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Proceeding of the Eighth Combined Joint AGRESCO Meeting of SAUs

ORGANIZED BY

NAVSARI AGRICULTURAL UNIVERSITY

(APRIL 19-21, 2012)

NAVSARI AGRICULTURAL UNIVERSITY

Directorate of Research
Navsari Agricultural University
Navsari-396450
2012

PROCEEDING OF THE EIGHTH COMBINED JOINT AGRESCO MEETING OF STATE AGRICULTURAL UNIVERSITIES HELD AT NAU, NAVSARI DURING APRIL 19-21, 2012

The Eighth Combined Joint meeting of the Agricultural Research Council (AGRESCO) of SAUs was held at Navsari Agricultural University, Navsari during April 19-21, 2012 under the Chairmanship of Dr. A.R. Pathak, Hon'ble Vice Chancellor, NAU, Navsari, Dr. N.C. Patel, Hon'ble Vice Chancellor, JAU, Junagadh, Dr. A.M. Shekh, Hon'ble Vice Chancellor, AAU, Anand and Dr. K. Sreedharan, Hon'ble Vice Chancellor, SDAU, Sardarkrushinagar. Dr. C.B. Patel, Ex. Director of Campus, GAU, Navsari Campus was invited as the Chief Guest. All the University Officers, Principal & Deans of various faculties of SAUs, the officers from line department of Gujarat state, the Associate Directors of Research, the conveners of different sub-committees of SAUs, the senior scientists/professors of SAUs attended the meeting.

Dr. A. N. Sabalpara, Director of Research, NAU, Navsari welcomed the Chief Guest, Hon. Vice-Chancellor of all SAUs, Director of Research, Director of Extension Education, Deans of all SAUs, Officers from line departments and all the participants. He gave brief summary of reommendations and new technical programmes approved in Agresco Sub-committe and Joint Agresco meeting of respective Universities, which were to be presented and discussed during the Eight Combined Joint Agresco Meeting.

Dr. N. C. Patel, Hon'ble Vice-Chancellor, JAU, Junagadh told that there is a good coordination among the SAUs, which is essential for exchanging ideas and chalking out sound research programmes in the interest of farmers of the state. He added that lot of infrastructure facilities have been created during last few years which should be fully and efficiently utilized to accelerate the research. He stated that food and nutritional security, climate change, residue free quality produce, bio-technology, mechanization, etc. are important points to be considered. He complemented the scientists for coming out with large number of recommendations and new technical programmes.

In his address, Dr. A. R. Pathak, Hon'ble Vice-Chancellor, NAU, Navsari expressed his concern about the importance PPP mode and added that success achieved in developing University's first Bt cotton hybrid varieties by NAU is an important land mark as cotton is considered to be the life line of Gujarat. He added that considering market demand, NAU has also developed a coarse grain paddy variety GNR-3 suitable for *pauha* making. Talking about marketing of technologies, he said that we are legging behind in marketing our technologies and there is need to develop strategies for the same by Marketing Dept. of IABM. He also stressed that breeders should put their whole hearted efforts to develop such breeding material/varieties which can perform better under changing climatic conditions. At the end, he also urged the breeders to initiate breeding work in fruit crops.

Dr. C.B. Patel, Chief Guest & Ex. Director of Campus pointed out that AGRESCO is an apex body of research for finalizing recommendations and new technical programmes. Agricultural production and protection are important responsibilities of this body and hence, we should be serious enough in taking these responsibilites. He added that the University now has sufficient manpower, infrastructure facilities and speedy instruments. Therefore, university authorities should see how these can be utilized most efficiently. He said that though we have made very good progress in

research, there is still need to see why some of the technologies are not acceptable to the farmers. At the end, he wished grand success of the meeting.

Dr. H. J. Derashri, Director of Extension Education, NAU, Navsari proposed the vote of thanks.

CROP IMPROVEMENT

Chairman	**:**	Dr. A. R. Pathak, Hon'ble Vice Chancellor, NAU, Navsari
Co-Chairman	**:**	Dr. K. B. Kathiria, Director of Research, AAU, Anand
Rapporteurs	**:**	Dr. L. K. Dhaduk, Res. Sci. (G&O), JAU, Junagadh Dr. D. U. Patel, Res. Sci. (S'cane), NAU, Navsari
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved:

University	Varietal recommendation				New Technical Programme	
	Farming community		Scientific community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	4 + 2# = 6	4 + 2# = 6	-	-	4	4
JAU	3 + 1* = 4	3 + 1* = 4	-	-	1	1
NAU	2 + 3*= 5	2 + 3* = 5	1	1	5	5
SDAU	1	1	-	-	3	3
TOTAL	**16**	**16**	**1**	**1**	**13**	**13**

*Endorsement, #Pre-release

Anand Agricultural University

Recommendations for farming community

1. Maize: Gujarat Anand White Maize Hybrid - 2 (GAWMH-2)

The proposed single cross hybrid derived from a cross CML-251 X GWL-10, recorded 3.9 tons/ha grain yield revealing 25.9%, 24.0% and 13.8% yield superiority respectively over Narmada Moti, GM-6 (composite varieties) and HQPM-1(single cross hybrid) under *kharif* - rain fed conditions. It is similar in grain color and texture as that of local cultivars. It showed moderate tolerance to stem borer and resistant against Maydis Leaf Blight (MLB).

The proposal was accepted for Middle Gujarat (AES-III) with following suggestions:

1) The seed and cob ratio of the hybrid/shelling percentage should be worked out.

(Action: Research Scientist, Maize, AAU, Godhra)

2. Tobacco: Gujarat Anand Bidi Tobacco - 1 (GABT-1)

The proposed variety derived from a cross ABD-65 x ABD-10 (Line ABD-101) possesses shy suckering habit, short internodes, more number of leaves (33), round, stout and thick stem with drooping as well as medium plant stature. On an average the variety gave 4175 kg cured leaf yield and revealed 87% and 11% yield advantage, respectively over the existing varieties A 119 and MR GTH 1 under irrigated condition at Anand. Quality wise it showed profuse spangling and desirable leaf thickness. The proposed variety has better smoke taste than MR GTH 1 and A 119.

The proposal was accepted for bidi tobacco growing area of Gujarat (Anand, Vadodara and Kheda districts) with following suggestions.

1) The table depicting the agronomical data on effect of spacing, nitrogen and topping on yield is not required in the proposal.
2) The name of the trials conducted over different years need to be specified.

(Action: Research Scientist, Tobacco, BTRS, AAU, Anand)

3. Forage Sorghum: Gujarat Anand Forage Sorghum-11 (GAFS-11)

The proposed culture showed tall stature with non lodging thin stem. It showed higher green forage yield to the tune of 32.9%, 11.1% and 23.5% and higher dry matter yield to the tune of 25.5%, 24.0% and 23.1%, respectively over checks S-1049, GFS-5 and C-10-2. The crude protein yield was found higher than the checks. In quality view point also the proposed variety was found superior to the checks. In Plant height, tillers, number of leaves, leaf length and leaf width, the variety was found better than checks. In its reaction to anthracnose, zonate leaf spot and leaf blight diseases it was found comparable with checks. Based on the performance of green fodder and dry matter yields, quality parameters and other important characters, the variety is recommended for cultivation in the Middle Gujarat, Bhal and North-West zone under rainfed conditions.

The proposal was accepted with following suggestions.

1) The variety should also be evaluated in South Gujarat and Dhari, JAU.

(Action: Research Scientist, MFRS, AAU, Anand)

4. Tomato: Gujarat Anand Tomato-4 (GAT-4)

The variety exhibited 269 q/ha fruit yield which was 16.4% and 30.9% higher over the checks GT-2 and AT-3, respectively. The genotype has determinate type plant growth habit with dark green foliage and dark green shoulder on fruit at breaker stage. The fruits are red in color, big in size and circular in shape. The fruits possess higher Vitamin C, acidity and pulp/juice ratio as compared to both the checks. The proposed variety GAT-4 showed low incidence of whitefly and fruit borer damages as well as TLCV compared to GT 2 and AT 3.

The proposal was accepted for Middle Gujarat (AES-III) with following suggestions.

1) The Data of GT-3 variety release from JAU should be included.
2) In the proposal the disease and pest reaction data of All India trials needs to be incorporated.

(Action: Res. Scientist, Vegetables, MVRS, AAU, Anand)

5. Maize: Gujarat Anand Yellow Maize Hybrid-1 (GAYMH-1)

The proposed single cross hybrid derived from a cross CML 307 x GYL-11 is an early maturing and yellow grain hybrid suitable for North Gujarat Agro Climatic Zone-IV under rain fed (*kharif)* conditions. The hybrid is similar in grain colour and texture as that of local cultivars preferred by maize growers of North Gujarat. It revealed 3.6 tons/ha grain yield which was 23.9% and 20.6% higher respectively over checks, *viz*., HQPM-1 (single cross hybrid) and GM-2 (variety) under *kharif*- rain fed conditions. It showed moderate tolerance to stem borer and resistance against *Maydis* Leaf Blight (MLB) when compared to check, GM-2 under natural field conditions.

The proposal was accepted as **pre-release** for North and Middle Gujarat with following suggestions.

1) The house suggested that the hybrid should be tested over more number of locations in both Middle and North Gujarat regions and therefore the proposal is accepted as a pre release. Locations of trial may be decided after discussion with concern scientists.
2) In Point No. 10 F, supporting data of Agronomical Features should be incorporated.

(Action: Research Scientist, Maize, AAU, Anand & DR, SDAU, Dantiwada)

6. Dilseed Seed Crop: Gujarat Anand Vegetable Dill seed-1 (GAVDS-1)

The proposed vegetable Dill Seed culture is a selection from local germplasm. It showed vigorous vegetative growth with many branches compared to other cultures. The dark green colour foliage revealed 180-190 q biomass production and showed 8.4%, 21.2% and 8.2% yield superiority respectively over check varieties GD-1, GD-2 and GD-3. Due to its late flowering habit it can be utilized for leafy vegetable purpose for a longer period. It possesses good aroma and volatile oil content.

The house accepted the proposal as a **pre-release**.

(Action: Assoc. Res. Sci., ARS, AAU, Sanad and Res. Sci., Vegetable, AAU, Anand)

Junagadh Agricultural University

Recommendations for farming community

1. **Brinjal: Gujarat Junagadh Brinjal-3 (GJB-3)**

The variety was developed from a cross JNDB-37 x JNDB-92. It recorded fruit yield of 393.9 q/ha which was 43.6% and 29.3% higher, respectively over checks JBGR-1 and GOB-1. Fruits are green in color, good shine and medium to big in size with oval shape. Fruit pulp is creamy white with less seed. Plants are medium in size and semi spreading. The reaction to little leaf disease and jassid is comparatively less in proposed variety as compared to checks. It is recommended for Gujarat state with following suggestions.

1) Inclusion of seeds to pulp ratio and distinguishing specific characters.

(Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)

2. **Indian bean: Gujarat Junagadh Indian Bean-2 (GJIB-2)**

The variety was developed from a cross JNDIB-88 x JNDIB-23. It recorded green pod yield of 112.5 q/ha which was 25.6% higher over check Gujarat Papadi-1. The pods of this variety are tender, flat and medium long in shape with green color. The immature seed color is light green and inflorescence length is more as compared to Gujarat Papadi-1. Plants are semi spreading; leaf spot and leaf blight diseases intensity are less than Gujarat Papadi-1. Pod borer damage is at par with check. The variety is approved for commercial cultivation in Saurashtra and middle Gujarat.

(Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)

3. **Ridge Gourd: Gujarat Junagadh Ridge Gourd Hybrid-1**

The hybrid has been developed at Junagadh from a cross combination of JRGL-11 x JRGL-32. It recorded fruit yield of 113.3 q/ha which was 24.56% higher over national check variety Pusa Nasdar. The fruits of the hybrid are long in size with green colour. This is a first hybrid in the public sector in Gujarat. It is moderately resistant to downy mildew and major pests. Considering its merits over the check, it is recommended for Saurashtra and middle Gujarat regions with following suggestions.

1. Include fiber content and male: female flower ratio.

(Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)

4. **Sesame: Endorsement of Gujarat Til-3**

This variety gave seed yield of 1200 kg/ha which was 7.58% higher than check variety Gujarat Til-2. Seed of this variety are white and bold containing 47.32% oil and is suitable for export. Disease and pest reactions are comparable with the check Gujarat Til-2. Therefore, it is recommended for summer cultivation in Saurashtra region.

(Action: Research Scientist (Pl. Br.), Agricultural Research Station, JAU, Amreli)

Navsari Agricultural University

Recommendations for farming community

1. **Paddy : Gujarat Navsari Rice-3 (GNR-3)**

The variety is developed from a cross combination of IR-28 x GR-4. It recorded 5918 kg/ha grain yield under irrigated transplanted condition and 5698 kg/ha grain yield under rainfed transplanted condition with yield advantage of 19.4% and 29.3%, respectively over Gurjari in irrigated transplanted condition and over GR-7 under rainfed transplanted condition. It is coarse grain type especially suitable for pohuva preparation. It showed resistance against BLB, blast and moderate resistance to sheath rot, grain discoloration, leaf folder and stem borer. Looking to its superiority for grain yield over Gurjari and GR-7, it is recommended for transplanted area of South Gujarat.

(Action: Professor, Plant Breeding, MPRC, NAU, Navsari)

2. Little Gourd : Gujarat Navsari Little Gourd-1 (GNLG-1)

This is the first variety of little gourd in the state. It recorded 15.6 tons/ha fruit yield with yield advantage of 32.9% over local check. It produced more number of fruits per vine in addition to its better quality. In disease and pest reaction, it is also found superior with respect to anthracnose, powdery mildew and vine borer as compared to local check. It is considered for South Gujarat region with following suggestion.

1) Inclusion of fruit fly infestation data.

(Action: Research Scientist, Vegetable, ACHF, NAU, Navsari)

3. Rice : Endorsement of NAUR-1 for aerobic condition

The variety NAUR-1 recorded significantly higher grain yield of 4121 kg/ha in South Gujarat and emerged out as top ranking genotype in aerobic conditions. It is recommended for aerobic rice cultivation in south Gujarat.

(Action: Professor, Plant Breeding, MPRC, NAU, Navsari)

4. Cotton : Endorsement of G.Cot.Hy.-6 (BG II)

G.Cot.Hy.-6 carrying BG-II (Mon 15985 event) was evaluated with its non Bt counter part and prescribed checks. It recorded seed cotton yield of 1981 kg/ha which was 31.4% higher than non Bt counter part and 12.6%, 13.6% and 6% higher over checks RCH-2 (BG II), VICH-5 (BG II) and G. Cot. 12, respectively. The fiber quality of the hybrid was at par with its non Bt counter part. The hybrid was free from spodoptera, heliothis and pink ball worm damage (Green boll). For sucking pests it is comparable with non Bt and Bt checks. The house unanimously endorsed the first Bt cotton hybrid G. Cot. Hy.-6 (BG II) from public sector.

(Action: Research Scientist, Cotton, MCRS, NAU, Surat)

5. Cotton : Endorsement of G.Cot.Hy.-8 (BG II)

G.Cot.Hy.-8 carrying BG-II (Mon 15985 event) was evaluated with its non Bt counter part and prescribed checks. It recorded seed cotton yield of 2231 kg/ha which was 21.3% higher than non Bt counter part and 26.8%, 28.4% and 19.4% over checks RCH-2 (BG II) and VICH-5 (BG II) and G.Cot.Hy.-12, respectively. The fiber quality of the hybrid was at par with its non Bt counter part. The hybrid was free from spodoptera, heliothis and pink ball worm damage (Green boll). For sucking pests it is comparable well with non Bt and Bt checks. The house unanimously endorsed the first Bt cotton hybrid G.Cot.Hy.-8 (BG II) from public sector.

(Action: Research Scientist, Cotton, MCRS, NAU, Surat)

Recommendations for Scientific Community

1. Cotton : GSB-39

The extra long staple *Barbadense* cotton genotype GSB-39 was proposed for the recommendation. The house expressed that at present, there is no area of *Babadense* cotton in Gujarat. This genotype proved to be a good parental line and hence, it should be registered with PPV & FRA/NBPGR and may be utilized in future for hybrid development programme.

(Action: Research Scientist, Cotton, MCRS, NAU, Surat)

Sardarkrushinagar Dantiwada Agricultural University

Recommendations for farming community

1. Pigeon Pea : Gujarat Tur-103 (GT-103)

It is derivative of MS Pusa-33 x UPAS-120. The variety recorded 1449 kg/ha grain yield which was 33.28% and 19.93% higher over the checks UPAS-120 and GT-101, respectively. It is early type with creamy white seed. It is comparable to checks with respect to wilt and SMD diseases and *helicovarpa* and pod fly insects. It is considered for Gujarat state with following suggestions.

1) Recast the proposal as per the prescribed proposal proforma.

2) Mention the details of pedigree.
3) Tabulate the data zone wise separately for irrigated and rainfed condition.
4) Being an early culture it should be evaluated in tribal belt of South Gujarat also.

(Action: Res. Sci., Pulses, SDAU, Sardarkrushinagar & Asso. Res. Sci., Pulses, NAU, Navsari)

GENERAL SUGGESTIONS

The following general suggestions are made by the house during the two days deliberations

1) The Research Scientist (Forage Crops), AAU and Research Scientist (Sorghum), NAU along with the all the Director of Research of SAUs should frame out and finalize the research on fodder and dual purpose sorghum besides the modalities for evaluation of the materials.
2) The breeding work in pointed gourd (parwar) and drum stick (Moringa spp.) should be initiated respectively in NAU and AAU.
3) In the crop varietal proposal, the name of the scientist working on sub-centers and the name of the students involved in testing/development/screening of the varieties should be included.
4) In cotton breeding research besides CGMS, use of GMS should also be intensified so as to speed up the seed production.
5) The fruit breeding research work needs to be initiated by all the SAUs.
6) The status of breeding materials should also be presented by respective crop breeders.

CROP PRODUCTION/NATURAL RESOURCE MANAGEMENT

Chairman	**:**	Dr. A.M. Shekh, Hon'ble Vice Chancellor, AAU, Anand Dr. K. P. Patel, Dean, BACA, AAU, Anand
Co-Chairman	**:**	Dr. M.K. Arvadia, Dean (Agriculture), NAU, Navsari
Rapporteurs	**:**	Dr. J. V. Polara, Professor, JAU, Junagadh Dr. V.P. Usdadiya, Assoc. Res. Sci., MCRS, Surat
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programs	
	Farming community		Scientific Community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	7	7	1	1	15	14
JAU	14	14	0	0	27	25
NAU	17	17	3	3	28	27
SDAU	5	4	4	4	13	12
TOTAL	**43**	**42**	**8**	**8**	**83**	**78**

Anand Agricultural University

Recommendations for farming community

1. **Response of irrigated Bt cotton to N, P and micronutrient**

   The farmers of middle Gujarat agro climatic zone-III (AES-2) growing irrigated Bt cotton are advised to apply 10 t FYM/ha and 240 kg N/ha, *i.e.*, 60 kg N/ha as a basal and remaining 180 kg N/ha in three equal split at one month interval after sowing for securing higher yield.

   (***Action: Prof. and Head, Dept. of Agronomy, BACA, AAU, Anand)***

2. **Effect of spacing, drip irrigation and nitrogen on late *Kharif* castor**

   The farmers of middle Gujarat agro climatic zone-III (AES-II) are recommended to sow castor seed in paired row (60x60x180 cm) and irrigate as well as fertigate through drip at 0.8 PEF. The 30% of RDN (22.5kg/ha) and full dose of P (50 kg/ha) should be applied as basal and remaining N in three equal splits at an interval of one month through drip.

   System details :

Lateral spacing	**:**	2.4 m
Dripper spacing	**:**	0.6 m
Dripper discharge	**:**	4 lph
Operating pressure	**:**	1.2 kg/cm^2
Operation frequency	**:**	Alternate day
Operating time	**:**	100-150 min

   (Action: Assoc. Res. Sci., ARS, AAU, Thasra)

3. **Response of chickpea (GG-1) to nitrogen, phosphorus and sulphur with and without bio-fertilizers under supplementary irrigation in *Bhal* region**

   Farmers of *Bhal* area growing chickpea under limited irrigation facility are advised to apply *Rhizobium* as a seed treatment (30g/kg seed) and 20 kg N + 20 kg S/ha as a basal and remaining 20 kg N/ha at the time of first irrigation after sowing to obtain higher seed yield and net return.

   (Action: Research Scientist, ARS, AAU, Arnej)

4. Influence of integrated nutrient management on yield of soybean

The farmers of middle Gujarat agro climatic zone-III (AES-II) growing soybean *(kharif)* are advised to apply 50% of RDF i. e. 15 kg N and 30 kg P_2O_5/ha along with seed treatment with PSB + *Rhizobium* (each of @ 5ml/kg) to get higher yield and net return.

(Action: Associate Research Sciientist, TRTTC, AAU, Devgagadh baria)

5. Comparative evaluation of SRI with different methods of rice cultivation

The farmers of middle Gujarat agro climatic zone III (AES-II) having assured irrigation and drainage facility are advised to grow rice var. GR 12 in *kharif* season by adopting SRI/Modified SRI technique for obtaining higher yield and saving of 50% chemical fertilizer over conventional practice. The farmers should adopt either one of the following two modified SRI techniques.

SN	Practices to be followed	Modified SRI	Modified SRI (Under paucity of labours)
1	Seeding	Seeding of near sprouted seeds on well drained leveled soil after puddling	
2	Seed rate (kg/ha)	5	20
3	Spacing (cm)	25 cm x 25 cm	25 cm between two row
4	Nutrient management	(1) FYM@ 5 t/ha as basal (2) *Azotobacter chroococcum* ABA 1 +PSB *Bacillus coagulans* PBA 16 (10^8 cfu/ml) each @ one liter/ha at the time of seeding along with well sieved FYM (50 kg/ha) (3) Fertilizers 40-12.5-0 NPK kg/ha (a) Basal: 40% N & 100% P_2O_5 (16-12.5-0 NPK kg/ha) (b) At the tillering stage: 40% N (16 kg N/ha at 30 DAS) (c) At Panicle initiation (PI) stage: 20% N (8 kg N/ha one week before PI stage)	
5	Water management	No flooding of water upto PI stage, maintain the soil moist condition and 5 cm submergence of water form Panicle initiation (PI) to dough stage.	
6	Weed management	Use rotary/cono weeder for weeding/interculturing 4 times at 10 days interval starting from 25 days after seeding.	

*$ZnS0_4$ @ 25 kg/ha should be given as basal dose.

(Action: Research Scientist, MRRS, AAU, Nawagam)

6. Effect of organic manures, sulphur and phosphorus on growth and yield of black gram

The farmers of middle Gujarat agro climatic zone- III (AES-2) growing black gram (var. Guj. Urd 1) during *kharif* season are advised to apply vermicompost @ 2 t/ha or FYM @ 5 t/ha and 20:40:40 NPS kg/ha as a basal dose to get higher yield and net realization.

(Action: Assoc. Res. Sci., PRS, AAU, Vadodara)

7. Effect of sowing dates on yield and quality of forage sorghum

The farmers of middle Gujarat agro climatic zone-III are advised to sow fodder sorghum var. GFS-5 upto 30th June to get higher yield and net profit.

(Action: Assoc. Res. Sci., MFRS, AAU, Anand)

Recommendations for scientific community

1. Study on nitrogen stress detection in wheat crop using Spectroradiometer

It is advisable to use the NDRE (Normalized Difference Red Edge) vegetative index computed from narrow band spectral reflectance measured using spectroradiometer to detect the nitrogen stress in wheat during early growth stage (30 to 45 DAS) as NDRE is found the most sensitive index. Nitrogen deficiency can be computed using stepwise regression equation.

Nitrogen deficiency (kg/ha) = 468.1 - 923.4 x NDRE (R^2:0.78**)

(Action: Prof. and Head, Dept. of Agril. Meteorology, BACA, AAU, Anand)

Junagadh Agricultural University

Recommendations for farming community

1. **Fertilizer management in cotton + sesame (1:1) intercropping system under dry farming condition**

   The farmers of North Saurashtra Agro-climatic zone (AES XV) adopting hybrid cotton + sesame (1:1) intercropping system under rainfed conditions are advised to apply 40 kg N/ha to cotton and 25 kg N/ha + 12.5 kg P_2O_5/ha to sesame for getting higher yield and net return.

   (Action: Research Scientist, DFRS, JAU, Targhadia & Assistant Research Scientist, ARS, JAU, Nanakandhasar)

2. **Fertilizer management in cotton + sesame (1:1) intercropping system under dry farming condition**

   The farmers of North Saurashtra agro climatic zone (AES X) adopting cotton + sesame (1:1) intercropping system under rainfed conditions are advised to apply 80 kg N/ha to cotton and 25 kg N/ha +12.5 kg P_2O_5/ha to sesame crop for getting higher yield and net return.

   (Action: Research Scientist, DFRS, JAU, Targhadia & Assistant Research Scientist, ARS, JAU, Jam khambhalia)

3. **Weed management in *kharif* pearl millet**

   The farmers of North Saurashtra agro climatic zone growing hybrid pearl millet during *kharif* season are advised to keep their field weed free through pre emergence application of atrazine @ 0.5 kg/ha (dissolve in 500 liters water) to obtain higher yield and net return.

   (Action: Research Scientist, Pearl Millet Research Station, JAU, Jamnagar)

4. **Evaluation of different seed pellets on production of pasture grasses**

   The farmers of North Saurastra agro climatic zone growing *Anjan* grass *(kharif)* are advised to prepare small balls containing seeds (40,000 balls/ha) using 200 kg soil + 200 kg FYM + 4 kg seeds mixture to get higher germination and fodder yield.

   (Action: Associate Research Scientist, Grassland Research Station, JAU, Dhari)

5. **Effect of nitrogen and bio fertilizer on yield of *shaniar* grass *(Sehima nervosum)***

   The farmers of North Saurastra agro climatic zone growing *shaniar* grass (*kharif*) are advised to apply 60 kg N/ha in two equal splits first at ten days after first rain and second at 30 days after first application for getting higher fodder yield**.**

   (Action: Associate Research Scientist, Grassland Research Station, JAU, Dhari)

6. **Effect of phosphorus with and without K_2O on yield of *Anjan* grass**

   The farmers of North Saurashtra agro climatic zone growing *Anjan* grass in (*kharif)* are advised to apply 60 kg P_2O_5/ha as a basal dose along with recommended dose of 20 kg N/ha (10 kg as basal + 10 kg/ha at 30 DAS) for getting higher fodder yield.

   (Action: Associate Research Scientist, Grassland Research Station, JAU, Dhari)

7. **Effect of potassium and zinc on yield and quality of fodder jowar under rainfed condition**

   The farmers of North Saurashtra agro climatic zone (AES-XIV) growing fodder sorghum (*kharif)* are advised to apply 40 kg K_2O + 20 kg $ZnSO_4$/ha along with recommended dose of fertilizers (80:40 kg NP/ha) for getting higher fodder yield.

   (Action: Associate Research Scientist, Grassland Research Station, JAU, Dhari)

8. Effect of application of potassium and zinc on growth, yield and nutrients uptake by onion and its residual effect on *kharif* groundnut in medium black calcareous soil

The farmers of South Saurashtra agro climatic zone adopting onion- groundnut sequence in medium black calcareous soil are advised to apply 75 kg K_2O/ha in two splits i.e. ½ K_2O as basal + ½ at 30 DAS besides 25 kg $ZnSO_4$/ha and recommended fertilizer dose (75:60 kg NP/ha) to onion crop for getting higher yield and net return.

(Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

9. Bt. cotton response to potash with and without zinc

The farmers of South Saurashtra agro climatic zone growing irrigated Bt cotton on medium black calcareous soil are advised to apply potassium @ 120 kg/ha in two splits i.e. 1/2 as basal + 1/2 at 30 DAS in addition to recommended fertilizer dose for getting higher yield and net return.

(Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

10. Balance fertilization in Bt. Cotton

The farmers of South Saurashtra agro-climatic zone growing Bt. Cotton on medium black calcareous soil are advised to apply 10 t FYM/ha + 240 kg N/ha (four splits, 25% at sowing and remaining three equal splits at 30, 60 and 90 DAS) and @ 50 kg P_2O_5/ha as basal for getting higher yield and net return.

(Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

11. Effect of soil amendments on different genotypes of gram under salt affected soil

The farmers of South Saurashtra agro-climatic zone having sodic soil are recommended to grow gram variety GG 4 or GG 1 and apply 10 t FYM/ha + gypsum @ 50% G.R. for getting higher yield and net return.

(Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

12. Integrated nutrient management in garlic on sandy loam soil of Saurashtra

The farmers of North Saurashtra agro climatic zone (AES-X) growing garlic are advised to apply 75% RDF (37.5:37.5:37.5 NPK kg/ha) along with either 2.5 t FYM/ha or castor cake 300 kg/ha for obtaining higher yield and net realization.

(Action: Research Scientist, DFRS, JAU, Targhadia & Assistant Research Scientist, DFRS JAU, Jam Khambhalia)

13. Integrated nutrient management for *bajra* and cotton rotation under rainfed condition

The farmers of North Saurashtra agro climatic zone (AES-XV) adopting rainfed *bajra* and cotton rotation are recommended to apply 50% of recommended dose of fertilizers (*Bajra* 40:20 kg NP/ha and Cotton- 40 kg N/ha) along with castor cake @ 900 kg/ha for getting higher yield and net realization**.**

(Action: Research Scientist, DFRS, JAU, Targhadia & Assistant Research Scientist, DFRS JAU, Nana Kandhasar)

14. Evaluation for the potentiality of bio-fertilizer and organic resources for sustaining sesame yield under rain fed condition

The farmers of western *Bhal* and coastal zone (AES-1(a), 1(b) and 3) growing sesame under rainfed condition are advised to apply 50% of recommended dose of fertilizers i.e. 12.5:12.5 kg NP/ha along with 500 kg castor cake/ha and besides seed treatment of *Azotobacter* and PSB (CFU 10^8/g) each of 30 g/kg seed for getting higher yield and net realization alongwith 50% saving of fertilizers.

(Action: Research Scientist, DFRS, JAU, Targhadia & Assistant Research Scientist, DFRS JAU, Vallabhipur)

Experiments concluded/continued

1. **Response of garlic to sulphur sources under salt affected soil conditions**

   Experiment concluded.

   (Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

2. **Balance nutrient management in groundnut (monsoon)–wheat (winter) cropping sequence on LTFE basis**

   Experiment continued.

   (Action: Professor & Head, Agril. Chemistry & Soil Science, JAU, Junagadh)

Navsari Agricultural University

Recommendations for farming community

1. **Feasibility of using banana pseudostem sap as liquid fertilizer in onion under drip irrigation**

   The farmers of South Gujarat heavy rain fall zone (AES-III) growing white onion (Cv.GWO 1) crop after *kharif* paddy are recommended to transplant onion on raised bed (top width 90 cm followed by 30 cm wide and 15-20 cm deep furrow) and be irrigated through drip and fertigated @ 80% RDF i. e. 100 : 40 kg NK/ha along with banana pseudostem sap @ 1500 l/ha. While full dose of P (50 kg/ha) should be applied as basal, N, K_2O and sap should be applied in five equal splits at an interval of 10 days starting from 15 days after transplanting for getting higher bulb yield and net income beside saving of 30 per cent of irrigation water as compared to conventional practice.

   System details:

Lateral spacing (cm)	**:**	120
Lateral diameter (mm)	**:**	16
Dripper discharge rate (lph)	**:**	8
Dripper spacing (cm)	**:**	100
Operating pressure (kg/cm^2)	**:**	1.20
Operation frequency	**:**	Alternate day
Operating time		
Dec.-Feb.	**:**	40 - 50 min
March-April	**:**	60 - 70 min

   (Action :Research Scientist, SWMRU, NAU, Navsari)

2. **Study on periodical water stress in castor under drip irrigation with and without mulch**

   The farmers of South Gujarat heavy rain fall zone (AES-III) growing castor (Cv. GCH 4) during *rabi* season under drip method of irrigation and operating the system on alternate day are advised to impose water stress by stopping drip irrigation for a period of 20 days in case of without mulch or 30 days with Black plastic mulch starting from 50 per cent emergence of main spike stage. By adopting this no cost practice, farmer can save irrigation water up to 18 per cent as compared to normal operation of the drip system.

   (Action: Research Scientist, SWMRU, NAU, Navsari)

3. **Optimization of raised bed size under different levels of drip irrigation in turmeric**

   The farmer of AES-III of South Gujarat heavy rainfall agro climatic zone I are recommended to plant three rows of turmeric (S*ugandhm*) (30 x 20 cm) on raised bed (90 cm width followed by 45 cm wide and 30 cm deep furrow) and irrigate the crop by drip method. They should apply 80% of recommended dose of N and K_2O *i.e.,* 48:48 kg NK/ha. Full dose of P_2O_5 (60 kg/ha) and half dose of N and K_2O should be applied at the time of planting. The remaining 50% of N and K should be applied in nine equal splits through drip system at an interval of 15 days starting after cessation of monsoon. By adoption of this technology, farmer can realize higher net income and yield beside 32 per cent water and 20 per cent fertilizer saving as compared to conventional practices.

System details :

Lateral spacing (cm)	:	135
Dripper spacing (cm)	:	100
Dripper discharge rate (lph)	:	8
Operating pressure (kg/cm^2)	:	1.2
Operation frequency	:	Alternate day
Operating time		
Sept.-Dec.	:	45 - 60 min
Jan.-March	:	50 - 75 min

(Action: Research Scientist, SWMRU, NAU, Navsari)

4. Evaluation of methods of irrigation in oil palm

The farmers of AES-III of South Gujarat heavy rainfall zone intended to grow oil palm are advised to adopt triangular method of planting (9 x 9 x 9 m) and drip method of irrigation. The drip system should be placed at 0.5 m away from trunk for first two years and third year onward 1.5 m away from the trunk. The system details and operation schedule are given below.

System details

Particulars		**Year-I**	**Year-II**	**Year-III onward**
Lateral spacing (m)	:	9	Two laterals per row	Two laterals per row
Lateral diameter (mm)	:	16	16	16
Dripper discharge rate (lph)	:	8	8	8
Number of dripper/tree	:	2	12	18
Operating pressure (kg/cm^2)	:	1.20	1.20	1.20
Operation frequency	:	Alternate day	Alternate day	Alternate day
Operation schedule (hrs)				
Jan.-Feb.		3.0 to 3.5	1.5 to 2.0	3.0 to 3.75
March-April		5.0 to 5.5	2.5 to 3.15	5.0 to 5.30
May-June		5.5 to 6.0	2.5 to 3.5	5.15 to 6.0
Sept.-Oct.		3.0 to 3.4	1.5 to 2.0	2.5 to 3.0
Nov.-Dec.		4.3 to 4.6	2.2 to 2.5	1.75 to 2.25

(Action: Research Scientist, SWMRU, NAU, Navsari)

5. Effect of pseudostem sap and vermiwash on fruit setting in mango (cv. *Kesar*)

Farmers having mango orchard in South Gujarat heavy rainfall zone (AES-III) are advised to apply four sprays of banana pseudostem sap and vermiwash in 1:1 ratio with 5% concentration during its flowering period. First spray at the time of flower initiation, second at 25% flower opening (15 days after 1st spray), third at 50% flower opening (25 days after 1st spray) and last at 100% flower opening (35 days after 1st spray) for getting higher fruit retention, fruit yield and net income.

(Action: Research Scientist, SWMRU, NAU, Navsari)

6. Response of garlic to different levels of irrigation and integrated nutrient management

The farmers of South Gujarat heavy rainfall zone (AES-III) intending to grow garlic after k*harif* paddy are advised to give 11 irrigations *i.e.*, first irrigation just after sowing, second at 9-10 days after sowing and remaining 9 irrigations at an interval of 9-15 days. *i.e.* during Dec-Jan 16-14 days, Feb. 12 days and March 9 to 10 days interval. They are further advised to apply 50% RDN as urea + 50% N through bio compost for achieving higher bulb yield and net profit.

(Action: Research Scientist, SWMRU, NAU, Navsari)

7. Fertigation study in oil palm

The farmers of AES-III of South Gujarat heavy rainfall zone having well established oil palm orchard are advised to irrigate their palm through drip method and fertigate N and K_2O each @ 2400 g/tree/year in four equal splits using Urea and White MoP as sources, respectively. The fertigation of N and K_2O should be done during May, June, October and November months. While P_2O_5 (600 g/tree) should be applied in soil in two equal splits *i.e.* before and after monsoon for getting higher fresh fruit bunch (FFB) yield and net profit.

System details :

Lateral spacing	**:**	Two laterals per row
Lateral diameter (mm)	**:**	16
Dripper discharge rate (lph)	**:**	8
Number of dripper/tree	**:**	18
Operating pressure (kg/cm^2)	**:**	1.20
Operation frequency	**:**	Alternate day

Operating schedule (hrs)

Jan.-Feb.	3.50 to 4.25
March-April	6.00 to 6.30
May-June	6.50 to7.00
Sept.-Oct.	3.00 to 3.30
Nov.-Dec.	2.00 to 2.50

(Action: Research Scientist, SWMRU, NAU, Navsari)

8. Evaluation of banana pseudostem sap as a liquid fertilizer through drip in sugarcane

The sugarcane growers of South Gujarat agro climatic zones are advised to apply banana pseudostem sap @ 5000 l/ha through drip along with 60 per cent RDF (150:75:75 NPK kg/ha) for realizing higher net profit. The 100 per cent P_2O_5, 15 per cent N and K_2O should be applied at the time of planting. While the remaining N and K_2O should be applied along with sap in 10 equal splits at an interval of 10 days starting from 60 DAP. The system details are as follow.

System details :

Lateral spacing (cm)	**:**	180
Dripper spacing (cm)	**:**	60
Dripper discharge rate (lph)	**:**	4
Operating pressure (kg/cm^2)	**:**	1.2
Operation frequency	**:**	Alternate day
Operating time		
Winter	**:**	1.50 - 2.00 hrs
Summer	**:**	2.00 - 2.75 hrs

(Action: Research Scientist, SWMRU, NAU, Navsari)

9. Comparative performance of FYM, biocompost and banana pseudostem based vermicompost in production of sugarcane

The farmers of South Gujarat agroclimatic zone growing sugarcane under drip system are advised to apply FYM @ 20 t/ha + RDF (250:125:125 NPK kg/ha) for realizing higher net income. Under the circumstance of shortage or unavailability of FYM, they can apply pseudostem based vermicompost @ 5 t/ha in addition to RDF.

System details :

Lateral spacing (cm)	:	180
Dripper spacing (cm)	:	60
Dripper discharge rate (lph)	:	4
Operating pressure (kg/cm^2)	:	1.2
Operation frequency	:	Alternate day
Operating time		
Winter	:	1.50 - 2.00 hrs
Summer	:	2.00 - 2.75 hrs

(Action: Research Scientist, SWMRU, NAU, Navsari)

10. Comparative evaluation of SRI with different methods of paddy cultivation

The farmers of South Gujarat heavy rainfall zone (AES-III) growing paddy are advised to adopt SRI method (10-12 days old single seedling per hill at 25 cm x 25 cm spacing) to realize higher grain yield and net income besides 41 per cent saving in irrigation water.

Alternatively, from water saving (40%) point of view, they are advised to adopt aerobic sowing (irrigated drilled) of rice at a row spacing of 30 cm to get higher cost: benefit ratio as compared to conventional paddy cultivation.

(Action: Research Scientist, SWMRU, NAU, Navsari)

11. Inter-cropping in *rabi* castor

The farmers of coastal areas of South Gujarat heavy rainfall agroclimatic zone (AES- IV) are advised to cultivate *rabi* castor at 90 x 60 cm spacing either as a sole crop or castor + onion intercrop. Four rows of onion at 15 x10 cm spacing should be transplanted between two rows of castor (1:4 row ratio). For both, castor (80:40:00 NPK kg/ha) as well as onion (125:50:50 NPK kg/ha) respective recommended doses of fertilizer should be applied on the basis of area under intercrop.

(Action: Research Scientist, SWMRU, NAU, Navsari)

12. Integrated nutrient management in salicornia

The farmers of coastal areas of South Gujarat heavy rainfall zone (AES-IV) having waste lands in the vicinity of sea are advised to cultivate salicornia. For getting higher yield and net profit, they are recommended to fertilize salicornia with biocompost @ 20 t/ha and inorganic fertilizer @ 250:75:50 kg NPK/ha. The 50% of N and full dose of P_2O_5 and K_2O should be applied as basal and the remaining 50% N at 110 days after sowing.

(Action: Research Scientist, SWMRU, NAU, Navsari)

13. Performance of paddy based cropping sequence in presence and absence of green manure

The farmers of South Gujarat heavy rainfall agroclimatic zone adopting paddy (k)- paddy (s) are advised to follow paddy (k)-castor (r)- green manure (s) or paddy (k)-sorghum (r)- green manure (s) sequence for realizing higher net income as compared to paddy (k)- paddy (s) sequence. Further, these sequences also save 62 per cent irrigation water in comparison to summer paddy.

(Action: Asstt. Res. Sci., WRS, Bardoli and Research Scientist, SWMRU, NAU, Navsari)

14. Effect of depth of tillage on water requirement of Bt. hybrid cotton

Farmers of South Gujarat agro-climatic zone II growing irrigated *Bt* cotton are advised to adopt deep ploughing (22.5 cm depth) in summer and apply two irrigations *i.e.*, first (80 mm) at 25 days after cessation of monsoon and second (60 mm) at 50 days after first irrigation for obtaining higher seed cotton yield and net profit.

(Action: Research Scientist, MCRS, NAU, Surat)

15. Effect of precision application of irrigation and fertilizers through drip on productivity and fibre quality of Bt cotton

The farmers of South Gujarat agro-climatic zone–II growing *Bt* cotton under irrigated conditions are advised to adopt drip irrigation in paired row planting (60 x 45 x 180 cm) and schedule irrigation at 0.8 PEF. Further, they are advised to apply 180 kg N/ha (75% RDN) in 6 equal splits at 15 days interval starting from 15 DAS through drip system to obtain higher seed cotton yield and net profit besides with saving of irrigation water by 20% and nitrogen by 25%.

System details :

Main line	:	75 mm
Sub main line	:	63 mm
Lateral (Inline)	:	16 mm
Lateral spacing	:	240 cm
Dripper	:	4 lph
Dripper spacing	:	45 cm
Operating pressure	:	1.2 kg/cm^2
Operating frequency	:	Alternate day
Operating time	:	70-85 minutes

(Action: Research Scientist, MCRS, NAU, Surat)

16. Agronomic requirements of pre-released *herbaceum* variety (GN Cot.-25) in respect of plant density and fertilizer requirement under rainfed condition

Farmers of South Gujarat agro-climatic zone-II growing rainfed cotton (GN Cot.-25) are advised to follow spacing of 120 x 45 cm with application of 80 kg N/ha for getting higher seed cotton yield and net profit. The nitrogen should be applied in two splits *i.e.,* 50% as basal and 50% at 1-1.5 month after sowing.

(Action: Research Scientist, MCRS, NAU, Surat)

17. Interactive effect of weed management and fertilizer levels on yield of onion under South Gujarat condition

The farmers of AES-III of South Gujarat heavy rainfall zone are advised to apply pendimethalin @ 1 kg ha^{-1} as pre emergence + one hand weeding at 40 days after transplanting along with 100% RDF (100:50:50 kg NPK/ha) for getting higher weed control efficiency and onion bulb yield.

(Action: Prof. and Head, Dept. of Agronomy, NAU, Navsari)

Recommendations for Scientific Community/Conclusions

1. Desuckering of banana through use of conventional fertilizers

Based on the results of two sets, it is concluded that for effective sucker control in banana, 2-4 D treatment was found to be the best. However, it was closely followed by SSP 4 g/sucker or SSP 5 g/sucker which implies that these treatments can be an effective alternative to 2-4 D treatment. The SSP treatments will also minimize the risk of deformation caused due to unscientific use of 2-4 D for desuckering.

Note :

Based on the conclusion, it is proposed to conduct large scale trial with three treatments *viz.,* 2-4 D, SSP 4 g/sucker and manual desuckering. The treatments will be followed continuously and economics will be calculated. After validation of the results, proposed recommendation will be made for the farmers.

(Action: Research Scientist, SWMRU, NAU, Navsari)

2. Assessment of soil fertility of eastern hilly belt of South Gujarat

- Within eastern hilly tract of South Gujarat, considerable variations with respect to climate (semi-arid to humid), rainfall (1004 mm in Nandod to 2384 mm in Dharampur and Kaparada) and LGP (105 to 150 days lower limit and 120 to 165 day upper limit) was observed.
- The predominant soil series occurring in hilly tract are *Baldha, Billimora, Bedmal* and *Vadhwania* which are shallow in depth, excessively drained and subjected to moderate to severe erosion. From soil fertility point of view, the soils of hilly tract are medium acidic to neutral in reaction, normal in soluble salt content, high in organic C, low to medium in available P, medium to high in K and moderate to sufficient in micronutrient content.

(Action: Research Scientist, SWMRU and Prof., SSAC, NMCA, NAU, Navsari)

3. Studies on soil sodicity in relation to sugarcane productivity

The critical limit of exchangeable sodium percentage (ESP) for sugarcane crop grown on clay soils of Ukai Kakrapar Command area be considered as 6 ESP instead of 15 ESP for determining the gypsum requirement of soils.

(Action: Research Scientist, SWMRU, NAU, Navsari)

Sardarkrushinagar Dantivada Agricultural University, Sardarkrushinagar

Recommendations for farming community

1. Effect of cropping system diversification and/or intensification on yield and economics

The farmers of North Gujarat agro climatic zone (AES-1) having assured irrigation facility are advised to adopt castor(k/r)-greengram (s) or greengram + castor relay(k/r)-pearlmillet (s) or castor(k/r) - pearlmillet(s) for higher yield and net return over predominant cropping system pearlmillet-mustard.

(Action: Research Scientist, AICRP on IFS, SDAU, Sardarkrushinagar)

2. Effect of different organic sources to fenugreek under organic farming

The farmers of AES-I of North Gujarat agro climatic zone interested to grow fenugreek organically are advised to apply 50% RDN (10 kg N/ha) through castor cake (de-oiled) along with seed inoculation with *Rhizobium* (FRS-7) @ 30g/kg seed and PSB (PSB-4) @ 30g/kg seed to get higher yield and net return besides 50% saving of organic manure.

(Action: Prof. & Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)

3. Fertigation scheduling in Bt cotton under drip system

Deferred/with held.

Suggestion : To be validated by conducting experiment in large field plot keeping recommended (proposed) treatment with and without P_2O_5 (40 kg/ha) application for one year.

(Action : Asstt. Res. Sci., PDC, CW M, P R and RE, SDAU, Sardarkrushinagar)

4. Fertigation study in cauliflower

The farmers of North Gujarat agro climatic zone (AES-I) growing *Rabi* cauliflower are advised to irrigate their crop through drip system at 1.0 PEF at alternate day and apply 100% RDF (100 kg N: 45 kg P_2O_5: 45 kg K_2O/ha) for obtaining higher yield and net return besids 10% water saving.

Apply full recommended dose of P_2O_5, 25% N and 25% K_2O as basal and remaining 75% each of N and K_2O should be applied in three equal splits through fertigation at 10 days interval starting from 20 DAT in the form of water soluble fertilizer (13-0-45 NPK). The crop should be planted in paired row (30cm x 30 cm x 60cm).

System details :

Lateral spacing (cm)	:	90
Dripper spacing (cm)	:	60
Dripper discharge rate (lph)	:	4
Operating pressure (kg/cm^2)	:	1.2
Operating time (min)		
November	:	100
Dec.-Jan.	:	70
Feb. till harvest	:	90

(Action : Assoc. Res. Sci., ARS, SDAU, Ladol)

5. **Effect of phosphorus, sulphur and biofertilizer on growth, yield, nodulation and nutrient uptake by greengram on sandy loam soil**

The farmers of North-West agro climatic zone (IV) of Gujarat growing greengram (GM 4) during *kharif* are advised to apply P_2O_5 @ 20 kg/ha as DAP and sulphur @ 20 kg/ha in form of gypsum as well as seed inoculation with *Rhizobium* (30g/kg seed) to obtain higher yield and net return.

(Action : Assoc. Res. Sci., Centre of Excellence for Research on OF, SDAU, Bhachau)

Recommendations for scientific community

1. **Management of physiological disorder (wilting) of Bt. cotton through method of irrigation and nutrient supply system**

For controlling para wilt disorder in Bt cotton, application of 20 t FYM/ha in soil was found benificial.

(Action: Research Scientist, ARS, SDAU, Talod)

2. **Enhancement of summer sesame production through intercropping with pearlmillet**

Growing of sesame either sole or as intercrop with pearl millet during summer season in North Gujarat is not advisable.

(Action : Prof. & Head, Dept. of Agronomy, CPCA, SDAU, Sardarkrushinagar)

3. **Delineation of nutrient status of soils of Banaskantha district and their relationship with soil properties**

The soils of Banaskantha district are sandy to loamy sand in texture and neutral to alkaline in reaction. Most of the soils in Banaskantha district have soluble salt content under safe limit.

The soils of Banaskantha district are low in organic carbon content; medium in available P, K, S, Fe and Zn whereas available Mn and Cu status was high. The overall fertility status of the soils in Banaskantha district was marginal.

(Action : Assoc. Res. Sci., Central Instrumentation Laboratory, Directorate of Research, SDAU, Sardarkrushinagar)

4. **Assessment of quality of irrigation water of Kachchh District**

Based on the ground water quality assessment of Kachchh district, following conclusions are emerged (Table).

1. Most of the samples of ground water (> 80%) of kachchh district are classified in C_3 and C_4 group salinity.
2. In contrast, from solicit hazard point of view, most of the sample (>80%) are grouped in S_1 and S_2 class.
3. The ground water samples of Kachchh district are mostly safe RSC and F content point of view.

Distribution of ground water samples (%) in to different classes :

Taluka	Salinity				Sodicity				RSC			F*
	C1	C2	C3	C4	S1	S2	S3	S4	S	MS	US	
Bahchau	-	4.50	31.82	63.64	68.18	25.00	6.82	-	90.9	4.5	4.5	
Rapar	-	2.94	20.59	76.47	70.59	25.00	4.41	-	92.6	2.9	4.4	
Abdasa	-	5.00	22.50	72.50	32.50	55.00	20.00	2.50	92.5	5.0	2.5	
Lakhpat	-	4.08	30.61	65.31	56.94	53.06	-	-	95.9	4.1	0.0	
Makhatrana	-	7.14	42.86	50.00	57.14	42.86	-	-	92.9	3.6	3.6	
Anjar	-	8.33	52.78	38.8	86.11	13.89	-	-	91.7	8.3	0.0	
Bhuj	-	2.63	55.26	42.11	84.21	13.16	2.63	-	81.6	7.9	10.5	
Mundra	-	-	23.34	76.64	10.00	30.00	53.33	6.67	70.0	10.0	20.0	
Mandvi	-	-	25.00	75.00	32.14	21.73	39.29	3.57	78.6	3.6	17.9	
Gandhidham	-	-	25.00	75.00	25.00	50.00	25.00	-	100.0	0.0	0.0	
District	-	3.79	32.52	63.69	56.10	30.62	11.92	1.36	88.9	5.1	6.0	

Note: F content in water samples is well within safe limit

(Action : Assoc. Res. Sci., Centre of Excellence for Research on Organic Farming, SDAU, Bhachau)

HORTICULTURE/FORESTRY/AGRO-FORESTRY

Chairman	**:**	Dr. A.V. Barad, Dean (Agricultue), JAU, Junagadh
Co-Chairman	**:**	Dr. N.L. Patel, Dean (Horticulture), NAU, Navsari
Rapporteurs	**:**	Dr. P.K. Kapadia, Res. Sci. (FC), ARS, JAU, Mahuva Dr. B.N. Patel, ADR, NAU, Navsari
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programs	
	Farming community		Scientific Community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	2	1	-	-	1	1
JAU	5 + 2*	5 + 2*	2	2	2	2
NAU	10 + 1* + 3#	10 + 1* + 3#	-	-	41	35
SDAU	3	3	-	-	7	7
TOTAL	**20**	**19**	**2**	**2**	**51**	**45**

*Included in Crop Improvement. #Included in Agril. Engineering.

Anand Agricultural University

Recommendations for farming community

1. **Effect of biofertilizers and chemical fertilizers on growth and flower yield of *Deshi* Red Rose**

The farmers of middle Gujarat Agro Climatic Zone-III (AES-II) growing *D*eshi Red Rose are advised to apply 40 g nitrogen (87 g urea), 40 g phosphorus (250 g single super phosphate) and 25 g potash (42 g muriate of potash) per plant in three equal splits from third year onward in June, October and January and after two days of fertilizers application 1 ml/plant each in 3 equal splits of *Azospirillum* and PSB (*Bacillus coagulans*) should be applied as soil treatment mixing in 200 ml of water for getting higher flower yield, maximum shelf life of flowers as well as higher net realization.

(Action: Prof. and Head, Dept. of Horti. BACA, AAU, Anand)

2. **Influence of pre-planting treatments of plant growth regulators and chemicals on growth, flowering and shelf life of tuberose cv. Double**

Recommendation was differed. Flower yield/plant was very low during second and third year of experiment. So, this recommendation was not accepted.

(Action: Prof. and Head, Dept. of Horti. BACA, AAU, Anand)

Junagadh Agricultural University

Recommendations for farming community

1. **Study on adoptability of fertigation system in guava cv. Bhavnagar Red**

Farmers of Saurashtra region growing guava cv. Bhavnagar Red (6 years and above old tree) for *Mrig Bahar* crop are advised, to apply 1.0 kg urea per plant through drip irrigation and 0.4 Kg MOP per plant in soil in four equal splits during June, August, October and December; while phosphorus (SSP-1.5 Kg) as a basal dose with drip system operating for 3.00 hours daily during October to December and 4.00 hours during January to March with 4 drippers per tree, each having discharge 4 lit. per hour keeping dripper 1.0 meter away from trunk of tree, which will save 40.69% irrigation water for higher production and income.

(Action: Professor and Head, Department of Horticulture, JAU, Junagadh)

2. **Varietal evaluation of gerbera (*Gerbera jamesonii*) under green house.**

Farmers of South Saurashtra agro climatic zone, interested to cultivate gerbera flower crop under green house are advised to grow varieties Pink Elegance (pink), Savannah (red) and Dana Allen (yellow) for obtaining higher yield and income with good quality of cut flowers.

(Action: Professor and Head, Department of Horticulture, JAU, Junagadh)

3. **Proposal for release of brinjal variety Gujarat Junagadh Brinjal-3 (GJB-3)**

Accepted. Included under Crop Improvement section.

(Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)

4. **Proposal for release of Indian Bean variety Gujarat Junagadh Indian Bean-2 (GJIB-2)**

Accepted. Included under Crop Improvement section.

(Action: Research Scientist (G & O), Vegetable Research Station, JAU, Junagadh)

5. **Integrated nutrient management in Sapota cv. Kalipatti**

Farmers of South Saurashtra region growing sapota cv. Kalipatti are advised to apply full recommended dose of phosphorus and potash (450 g/plant P & K each) along with half dose of nitrogen (11.25 kg castor cake) and 100 g *Azatobacter* per plant during onset of monsoon and half recommended dose of nitrogen i.e. 450 g/plant during October to get higher fruit yield and net return.

(Action: Research Scientist (Hort.), Agricultural Research Station (FC), JAU, Mahuva)

6. **Application of nutrients through root feeding of coconut cv. D x T (Mahuva)**

The coconut growers of South Saurashtra Agro-climatic region are advised to apply full recommended dose of chemical fertilizer (1500, 750, 1500 NPK g/palm) and two dose each of 400 ml of nutrient solution in June and October [10 g urea and muriate of potash each, 5 g zinc sulphate, 2 g Ferrous sulphate, Magnesium sulphate, Manganese sulphate and Borax each, 1 g Copper sulphate, 10 mg Sodium Molybdate and Citric acid each and 460 mg NAA (10 ml Planofix) dissolved in one liter of water] through root feeding to get higher nut yield and net return in coconut cv. D x T (Mahuva).

(Action: Research Scientist (Hort.), Agricultural Research Station (FC), JAU, Mahuva)

7. **Effect of soil amendment with organic materials on yield and quality of bottle gourd cv. Pusa Naveen under sodic soil and brakish water condition**

Vegetable growers of South Saurashtra Agro-climatic Zone growing bottle gourd cv. Pusa Naveen under sodic soil and brakish irrigation water condition are advised to apply FYM 5 t/ha along with half recommended dose of chemical fertilizer i.e. 50:25:25, N:P:K kg/ha and poultry manure 3.3 t/ha to get maximum yield and net return.

(Action: Research Scientist (Hort.), Agricultural Research Station (FC), JAU, Mahuva)

Recommendation for scientific community

1. **Response of different genotypes of custard apple to weather parameters**

The climatic parameters like temperature, humidity and rainfall influenced the flowering, fruit setting, fruit retention percentage, fruit yield and disease-pests incidence. More humidity and off seasonal rain during March-April insist the first and second reproductive flush and adversely affects the third flush. Optimum temperature and rain leads to more fruit set. Heavy rain during fruit set also tends to more drop with less fruit retention percentage. Mealy bug population is decreasing with increasing rain, whereas, black spot decreases when wind speed is less. Custard apple requires 30-35ºC temperature during flowering and fruit setting, 75-90% humidity and 600-1400 mm even distributed rainfall. Off seasonal rain disturbs the flowering pattern and adversely affects the crop.

(Action: Professor and Head, Department of Horticulture, JAU, Junagadh)

2. Survey of coconut gardens in Gujarat state

From the survey of five districts of South Saurashtra and South Gujarat region, it was observed that only 14.29% farmers are growing hybrid coconut varieties (D x T and T x D) and 45.71% farmers preferred seedlings from nursery of university as well as horticulture departments of state Government. While, 38.10% farmers are growing coconut as per recommended spacing and 50% farmers follow recommended dose of fertilizers. It was also observed that only 10% farmers adopt the recommended irrigation practices and none of the farmers is using drip irrigation and plant protection measures in their orchards. Therefore, it is suggested that the extension functionaries are required to motivate the farmers to adopt recommended cultivation practices for coconut.

(Action: Research Scientist (Hort.), Agricultural Research Station (FC), JAU, Mahuva)

Navsari Agricultural University

Recommendations for Farming Community

1. To study the long term effect of Paclobutrazol on fruiting and flowering of mango cv. Alphonso

The farmers of Gujarat growing mango Cv. Alphonso are advised to apply either 4 g paclobutrazol/tree every year or 4 and 2 g paclobutrazol/tree in alternate years during first fortnight of August along with 1.5 times recommended dose of fertilizer (i.e. 150 kg FYM/tree and 1125:240:1125 g NPK/tree) to adult trees for receiving higher production and better fruit quality along with a week early harvesting.

(Action: Research Scientist, Horti., AES, NAU, Paria)

2. Pre-harvest treatment for extending the post-harvest life of mango cv. Kesar

The farmers of Gujarat growing mango cv. Kesar are advised to apply mulching covering 1.5m from tree trunk with 100 micron black polyethylene plastic during October-November for obtaining good quality of fruits and longer storage life with higher yield and economic return.

(Action: Research Scientist, Horti., AES, NAU, Paria)

3. Effect of calcium, boron and sorbitol on fruit set in mango

The farmers of South Gujarat growing mango cv. Kesar are advised to spray 12 g boric acid with 36 g calcium nitrate per 10 lit water at 50% flowering stage for obtaining higher fruit set, yield and economic return.

(Action: Research Scientist, Horti., AES, NAU, Paria)

4. Proposal for release of little gourd variety GN Little Gourd-1 (LG-16)

Accepted. Included under Crop Improvement section.

(Action: Prof. and Head, Veg. Sci., RHRS, NAU, Navsari)

5. Effect of land configuration, soil conditioner and fertilizer on greater yam cv. Local Round

The farmers of south Gujarat heavy rain fall zone, AES-III growing greater yam cv. Local Round are advised to plant the crop on ridge furrow of 30 cm height at 90 cm x 90 cm distance and fertilize with FYM @ 20 t/ha along with recommended dose of fertilizer @ 80 : 60 : 80 NPK kg/ha. Full dose of FYM, P_2O_5 and half dose of N and K_2O applied at plating then remaining half dose of N and K_2O fertilizer should be applied in two equal splits at 90 and 135 days after planting for getting higher tuber yield and maximum economic return.

(Action: Prof. and Head, Veg. Sci., RHRS, NAU, Navsari)

6. Organic production of elephant foot yam

The farmers of South Gujarat intending to grow elephant foot yam (cv. Gajendra) through organic farming are advised to apply vermicompost (1.21% N) @ 5 t/ha + *Azospirillum* @ 5 kg/ha + *Phosphobacteria* @ 5 kg/ha + ash @ 5 t/ha to get good quality produce and improving soil health. The vermicompost should be applied in two equal split *i.e.* at sowing and one month after sowing.

(Action: Prof. and Head, Agril. Chem & Soil Sci., ACHF, NAU, Navsari)

7. Effect of different organic manures on growth, yield and quality of greater yam

The farmers of South Gujarat intending to grow greater yam trough organic farming are advised to apply 75 per cent of 80 kg recommended N/ha through vermicompost (1.21%N) @ 5 t/ha and the remaining 25% of N through castor cake (4.31% N) @ 500 kg/ha to get good quality produce and improvement in soil health. The organics should be applied in two equal splits *i.e.* at sowing and one month after sowing.

(Action: Prof. and Head, Agril. Chem & Soil Sci., ACHF, NAU, Navsari)

8. Assessment of Helicornia Collection under 50% shade net

The farmers of South Gujarat Heavy Rainfall Zone AES-3 cultivating flower crops are advised to grow *Heliconia stricta* variety Iris Bannochie (red) for qualitative as well as quantitative cut spike production. In addition, if the farmers wish to cultivate varieties with different colours and forms, according to market demand, varieties like Parrot Beak (red with yellow edges), Lobster Claw-II (orange-red), Pedro Ortiz (cherry red), *H. wagneria*"Red" (red), Orange (crimson) and Golden Torch (yellow) are also recommended for quality flower production. Heliconia produces good quality flowers up to three years after planting under 50% shade net.

(Action: Prof. and Head, Floriculture, ACHF, NAU, Navsari)

9. Varietal assessment of gladiolus under South Gujarat condition

The farmers of south Gujarat Heavy Rainfall Zone AES-3 cultivating flower crops are advised to grow Gladiolus variety Sancerre (white) for qualitative as well as quantitative cut spike production. However, if the farmers wish to grow other coloured varieties according to market demand, varieties like Punjab Dawn (peach with red throat), Pricilla (whitish pink), Shagun (cream) Psittacinus Hybrid (Saffron with yellow throat), Gunjan (light peach), and American Beauty (pink) are also recommended for quality flower production.

(Action: Prof. and Head, Floriculture, ACHF, NAU, Navsari)

10. Varietal assessment study of Gerbera in naturally ventilated greenhouse under South Gujarat conditions

The farmers of South Gujarat heavy rainfall zone-1, AES-III, growing gerbera under naturally ventilated greenhouse are advised to grow Mademoiselle (red), Dream (pink) and Gucci (yellow) varieties for higher yield with better quality and higher economic returns.

(Action: Prof. and Head, Floriculture, ACHF, NAU, Navsari)

11. Standardization of harvest stage and post harvest spray in heliconia cv. Golden Torch

Farmers are advised to harvest heliconia flowers (spike) cv. Golden Torch at three bracts open stage for quality production. Further, florists (wholesalers and retailers) are also advised to spray GA_3 100mg/l or BSA 50mg/l one day after harvest (two times at alternate day) to enhance vase life by almost double (two weeks) and better quality in terms of colour and freshness.

(Action: Prof. and Head, Floriculture, ACHF, NAU, Navsari)

12. Study on pre-cooling treatments in Sapota for extending the initiation of ripening process

Accepted. Included in Agril. Engineering section.

(Action: Incharge, PHT, NAU, Navsari)

13. Study on storage and use of partial pressure technology in LDPE bag to enhance the shelf life of pointed gourd

Accepted. Included in Agril. Engineering section.

(Action: Incharge, PHT, NAU, Navsari)

14. Standardization of freeze drying parameter for sapota fruits

Accepted. Included in Agril. Engineering section.

(Action: Incharge, PHT, NAU, Navsari)

Sardarkrushinagar Dantiwada Agricultural University

Recommendations for farming community

1. Moisture conservation by use of mulches in Aonla

The farmers of North Gujarat growing aonla are recommended to apply black polyethylene mulch (300 gauge) or castor shell @ 12-15 kg/m^2 according to plant canopy at the time of withdrawal of monsoon for maximum production and conserving soil moisture.

(Action: Principal, College of Horticulture, SDAU)

2. Studies on the effect of spacing and date of planting on growth, yield and quality of papaya cv. Madhu Bindu

Papaya cv. Madhu Bindu growing farmers of North Gujarat region are recommended to transplant the papaya from 1st July to 15th August at a spacing of 1.5 m x1.5 m to obtain the maximum yield.

(Action: Prof. & Head, Dept. of Horti., CPCA, SDAU)

3. Performance of different varieties of chrysanthemum in respect of growth, flowering and flower yield under North Gujarat condition

Chrysanthemum growing farmers of North Gujarat Agro climatic Zone-IV are advised to grow the Chrysanthemum variety Bijli (red), Nilima (pink), Shyamal (purple pink), Red Gold (red), Panchon (dark red) and Lal Pari (red) to get higher flower yield.

(Action: Prof. & Head, Dept of Horti., CPCA, SDAU)

PLANT PROTECTION

Chairman	**:**	Dr. A.N. Sabalpara, Director of Research, NAU, Navsari
Co-Chairman	**:**	Dr. R.L. Patel, Director of Research, SDAU, SKNagar
Rapporteurs	**:**	Dr. P.K. Borad, Professor, Entomology, AAU, Anand Dr. K.B. Rakholiya, Assoc.Prof., Pl. Patho., NMCA, Navsari
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendation								New Technical Programme			
	Farming community				Scientific community				Proposed		Approved	
	Proposed		Approved		Proposed		Approved					
	E*	P#	E	P	E	P	E	P	E	P	E	P
AAU	10	4	10	2	1	1	1	1	8	16	8	13
JAU	8	3	3	2	5	1	5	0	12	11	12	11
NAU	5	2	5	2	2	1	2	1	21	10	21	10
SDAU	0	4	0	4	0	0	0	0	4	5	4	4
Total	**23**	**13**	**18**	**10**	**8**	**3**	**8**	**2**	**45**	**42**	**45**	**38**

E* = Agril. Entomology P# = Plant Pathology

Anand Agricultural University

AGRICULTURAL ENTOMOLOGY

Recommendations for farming community

1. Evaluation of IPM module for the management of sucking pests in *Bt* cotton

Following IPM module found cost effective and safer to the natural enemies is recommended for the management of aphid, jassid, whitefly and thrip in *Bt* cotton (BG II) cultivated in middle Gujarat.

1) One need based (5 aphids or leafhoppers or whiteflies/ leaf) application of *Beauveria bassiana* (2 x 10^8 cfu/g) @ 40 g/10 l water followed by need based application of thiamethoxam 25 WG 0.01% (4 g/10 l water) (50 g a.i./ha).
2) Need based (5 thrips/ leaf) application of acephate 75 SP 0.075% (1 g/l water) (375 g a.i./ha).
3) The waiting period of thiamethoxam 25 WG 0.01% (50 g a.i./ha) and acephate 75 SP 0.075% (375 g a.i./ha) should be maintained 21 and 15 days after application, respectively.

(Action: Prof. & Head, Dept. of Entomology, BACA, AAU, Anand)

2. Evaluation-cum-demonstration of management strategies for the control of fruit flies (*Bactrocera cucurbitae* and *Dacus ciliatus*) in bitter gourd orchard

Bitter gourd growers of middle Gujarat are advised to install pheromone trap with Cue-lure impregnated wood blocks @ 16/ha at the initiation of the flowering followed by spot application of poisoned bait made by mixing of 400 g Jaggery + 8 ml of dichlorvos 76 EC in 10 liter of water at fortnightly (15 days) interval. The spots should be spaced at 7 × 7m distance. The bait should also be applied on border/field boundaries.

(Action: Prof. & Head, Dept. of Entomology, BACA, AAU, Anand)

3. Evaluation of different insecticides as seed treatments against leaf miner in cucurbitaceous vegetable crops

For effective management of leaf miner in early stage of the crops *viz.,* cucumber, bottle gourd, ridge gourd and smooth gourd, the farmers of middle Gujarat are advised to treat the seeds with imidacloprid 70 WS @ 7.5 g/kg seeds or thiamethoxam 70 WS @ 4 g/kg seed before sowing.

(Action: Asstt. Res. Sci., Ento., MVRS, AAU, Anand)

4. Evaluation of some microbial insecticides against leaf defoliators and plant hoppers infesting paddy

Paddy growers of middle Gujarat are advised to give application of *Bacillus thuringiensis* (5×10^7 spores/mg) @ 1.0 kg/ha (20 g/ 10 litre water) or *Beauveria bassiana* (2×10^6 cfu/g) @ 1.0 kg/ha (20 g/ 10 litre water) or *Verticillium lecanii* (2×10^6 cfu/g) @ 1.0 kg/ha (20 g/ 10 litre water) at initiation of leaf folder damage.

(Action: Principal Res. Sci., Biocontrol Res. Lab., AAU, Anand and Assoc. Res. Sci. (Ento.), Main Rice Res. Station, AAU, Nawagam)

5. Evaluation and demonstration of IPM module against pest complex of paddy

Paddy growers of middle Gujarat are advised to use resistant paddy cultivar (Gurjari), transplanting of paddy seedlings during first fortnight of July and application of NSKE @ 5% (500 g/ 10 litre water) to suppress the incidence of leaf folder and maintain the population of predatory spiders.

(Action: Principal Res. Sci., Biocontrol Res. Lab., AAU, Anand and Assoc. Res. Sci. (Ento.), Main Rice Res. Station, AAU, Nawagam)

6. Impact evaluation of cow-urine and vermiwash on insect pests, their natural enemies and yield of brinjal

Farmers growing brinjal crop organically are advised two sprays (60 and 75 days after transplanting) of cow-urine @ 20% mixed with leaf extract of neem or custard apple or jatropha or lantana @ 10% for suppression of sucking pests (aphid, leafhopper and whitefly) as well as shoot and fruit borer.

(Action: Principal Research Scientist, Biocontrol Research Laboratory, AAU, Anand)

7. Evaluation of microbial insecticides formulations against fruit borer of tomato

Tomato growers are advised to spray HearNPV (1.0×10^9 POB/ml) @ 250 ml/ha (5 ml/ 10 litre water) or *Beauveria bassiana* (1×10^8 cfu/g) @ 1.0 kg/ha (20 g/10 litre water) or *Metarhizium anisopliae* (1×10^8 cfu/g) @ 1.0 kg/ha (20 g/10 litre water) 85 days after transplanting for suppression of fruit borer, *Helicoverpa armigera* (Hubner).

(Action: Principal Research Scientist, Biocontrol Research Laboratory, AAU, Anand)

8. Bio-efficacy of some microbial insecticides against pests of cabbage

Cabbage growers are advised two sprays of *Beauveria bassiana* (2×10^6 cfu/g) or *Verticillium lecanii (*2×10^6 cfu/g) @ 1.5 kg/ha at 40 and 60 days after transplanting for suppression of aphid and head borer (*Helicoverpa armigera*).

(Action: Principal Research Scientist, Biocontrol Research Laboratory, AAU, Anand)

9. Standardization of number of pheromone traps for mass trapping of stem borer in paddy

The farmers of middle Gujarat growing rice are advised to install pheromone traps with *Scirpophaga incertulas* lures equidistantly in the field one month after the transplanting of the crop @ 30 traps/ha for effective and economical management of stem borer (*Scirpophaga incertulas*). Lure should be changed at 3 weeks interval. The installation of pheromone traps helps the farmers to gain economic benefit.

(Action: Assoc. Res. Sci., Ento., Main Rice Research Station, AAU, Nawagam)

10. Evaluation of various physical barriers to prevent damage of rose-ringed parakeet to wheat panicles

To prevent parakeet damage to the wheat panicles, farmers growing wheat under irrigated condition are advised to tie two parallel jute strings vertically, 20 cm apart by fixing it with the help of wooden stakes on the outer edge of the row; the strings to be fixed just 6 inches away from the panicles.

(Action: Research Scientist, Ornithology, AAU, Anand)

Recommendations for scientific community

1. Impact evaluation of cow-urine and vermiwash on insect pests, their natural enemies and yield of Brinjal

Cow-urine alone sprayed at higher concentrations (40 & 50%) on 60 and 75 days after transplanting of brinjal crop positively affects certain growth and yield attributing characters (plant height, fruit length and fruit diameter).

(Action: Principal Research Scientist, Biocontrol Research Laboratory, AAU, Anand)

PLANT PATHOLOGY

Recommendations for farming community

1. Management of physiological wilt of *Bt* Cotton

Not approved.

Micronutrient content from leaf of *Bt* cotton and soil does not justify the result of experiment.

(Action: Prof. and Head, Dept. of Plant Pathology, BACA, AAU, Anand)

2. Integrated management of phytonematodes, *Meloidogyne* spp. in mung by adding organic compounds

The farmers of middle Gujarat growing *kharif* mung are advised to apply neem cake @ 1000 kg/ha + *Trichoderma viride* (2 x 10^8 spores/g) @ 2.5 kg/ha, 10 days before sowing for effective and economical management of root knot nematodes (*Meloidogyne* spp.).

(Action: Prof. and Head, Dept. of Nematology, BACA, AAU, Anand)

3. Management of root-rot disease of soybean through bio-agents and chemical in field conditions

Not approved.

This recommendation was not approved by the house as the plant stands differ with the plot size.

(Action: Training Associate, TRTC, AAU, Devgadh Bariya)

4. Management of wilt of pigeonpea through bio-agents and fungicides

Farmers of middle Gujarat growing pegionpea are advised to treat the seeds first with carboxin (37.5%) + thiram (37.5%) @ 3 g/kg seeds followed by *Trichoderma viride* (2 x 10^8 cfu/g) @ 10 g/kg seeds for effective and economical management of wilt disease of pigeon pea.

(Action: Asstt. Res. Sci., PP, ARS, AAU, Derol)

Recommendations for scientific community

1. Assessment of loss due to early blight disease in potato crop

Loss due to early blight disease in yield of potato tuber is estimated to the tune of 33% in middle Gujarat.

(Action: Principal Research Scientist, Biocontrol Research Laboratory, AAU, Anand)

Junagadh Agricultural University

Agricultural Entomology

Recommendations for farming community

1. **Efficacy of newer insecticides against cabbage aphid**

   For effective and economical management of cabbage aphids under South Saurashtra Agro-climatic Zone, two spray of acetamiprid 20 SP 0.004% (2 g/10 liter water) at 15 day interval starting from aphid infestation are recommended. The waiting period of acetamiprid 20% SP (15 g. a.i./ha) should be maintained 7 days between last spray and harvesting of the crop.

   (Action: Prof. and Head, Dept. of Entomology, JAU, Junagadh)

2. **Monitoring of *bajra* worm *Helicoverpa armigera* (Hubner) through sex pheromones during *kharif***

   Farmers of North Saurashtra Agro-climatic Zone growing *kharif bajra* are advised to install sex pheromone traps for monitoring of adult male moths of ear head worm (*Helicoverpa armigera* Hubner) @ 5 traps/ha at 1 ft height above earhead after the formation of earhead.

   (Action: Research Scientist, Pearl millet Research Station, JAU, Jamnagar)

3. **Ecofriendly management of sesame leaf webber *(Antigastra catalaunalis* Duponchel) under rainfed condition**

   Note: Deferred. Next year again to be presented for cartap hydrochloride 50 SP 0.075% (15 g/10 l water) with residue analysis.

   (Action: Research Scientist, Main Dry Farming Research Station, JAU, Targhadia)

4. **Chemical control of thrips (*Thrips tabaci*) in onion through newer insecticides**

   Note: Deferred. To be presented next year with residue data of recommending insecticides.

   (Action: Assoc. Res. Sci., PB, Grassland Research Station, JAU, Dhari)

5. **Management of sucking pests in groundnut through newer insecticides**

   Note: Deferred. To be presented next year with residue data of recommending insecticides.

   (Action: Associate Research Scientist, Grassland Research Station, JAU, Dhari)

6. **Chemical control of sucking pests through foliar application of new insecticides in cotton**

   Note: Deferred. To be presented next year with residue analysis of imidacloprid 200 SL @ 40 g a.i./ha and acephate 75 SP @ 750 g a.i./ha.

   (Action: Research Scientist, Cotton Research Station, JAU, Junagadh)

7. **Management of Eriophyid mites in coconut cv. D x T with nutrient and biofertilizers**

   For the effective and economical management of eriophyid mite in hybrid coconut (D x T Mahuva), application of half dose of recommended chemical fertilizers (NPK-0.750: 0.375: 0.750 kg/palm/year) with 50 kg FYM, 1.5 kg gypsum and 0.075 kg borax/palm/year in June and remaining half dose of recommended chemical fertilizers (NPK 0.750:0.375:0.750 kg/palm/year) in October is recommended under South Saurashtra Agro-climatic Zone.

   (Action: Research Scientist, Agricultural Research Station (Fruit Corps), JAU, Mahuva)

8. **Integrated management in storage pest of coriander**

   Note: Not approved due to the restricted use of aluminum phosphide.

   (Action: Research Engineer, Post Harvest Technology, CAET, JAU, Junagadh)

Recommendations for scientific community

1. **Testing bio efficacy of insecticides through seed treatment against sucking pests of summer groundnut**

Seed treatment with imidacloprid 600 FS @ 2 ml/kg seed gave effective control of jassids and thrips in summer groundnut up to 35 day after sowing.

(Action: Research scientist, Main Oil Seed Research Station, JAU, Junagadh)

2. **Monitoring of fruit flies in mango orchard through methyl eugenol trap**

In mango orchards of South Saurashtra Agro-climatic Zone, the population of fruit fly *(Bactocera dorsalis* Hendel*)* males was maximum during April to September (14^{th} to 36^{th} Met. Standard week). Its activity was related positively with high humidity (80 to 90%) and 24 to 26 °C minimum temperature.

(Action: Prof. & Head, Dept. of Entomology, JAU, Junagadh)

3. **Monitoring of fruit flies in mango orchard through methyl eugenol trap**

In mango orchards of North Saurashtra Agro-climatic Zone, the population of fruit fly *(Bactocera dorsalis* Hendel*)* males was maximum during 1^{st} week of April to last week of July (13^{th} to 31^{th} Met. Standard week). Its activity was related positively with maximum (32 to 42 °C) and minimum (21 to 27 °C) temperature and relative humidity (63 to 89%).

(Action: Assoc. Research Scientist, Grassland Research Station, JAU, Dhari)

4. **Monitoring of pod borer by pheromone trap in chickpea**

The population of gram pod borer (*Helicoverpa armigera* Hub.) males was observed throughout the crop period except severe winter month, with maximum activity in 3^{rd} Met. Standard week. Its activity was related negatively with maximum and minimum temperature and mean evaporation.

(Action: Assoc. Research Scientist, Grassland Research Station, JAU, Dhari)

5 **Population dynamics of shoot fly and stem borer in forage sorghum in relation to abiotic factors**

The sorghum shoot fly (*Atherigona soccata*) and stem borer (*Chilo partelus)* in *kharif* forage sorghum were active during 14 to 21 DAG and 45 DAG, respectively. Weather parameters did not show any effect on damage caused by both the pests; however, afternoon relative humidity caused negative effect on the damage caused by shoot fly.

(Action: Assoc. Research Scientist, Grassland Research Station, JAU, Dhari)

Plant Pathology

Recommendations for farming community

1. **Integrated management of major diseases of groundnut**

The farmers of South Saurashtra Agro-climatic Zone growing groundnut are advised to treat the seeds with tebuconazole 2% DS @1.5 g/kg and spray tebuconazole 250 EC @ 10 ml/ 10 l water at 45 and 60 days after sowing.

OR

Apply talc based *Trichoderma* @ 10 g/kg seed and @ 4 kg/ha with 250 kg castor cake in furrow at the time of sowing and spray hexaconazole 5 EC @ 10 ml/10 l water twice at 45 and 60 days after sowing for economic and effective control of soil borne (collar rot & stem rot) and foliar (tikka & rust) diseases.

The waiting period of tebuconazole 250 EC (125 g a.i./ha) and hexaconazole 5 EC (100 g a.i./ha) should be maintained 49 and 30 days, respectively between last spray and harvesting of the crop.

(Action: Research Scientist, Main Oilseed Research Station, JAU, Junagadh)

2. Wilt management in chickpea

Farmers of the South Saurashtra Agro-climatic Zone growing irrigated chickpea during *rabi* season are advised to adopt seed treatment of carbendazim 1g+thiram 2 g/kg seed along with soil application of *Trichoderma viride* (10^6 cfu/g) @ 2.5 kg mixed in 250 kg either castor cake or FYM/ha at the time of sowing in furrow for management of wilt and to get higher seed yield.

(Action: Research Scientist, Pulse Research Station, JAU, Junagadh)

3. Management of leaf spot diseases of cowpea

Note: Deferred. To be presented next year with residue data of recommending propiconazole 25 EC, 0.025%.

(Action: Research Scientist, Garlic & Onion, Vegetable Research Station, JAU, Junagadh)

Recommendations for scientific community

1. Management of foliar diseases through chemicals (Alternaria leaf spot)

Not approved.

Note: Being other agency projects.

(Action: Research Scientist, Cotton Research Station, JAU, Junagadh)

Navsari Agricultural University

AGRICULTURAL ENTOMOLOGY

Recommendations for farming community

1. Studies on host preference of eri silkworm, *Philosamia ricini* Hutt

Farmers of South Gujarat heavy rainfall zone, AES-III are advised to use castor leaves or tapioca leaves as a suitable food material for rearing of eri silk worm.

(Action: Prof. and Head, Dept. of Entomology, NMCA, NAU, Navsari)

2. Evaluation of newer miticides against mite infesting sorghum

Sorghum growers of South Gujarat are recommended to apply two sprays of propargite 57 EC, 0.057% (10 ml/10 litre water) at 15 days interval with the initiation of sorghum mite. Further, the residues of this chemical was below determination level in grain and fodder.

The period of 60 days between last application of propargite 57 EC, 0.057% and of harvesting should be maintained.

(Action: Assoc. Res. Sci., MSRS, NAU, Surat)

3. Compatibility of insecticide and fungicide and their efficacy in controlling sheath mite and grain discolouration of rice

Paddy growing farmers of South Gujarat AES-III are recommended to spray ethion 50 EC, 0.05% + mancozeb 75 WP, 0.25% (10 ml ethion + 33 g mancozeb in 10 litre water) on initiation of sheath mite for effective control of sheath mite as well as grain discoloration and to get higher grain yield and net profit.

The period of 42 days between last application of ethion 50 EC, 0.05% + mancozeb 75 WP, 0.25% and of harvesting should be maintained.

(Action: Assistant Professor, NARP, NAU, Navsari)

4. Evaluation of different insecticides for the control of mealybug in pigeonpea

For effective and economical management of pigeonpea mealybug, *Coccidohystrix insolita* Green, farmers of South Gujarat AES-V are advised to apply two sprays of profenophos 50 EC, 0.06% (12 ml/10 litre water) or chlorpyriphos 20 EC, 0.05% (25 ml/10 liter water) or acetamiprid 20 SP, 0.004% (2 g/10 liter water) at 15 days interval starting from initiation of incidence. Further, the residue of these insecticides remained below determination level in dry grains of pigeonpea.

The period between last application and of harvesting for profenophos 50 EC, 0.06% (12 ml/10 litre water), chlorpyriphos 20 EC, 0.05% (25 ml/10 liter water) and acetamiprid 20 SP, 0.004% (2 g/10 liter water) should be 20, 42 and 20 days, respectively.

(Action: Asstt. Res. Sci., Ento., NARP, NAU, Bharuch)

5. Evaluation of newer insecticides against pod borers in pigeonpea

For effective management of pod borers in pigeonpea, farmers of South Gujarat AES-V are advised to apply two sprays of chlorantraniliprole 18.5 SC, 0.006% (3 ml/10 lit of water) or flubendiamide 48 SC, 0.0096% (2 ml/10 lit of water); first at 50% flowering and second at 50% pod formation stage for getting higher yield and better returns. Further, the residues of these insecticides remained below determination level in dry grains of pigeonpea.

The period between last application and of harvesting for chlorantraniliprole 18.5 SC, 0.006% (3 ml/10 lit of water) and flubendiamide 48 SC, 0.0096% (2 ml/10 lit of water) should be 47 and 30 days, respectively.

(Action: Asstt. Res. Sci., Ento., NARP, NAU, Bharuch)

Recommendations for scientific community

1. Survey for the identification of potential natural enemies of gundhi bug, *Leptocorisa* sp.

The incidence of rice gundhi bug, *Leptocorisa sp*. generally occurs in 37 std. week and continues till 42 std. week in rice fields during *kharif* season. Multiple parasitism of two egg parasitoids *viz. Trissolcus sp*. (Hymenoptera: Scelinoidae) and *Oenocyrtus utetheisae* (Hymenoptera: Encyrtidae) occurs from last week of September and remains active till third week of October with a peak in second week of October.

(Action: Prof. and Head, Dept. of Entomology, NMCA, NAU, Navsari)

2. Screening of pigeonpea genotypes/varieties against pod borer and pod fly

The pigeonpea genotypes BP-06-38, BP-07-09 and BP-07-05 were found less susceptible against pod borer, whereas, BP-07-12, BP-01-110 and BP-06-33 were found less susceptible against pod fly.

(Action: Asstt. Res. Sci., Ento., NARP, NAU, Bharuch)

PLANT PATHOLOGY

Recommendations for farming community

1. Testing the efficacy of different *Pseudomonas* spp. on finger millet blast in field

Finger millet (Nagli) growing farmers of south Gujarat AES-I are advised three spray of *Pseudomonas aeruginosa* Rambhas Ambika River (PaRs) Strain $2x10^9$ cfu/ml, 0.6% (60 ml/10 lit of water) or *Pseudomonas aeruginosa* Navsari farm pond (PaNs) Strain $2x10^9$ cfu/ml, 0.6% (60 ml/10 lit of water) at 15 days interval, starting at 21days of transplanting for effective and economical management of leaf blast.

(Action: Prof. and Head, Dept. of Plant Pathology, NMCA, NAU, Navsari)

2. Testing the efficacy of different isolates of *Azotobacter* spp. for improving the yield of finger millet

Finger millet (Nagli) growing farmers of South Gujarat AES-I are advised to treat seedlings with 200 ml/ha liquid biofertilizer of native *Azotobacter chroococcum* ABN-1 (N.A.U.) ($1x10^8$ cfu/ml) or AAU commercial strain ($1x10^8$ cfu/ml) mixed in 1% jaggery solution for 30 minutes and soil application of liquid biofertilizer native *Azotobacter chroococcum* ABN-1 (N.A.U.) 1 lit/ha or AAU commercial strain 1 lit/ha mixed with pulverized soil (20 Kg/ha) as spot application at the time of transplanting to save 50% nitrogenous fertilizer and get higher yield.

(Action: Prof. and Head, Dept. of Plant Pathology, NMCA, NAU, Navsari)

Recommendations for scientific community

1. **Evaluation of resistant genotype/s against S.M. disease in SMD Nursery**

The pigeonpea genotypes GAUT-9317 and ICPL 87119 X BP- 94-03 were found Moderately Resistant against Sterility Mosaic Disease.

(Action: Research Scientist, Pathology, NARP, NAU, Bharuch)

Sardarkrushinagar Dantiwada Agricultural University

PLANT PATHOLOGY

Recommendations for farming community

1. **Effect of date of sowing and spacing on the development of bacterial blight of cluster bean**

The farmers of North Gujarat Agro-climatic zone IV (AES-1) growing rainfed cluster bean are recommended to sow the crop during mid to end of July at 45 cm row spacing for the effective and economical management of bacterial blight disease.

(Action: Asstt. Res. Sci., Centre of Excellence for Res. on Pulses, SDAU, Sardarkrushinagar)

2. **Effect of seed dressers for the control of root rot of cowpea**

Farmers of North Gujarat Agro-climatic zone IV (AES-1) growing cowpea are recommended to grow the crop after treating the seeds with thiram @ 2 g/kg or carboxin 37.5% + thiram 37.5% @ 3 g/kg or captan @ 2 g/kg for the effective and economical management of root rot in cowpea.

(Action: Asstt. Res. Sci., Centre of Excellence for Res. on Pulses, SDAU, Sardarkrushinagar)

3. **Management of phyllody in fennel by intercropping**

Farmers of North Gujarat Agro climatic zone IV are advised to adopt intercropping of fennel with green gram (1:1 ratio) for minimizing the phyllody in fennel crop. For that sowing of green gram should be carried out at onset of monsoon and fennel should be transplanted around 15th August.

(Action: Research Scientist, Centre for Research on Seed Spices, SDAU, Jagudan)

4. **Management of cumin wilt through biocontrol agents**

For effective and economical management of cumin wilt, the farmers of North Gujarat Agroclimatic Zone IV are recommended to apply *Trichoderma harzianum* @ 10 kg/ha + FYM @ 3 t/ha at the time of sowing.

(Action: Res. Sci., Centre for Res. on Seed Spices, S.D. Agricultural University, Jagudan)

AGRICULTURAL ENGINEERING

Chairman	**:**	Dr. N C Patel, Hon. VC, JAU, Junagadh
Co-Chairman	**:**	Dr. S.H. Suthar, Principal & Dean, RE & EE, SDAU, Dantiwada
Rapporteurs	**:**	Dr. P. M. Chauhan, Prof. & HOD, RERE, CAET, JAU, Junagadh Er. P.S. Pandit, Asstt. Prof., PHTC
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programme	
	Farming community		Scientific community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	0	0	0	0	0	0
JAU	6 + 1*	6 + 0*	2	2	5	5
NAU	4	4	1	1	4	3
SDAU	0	0	0	0	0	0
Total	**10**	**10**	**3**	**3**	**9**	**8**

*Included in Plant Protection section

Junagadh Agricultural University

Recommendations for farming community

1. **Study on Modified Atmosphere Packaging of spine gourd cv. Local**

   The farmers, processors and exporters are recommended to adopt modified atmosphere packaging technique developed by JAU for increasing the shelf life of spine gourd by packing in 50 µ LDPE bag with a combination of 2% O_2 + 4% CO_2 gas concentration and stored at 8ºC temperature. The spine gourd can be stored up to 20 days by using this technique.

   (Action: Professor & Head, Department of RE & RE, CAET, JAU, Junagadh)

2. **Study of transportation losses for sapota**

   The farmers, processors and exporters are recommended to adopt foldable plastic box with cells developed by JAU for local transportation of sapota fruit. This box was found cheaper compared to other containers considering cost of container, transportation, returning empty container/bag and total losses after transportation including decay after storage and also quality of the fruits retained during transportation**.**

   (Action: Professor & Head, Department of RE & RE, CAET, JAU, Junagadh)

3. **Dehydration and storage study of vegetables**

   The processors, exporters are advised to store dehydrated onion, garlic and unripe mango powder in polyethylene (HDPE) bags of 50 micron in vacuum packaging (740 mm Hg) to retain the quality up to 120 days of storage period.

   (Action: Professor & Head, Department of APE, CAET, JAU, Junagadh)

4. **Storage study of onion**

   Farmers and traders who are interested to store the onion for more than four months are recommended to use forced air ventilated storage structure to get 36% of more marketable red onion.

   (Action: Professor & Head, Department of APE, CAET, JAU, Junagadh)

5. **Integrated management in storage pest of coriander**

Note: The same recommendation was presented in Plant Protection Agresco sub-committee meeting. The recommendation was not approved due to the restricted use of alluminium phosphide.

(Action: Professor & Head, Department of APE, CAET, JAU, Junagadh)

6. **Comparison of different methods of sowing of groundnut under poor drainage condition**

Farmers of South Saurashtra Agro-climatic Zone growing bunch type groundnut under poor drainage field condition are advised to sow by broad bed furrow method (55 cm width and 15 cm depth of furrow and 100 cm bed width between two furrows) for getting higher yield and net return.

(Action: Research Scientist (Agril. Engg.), RTTC, JAU, Junagadh)

7. **Introduction and evaluation of new horticultural crops in coastal belt area of Saurashtra region using saline water with drip and mulching technology**

Farmers of South Saurashtra Agro-climatic Zone having saline ground water (EC-3.15 ds/m) and medium black calcareous soil (EC-0.88 ds/m) conditions are advised to introduce trees like; seemaruba, tamarind, aonla, pomegranate, sapota, date palm, ber, carambola and guava with drip irrigation.

(Action: Research Scientist (Agril. Engg.), RTTC, JAU, Junagadh and Assistant Research Scientist, Cotton Research Station, JAU, Khapat)

Recommendations for scientific community

1. **Water balance and assessment of groundwater recharge in Meghal river basin of Saurashtra region.**

The efficient utilization of available water in Meghal river basin is recommended using surface as well as micro irrigation systems. The total groundwater recharge through rainfall and water harvesting structures in the study area was found 12,592 ha m. The possible options for efficient utilization of groundwater using different irrigation systems are as below:

Option 1: Using surface irrigation methods

In Meghal river basin, if surface irrigation system is adopted at 60 per cent application efficiency, about 9,084 ha of wheat crop (irrigation water requirement 457 mm) can be irrigated using 5,187 ha m of water. The remaining amount of water can be used for irrigating horticultural crops viz. coconut, mango and sapota (gross irrigation requirement 1097, 453 and 768 mm) of about 3,669, 1,005 and 596 ha area, which covers about 2/3rd area of horticultural crops.

Option 2: Allocating all crops under micro irrigation system

In Meghal river basin, if drip irrigation system is adopted (90 per cent application efficiency) for existing horticultural crops of coconut, mango and sapota in 5595, 1602 and 796 ha area water required is 6137, 725 and 611 ha m respectively. The remaining water can be utilized through sprinkler irrigation (80 per cent application efficiency) for irrigating wheat crop will cover about 11,950 ha area. This can bring under irrigation all horticultural crops and an additional area of 2866 ha (76%) of wheat crop.

(Action: Professor& Head, Department of SWE, CAET, JAU, Junagadh)

2. **Rainfall analysis for crop planning**

1) Rainfall amount of 25.4 mm & 37.1 mm and 8.98 mm & 30.64 mm will be received at 75% and 60% probabilities in 27^{th} and 29^{th} MSW, respectively. The conditional probability of getting 30 mm is 66.64% and 65.17% during 27^{th} and 29^{th} MSW, respectively. Therefore sowing operation can be carried out during this period.
2) Annual, seasonal rainfall and rainy days followed the increasing trend after 2000. The average length of the rainy season was observed 99 days. Drought resistance, low water

requirement, short duration crop and its varieties having crop growth period maximum 99 days should be grown.

3) During 32 MSW, probability of a dry spell of length 7 is higher (0.64).Therefore, this period can be used to carry out interculturing operations and formation of ridges. Fertilizer top dressing needs to be done when the soil is sufficiently moist i.e. before 32 MSW. During 35 MSW to 37 MSW, probability of a dry spell of length 21 or more is higher; therefore spraying of anti-transparent and mulching can be done to reduce evapo-traspiration losses.
4) Excess rain water received during 28th to 31st MSW can be harvested and later used as a life saving irrigation at times when prolonged dry spells occur.

(Action: Research Scientist, Main Dry Farming Research Station, JAU, Targhadia)

Navsari Agricultural University

Recommendations for farming community

1. Rain water harvesting for sustaining ground water quality in coastal South Gujarat

Farmers of the South Gujarat coastal region are recommended to harvest as much rain water as possible to maintain ground water quality below (EC=2 dS/m) as per catchment area as tabulated below. The suggested modes of harvesting in decreasing order of preference could be Pond, Check dam, Percolation pit, Percolation well, Trenches and Sub soiling, as per availability of land, catchment area, water demands, financial capacity, topography, rainfall pattern, soil type, vegetative cover and nearness to sea.

S.No	Area (ha)	Mode of Harvesting
1	> 2	Pond & Check Dam
2	2 to 1	Percolation pit
3	1 to 2	Percolation well
4	< 0.5	Trenches & Sub soiling

(Action: Prof. and Head, NRM, ACHF, NAU, Navsari)

2. Study on pre cooling treatments in sapota for extending the initiation of ripening process

Farmers, entrepreneurs and stake holders of Sapota fruit are advised to pre-cool the fruit at 2ºC for 5 hours with air flow rate of 283-340 m^3/min to bring down the fruit core temperature at 8ºC and to delay initiation of fruit ripening by two days.

(Action: I/C, PHTC, NAU, Navsari)

3. Study on storage and use of partial pressure technology in LDPE bag to enhance the shelf life of pointed gourd

Farmers, exporters and stake holders are advised to use 25µ LDPE bags as packaging material after washing and cleaning for storage and marketing of pointed gourd at ambient condition to increase the shelf life up to 9 days and with the vacuum packaging (300 mm of Hg, 60.5% vacuum and 12.78% initial O_2 level) to increase the shelf life up to 12 days for acceptable visual quality (appearance) and minimum weight loss.

(Action: I/C, PHTC, NAU, Navsari)

4. Standardization of freeze drying parameter for sapota fruits

It is recommended to the processors that, freeze drying of sapota should be carried when TSS, reducing sugar, total sugar, moisture content and firmness of sapota fruit reaches between 20-22ºBrix, 11-12%, 17-18%, 86-88% (w.b.) and 4-5kgf/cm^2, respectively after harvest (i.e. after 5 days of harvest) with 5 mm thickness of chips followed by standard freezing at -30ºC for at least 10h and freeze drying under vacuum (760 mm of Hg) at 70ºC temperature for getting better quality product and increased the B/C ratio by 9.5%.

(Action: I/C, PHTC, NAU, Navsari)

Recommendations for scientific community

1. Time series analysis of weather parameters in relation to crop productivity

The monsoon onset is delayed by a week and recedes a week early. Higher evaporation of 8% and 18% were observed during summer and *rabi* seasons, respectively Therefore, scientists are recommended to

1) Evolve shorter duration crop varieties suitable for delayed monsoon and
2) Reassess the crop water requirements for South Gujarat region.

(Action: Prof. and Head, NRM, ACOHF, NAU, Navsari)

GENERAL SUGGESTIONS

The members also discussed about merging Food Processing/Food Technology subcommittees with Agricultural Engineering subcommittee, in presence of Dr D.C. Joshi, Principal & Dean (Food Processing Technology), AAU, Anand and Dr. R.F. Suthar, Convener, Food Processing/Food Technology. After discussing the pros and cons of merging at stretch, final opinion of the house was that Food Processing and Technology subcommittee should be merged into Agricultural Engineering subcommittee instead of Dairy Science and Dairy Technology subcommittee.

BASIC SCIENCE/PLANT PHYSIOLOGY/BIO-CHEMISTRY/ BIO-TECHNOLOGY/ HUMANITIES

Chairman	**:**	Dr. C.J. Dangaria, Director of Research, JAU, Junagadh
Co-Chairman	**:**	Dr. V. Kumar, Res. Sci. (Pl. Physio.), MCRS, NAU, Surat
Rapporteurs	**:**	Dr. N. Subhash, Professor, Tissue Culture, AAU, Anand Dr. Sanjay Jha, Asstt. Prof., Dept. of Bio-tech., NAU
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programme	
	Farming community		Scientific community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	1	1	-	-	20	20
JAU	-	-	2	2	6	6
NAU	1	1	1	1	8	8
SDAU	-	-	-	-	1	1
Total	**2**	**2**	**3**	**3**	**35**	**35**

Anand Agricultural University

Recommendations for farming community

1. **Effect of etheral and gibbrellic acid (GA_3) on fruit ripening in chilli crop cv. GVC-111**

Farmers of Middle Gujarat, Agro climatic Zone–III planting chilli varieties GVC-111 crop for seed production purpose are advised to spray GA_3 @ 50 mg/L at 45 days after transplanting for getting higher seed yield and quality seed.

The committee approved the recommendation with the following suggestions :

- Viability of seeds in terms of seed storage may be included in similar future studies.

(Action: Res. Sci., MVRS, AAU, Anand)

Junagadh Agricultural University

Recommendations for scientific community

1. **Regeneration protocol for Malkankani (*Celastrus peniculata Willd*)**
   - **a) Surface sterilization**: Seeds of Malkankani could be used for *in vitro* germination after surface sterilization with carbendazim 2.5 g/ litre of water for 30 minutes followed by 0.1% mercuric chloride treatment for 20 minutes and washed with sterilized distilled water for four to five times for removing traces of the chemicals.
   - **b) Callus induction**: Shoot tips from *in vitro* grown seedlings, collected aseptically should be inoculated for callusing in MS medium with 15.0 µM BA (Benzyl adenine) and 30.0 µM AS (Adenine sulphate).
   - **c) Shoot multiplication**: Proliferated compact green callus should be recultured in the same medium (MS + 15.0 µM BA + 30.0 µM AS) for multiple shoot induction and plantlet development.
   - **d) *In vitro* rooting**: Maximum rooting, more number of roots and longer roots are achieved in half strength MS medium supplemented with 10.0 µM IAA (Indole Acetic Acid).

e) Hardening: For acclimatization of *in vitro* multiplied seedlings in greenhouse, a pot mixture of soil: sand (1: 1) could be successfully utilized which gave the highest (78.33%) survival percentage.

(Action: Professor & Head, Genetics & Plant Breeding, JAU, Junagadh)

2. Effect of brassinolide on germination and biochemical parameters of chickpea

The application of Brassinolide as seed soaking treatment for 2hrs @ 0.25 mg/l in chickpea crop gives good and speedy germination as well as enhanced seedling vigour. This may be attributed to the activation in metabolism during germination through increased enzymatic activities and total soluble sugar content.

(Action: Professor & Head, Genetics & Plant Breeding, JAU, Junagadh)

Navsari Agricultural University

Recommendations for farming community

1. Manipulations of morphoframe through nipping at grand growth stages in cotton

Farmers of South Gujarat growing Bt or conventional cotton hybrids under irrigated conditions are advised to go for detopping at 95 days after sowing followed by nipping of sympodial meristem at 105 DAS to obtain high yield and net returns.

(Action: Res. Sci., Cotton, Main Cotton Res. Station, Surat)

Recommendations for scientific community

1. Physiological analysis of growth and productivity in hybrid rice under South Gujarat condition

Rice breeders are advised to use photosynthetic parameters (stomatal resistance, photosynthesis rate and transpiration rate) at 30, 60 and 90 days after transplanting for the screening of germplasm for higher yield in rice.

(Action: Prof., Crop Physiol., Main Paddy Research Center, Navsari)

SOCIAL SCIENCE

Chairman	**:**	Dr. P. P. Patel, Director of Extension Education, AAU, Anand
Co-Chairman	**:**	Dr. R. L. Shiyani, Prof. & Head, Dept. of Ag. Econ., JAU, Junagadh
Rapporteurs	**:**	Dr. B. K. Bhatt, Assoc. Prof. (Stat.), ACHF, NAU, Navsari Dr. Ruchira Shukla, Assoc. Prof. (ABM), AABMI, NAU, Navsari
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations						New technical programme	
	Farming community		Scientific/Extension functionary		Policy makers			
	Proposed	Approved	Proposed	Approved	Proposed	Approved	Proposed	Approved
AAU	1	1	1	0	1	1	38	34
JAU	-	-	-	-	-	-	8	8
NAU	1	1	2	2	-	-	5	5
SDAU	-	-	2	2	-	-	25	25
Total	**2**	**2**	**5**	**4**	**1**	**1**	**76**	**72**

Anand Agricultural University

Recommendations for farming community

1. **Economic analysis of tissue cultured and sucker propagated banana in middle Gujarat**

In Middle Gujarat Agro-climatic Zone-III, tissue-cultured banana was found to be more profitable than sucker-propagated banana and the risk was also lower in tissue-cultured banana. Therefore, the farmers are recommended to grow banana by tissue-cultured plantlets.

(Action: Prof. & Head, Dept. Ag. Economics, BACA, AAU, Anand)

Recommendations for scientific community/extension functionary

1. **Advantages perceived by the chaff cutter users under RKVY project**

The house resolved to repeat the study for two more years with 200 sample size.

(Action: DEE, AAU, Anand)

Recommendations for policy makers

1. **Economic analysis of tissue cultured and sucker propagated banana in middle Gujarat**

The total cost of cultivation was found to be higher in tissue-cultured banana (TCB) by Rs. 36,649/- per hectare than sucker-propagated banana (SPB), in which higher cost of tissue-cultured plantlets alone contributed to about 70 per cent. In adoption of TCB, high cost of tissue-cultured plantlets was the main constraint expressed by about 73 per cent of SPB farmers. Therefore, to popularize TCB, the trustworthy tissue-cultured plantlets should be made available to the farmers at reasonable price.

(Action: Prof. & Head, Dept. Ag. Economics, BACA, AAU, Anand)

Navsari Agricultural University

Recommendations for farming community/Processors/Entrepreneurs

1. **Market assessment for mango pulp in south Gujarat**

   Mango pulp processing was profitable and provided a rate of return on investment of 0.10, 0.13 and 0.14 at small, medium and large scale of production respectively and therefore all the mango pulp processors and start up entrepreneurs in South Gujarat are advised to tap the market potential by processing Kesar and Alphonso varieties, setting up proper marketing network, maintaining taste and quality, using improved packaging and hygiene standards, understanding requirements of different markets and ensuring regular and cost effective supply of raw materials for processing.

   (Action: Principal, AABMI,NAU, Navsari)

Message/Recommendations for scientific community/extension functionary

1. **Market assessment for mango pulp in south Gujarat**

   The mango growers should be encouraged by providing training, technical guidance and marketing information support for setting up small or micro enterprises for mango pulp processing.

   (Action: Principal, AABMI,NAU, Navsari)

2. **Adoption of new recommendations made by NAU, Navsari by the tribal farmers of South Gujarat**

   For enhancing the knowledge and adoption of technologies recommended by Navsari Agricultural University for tribal farmers of South Gujarat, the educated, young, having membership in social organization with scientific orientation should be selected on priority basis in extension activities.

   (Action: Prof. & Head, Dept. Ext. Education, NMCA, NAU, Navsari)

Sardarkrushinagar Dantiwada Agricultural University

Recommendations for scientific community

1. **Estimation of optimum size and shape of plots for field experiments on isobgul**

   A plot of 20 basic units size having shape of 12 rows each of 5 meters length (5.0 m × 3.6 m = 18 m^2) was found as optimum plot size (net plot) with four replications for field experiments on Isabgol crop at the Agricultural Research Station, S. D. Agricultural University, Kholvada (Dist. Patan).

   (Action: Prof. & Head, Dept. Ag. Statistics, CPCA, SDAU, Sardarkrushinagar)

2. **Optimum size and shape of plots for field experiments on maize**

   A plot of 20 basic units with shape of 4 rows each of 10 meter length (2.40 m x 10.00 m = 24.00 m^2) was found as optimum plot size (net plot) with maximum 5 replications for field experiments on Maize at S. D. Agricultural University, Khedbrahma.

   (Action: Prof. & Head, Dept. Ag. Statistics, CPCA, SDAU, Sardarkrushinagar)

ANIMAL PRODUCTION & FISHERIES

Chairman	**:**	Dr. R.R.Shah, Dean & Principal, Veterinary college, JAU, Junagadh
Co-Chairman	**:**	Dr. A.Y. Desai, Dean. College of fisheries, JAU, Veraval
Rapporteurs	**:**	Dr. B.P. Brahmkshatri, Professor (AGB), NAU, Navsari Mr. H.G.Solanki, Asst. Res. Scientist (Fisheries), NAU, Navsari
Speakers	**:**	Respective convener, AAU/JAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programs	
	Farming community		Scientific Community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	05	04	16	15	25	21
JAU	05	05	08	07	13	13
NAU	02	02	00	00	12	11
SDAU	01	01	01	01	03	01
TOTAL	**13**	**12**	**25**	**23**	**53**	**46**

Anand Agricultural University

Recommendations for farming community

1. **Development of coloured meat purpose crossbred birds**

   For development of coloured meat purpose chicken crosses suitable for rural farming, New Hampshire can be used as male line and Australorp as female line as New Hampshire crosses gained significantly higher weight (1253 g) at 8 weeks age whereas, Australorp has produced significantly higher egg numbers (80) upto 40 weeks with 55 g egg weight at 40 weeks age.

   (Action: Principal Sci., Dept. of Poultry Sci., Veterinary College, AAU, Anand)

2. **The feed cost of raising weaner kids and lambs fed *jowar* hay (30%) and groundnut *gotar* (30%) based Total Mixed Ration**

   The feed cost of raising weaner kids and lambs fed *jowar* hay (30%) and groundnut *gotar* (30%) based Total Mixed Ration can be reduced by 25 to 30% compared to TMR based on *jowar* hay (60%) alone**.**

   (Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

3. **Supplementation of concentrate mixture to buffaloes of Ahmedabad district**

   In Ahmedabad district buffaloes yielding 5-7, 7.5-9.5 and 10-12 kg milk/day, on an average received daily 3.0, 4.0 and 5.0 kg concentrate mixture, respectively. In order to fulfill their nutrient requirement, the farmers are advised to feed daily additional 1.0 kg compound concentrate mixture in summer to buffaloes yielding 5-7 kg milk and 0.5 kg compound concentrate mixture round the year to buffaloes yielding daily 7.5-12 kg milk.

   (Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

4. **Effect of inclusion probiotics in broiler ration**

The cost of feeding (Rs/ kg gain) in coloured broilers was reduced by 14.5% when probiotics was supplemented @ 100 g and 50g/tonne of feed during starter and finisher phase, respectively.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

5. **On-farm trial to study the effect of supplementation of indigenously manufactured bypass fat to buffaloes during early lactation**

Deferred and was suggested for appropriate statistical analysis.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

Recommendations for scientific community/industries

1. **The effect of estrus synchronization protocols on estrus response and fertility in Gir cows**

Estrus Synchronization protocols *viz*. I: CIDR protocol (CIDR+EV-Day 90-92; PGF2α - Day 7, AI – days 9th (48 hr after PG2α injection),II: Ovsynch Protocol (GnRH -Day 0; PGF2α - Day 7; GnRH- Day 9; AI - Day 22-24 hr after 2nd injection) or III: Covsynch Protocol(GnRH - Day 0; PGF2α - Day 7; GnRH - Day 9 + AI - 12 & 18 hr) results in successful ovulatory estrus and conception within two cycles in postpartum infertile Gir cows.

(Action: Res. Sci. & Head, LRS, Veterinary College, AAU, Anand)

2. **Effect of IGF-II genotypes on feed consumption and egg production in Bantamized White Leg Horn**

At IGF-II locus, AA genotype (*NlaIII* RFLP) has lower body weight and better feed conversion efficiency than AB and BB genotypes with egg number, egg weight and AFE at par in Bantamized White Leghorn birds suggesting A allele having favorable effect on feed conversion efficiency.

(Action: Principal Sci., Dept. of Poultry Sci., Veterinary College, AAU, Anand)

3. **Effect of O CX-32 genotypes on egg production in Bantamized White Leg Horn**

At OCX-32 ex2 and ex4 loci, AB and BB genotypes (*HpyCH4IV* and *Ncol* RFLP) has significant and favourable association with egg production without affecting egg weight as compared to AA genotype in Bantamized White Leghorn birds suggesting B alleles at both loci has favourable effect on egg production.

(Action: Principal Sci., Dept. of Poultry Sci., Veterinary College, AAU, Anand)

4. **Developing egg purpose crosses for backyard poultry farming**

For development of crossbred chicken suitable for rural poultry farming using Australorp, Naked neck and Rhode Island Red as male and White Leghorn as female parents, Naked neck and Rhode Island Red crossbred have shown significantly better egg number, egg mass, feed efficiency in term of feed consumption per egg, per kg egg and per dozen egg and return over feed cost up to 40 weeks of age as compared to Australorp crossbred.

(Action: Principal Sci., Dept. of Poultry Sci., Veterinary College, AAU, Anand)

5. **Composition of Kachchhi camel milk**

Kachchhi camel milk contains comparatively higher unsaturated fatty acids (Palmitoleic Acid 7.31%, Linoleic Acid- 0.78% and Linolenic Acid 0.57%), Minerals (Iron +0.30 ppm and Zinc +2.64 ppm) and Vitamin C (+5.88 mg/100 ml) than goat milk.

(Action: Assoc. Prof. and Head, Dept of LPM, Veterinary College, AAU, Anand)

6. Technology for manufacturing camel milk medium fat ice cream

Pineapple flavoured medium fat ice cream (6% milk fat, 11% MSNF, 15% sugar, 1.5% whey protein concentrate, 0.2% sodium alginate and 0.15% glycero monostearate) can be prepared from camel milk which has comparable acceptability to regular ice-cream (10% fat).

(Action: Assoc. Prof. and Head, Dept of LPM, Veterinary College, AAU, Anand)

7. Genetic variability in Kachchhi camel

Kachchhi camel has low genetic variability as revealed by low observed and effective mean number of alleles (MNA=3.18 and 2.06 respectively), low observed and expected heterozygosity (Ho=0.364 and He=0.421) and low inbreeding coefficient (F_{IS} = 0.1027) based on camel specific set of 16 microsatellite markers.

(Action: Assoc. Prof. and Head, Dept of LPM, Veterinary College, AAU, Anand)

8. Growth performance of kids and lambs fed *jowar* hay and groundnut haulms based total mixed ration (TMR)

The weaner lambs fed *jowar* hay (30%) and groundnut *gotar* (30%) based Total Mixed Ration (TMR-T_2) resulted in significantly higher amount of total and protein nitrogen (95.56 & 66.16 mg/dl, respectively) compared to lambs fed TMR based on *jowar* hay (60%) alone (68.49 and 39.02 mg/dl, respectively). The higher availability of increased protein–N resulted in significantly higher growth rate in weaner lambs.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

9. Area specific mineral mixture for Dahod district

Following area specific mineral mixture is recommended for Dahod district to makeup the deficiency when fed @ 30g/head/day to dairy animals in addition to the current feeding practices.

SN	Mineral element	Requirement (%)	Mineral salt	Quantity (kg)
1	Calcium	20.000	Dicalcium phosphate	
			Calcite powder	12.177
2	Phosphorus	12.000	DCP	66.667
3	Magnesium	5.000	Magnesium oxide	9.259
4	Sulphur	2.700	Sodium thiosulphate	6.923
5	Copper	0.100	Copper sulphate	0.400
6	Zinc	0.900	Zinc sulphate	2.727
7	Manganese	0.130	Manganese sulphate	0.419
8	Iron	0.400	Ferrous sulphate	1.333
9	Cobalt	0.012	Cobalt sulphate	0.060
10	Iodine	0.026	Potassium iodide	0.034
			Total	100.000

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

10. Compensatory growth in crossbred calves fed crop residue based TMR

Restricted feeding of 8-12 months old growing crossbred calves at the rate of 75% of the requirement as per NRC (1989) standards for 3 months followed by re-alimentation for 2 months at the rate of 125% of requirement is a feasible option since it resulted in 29% higher body weight gain without increase in feed cost per kg gain.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

11. On-farm trial to study the effect of supplementation of indigenously manufactured bypass fat to buffaloes during early lactation

Deferred and was suggested for appropriate statistical analysis.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

12. Nutritional evaluation of detoxified Jatropha curcas meal on milk production in buffaloes

The replacement of soyabean meal protein with detoxified *Jatropha curcas* meal at 50% level in the concentrate mixture for buffaloes had no any adverse effect on total milk yield, gross milk composition, nutrient utilization, feed conversion efficiency and blood biochemical profile *viz* glucose, total protein, albumin, globulin, and activities of alanine-aminotransferase and aspartate aminotransferase.

(Action: Res. Sci. & Head, ANRS, Veterinary College, AAU, Anand)

13. Effect of GHR gene SNPs on production in Jaffarabadi and Mehsana buffalo

Two SNPs in Exon 8 of GHR gene (G1961T and T1972C) have significant and favourable association with milk fat% in Jaffarabadi and Mehsana buffalo, where allele T and allele C respectively have favorable effects.

(Action: Prof. and Head, Dept. of AGB, Veterinary College, AAU, Anand)

14. Novel SNPs in Leptin gene in Jaffarabadi and Mehsana buffaloes

Three novel SNPs one each in Promoter (C287A), Intron-1 (A321G) and Exon-3 (A498T) in Leptin gene are discovered in Jaffarabadi and Mehsana buffalo.

(Action: Prof. and Head, Dept. of AGB,Veterinary College, AAU, Anand)

15. Effect of Leptin gene SNPs on production in Jaffarabadi and Mehsana buffalo

An SNP (C310T) in intron 1 of Leptin gene has significant association with milk fat% in Jaffarabadi buffalo. Allele C was found to have favourable effect.

(Action: Prof. and Head, Dept. of AGB, Veterinary College, AAU, Anand)

16. Effect of Pit gene SNPs on production in buffalo

Seven new SNPs discovered in Pit 1 gene of buffalo, one in Exon 1 (T264A), three in Intron-1 (C461T, G472A and C603G), one in Exon 2 (C720T) and two in Intron 2 (T771C and G772A) have no association with the milk yield and milk fat %.

(Action: Prof. and Head, Dept. of AGB, Veterinary College, AAU, Anand)

Junagadh Agricultural University

Recommendations for farming community

1. Impact of herd composition on herd performance traits in Gir cattle

On a large farm of Gir cattle in South Saurashtra region, herd structure of 330-345 heads with 100-110 (30-33%) cows, 65-70 (18-21%) breedable heifers and 245-250 (72-75%) total female proportion in the herd is optimum to achieve higher wet average (7.3-7.7 lit), herd average (4.2-4.7 lit), % milch cows (55-60%) and higher return over feed cost (140%) in the herd.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

2. Impact of herd composition on herd performance traits in Gir cattle

Dairy farmers/gaushalas of Gir herd in South Saurashtra region desiring to improve herd performance and return should set optimum targets of herd performance traits of 7.6 lit. wet average, 4.3 lit. herd average and more than 64% milch cows for economical and sustainable dairy farming.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

3. **Breeding and lactation efficiencies of Gir cows**

Dairy farmers of large herd of Gir cattle in South-Saurashtra region should set the target of age at first calving < 44 months and calving interval of 14 months to improve these traits for maximum return. They can maintain Gir cows up to 8 lactations for economical dairy farming; however, high yielding cows may be maintained for more than 8 lactations also.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

4. **Breeding and lactation efficiencies of Jaffrabadi buffaloes**

Dairy farmers of large herd of Jaffrabadi buffaloes in South Saurashtra region should set age at first calving of 47 months and calving interval of 15 months as targets to improve these traits for maximum return. They can maintain Jaffrabadi buffaloes upto 6 lactations for economical dairy farming, however, high yielding buffaloes may be maintained for more than 6 lactations also.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

5. **Study of foulers and borers of pearl Oyster (*Pinctada fucata*) in around Sikka area**

The aqua farmers of the Gulf of Kutch are advised to take appropriate control measures as the Pearl Oysters has been found to be infested by the foulers and borers such as sponges like *Cliona vastifica, Cliona Carpenteri, Cliona celata,* Coelenterate like Bryozoans and Hydroids, crustaceans like copepod, *Balanus amphrite,* pea crab, bivalves like Crassostrea, animals of minor phyla like isopod, amphipod and tunicates like Ascidians sp. and annelids like Tubiculous and Serpulid worms.

(Action: Research Scientist, Fisheries Research Station, JAU, Sikka)

Recommendation for scientific community

1. **Impact of herd compisition on herd performance traits in Gir cattle**

Maintaining an established breeding herd of an average of 110 Gir cows in South Saurashtra region results in an average of 388 (i.e. 400) total heads, 260 total adult units and 72% total female population with 85 (22%) breedable heifers, 80 (21%) growing females below 2 years of age and 63 (57% total cows) milch cows with wet average of 6.8 lit., herd average of 3.8 lit. and return of 116% over feed cost**.** Herd structure and performance vary significantly by year. Month significantly influences calving rate and herd average. Wet average (7.2 vs 6.1 lit), herd average (4.2 vs 3.4 lit) and % milch cows (57-60 vs 54-55%) remain higher from March to May and lower during August-September months. Performance traits show negative trend with number of cows, total breedable females and total heads present in the herd. Hence, optimum herd structure should be maintained for higher performance and return.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

2. **Breeding and lactation efficiencies of Gir cows**

In organized large dairy herd of Gir cattle in South Saurashtra region- i) Over-all breeding efficiency, lactation efficiency, age at first calving, calving interval and lactation period of Gir cows were 86.9±0.5%, 61.1±1.1%, 1527.8±14.2 (50.1 mo.), 481.2±4.9 (15.8 month) and 281.0±4.6 days, respectively. About 29% of heifers calved for the first time below the average age of 44 months and 38% of cows calved at an average calving interval of 14 months. ii) Average milk production of Gir cows increased with increase in parity and reached peak of 2300 lit. of 300-d milk yield in 5^{th} lactation. In subsequent lactations also, 300-d lactation milk yield remained between 1950 and 2100 lit. up to 8th lactation which indicated high persistency of production over parity. Productive life of cows averaged 8.5 years (i.e., 3108 days) with 10,000 lit. life-time milk production with an average of 4.3 calvings during lifetime. iii) About 19% Gir cows remained in the herd for more than 12 years of age (on an average 14.6 years) and more than 25% of cows performed in the herd for more than 6 lactations. Hence, breeding goals of less than 44 months of age at first calving and 14 months of calving interval may be set for Gir cattle.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

3. Breeding and lactation efficiencies of Jaffrabadi buffaloes

In organized large dairy herd of Jaffrabadi buffaloes in South Saurashtra region- i) Over-all breeding efficiency, lactation efficiency, age at first calving, calving interval and lactation period of Jaffrabadi buffaloes averaged 79.0±1.5%, 58.2±1.6%, 1656.7±28.6 (54.3 month), 541.9±7.9 (17.8 month) and 291.9±5.0 days, respectively. About 28% of heifers calved for the first time below the average age of 47 month and 31% of buffaloes calved at an average calving interval of 15 months**.** ii) Average milk production of Jaffrabadi buffaloes increased with increase in parity and reached peak of 1900 lit. of 300-d milk yield in 4th lactation. In subsequent lactations also, 300-d lactation milk yield remained between 1700 and 1800 lit. upto 6th lactation which indicated high persistency of production over parity. Productive life of buffaloes averaged 10.1 years (i.e., 3701 days) with 8500 lit. life-time milk production with an average of 4.7 calvings during life-time. iii) About 20% Jaffrabadi buffaloes remained in the herd for more than 12 years of age (on an average 16.6 years) and more than 38% of these animals performed in the herd for more than 6 lactations. Hence, breeding goals of less than 47 months of age at first calving and 15 months of calving interval may be set for Jaffrabadi buffaloes.

(Action: Research Scientist, Cattle Breeding Farm, JAU, Junagadh)

4. Preparation and evaluation of edible fish powder prepared from small sized croaker *Otolithes ruber* (Block & Schneider, 1801) landed at Veraval harbour

Fishery entrepreneurs and processors are advised to use small sized croaker *Otolithes ruber* along with their bones for the production of heat sterile protein and mineral rich edible fish powder having a shelf life of seven months.

(Action: Principal, College of Fisheries Science Veraval)

5. Qualitative studies of zooplankton in Meghal River at Chorwad

The Meghal River system, located in South Saurashtra region harbours Zooplanktons belonging to seven genera viz. *Cyclops, Daphnia, Filinia, Brachionus, Bosmina, Moina* and *Keratella* during monsoon and winter months.

(Action: Principal, College of Fisheries Science Veraval)

6. The effect of air and water transport on stress and survival of rock oyster (*Saccostrea cucullata*)

Deferred and suggested to modify the duration of transportation and to mention density and bag size for transportation of rock oyster.

(Action: Research Officer, Fisheries Research Station, Okha)

7. Identification and quantification of rotifer fauna of Okhamandal region

Thirteen species of rotifers are found in Okhamandal region. The rotifers are found in higher diversity and density in Surajkaradi pond and Gomati creek than seacoast areas in Okhamandal region in monsoon and post monsoon seasons. They are more abundant in lower salinity.

(Action: Research Scientist, Fisheries Research Station, JAU, Okha)

8. Cycle Evaluation for fish landing at Veraval of Veraval coast

The entrepreneurs and financial institutions are advised to consider an aggregate, profit making time span of seven years as the cycle period for fish landing centre, Veraval.

(Action: Principal, College of Fisheries Science, JAU, Veraval)

Navsari Agricultural University

Recommendations for farming community

1. **Exploring possibility of partial substitution of carp feed with banana psuedostem based vermicompost**

   The farmers of coastal areas of South Gujarat following freshwater carp culture are advised to use pelleted mixture of 30% banana psuedostem based vermi compost + 70% compounded cattle feed (BIS type-II) as Rohu (carp) fish feed reduces 12% cost of production as compared to use of cattle feed alone as fish feed.

   (Action: Research Scientist, SWMRU, NAU, Navsari)

2. **Study on dairy husbandry practices in Navsari and Jalalpore talukas of Navsari district**

   Dairy farmers are recommended to follow chaffing and mixing of fodders, preserve fodders when excess availability, colostrum feeding to calves within 2 hours of birth, sanitation of shelter, mineral mixture supplementation, follow full hand milking with dry hand at navsari and Jalalpore talukas of Navsari district.

   (Action: Prof. and Head, LPM, NAU, Navsari)

Sardarkrushinagar Dantiwada Agricultural University

Recommendations for farming community

1. **Postpartum ovarian activity monitored by ultrasonography with reference to herbal and mineral therapy in Kankrej cattla**

   Feeding of 50 gm powder of chelated mineral mixture from 1st to 40th days post partum reduces the post partum estrus interval, number of services per conception, service period and calving interval in Kankrej cattle.

   (**Composition of mineral mixture powder (per kg):** Calcium 240 gm, Phosphorous 130 gm, Mn 1500 mg, Potassium 100 mg, Selenium 10 mg, Sodium 5.9 mg, Cobalt 150 mg, Copper 1200 mg, Iodine 325 mg, Iron 500 mg, Mg 6000 mg, Sulphur 720, Zinc 9600 mg)

   (Action: Research Scientist, LRS, SDAU, Dantiwada)

Recommendation for scientific community

1. **Postpartum ovarian activity monitored by ultrasonography with reference to herbal and mineral therapy in Kankrej cattla**

   Feeding of 50 gm powder of chelated mineral mixture from 1st to 40th days post partum significantly reduces the post partum estrus interval, number of services per conception, service period and Calving interval in Kankrej cattle as compare to herbal preparation.

   (**Composition of Mineral Mixture Powder (per kg):** Calcium 240 gm, Phosphorus 130 gm, Mn 1500 mg, Potassium 100 mg, Selenium 10 mg, Sodium 5.9 mg, Cobalt 150 mg, Copper 1200 mg, Iodine 325 mg, Iron 5000 mg, Mg 6000 mg, Sulphur 720 mg, Zinc 9600 mg; **Composition of a herbal formulation:** Each bolus contained extracts of herbs equivalent to Vasa 1.10g, Karpasa 1.10g, Chandrasura 0.85g, Citraka 0.85g, Langali 0.85g, Harmal 0.50g, Excipient QS.)

   (Action: Research Scientist, LRS, SDAU, Dantiwada)

ANIMAL HEALTH

Chairman	**:**	Dr. A.M. Thakar, Dean (Veterinary Science), AAU, Anand Dr. N.M. Shah, ADR & Prof., Vet. Microbiology, SDAU, SKNagar
Co-Chairman	**:**	Dr. N.H. Kelawala, Dean (Veterinary), NAU, Navsari
Rapporteurs	**:**	Dr. J.N. Mistry, Prof. (Surgery), CVSAH, NAU, Navsari Dr. B.N. Suthar, Professor & Head, Gynecology, SDAU, SKNagar
Speakers	**:**	Respective convener, AAU/NAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations				New Technical Programs	
	Farming community		Scientific Community		Proposed	Approved
	Proposed	Approved	Proposed	Approved		
AAU	-	-	4	4	12	12
JAU	-	-	2	-	1	1
NAU	-	-	1 + 3*	1 + 2*	6	6
SDAU	-	-	7	7	2	2
TOTAL	**-**	**-**	**14 + 3***	**12 + 2***	**21**	**21**

* Information

Anand Agricultural University

Recommendations for scientific community

1. **Evaluation of immunomodulatory activity of a topical herbal drug in the treatment of bovine subclinical mastitis**

   Topical application of 5 g of a gel based herbal drug {containing *Curcuma longa* (0.04 g), *Paedaria foetida* (0.04 g), *Glycyrrhiza glabra* (0.1 g), *Eucalyptus globulus* (0.2 g), *Cedrus deodara* (1.0 g) and *Shudh gandhaka* (1.0 g) in each 10 g} on sub-clinically infected udder quarters twice daily after milking for 5 consecutive days results in significant reduction in bacterial load and immunomodulation till day 21 post-treatment, hence suggested as an effective herbal therapy against bovine sub-clinical mastitis.

   (Dept. of Vet. Medicines, CVSAH, Anand)

2. **Anticancerous efficacy of Semecarpus anacardium on N-Nitrosodiethylamine induced Hepatocellular Carcinoma in Wstar Rats**

   The Nut milk extract of *Semecarpus anacardim* (Bhilamo) at the dose rate of 2.5 g/kg body weight orally once a day for seven weeks has anticancerous effect on N- nitroso diethylemine induced hepatocelluler carcinoma in wistar rat.

   (Dept. of Vet. Medicines, CVSAH, Anand)

3. **Influence of different categories of Follicles on quantity and quality of oocytes with respect to their in vitro maturation in Surti baffaloes**

   (1) For better maturation rate of oocytes in Surati buffaloes, oocytes with more number of cumulus layers should be selected.

   (2) In Surati buffalo, better quality and quantity of oocytes are retrieved in absence of corpus luteum.

   (Dept. of Animal Reprod., Gynaecology & Obsterics, CVSAH, Anand)

4.

In the rabbit model, based on histomorphometry, monopolar electrocoagulation (24 W and 3 sec) caused greater thermal damage than bipolar (56 W and one sec), advocating low power output and less duration of application.

(Dept. of Surgery & Radiology, CVSAH, Anand)

Navsari Agricultural University

Recommendations for scientific community

1. Incidence of gastrointestinal parasitic load in bovine

(1) Oral administration of Fenbendazole (10mg/kg b. w.) and Ivermectin (200 µg/kg b.w.) combination is recommended for prophylactic deworming against flukes and nematodes in bovines of high rainfall area of South Gujarat.

(2) Oral administration of Oxyclozanide (10 mg/kg b.w.) and Levamisole (7.5 mg/kg b.w.) combination is recommended for prophylactic deworming against flukes in bovines of high rainfall area of South Gujarat.

(Dept. of Teaching Vet. Clinical Complex, CVSAH, Navsari)

Information for scientific community

1. To study the incidence of blood protozoans in cattle and canines

Simultaneous administration of injection Oxytetracycline HCl at the dose rate of 5-10 mg/kg body weight IV for three days with single dose of an appropriate antiprotozoal therapy for specific animal species is recommended for better results in cases of haemoprotozoal infections in bovine and canines.

(Dept. of Teaching Vet. Clinical Complex, CVSAH, Navsari)

2. Incidence, diagnosis and surgical management of diaphragmatic hernia in bovines

In buffaloes, for trans abdominal diaphragmatic herniorraphy, simple continuous suture pattern using polypropylene (fish net # 3) is advisable.

(Dept. of Teaching Vet. Clinical Complex, CVSAH, Navsari)

Sardarkrushinagar Dantiwada Agricultural University

Recommendations for scientific community

1. Anti-teratogenic effect of Beta cyclodextrin against acetazolamide and tolbutamide induced teratogenicity in Wistar rats

Oral administration of Beta cyclodextrin at the dose rate of 750 mg/kg body weight in Wistar rats has curative role in teratogenicity induced by acetazolamide and tolbutamide.

(Dept. of Pharmacology & Toxicology, CVSAH, Sardarkrushinagar)

2. Protective effect of L-carnitine against cyclophosphamide induced genotoxiticy and oxidative renal stress in mice

Oral administration of L-carnitine at the dose rate of 400 mg/kg body weight has protective effect against genotoxicity and oxidative renal stress induced by cyclophosphamide in ICR male mice.

(Dept. of Pharmacology & Toxicology, CVSAH, Sardarkrushinagar)

3. Isolation and molecular characterization of BTV from goat blood

Bluetongue virus isolates from goat blood are of serotype 16 (BTV-16).

(Dept. of Microbiology, CVSAH, Sardarkrushinagar)

4. **Isolation and molecular characterization of BTV from *Culicoides oxystoma***

Bluetongue virus isolates from *Culicoides oxystoma* is of serotype-1 with more than 86% similarity with Australian BTV serotype-1.

(Dept. of Microbiology, CVSAH, Sardarkrushinagar)

5. **Therapeutic management of oxidative stress during diaphragmatic herniorrhaphy**

Manganese chloride at the dose rate of 5 mg/kg body weight as compared to low dose at the dose rate of 1 mg/ kg body weight intravenously prior to rumenotomy proves better to control the oxidative stress during diaphragmatic hernia repair in buffaloes.

(Dept. of Surgery & Radiology, CVSAH, Sardarkrushinagar)

6. **Sexual behaviour and semen characteristics of Mehsana buck**

Sexual behavior score is useful for selecting Mehsana buck for better fertility.

(Dept. of Animal Reprod., Gynaecology & Obsterics, CVSAH, Sardarkrushinagar)

7. **Washing of Mehsana buck spermatozoa for improving cryopreservation**

Removal of seminal plasma and washing of spermatozoa with washing solution (Krebs-Ringer-Phosphate-Glucose solution) improves the quality of cryopreservation of Mehsana buck semen in tris egg yolk based extender.

(Dept. of Animal Reprod., Gynaecology & Obsterics, CVSAH, Sardarkrushinagar)

Junagadh Agricultural University

Recommendations for scientific community

1. Evaluation of internal parasitic load from faecal sample at different Gaushalas/ Pajarapol

Not approved.

(Action: Principal, College of Veterinary & Animal Husbandary, JAU, Junagadh)

2. Assessment of microbiological quality of drinking water at different gaushalas

Not approved.

(Action: Principal, College of Veterinary & Animal Husbandary, JAU, Junagadh)

DAIRY SCIENCE/DAIRY TECHNOLOGY & FOOD PROCESSING/ FOOD TECHNOLOGY

Chairman	**:**	Dr. D.C. Joshi, Dean & Principal, College of Food Processing Technology & Bio energy, AAU, Anand
Rapporteurs	**:**	Dr. Devraj, Assoc. Prof., PHT, NAU, Navsari
Speakers	**:**	Respective convener, AAU/SDAU

No. of recommendations and new technical programs presented, discussed and approved :

University	Recommendations								New Technical Programs			
	Farming community				Entrepreneurs				Proposed		Approved	
	Proposed		Approved		Proposed		Approved					
	D*	F#	D	F	D	F	D	F	D	F	D	F
AAU	0	0	0	0	3	2	3	2	25	4	25	4
SDAU	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**4**	**25**	**4**

D* = Dairy Science/Dairy Technology, F# = Food Processing/Food Technology

Anand Agricultural University

Recommendations for dairy/food industries and entrepreneurs

Dairy Science/Dairy Technology

1. Process standardization for the manufacture of thabdi

A scientific method to manufacture *Thabdi* is developed from milk standardized to 0.66 fat:SNF ratio and added with 8% (w/v) sugar at the time of first boiling. The boiling is to be continued till pat formation. The final heat treatment is imparted for 40 min in two parts; 20 min after pat formation to have graininess development accompanied by addition of ghee @1.2 per cent and continuing the heat desiccation for further 20 min to get desired moisture, colour and grainy texture. The yield of the *Thabdi* is 27 kg/100 kg milk which can be stored at 30 ±2ºC for 9 days.

(Action: Head, Dairy Technology Deptt, DSC, AAU, Anand)

2. Process standardization for the manufacture of *halvasan*

Good quality *Halvasan* can be prepared using standardized milk having 0.66 fat: SNF ratio, 5% *fada* (sprouted dry Bhalia wheat, Duram), 17% sugar and heating at 90˚C for 2 h. The final desiccation is to be carried out for 30-40 min to have desired colour, moisture and proper grain size. The yield of *Halvasan* is 45 kg/100 kg milk which can be stored at 30 ±2ºC for 9 days.

(Action: Head, Dairy Technology Deptt, DSC, AAU, Anand)

3. Development of self carbonated probiotic whey beverage

Self carbonated probiotic whey beverage could be prepared by fermentation of pasteurized paneer whey using yeast *Kluyveromyces marxianus* NCIM 3566, probiotic culture *Lactobacillus helveticus* MTCC 5463 and 7% sugar. The product could provide optimum dose of probiotic lactobacilli of 2.13 X 10^8 cfu/ml having organoleptically acceptable quality till 21 days of storage at 5±2^{0}C.

(Action: Head, Dairy Microbiology Deptt, DSC, AAU, Anand)

Food Processing/Technology

1. Utilization of pumpkin powder for preparation of various food products

The pumpkin powder rich in carotene (Precursor of vitamin-A) can be used for manufacturing of various food items.

(A) A carotene biofortified biscuits can be prepared by replacing refined wheat flour (maida) with pumpkin powder at the rate of 2.5% (w/w). This biscuit will be of a good dietary supplement of vitamin-A.

(B) A carotene biofortified deep fried bhajjiya can be prepared by replacing gram flour (besan) at the rate of 10% (w/w) with pumpkin powder. The bhajjiya will be a good dietary supplement of vitamin-A.

(C) A carotene biofortified ice-cream can be prepared with pumpkin powder incorporated at the rate of 1.5% (w/v). The ice-cream will be a good dietary supplement of vitamin-A.

(Action: Dean, FPT and BE, AAU, Anand)

2. Puffing of grains (Parboiled Milled Rice) using microwave energy from Gurjari/Jaya rice

The entrepreneurs and food processors interested in production of instant puffed rice using microwave energy are advised to use Gurjari or Jaya variety following the protocol developed by AAU. The technology enables production of puffed rice in domestic convective-cum-microwave oven.

(Action: Dean, FPT and BE, AAU, Anand)

NEW TECHNICAL PROGRAMMES

CROP IMPROVEMENT

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Evaluation of different varieties/accessions of palmrosa for higher yield and quality	Accepted.	Res. Sci. (M&AP), AAU, Anand
2.	Small Scale Varietal Trial on forage sorghum single cut.	Accepted.	Res. Sci. (Forage), AAU, Anand
3.	Multi location Varietal trial of Soybean	Accepted.	Assoc. Res. Sci., Tribal Res.-cum-Training Centre, AAU, Devgadhbaria
4.	Preliminary row trial of promising local germplasm (Urdbean)	Accepted.	Assoc. Res. Sci., Tribal Res.-cum-Training Centre, AAU, Devgadhbaria
	Junagadh Agricultural University		
1.	Pilot project on alternative area of hybrid seed production of pearl millet during summer season	Accepted.	Res. Sci. (Pearlmillet), JAU, Jamnagar
	Navsari Agricultural University		
1.	Conversion of parental lines of released and promising cotton hybrids in to Bt (BG-II) background.	Accepted.	Res. Sci. (Cotton), MCRS, Surat
2.	To study the effect of reciprocal crosses on yield and its attributing characters for release hybrids in cotton	Accepted.	Res. Sci. (Cotton), MCRS, Surat
3.	Utilization of CMS system to develop hybrids in chilly	Accepted.	Prof. (Vegetable), RHRS, ACHF, Navsari
4.	Preliminary Evaluation Trial on Tomato	Accepted.	Prof. (Vegetable), RHRS, ACHF, Navsari
5.	Screening for resistance to *fusarium* wilt in tomato varieties	Accepted.	Prof. (Vegetable), RHRS, ACHF, Navsari
	Sardarkruhinagar Danwitada Agricultural University		

1.	To develop protocol for micro propagation of pomegranate	Accepted.	Prof. & Head, Dept. of Gen. & Pl. Breeding, CPCA, SDAU, Sardarkrushinagar
2.	Breeding Ashwagandha for North Gujarat condition	Accepted.	Prof. & Head, Dept. of Gen. & Pl. Breeding, CPCA, SDAU, Sardarkrushinagar
3.	Standardization of isolation distance for seed production of cumin	Accepted.	Res. Sci. (Seed), Seed Tech., Sardarkrushinagar & Res. Sci. (Spices), Jagudan

CROP PRODUCTION/NATURAL RESOURCE MANAGEMENT

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Site specific nutrient management in soybean-wheat cropping system in middle Gujarat	Accepted with following suggestion/s : 1) Expt. should be conducted at fix site. 2) Treat. T_8 is changed to T_2 + Fe-Zn enriched FYM. 3) Treat. T_5 is changed to T_4 + K @ 60 kg/ha instead of 120 kg/ha. 4) Variety should be taken as GW 322 or GW 366. 5) Analyze FYM before use. 6) Soil analysis for Available N. 7) Quality analysis.	Prof. & Head, Dept. of Agri. Chem. & Soil Sci., AAU, Anand
2.	Micrometeorological studies for stress management in summer groundnut.	Accepted with following suggestion/s : 1) Conduct feeler trial using different mulches and dates of sowing.	Prof. & Head, Dept. of Agril. Meteorology, BACA, AAU, Anand
3.	Analysis and thematic mapping of extreme weather events of Gujarat	Accepted.	Prof. & Head, Dept. of Agril. Meteorology, BACA, AAU, Anand
4.	Efficacy of Potash mobilizing bacteria on Potato (*Solanum tuberosum* L.)	Accepted with following suggestion/s : 1) Remove word treated check in treatment T_9.	Prof. & Head, Dept. of Microbio.& Bio.Ferti.,AAU, Anand
5.	Survey of physiological disorder in Bt. Cotton	Accepted with following suggestion/s : 1) Collect 50 samples each of soil and plant instead of 100 samples.	Res. Sci., Micronutrient Project, AAU, Anand
6.	To study the effect of nitrogen and phosphorus on yield and quality of multi-cut sorghum Cv. COFS-29	Accepted.	Res. Sci., Main Forage Research Station, AAU, Anand
7.	Effect of methods of sowing and seed rates on yield of wheat under rice - wheat cropping system	Accepted with following suggestion/s : 1) Change variety as GW 322 / GW 366.	Res. Sci., Regional Research Station, AAU, Anand
8.	Production potential of oil seed crop base cropping system for rustica tobacco with different nitrogen levels in middle Gujarat	Accepted.	Res. Sci., BTRS, AAU, Dharmaj

9.	Effect of different levels of nitrogen and phosphorous on yield of castor under supplementary irrigation in *Bhal* region	Accepted with following suggestion/s : 1) Delete 25 kg N /ha from Nitrogen levels. 2) Add 0 kg P_2O_5 /ha and remove 75 kg P_2O_5 /ha from P levels. 3) Add observations on oil content (%), No. of branches/plant and test weight.	Res. Sci., ARS, AAU, Arnej
10.	Feasibility of drip irrigation in Bt cotton	Accepted with following suggestion/s : 1) Treatment I1, I2 and I3 arranged in paired row with 0.6, 0.8 and 1.0 ADFPE (Drip), respectively. 2) Delete treatment I4 i.e. all furrow irrigation. 3) Add one more factor fertigation with treatments 75, 100, 125 % RDF and Control (surface). 4) In observations, Calculate water and fertilizer use efficiency. 5) Change word stalk yield instead of stover yield. 6) Change plot size according to spacing.	Asso. Res. Sci., ARS, AAU, Thasara
11.	Response of drilled paddy to graded levels of nitrogen and phosphours	Accepted.	Res. Sci., ARS, AAU, Derol
12.	Weed management in drilled paddy	Accepted.	Res. Sci., ARS, AAU, Derol
13.	Effects of sowing dates, spacing and cultivars on growth and yield of cluster bean	Accepted with following suggestion/s : 1) Instead of fixed date, use week in all the sowing date treatments. 2) Remove observation on bioassay of succeeding crop.	Res. Sci., ARS, AAU, Derol
14.	Effect of irrigation scheduling and organic manure on performance of summer Cluster bean in Middle Gujarat Conditions	Accepted with following suggestion/s : 1) In treatment 1, irrigation be applied at critical growth stages instead of as and when required. 2) Change plot size according to spacing.	Principal, Polytechnic in Agri., AAU, Vaso
15.	To study the fodder productivity through forage crop combinations	Accepted with following suggestion/s : 1) Change title as " Evaluation of Silvi-Pasture system". 2) Specify row ratio and spacing i.e. 1:3.	Res. Sci., PSK, AAU, Ramna Muvada

	Junagadh Agricultural University		
1.	Evaluation of potentiality of organic farming for groundnut (*kharif*)-chickpea (*rabi*) cropping sequence	Accepted with following suggestion/s : 1) Analysis of all organic manures. 2) Treatment 8 outside the Organic plot. 3) Treatment 9 and 2 remove. 4) Replace T4 as 50% FYM 25% Vermi-compost and 25% CC. 5) Microbial and heavy metal as in observation.	Prof. & Head, Dept. of Agronomy, JAU, Junagadh
2.	Response of cumin to drip irrigation and organic manures	Accepted with following suggestion/s : 1) Conduct as feeler trial and present with recorded data during next AGRESCO.	Prof. & Head, Dept. of Agronomy, JAU, Junagadh
3.	Integrated weed management in summer sweet corn	Accepted with following suggestion/s : 1) Delete treatment 4. 2) 30 DAS instead of 20 DAS in T1, T2, T3, T5 and T6. 3) Herbicide residue study at cob harvesting and in soil after harvest.	Assoc. Res. Sci. (Weed control) Dept. Agronomy, JAU, Junagadh
4.	Weed management in pre-monsoon groundnut	Accepted with following suggestion/s : 1) Trematent 4 at 25 DAS. 2) Add bio assay study in observation. 3) Delete a.i. in Treatment 1 and 2.	Assoc. Res. Sci. (Weed control), Dept. Agronomy, JAU, Junagadh
5.	Effect of biophos on the performance of castor	Accepted. 1) AICRP Trial.	Res. Sci. (Groundnut), JAU, Junagadh
6.	Yield maximization in groundnut through nutrient management practices during *kharif* season	Accepted.	Res. Scientist (Groundnut), JAU, Junagadh
7.	Evaluation of time and dosage of Imazethapyr herbicide in chickpea.	Accepted with following suggestion/s : 1) Add Biomass Study in observation.	Res. Sci., Pulse Res. Station, JAU, Junagadh
8.	Inter cropping of seed spices in vegetables	Accepted. 1) AICRP Trial.	Res. Sci. (G & O), Vegetable Res. Station, JAU, Junagadh
9.	Performance of wheat varieties at different dates of sowing under irrigated conditions.	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
10.	Performance of wheat varieties at different dates of sowing under irrigated conditions.	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh

11.	Performance of new wheat genotypes at different dates of sowing under irrigated late sown conditions.	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
12.	Performance of new wheat genotypes at different dates of sowing under irrigated conditions.	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
13.	Evaluation of bio-efficacy of herbicides against broad-leaved weed flora in wheat	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
14.	Mitigating terminal heat stress in wheat through mulching and foliar nutrition under late sown conditions	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
15.	Effect of hydrogel on the performance of wheat	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
16.	Performance of wheat varieties at very late sowing under irrigated conditions.	Accepted. 1) AICRP Trial.	Res. Sci., Wheat Res. Station, JAU, Junagadh
17.	Effect of irrigation regimes and FYM on drip irrigated cotton.	Not accepted.	Res. Sci. (Cotton), JAU, Junagadh
18.	Fertigation in Bt cotton	Accepted with following suggestion/s : 1) Treatments recast as **(A)Irrigation scheduling (I)** **(B) Nitrogen levels (F)** I_1: 0.6 Etc through drip — F_1: 75 % RDN in 6 splits with 15 days interval through drip I_2: 0.8 Etc through drip — F_2: 100 % RDN in 6 splits with 15 days interval through drip I_3: 1.0 Etc through drip — F_3: 125 % RDN in 6 splits with 15 days interval through drip Surface irrigation (1.0 IW/CPE IW: 50 mm) with 100 % RDN in 3 splits with 30 days interval as soil application (Control)	Res. Sci. (Cotton), JAU, Junagadh
19.	Weed control in *kharif* groundnut	Accepted with following suggestion/s : 1) 25 DAS instead of 20 DAS in T4, T5, T6, T7 and T8. 2) Add Bioassay study in observation.	Res. Sci. (Dry farming), JAU, Targhadia
20.	Optimization of nutrients for pearl millet production under assured Moisture availability condition	Accepted with following suggestion/s : 1) Replace treatment as levels of N 90,120 and 150 kg/ha and levels of P as 0, 20, 40 and 60 kg/ha.	Res. Sci. (Millet), JAU, Jamnagar

21.	Suitability of pearl millet hybrids under varying time of sowing during semi rabi season	Accepted with following suggestion/s : 1) Main treatment time of shoving D_1 1st week of October, D_2 3rd week of October, D_3 1st week of November and D4 3rd week of November.	Res. Sci. (Millet), JAU, Jamnagar
22.	Influence of time of sowing and N levels on yield and quality of summer forage pearl millet *Pennisetum glaucum* (L.)	Accepted with following suggestion/s : 1) Keep main plot date of shoving D_1 3rd week of January, D_2 1st week of February and D_3 3rd week February. 2) Levels of N 100, 150 and 200 kg/ha in sub plot.	Res. Sci., Agril. Res. Station, JAU, Dhari
23.	Weed management practices in spring planted sugarcane based intercropping system	Accepted with following suggestion/s : 1) Remove treatment weed control W_4.	Res. Sci., Sugarcane Res. Station, JAU, Kodinar
24.	Response of sugarcane to dhaincha green manuring and PSB under varying levels of fertilizers.	Accepted with following suggestion/s : 1) Change title as "Effect of INM on sugarcane". 2) Delete G_3. 3) Add *Azotobactor* in G_4.	Res. Sci., Sugarcane Res. Station, JAU, Kodinar
25.	Establishment of critical limit of Sulphur under garlic crop in medium black calcareous soils	Accepted with following suggestion/s : 1) Keep level of S as 0, 10, 20 and 40 PPM.	Prof. & Head, Dept. of Ag.Chem. & Soil Sci., JAU, Junagadh
26.	Establishment of critical limit of Sulphur under onion crop in medium black calcareous soils.	Accepted with following suggestion/s : 1) Keep level of S as 0, 10, 20 and 40 PPM.	Prof. & Head, Dept. of Ag.Chem. & Soil Sci., JAU, Junagadh
27.	Effect of zinc fertilization on wheat yield on sandy loam soil	Accepted with following suggestion/s : 1) Early dough stage instead of dough stage in treatment. 2) Add yellow berry in observation.	Res. Sci. (Dry Farming), JAU, Targhadia
	Navsari Agricultural University		
1.	Feasibility of drip irrigation in pigeon pea with and without mulch (*rabi*)	Accepted.	Res. Sci., SWMRU, NAU, Navsari
2.	Feasibility of drip irrigation in summer paddy	Accepted with following suggestion/s : 1) Unfilled grains/panicle - observation.	Res. Sci., SWMRU, NAU, Navsari
3.	Comparative performance of water soluble and routinely used fertilizer in banana (cv. Grand Naine) under drip irrigation	Accepted.	Res. Sci., SWMRU, NAU, Navsari

4.	Irrigation and fertilizer management through drip in r*abi* pigeon pea under oastal areas of South Gujarat	Accepted.	Res. Sci., SWMRU, NAU, Navsari
5.	Effect of manuring in organically grown garlic in coastal area of South Gujarat	Accepted.	Res. Sci., SWMRU, NAU, Navsari
6.	Effect of soil conditioners on yield and quality of organically grown turmeric in coastal area of South Gujarat	Accepted.	Res. Sci., SWMRU, NAU, Navsari
7.	Effect of irrigation and date of sowing on seed yield and components of *Salicornia* (*S. brachiata* Roxb.)	Accepted.	Res. Sci., SWMRU, NAU, Navsari
8.	Screening of different flower crops under coastal salt affected soils of South Gujarat (Feeler trial)	Accepted with following suggestion/s : 1) Feeler trial.	Res. Sci., SWMRU, NAU, Navsari
9.	Integrated weed management in castor	Accepted with following suggestion/s : 1) Bio assay study	Nodal Officer (Castor), Pulses Res. Station, Navsari
10.	Studies on intercropping of mung bean in castor	Accepted.	Assoc. Res. Sci., Pulses Res. Station, Navsari
11.	Spacing and nutrient management with and without VAM for greengram Cv. Co-4 during *rabi* season	Accepted.	Assoc. Res. Sci., Pulses Res. Station, Navsari
12.	Intercropping and planting geometry in relation to mechanization in sugarcane	Accepted.	Res. Sci., Sugarcane, NAU, Navsari
13.	Agronomical evaluation of promising sugarcane genotypes	Accepted.	Res. Sci., Sugarcane, NAU, Navsari
14.	Priming of cane node for accelerating germination	Accepted with following suggestion/s : 1) Add $CaCO_3$ and banana pseudostamp sap treatments.	Res. Sci., Sugarcane, NAU, Navsari
15.	Influence of preceding summer crops and integrated nutrient management to cotton crop for sustainable productivity and soil fertility	Accepted with following suggestion/s : 1) Recast title as "Influence of preceding summer crops and integrated nutrient management on cotton". 2) Add treatment as M_2 : 5 t FYM/ha + 500 kg CC/ha at 30 DAS.	Res. Sci., Cotton, MCRS, NAU, Surat
16.	Rice production technology (RPT) for profitable rice cultivation	Accepted.	Res. Sci., Rice, RRRS, NAU, Vyara
17.	Study on row spacing and intercropping in pigeonpea cv. Vaishali under rainfed condition	Accepted with following suggestion/s : 1) LER and grain equivalent yield observations.	Assoc. Res. Sci., NARP, NAU, Bharuch

18.	Effect of time of fertilizer application on flowering and yield of mango CV. Alphonso	Accepted with following suggestion/s : 1) Experiment to be present in Horti. Sub Committee.	Res. Sci., AES, NAU, Paria
19.	Efficacy of organic mulches on soil properties, growth and yield of mango cv. Kesar in rainfed ecosystem	Accepted with following suggestion/s : 1) Experiment to be present in Horti. Sub Committee**.**	Res. Sci., AES, NAU, Paria
20.	Response of pegionpea to different sowing methods and organic sources (cv. Vaishali)	Accepted with following suggestion/s : 1) Cooking time. 2) Heavy metal study.	Prof., ACHF, NAU, Navsari
21.	Effect of different organic sources on yield and quality of rice grown on certified organic farm	Accepted with following suggestion/s : 1) Apply RDF in control treatment.	Prof., ACHF, NAU, Navsari
22.	Effect of different organic sources on yield and quality of wheat grown on certified organic farm	Accepted.	Prof., ACHF, NAU, Navsari
23.	Effect of different cropping systems on physicochemical and biological properties of soils	Accepted with following suggestion/s : 1) Treatment $T_{10:}$ Teak. 2) Treatment $T_{13:}$ Kalam. 3) Treatment $T_{14:}$ Eucalyptus.	Prof., ACHF, NAU, Navsari
24.	Weed management in sugarcane under South Gujarat conditions	Accepted.	Prof., Dept. of Agron. NMCA, NAU, Navsari
25.	Response of black gram to integrated nutrient management under South Gujarat conditions	Accepted.	Prof., Dept. of Agron. NMCA, NAU, Navsari
26.	Effect of integrated nutrient management in rice – green gram cropping sequence under South Gujarat conditions	Accepted with following suggestion/s : 1) S_2 = 50 % RD (10:20:0 NPK kg/ha).	Prof., Dept. of Agron. NMCA, NAU, Navsari
27.	Effect of nipping and water management on productivity of irrigated chickpea	Acepted.	Training Organizer, KVK, NAU, Dediapada
28.	Intercropping in *rabi* sorghum var. BP-53 under conserved soil moisture conditions	Accepted with following suggestion/s : 1) Delete treatments T_8 and $T_{9.}$ 2) T_2 :Sole sorghum paired row sowing at 90 -45x20 cm.	Asstt. Res. Sci., ARS, Tanchha
	Sardarkrushinagar Dantiwada Agricultural University		
1.	Diversification of cropping system as a component of small holder farming systems	Accepted.	Res. Sci., AICRP on Integrated Farming Systems, Sardarkrushinagar

2.	Response of wheat to foliar spray of Fertilizer mixture	Accepted with following suggestion/s : 1) Feeler trial. T1: RDF (150-75-00 NPK kg/ha) T2: RDF + 1% foliar spray of fertile. mixture (19-19-19 NPK) T3: RDF + 2% foliar spray of Uria	Prof & Head, Dept. of Agronomy, CPCA, Sardarkrushinagar
3.	Chemical weed control in Grain Amaranths	Accepted.	Asso. Res. Sci., AICRN on Underutilized Crops, Sardarkrushinagar
4.	Comparative study of different *rabi* forage crops under north Gujarat agro climatic conditions	Accepted with following suggestion/s : 1) T6: Lucerne + Chicory (50% + 50% seed ratio). 2) Delete variety name.	Res. Sci., Forage Research Scheme, Sardarkrushinagar
5.	To assess the possibilities of high plant density in late sown Bt cotton with low nitrogen application	Accepted.	Res. Sci., Agril. Research Station, Talod
6.	Irrigation and nitrogen management to combat yellow berry incidence in wheat	Accepted.	Res. Sci., Centre of Excel. for Res. on Wheat, Vijapur
7.	Development of agro techniques for improved potato cultivars	Accepted with following suggestion/s : 1) Recast treatments i. e. N levels: 225, 275 and 325 kg/ha, P levels : 140 and 180 kg/ha, K levels : 225, 275 and 325 kg/ha. 2) Replication : 3 3) Recast title : Fertilizer management in potato	Res. Sci., Potato Research Station, Deesa
8.	Response of horse gram to row spacing and fertilizer doses in *kharif* season	Accepted with following suggestion/s : 1.Replication -3	Res. Sci., Centre of Excel. for Res. on Pulses, Sardarkrushinagar
9.	Effect of time of N application in clusterbean	Accepted. 1) AICRP Trial	Res. Sci., Centre of Excel. for Res. on Pulses, Sardarkrushinagar
10.	Effect of different weed management practices on *rabi* fennel and residual effect on succeeding crop	Accepted with following suggestion/s : 1) Title recast as " Effect of different weed management practices on rabi fennel and residual effect on succeeding green gram. 2) Bio assay study.	Res. Sci., Centre for Res. on Seed Spices, Jagudan

11.	Scheduling of irrigation and fertility levels on summer vegetable cowpea	Accepted.	Asso. Res. Sci., Agricultural Research Station, Ladol
12.	Weed management in fieldpea	Accepted with following suggestion/s : 1. Bio assay study.	Res. Sci., Centre of Excel. for Res. on Pulses, Sardarkrushinagar
13.	Integrated Weed Management in Greengram	Accepted with following suggestion/s : 1. Bio assay study.	Res. Sci., Centre of Excel. for Res. on Pulses, Sardarkrushinagar

HORTICULTURE/FORESTRY/AGRO-FORESTRY

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Effect of plant growth regulators on growth, flowering and flower yield of *D*eshi Red Rose (*Rosa damascena* L.)	Accepted with following suggestion/s : 1) Add 2 treatments of Cycocel i.e. 750 mg/l and 1000mg/l. 2) Correction in objective no. 2 "To see the effect of PGRs on shelf life of flowers".	Prof. & Head, BACA, AAU, Anand
	Junagadh Agricultural University		
1.	Effect of Boron and NAA on flowering, fruit set and yield of coconut (*Cocos nucifera* L.) cv. D x T	Accepted with following suggestion/s : 1) Delete the total no. flowers per spadix. 2) Mention the time of application.	Prof. & Head, Dept of Horticulture, JAU,Junagadh
2.	Evaluation of papaya selection along with check varieties	Accepted with following suggestion/s : 1) Delete days to fruit set. 2) Add the observation on cavity index.	Prof. & Head, Dept of Horticulture, JAU,Junagadh
	Navsari Agricultural University		
1.	Effect of fertilizer application on yield and quality of Sapota cv. Kalipati	Accepted with following suggestion/s : 1) Change in title " Effect of time of fertilizer application on yield and quality of Sapota cv. Kalipati. 2) Modify object no 2. 3) Correction in T6. 4) Physico-chemical parameters will be taken. 5) Soil analysis will be done before and after application of fertilization.	Res. Sci., RHRS,Navsari, Res. Sci., AES, Paria and Assoc. Res. Sci., FRS Gandevi
2.	Multilocation trial for custard apple (*Annona Squamosa* L.)	Accepted.	Res. Sci., RHRS, Navsari
3.	Effect of fertigation and mulching on growth, yield and quality of papaya cv. Red Leady Suggestion	Not approved - PG trial.	Res. Sci., RHRS, Navsari

4.	To study the effect of environment on behavior and structures of flowering, pollen and fruitset charecters in mango	Accepted with following suggestion/s : 1) Analysis will be done by t-Test. 2) Correlation will be calculated with temperature. 3) Delete design and replication.	Res. Sci., RHRS, Navsari
5.	Response of water soluble fertilizers in banana cv. Grand nain	Not approved- PG trial.	Res. Sci., RHRS, Navsari
6.	Effect of post-shooting foliar spray of fertilizers on banana cv. Grand Nain	Accepted with following suggestion/s : 1) Mention the contents of pouch feeding. 2) Correct the year of Experiments.	Res. Sci., RHRS, Navsari
7.	Varietal evaluation of papaya under South Gujarat conditions	Accepted with following suggestion 1) Spacing will be 2.0 mX2.0 m instead of 2.4 m X 1.5 m.	Res. Sci., RHRS, Navsari
8.	Hybridization of mango	Accepted.	Res. Sci., RHRS, Navsari
9.	Effect of temperature regimes on flowering of mango cv. Alphonso	Accepted with following suggestion/s : 1) Five replication will be taken. 2) Calculate no. of hermaphrodite flowers.	Res. Sci., RHRS, Navsari
10.	Seasonal influence on nutritional and physiological changes associated with flowering and fruiting behavior in mango	Accepted with following suggestion/s : 1. Correlation will be worked out with weather parameter.	Res. Sci., RHRS, Navsari
11.	Effect of de-blooming on different mango varieties having tendency of off season flowering	Accepted.	Res. Sci. AES, Paria
12.	Effect of time and fertilizer dose on flowering and yield of mango cv. Alphonso	Accepted.	Res. Sci. AES, Paria
13.	Efficacy of organic mulch on soil properties, growth and yield of mango cv. Kesar in rain fed wcosystem	Accepted.	Res. Sci. AES, Paria
14.	Evaluation of some guava varieties under South Gujarat Condition	Accepted with following suggestion/s : 1) Maintain Mrug Bahar treatments. 2) Add Bhavnagar Red variety.	Res. Sci. AES, Paria
15.	Comparative assessment of some Jackfruit genotypes under, South Gujarat agro- climatic conditions	Accepted.	Res. Sci. AES, Paria
16.	Study of Genetic Variability in Jamun from South Gujarat	Accepted.	Res. Sci. AES, Paria
17.	Evaluation of Bael verities under, South Gujarat agro-climatic conditions	Accepted.	Res. Sci. AES, Paria

18.	Effect of integrated nutrient management on growth, yield and quality of papaya(*Carica papaya* L.) cv. Taiwan Red lady	Not approved –PG trial	Res. Sci., RHRS, Navsari
19.	Effect of biofertilizers on soil health and fruit yield of mango cv. Kesar	Accepted.	Prof. & Head, Plant Patho., NMCA, Navsari.
20.	Study of *WADI YOJANA* with revised model in the Dangs	Accepted.	Programme Co-ordinator, KVK, waghai.
21.	Foliar application of nutrients on Cashew (Anacardium occidentale L.) Cv. Vengurla-4 with reference to growth, yield and quality	Not approved-PG trial	Res. Sci., RHRS, Navsari
22.	Utilization of CMS system to develop hybrids in chilli (*Capsicum annuum* L.)	Accepted.	Res. Sci., Vegetable, RHRS, Navsari
23.	PET (Preliminary Evaluation trial) on tomato	Accepted.	Res. Sci., Vegetable, RHRS, Navsari
24.	Screening for resistance to Fusarium wilt in tomato varieties	Accepted.	Res. Sci., Vegetable, RHRS, Navsari
25.	Grafting technology- A novel approach for commercial cultivation of muskmelon (*Cucumis melo* L.) cv. Bobby	Accepted with following suggestion/s : 1) Calculate sex ratio.	Res. Sci., Vegetable, RHRS, Navsari
26.	Performance of greater yam (*Dioscorea alata* L.) under different stacking systems	Accepted.	Res. Sci., Vegetable, RHRS, Navsari
27.	Integrated nutrient management (INM) for tomato (*Lycopersicon esculantum* L.) cv. Gujarat Tomato-2	Not approved - PG trial	Res. Sci., Vegetable, RHRS, Navsari
28.	Effect of irrigation levels and mulching on growth and yield of tuberose (*Polianthes tuberosa*) var. Prajwal	Accepted with following suggestion/s : 1. Add one treatment I5-flood irrigation and remove control. 2. Mulch will be done 1st year only.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari
29.	Effect of bending, GA_3, cow urine and banana pseudo stem sap on Rose (*Rosa hybrida* L.) cv. First Red, Shakira and Poison under polyhouse conditions	Accepted with following suggestion/s : 1) Add stalk length instead of stem length. 2) Remove treatment T-9.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari
30.	Efficacy of foliar nutrients in orchid Cv. Sonia Red	Accepted with following suggestion/s : 1) Use enriched banana psuedostem sap for treatment O-2.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari

31.	Standardization of Post Harvest Technology of Spiderlily for distant Market	Accepted.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S.,
32.	Morphological, physiological and biochemical variability study in different varieties of gerbera (*Gerbera jamesonii*) grown under polyhouse	Not approved. PG-trial	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari
33.	Effect of different growing conditions on growth and flowering of heliconia varieties	Accepted with following suggestion/s : 1) Treatment combination is 16 instead of 20.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari
34.	Effect of saline irrigation water on growth and yield of some bulbous flowering crops	Accepted with following suggestion/s : 1) Remove treatment S-7. 2) Correct the spelling in tax. 3) Remove kg/ha in flower yield observation and add kg/pot.	Prof. & Head, Floriculture Research Farm, ACHF, NAU S., Navsari
35.	Development of technology for dehydration of onions rings for adoption at commercial scale	Accepted with following suggestion/s : 1) Remove factorial concept in expt-II.	Incharge, Dept PHT, ACHF, Navsari
36.	Development of technology for dehydration of cauliflower for adoption at commercial scale	Accepted with following suggestion/s : 1) Remove factorial concept in expt-II.	Incharge, Dept PHT, ACHF, Navsari
37.	Development of technology for dehydration of okra slices for adoption at commercial scale	Accepted with following suggestion/s : 1) Remove factorial concept in expt-II.	Incharge, Dept PHT, ACHF, Navsari
38.	Qualitative analysis of Mango (Kesar and Alphanso)	Accepted.	Prof. & Head, Dept of Foodquality, NAU, Navsari
39.	Nutritional evaluation of Okra (cv. Parbhani kranti, GO-2) and Brinjal (cv.Surati ravaiya)	Accepted.	Prof. & Head, Dept of Foodquality, NAU, Navsari
40.	Feasibility of organic farming in tomato cv.Junagadh Tomato -3	Accepted with following suggestion/s : 1) Following observations will be taken: Plant Spreading, Days to first flowers, Crop duration, No of fruits/plant, Fruit length, fruit diameter, Moisture content and Dry mater yield of fruit, incidence of Pest and Disease, Fruit quality Parameter.	Prof. & Head (Agril. Chem & Soil Sci.), ACHF, N.A.U., Navsari
41.	Clonal Evaluation of Eucalyptus for growth and physiological characters	Accepted.	Prof. & Head (FBTI), ACHF, N.A.U., Navsari
	Sardarkrushinagar Dantivada Agricultural University		

1.	Varietal evaluation of Garlic (*Allium sativum* L.) under north Gujarat condition	Accepted with following suggestion 1) Sprouting % during storage is to be recorded.	Prof. & Head, Dept of Hort. SDAU
2.	Effect of different levels of Nitrogen and methods of application on growth, yield and quality of Garlic (*Allium sativum* L.*)*	Accepted with following suggestion 1) Sprouting % during storage is to be recorded. 2) Delete N-0 treatment. 3) Take Agrifound-White variety instead of Local.	Prof. & Head, Dept of Hort. SDAU
3.	Performance of different varieties in different seasons on growth, yield and quality of okra (*Abelmoschus esculentus* L. Moench)	Accepted with following suggestion 1) Experiment is to be conduct as two separate experiment i.e. Rainy and Summer season.	Prof. & Head, Dept of Hort. SDAU
4.	Collection, evaluation and selection of pomegranate germplasms	Accepted.	Principal, college of Horticulture, SDAU
5.	Effect of spacing and nitrogen fertilizer on growth and yield of marigold	Accepted with following suggestion 1) Take 60 cm X 60 cm spacing instead of 45 cm x 30 cm. 2) 50% dose of nitrogen as basal and remaining in two equal split at 30 and 45 DAT.	Asso. Res. Sci., FRS, Dehgam, SDAU
6.	Evaluation of different varieties of tomato (*Lycopersicon esculantum* Mill) under naturally ventilated poly house conditions	Accepted with following suggestion 1) Take pair row system 120 cm x 60 cm x 45 cm. 2) Plot size change as per spacing. 3) Delete observations of no of branches per plant and Days taken at 50 % flowering. 4) Delete Pusa Ruby and Aviskar and replace Indo American 553 and Shaktiman. 5) Experiment will be taken at two location i.e. Jagudan and Ladol.	Res. Sci. Center for Res. on Seed spices, SDAU, Jagudan & Asso. Res. Sci. ARS, Ladol, SDAU
7.	Evaluation of different varieties of Bell Pepper (*Capsicum annum* L.) under naturally ventilated polyhouse conditions.	Accepted with following suggestion 1) Take pair row system 120 cm x 60 cm x 45 cm. 2) Plot size change as per spacing. 3) Experiment will be taken at two location i.e. Jagudan and Ladol.	Res. Sci. Center for Res. on Seed spices, SDAU, Jagudan & Asso. Res. Sci. ARS, Ladol, SDAU

PLANT PROTECTION

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
	AGRICULTURAL ENTOMOLOGY		
1.	Bioefficacy of newer insecticides against *Spodoptera litura* (Fabricius) infesting castor	Accepted with following suggestion/s : 1) Plot size is required to be verified.	Prof. & Head, Dept. of Entomology, BACA, AAU, Anand
2.	Demonstration of Bio-Intensive Pest Management (BIPM) practices in Tomato	Accepted with following suggestion/s : 1) IPM module is required to be included. 2) Quadrates should be 10 instead of 5.	Principal Res. Sci., Biocontrol Research Laboratory, AAU, Anand
3.	Monitoring the Effect of Farming Activity on the Breeding Performance of Lapwings	Accepted.	Res. Sci. (Ornithology), AAU, Anand
4.	Avian community structure in mustard and Cabbage crops	Accepted.	Res. Sci. (Ornithology), AAU, Anand
5.	Screening of Mustard (*Brassica junceae*) genotypes against aphids and sawfly	Accepted.	Prof. & Head, Dept. of Entomology, BACA, AAU, Anand & Prof. & Head, Dept. of Agril. Botany, AAU, Anand
6.	Screening of Brassica sp. against aphids and Sawfly	Accepted.	Prof. & Head, Dept. of Entomology, BACA, AAU, Anand & Prof. & Head, Dept. of Agril. Botany, AAU, Anand)

7.	Bioefficacy of insecticides against pod borer of greengram	Accepted with following suggestion/s : 1) 'Legume' word should be removed from the title. 2) Observation of all pod borers damage should be recorded. 3) For Label expansion add two dose of the treatments after referring CIB guidelines and required to consult Dr.P.G. Shah, AAU, Anand. 4) Rynaxypyr name should be replaced with Chlorantraniliprole 18.5%SC.	Asstt. Res. Sci. (Ento.), Pulse Research Station, Vadodara
8.	Bio-efficacy of insecticides against pigeonpea pod fly	Accepted with following suggestion/s : 1) Observation on pod borer damage and count should be recorded. 2) Title to be revised as : Bio-efficacy of insecticides against pigeonpea pod fly and pod borer. 3) Remove Treatment No. 1, 3 and 4.	Asstt. Res. Sci. (Ento.), Agril. Research Station, Derol
	PLANT PATHOLOGY		
1.	Screening of Mustard genotypes against white rust and powdery mildew.	Accepted with following suggestion/s : 1. Design of the experiment should be finalized in consultation with the statistician.	Prof. & Head, Dept. of Plant Pathology and Prof. & Head, Dept. of Agril. Botany, AAU, Anand
2.	Screening of *Brassica* sp. against white rust and powdery mildew	Accepted.	Prof. & Head, Dept. of Plant Pathology and Prof. & Head, Dept. of Agril. Botany, AAU, Anand
3.	Management of Bean Common Mosaic Virus in mungbean vis-à-vis its vector (Aphid) through insecticides	Accepted.	Prof. & Head, Dept. of Plant Pathology, AAU, Anand
4.	Evaluation of biocontrol agents against wilt/root rot of chickpea in micro plot	Not accepted. **Note:** This experiment should be conducted as feeler trial in the sick plot.	Prof. & Head, Dept. of Plant Pathology, AAU, Anand
5.	Survival and rhizosphere colonization of *Trichoderma* spp. in the crops and efficacy of the bioagents against soil borne pathogens *in vitro.*	Not accepted. **Note:** This experiment should be conducted as feeler trial in the sick plot.	Prof. & Head, Dept. of Plant Pathology, AAU, Anand

6.	Nematode biodiversity, identification of hot spots and pest free areas for economically important plant parasitic nematodes.	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
7.	Impact of economically important nematodes population in identified hot spots on crop yield and estimation of avoidable yield loss in experimental plot under different agro-climatic conditions.	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
8.	Management of Major Nematode Pests of Vegetable Crops	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
9.	Evaluation of bio-pesticide, P*aecilomyces lilacinus* for the management of root knot nematodes (*Meloidogyne* spp.) in brinjal.	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
10.	Screening, confirmation and field evaluation of promising resistant germplasm of pulses against *Meloidogyne* spp.	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
11.	Management of root-knot nematodes by crop rotation in mung	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
12.	Management of major nematode pests of oilseeds and fibre crops	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
13.	Effect of organic amendments and biocontrol agents in citrus against *Meloidogyne indica*	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
14.	Management of nematodes on banana by using bioinoculants	Accepted.	Prof. & Head, Dept. of Nematology, AAU, Anand
15.	Effects of different period of seeding on occurrence of root knot disease in bidi tobacco nursery	Accepted.	Res. Sci., (Plant Pathology), BTRS, Anand
16.	Management of *Alternaria* leaf blight of wheat	Not approved Note: As there are no such incidence reported in the state.	Asstt. Res. Sci., (Plant Pathology), RRS, AAU, Anand)

	Junagadh Agricultural University		
	AGRICULTURAL ENTOMOLOGY		
1.	Management of sucking pests through seed treatments in cluster bean	Accepted with following suggestion/s : 1) T_7 : Replacement of Fipronil with Carbosulfan 25SD @ 30g/kg seed suggested. 2) T_8 : Replacement of Fipronil with Carbosulfan 25SD @ 60g/kg seed suggested. 3) Blanket spray of recommended systemic insecticides other then the seed treated insecticides suggested for the control of sucking pests at later stage. 4) The observation of sucking pests should be taken up to 45 days at weekly interval.	Prof. & Head, Dept. of Entomology JAU, Junagadh
2.	Field efficacy of newer insecticides against sucking pests of cumin	Accepted.	Prof. & Head, Dept. of Entomology JAU, Junagadh
3.	Efficacy of newer insecticides against pod borers of cowpea	Accepted with following suggestion/s : 1. Plot size should be mentioned. 2. Clorantraniliprole name should be replaced with Rynaxypyr.	Prof. & Head, Dept. of Entomology JAU, Junagadh
4.	Management of sucking pests through seed treatment in mustard	Accepted.	Res. Sci., Main Oil Seeds Research Station, JAU, Junagadh
5.	Effect of interval of insecticidal application on storability of wheat seed under ambient condition	Accepted.	Res. Sci., Millet Research Station, JAU, Jamnagar
6.	Effect of interval of insecticidal application on storability of mungbean seed under ambient condition	Accepted.	Res. Sci., Millet Research Station, JAU, Jamnagar
7.	Evaluation of some newer insecticides against leaf webber (*Antigastra catalaunalis*, Duponchal) infesting sesame under rainfed condition	Accepted.	Res. Sci., Main Dry Farming Research Station, JAU, Targhadia
8.	Insecticidal selectivity towards sucking pests and their natural enemies in *Bt* cotton	Accepted.	Res. Sci., Cotton Research Station, JAU, Junagadh
9.	Incidence of insect pests of chickpea throughout the cropping period and monitoring of pod borer moths using pheromone traps	Accepted.	Res. Sci., Pulse Research Station, JAU, Junagadh

10.	Identification of suitable pheromone blends for *Helicoverpa*	Accepted.	Res. Sci., Pulse Research Station, JAU, Junagadh
11.	Evaluation of different chickpea varities to bruchid damage in storage	Accepted.	Res. Sci., Pulse Research Station, JAU, Junagadh
12.	Storage study of mechanically damage wheat harvested by combine harvester	Accepted.	Res. Sci., PHT, CEAT, JAU, Junagadh
	PLANT PATHOLOGY		
1.	Evaluation of promising groundnut genotypes against Alternaria leaf blight	Accepted.	Res. Sci., Main Oil Seeds Research Station, JAU, Junagadh
2.	Management of groundnut diseases through organic practices for organic cultivation	Accepted.	Res. Sci., Main Oil Seeds Research Station, JAU, Junagadh
3.	Management of *Aspergillus flavus* and aflatoxin contamination in groundnut through cropping sequence	Accepted with following suggestion/s : 1) Treatment of Groundnut (*Kharif*)-Bajra (summer), should be included.	Res. Sci., Main Oil Seeds Research Station, JAU, Junagadh
4.	Management of flower-seed stalk blight (*Alternaria porri)* in seed production (Onion)	Accepted.	Res. Sci., Vegetable Research Station, JAU, Junagadh
5.	Integrated management for root diseases of chickpea Approved with following suggestions	Accepted with following suggestion/s : 1) Following treatments need to be added. a). T1 + Soil application of T.hargianum @ 4kg/ha at the time of Sowing. b). T2 + Soil application of T.hargianum @ 4kg/ha at the time of Sowing.	Res. Sci., Pulse Research Station, JAU, Junagadh
6.	Efficacy of different bio-control agents against cumin wilt caused by *Fusarium oxysporum* f.sp. *cumini*	Accepted with following suggestion/s : 1) Soil instead of sand should be used for the respective treatment. 2) Replacement of seed treatment of fungicides with T.hargianum @ 10g/kg seeds in all the treatment. 3) Observation to be recored on population of Fusarium, P. fluorescens from all treatments. 4) Seed rate: 12kg/ha instead of 18 kg/ha.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh

7.	Compatibility of SAWAJ-Trichoderma with different fungicides for the management of cumin wilt caused by *Fusarium oxysporum* f. sp. *cumini*.	Accepted with following suggestion/s : 1) Change Title as: "Effect of foliar application of fungicide in Cumin on Tricoderma applied in soil". 2) Remove Treatments T1 and T6 sole application. 3) Three sprays at 35, 50 and 65 days in T3 and T4 instead of four sprays. 4) Soil application of T.hargianum as per T5 in T2, T3 andT4. 5) Take observation on Trichoderma population Initialy, 15days after first spray and 15 day after last spray.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh
8.	Compatibility of SAWAJ-Trichoderma with different herbicides for the management of cumin wilt caused by *Fusarium oxysporum* f.sp. *cumini*	Accepted with following suggestion/s : 1) Change Title as: "Effect of foliar application of herbicide in Cumin on Tricoderma applied in soil". 2) Remove Treatments T1, T2. T3 and T4 sole application. 3) Redeviez plot size.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh
9.	Compatibility of SAWAJ-Trichoderma with different insecticides for the management of cumin wilt caused by *Fusarium oxysporum* f. sp. *cum*	Accepted with following suggestion/s : 1) Change in Title as: "Effect of foliar application of insecticide in Cumin on Trichoderma applied in soil". 2) Remove Treatments T1 and T4 sole application. 3) Two spray of respective insecticides at umbel formation and seed seting in T2 and T3 suggested. 4) Observation on insect-pest to be recorded. 5) Initial observation on Trichoderma population, 15days after first spray and 15 day after the last spray.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh

10.	Efficacy of bio-control agents against stem and pod rot of groundnut caused by *Sclerotium rolfsii*	Accepted with following suggestion/s : 1) Change Title as: "Standardization of method and time of application of bio-control agent for the management of stem and pod rot of groundnut caused by *Sclerotium rolfsii*. 2) Replace Seed treatment of fungicides with *T. harzianum* @ 10gm/kg seeds in all treatment.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh
11.	Compatibility of SAWAJ-Trichoderma with different seed dressing agrochemicals used for the management of diseases in groundnut	Accepted with following suggestion/s : 1) Take seed treatment of SAVAJ Trichoderma @ 10g/kg seed instead of 5g/kg seed in T_1. 2) Take observation for initial Trichoderma population, germination per cent and total plant stand at harvest.	Prof. & Head, Dept. of Plant Pathology, JAU, Junagadh
	Navsari Agricultural University		
	AGRICULTURAL ENTOMOLOGY		
1.	Dispersal of *Trichogramma chilonis* (Hymenoptera: Trichogrammatidae) in sugarcane field	Accepted with following suggestion/s : 1) Design: Large plot size instead of CRD. 2) Treatment: 5 should be deleted. 3) Repetition: 4 instead of 3. 4) Treatment No. (IV) 15m from release point instead of 14m.	Prof. & Head, Dept. of Entomology, NAU, Navsari
2.	Relative toxicity of various insecticides against rice gundhi bug egg parasitoids	Accepted with following suggestion/s : 1) Design: CRD 2) Repetition - 4 3) Not necessary to do residue analysis.	Prof. & Head, Dept. of Entomology, NAU, Navsari
3.	Seasonal incidence and pest activity of carnation mite, *Tetranychus urticae* under polyhouse	Accepted.	Prof. & Head, Dept. of Entomology, NAU, Navsari
4.	Screening of carnation cultivators for their resistance to *Tetranychus urticae*	Accepted.	Prof. & Head, Dept. of Entomology, NAU, Navsari
5.	Chemical control of carnation mite, *Tetranychus urticae* under polyhouse conditions	Accepted.	Prof. & Head, Dept. of Entomology, NAU, Navsari

6.	Role of antibiotics in mulberry silkworm, *Bombyx mori* L. rearing	Accepted with following suggestion/s : 1) Refer review of literature to fixed dose of antibiotics. 2) Replace DLF to DFL. 3) Add control treatment.	Prof. & Head, Dept. of Entomology, NAU, Navsari
7.	Study on the relative bio-efficacy of some insecticides against pests of Indian bean	Accepted with following suggestion/s : 1) Combination of treatment no. 1,2 and 6 with rest of treatments along with absolute control. 2) Dose g. a.i./ha as per CIB guidelines. 3) Observation methodology: Replace ETL with initiation of incidence of pest. 4) Residue analysis of effective treatments will be carried out.	Associate Professor, ACHF, NAU, Navsari
8.	Population dynamics of *Helicoverpa armigera* through pheromone trap in tomato	Accepted with following suggestion/s : 1) Five Pheromone traps/ha instead of 12.	Associate Professor, ACHF, NAU, Navsari
9.	Survey of insect Pests in medicinal and aromatic plants	Accepted with following suggestion/s : 1) Write English name or botanical name of the medicinal and aromatic plants.	Associate Professor, ACHF, NAU, Navsari
10.	Residues of some insecticides in/on Indian bean pod.	Accepted with following suggestion/s : 1) Treatments : Imidacloprid 17.8SL, Thiamethoxam 25WG, Novaluron 10EC, Indoxacarb 15.5EC, Spinosad 45SC, Acetamiprid 20SP, Flubendiamide 48SC, Control **Note:** Dose of the above treatments will be finalized as per the CIB guideline. 2) Spraying of insecticides at 50% flowering and 50% pod formation stage. 3) Residue analysis will be carried out periodically for all the insecticides.	Assistant Professor, ACHF, NAU, Navsari
11.	Status of residues of insecticides in/on Indian bean after *Ubadia* preparation.	Accepted with following suggestion/s : 1) Use only Indian Bean pods for Ubadia preparation. 2) Methodology: Mention the limit of detection, quantification and of chromatograms.	Assistant Professor, ACHF, NAU, Navsari

12.	Residue and dissipation pattern of indoxacarb, bifenthrin, fipronil and novaluron in okra and brinjal	Approved with following suggestions: 1) Recast as per CIB registration of pesticide format. 2) For recommended insecticides, only recommended dose is required and for the rest, lower and higher dose should be followed. 3) Method of sampling: Okra/brinjal take 500 g for analysis. 4) Control sample will be collect one day advance. 5) MRL is required for fixing PHI and if not available, LOQ should be used.	Professor, Food Quality Testing Laboratory, NAU, Navsari
13.	Status of insecticide residue in farm-gate samples of okra, brinjal and chilli.	Accepted.	Professor, Food Quality Testing Laboratory, NAU, Navsari
14.	Monitoring of pesticide residue in market samples of okra and brinjal.	Accepted with following suggestion/s : 1) Sample will be collected at every month. 2) Sample will be collected from two vendors, one kg from each. 3) Scope of analysis: organochlorines, Organophosphate and synthetic pyrethroids.	Professor, Food Quality Testing Laboratory, NAU, Navsari
15.	Quality and safety aspects of the drinking water of Navsari and surroundings	Accepted with following suggestion/s : 1) Title should be “Evaluation of drinking water of Navsari and surrounding area”. 2) Objective: Replace biochemical word with chemical. 3) Fill the water sample in 2.50 l glass bottle for analysis. 4) Obtain detail guidelines from AAU, Anand from concerned person. 5) Add objective No. 7: pesticide residues. 6) Collect the sample once in every season. 7) If source of drinking water is bore-well, note the depth.	Professor, Food Quality Testing Laboratory, NAU, Navsari

16.	To analyze the microbial contaminant and adulteration in milk.	Accepted with following suggestion/s : 1) Experiment will be conduct as a filler trial for the first year. 2) Collect the milk sample from local vendors and LRS Dairy, NAU, Navsari only. 3) Sample will be collect from the middle of Winter, Monsoon and summer season. 4) Sample should be collect as 500 ml for each time.	Professor, Food Quality Testing Laboratory, NAU, Navsari
17.	Isolation and identification of lactic acid bacteria and their various biochemical activities	Accepted with following suggestion/s : 1) In experiment detail, Mention fermented food product like Khaman and Dhokla.	Professor, Food Quality Testing Laboratory, NAU, Navsari
18.	Study the population dynamics of important insect pests of sapota	Accepted.	Assistant Professor, Polytechnic in Agriculture, Bharuch
19.	Monitoring of fruit fly in mango orchard	Accepted with following suggestion/s : 1) Methodology: Mention weekly interval instead of fortnight.	Assistant Professor, Polytechnic in Agriculture, Bharuch
20.	Monitoring of fruit borer in *Ber* orchard	Accepted with following suggestion/s : 1) Fruit fly should be added in title and objective. 2) Record the observation of fruit fly and fruit borer.	Assistant Professor, Polytechnic in Agriculture, Bharuch
21.	Evaluation of newer insecticides against chiku moth, *Nephopteryx eugraphella*	Accepted with following suggestion/s : 1) In title remove the ‘newer’ word. 2) Change the objective as find out the effective insecticide for control of Chiku moth.	Assistant Professor, Polytechnic in Agriculture, Bharuch
	PLANT PATHOLOGY		
1.	Effect of biofertilizers on soil health and fruit yield of mango cv. Kesar	Accepted with following suggestion/s : 1) NPK and Microbial analysis will be done before the start and 1 year after experiment. 2) Observation to be recorded: Mention PDI of mango disease.	Prof. & Head, Dept. of Plant Pathology, N.A.U., Navsari

2.	Incubation studies of Phosphate Solubilizing microorganisms from coastal, saline and sodic soil for managing soil health.	Accepted with following suggestion/s : 1) Change the title of experiment and write the quantification of Phosphate solubilize microorganism of different isolate in sterilized and un sterilized soil. 2) Microbial population of sterilized and unsterilized soil will be done before and after experiment.	Prof. & Head, Dept. of Plant Pathology, N.A.U., Navsari
3.	Isolation of chitinase producing microorganisms from south Gujarat region and testing its efficacy against soil borne pathogenic fungi	Accepted with following suggestion/s : 1) Title should be : Isolation of chitinase producing microorganisms from soil of south Gujarat region and testing its efficacy against soil borne pathogenic fungi. 2) Objective: Add isolation of Chitinase producing in place to screen Chitinase producer.	Prof. & Head, Dept. of Plant Pathology, N.A.U., Navsari
4.	Isolation of important microorganisms in biodegrading crop residues	Accepted with following suggestion/s : 1) Experiment detail: Add selective media in place of special media. 2) Collect the sample from Sugarcane waste, Rice waste, Banana waste and Manure pit.	Prof. & Head, Dept. of Plant Pathology, N.A.U., Navsari
5.	Detection of fungal pathogen from forest tree seed *in vitro*	Accepted with following suggestion/s : 1) Observation of insect and mite should be recorded with the help of entomologist.	Associate Professor, Dept. of Plant pathology, ACHF, NAU, Navsari
6.	Dynamics of diseases in gerbera(*Gerbera jamesonii* Adlam) under protected cultivation	Accepted.	Assistant Professor, Dept. of Plant pathology, ACHF, NAU, Navsari
7.	Screening and developing of Sterility Mosaic Disease resistant genotypes from segregating materials	Accepted with following suggestion/s : 1) Title should be changed: Screening of Sterility Mosaic Disease resistant lines from segregating materials of Pigeonpea. 2) Replace word variety or genotypes with lines.	Assistant Professor, NARP, Bharuch
8.	Molecular diagnosis and differentiation of papaya ring spot virus isolates	Accepted.	Asstt. Res. Sci., Fruit Research Station, N.A.U., Gandevi

9.	Molecular diagnosis and differentiation of papaya leaf curl virus isolates	Accepted.	Asstt. Res. Sci., Fruit Research Station, N.A.U., Gandevi
10.	Prevalence and Extent of yield losses due to stem rot and crown rot diseases of Groundnut in Tapi District	Accepted.	Asstt. Prof., Regional Rice Research station, N.A.U., Vyara
	Sardarkrushinagar Dantiwada Agricultural University		
	AGRICULTURAL ENTOMOLOGY		
1.	Evaluation of IPM modules against shoot and fruit borer, *Leucinodes orbonalis* in brinjal	Accepted with following suggestion/s : 1) Achook, being trade name should be replaced with the common name. 2) Neem based formulation 1500 ppm. 3) Lure will be changed at 15 to 20 days interval. 4) 10 traps/ha. 5) Minimum 5 plants/quadrate required. 6) Delete DDVP application. 7) Delete treatment of Bt.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
2.	Bio-efficacy of certain newer molecules of insecticides against sucking pests Infesting fenugreek	Accepted with following suggestion/s : 1) Title should be changed: Evaluation of some insecticide molecules against sucking pest infesting fenugreek. 2) Achook, being trade name should be replaced with the common name. 3) Neem base formulation 1500 ppm. 4) Plot size: gross: 3.6 x 2.7 m^2; net: 3.40 X 2.40 m^2 6) Spacing: 30 cm.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
3.	Management of termite in fenugreek through intercropping	Accepted.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
4.	Management of termite in isabgul through intercropping	Accepted.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
	PLANT PATHOLOGY		

1.	Bio-efficacy study of Pyraclostrobin 133 g + Epoxyconazole 50 g/l SE(Opera 18.3 % SE) against Alternaria blight and powdery mildew of cumin	Not Approve due to other Agency Trial	Prof. & Head, Dept. of Plant Pathology, CPCA, SDAU, Sardar Krushinagar
2.	Management of blight in cumin through new molecules of fungicides	Accepted with following suggestion/s : 1) Title should be changed: Evaluation of some fungicidal molecules against cumin blight for label expansion. 2) Spraying should be at 35, 45 and 55 DAG, as foot-note. 3) Remove T7, Chlorothalonil 75% WP. 4) "Note" should be removed. 5) Remove trade names from the treatments. 6) Mention the dose as a.i./ha. 7) Spray schedule,First spray at the initiation of disease or 35 days, whichever is earlier.	Asstt. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
3.	Management of Ramularia blight in fennel by new molecules of fungicide	Accepted with following suggestion/s : 1) Title should be: Evaluation of some fungicidal molecules against Ramularia blight in fennel for label expansion. 2) Remove treatment no. 1, 5, 7 and 8. 3) Treatment No. 2, 3, 4, 6, and 9 should have lower and higher Dose as per CIB guideline take 2 to 4 dose and 9 to 10. 4) Observation should be taken before spray, 5 days after each spray and at harvest.	Asstt. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan

4.	Management of Bacterial blight of Cluster bean cv. Pusa Navbahar	Accepted with following suggestion/s : 1) Residue analysis not required. 2) Observation should be taken before spray, 5 days after each spray and at harvest. 3) Treatment no. 2: Streptocycline 250 ppm for 30 minutes instead of 15 minutes and remove 2nd spray of Streptocycline @ 100 ppm after 15 days if needed. 4) Treatment no. 3: Streptocycline 250 ppm for 30 minutes instead of 15 minutes and Streptocycline 150 ppm + 0.2% copper hydrochloride. Remove 2nd spray of Streptocycline @ 150 ppm after 15 days after 1st spray if needed. 5) A treatment of (Streptomycin sulphate 9% + Tetracycline hydrochloride 1%)SP, the dose should be as per the CIB recommendation-kindly refer the document.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan
5.	Effect of date of sowing on the development of Bacterial blight of Cluster bean Cv. Pusa Navbahar	Accepted with following suggestion/s : 1) Remove the date of sowing: 2nd week of July. 2) Add 3rd week of August for date of sowing. 3) Observation will be recorded at weekly interval starting from 1 week of germination till harvest of crop.	Assoc. Res. Sci., Centre for Res. on Seed Spices, SDAU, Jagudan

AGRICULTURAL ENGINEERING

Sr. No.	Title	Suggestions	Action to be taken by
	Junagadh Agricultural University		
1.	Extraction of enzymes from potato peels substrate using bacillus group of bacteria	Accepted.	Prof. & Head, Dept. of APE, CAET, JAU, Junagadh
2.	Development of sapota cleaner	Accepted with following suggestion/s : 1) Replace 'grading efficiency' with 'cleaning efficiency' 2) Coconut fiber as abrasive material to be included as additional treatment. 3) The cost economics to be worked out.	Prof. & Head, Dept. of APE, CAET, JAU, Junagadh
3.	Extraction of pectin from Kesar mango peel by resins	Accepted.	Prof. & Head, Dept. of APE, CAET, JAU, Junagadh
4.	Storage study of mechanically damaged wheat harvested by combine harvester	Accepted.	Prof. & Head, Dept. of APE, CAET, JAU, Junagadh
5.	Evaluation of usefulness of an exhibition of College of Agricultural Engineering and Technology by the visitors	Accepted.	Prof. & Head, Dept. of Agril. Engg. Ext. Edu., CAET, JAU, Junagadh
	Navsari Agricultural University		
1.	Testing and modification of sugarcane planter	Accepted.	Associate Prof. & Head, Dept. of AE, NMCA, NAU, Navsari
2.	Study on levels of N and intra-row spacing on yield of drip irrigated castor (*rabi*)	Accepted.	Res. Sci., SWMRU, NAU, Navsari
3.	Rainfall Analysis of Dediapada Taluka of Narmada District (Gujarat)	Accepted.	Assoc. Prof. & Principal, PAE, NAU, Dediapada
4.	Performance Evaluation of Box Type Solar Cooker cum collector for Dediapada, Narmada	Not accepted in present format. 1) Reformulate the study in consultation with SPRERI/RERE, CAET, JAU, Junagadh.	Assoc. Prof. & Principal, PAE, NAU, Dediapada

BASIC SCIENCE/PLANT PHYSIOLOGY/BIO-CHEMISTRY/BIO-TECHNOLOGY/ HUMANITIES

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Screening of drought tolerance genotypes using PEG 6000 in bidi tobacco under laboratory condition	Accepted.	BTRS, AAU, Anand
2.	Influences of harvesting stages and chemical treatments on brinjal for seed quality	Accepted with following suggestion/s : 1) All the observations except observation sr. no. 1, 2 & nursery count should be recorded at 48 hrs interval upto 12 days.	Vegetable (Physiology), AAU, Anand
3.	Biochemical studies at different growth period in Safed Musli (*Chlorophytum borivilianum*)	Accepted.	M & AP, AAU, Anand
4.	Development of micropropagation protocol for *Chlorophytum borivilianum* (Safed Musli)"	Accepted.	Agril. Biotechnology, AAU, Anand
5.	Technology development for Mass multiplication of Bamboo using Tissue culture"	Accepted.	Agril. Biotechnology, AAU, Anand
6.	Technology Development for Micropropagation of Indian sandalwood (*Santalum album* L.)"	Accepted.	Agril. Biotechnology, AAU, Anand
7.	Survey and Collection of Sandalwood and Saffron germplasm	Accepted.	Agril. Biotechnology, AAU, Anand
8.	Effect of Benzyladenine (BA) on water deficit stress in wheat seedlings	Accepted.	Dept. of Biotechnology, AAU, Anand
9.	Response of different paddy varieties against Rice moth *Corcyra cephalonica* (Stainton) infestation	Accepted. In future, such programmes may also be presented in Entomology/Crop protection group	Seed Sci. Tech., Dept. of Botany, AAU, Anand
10.	Seed health status of different rice cultivars of Gujarat	Accepted with following suggestion/s : 1) If possible, collect the seeds from farmers instead of research stations (as management and seed storage practices are followed stringently at research stations).	Seed Sci. Tech., Dept. of Botany, AAU, Anand
11.	Molecular characterization of released Wheat varieties for genetic purity	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
12.	Molecular Characterization of released Pearl Millet inbred parents/hybrids for genetic purity	Accepted.	Dept. of Botany (Biotech.), AAU, Anand

13.	Improvement of Maize for nutritional quality	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
14.	Improvement of Maize for biotic and abiotic stress resistance	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
15.	Biofortification of rice with Fe, Zn and High Quality Protein	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
16.	Identification and characterization of genes for biotic and abiotic stresses resistance (in rice)	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
17.	Screening of Mustard (*Brassica junceae*) genotypes against aphids and Sawfly (*Athalia lugels proxima*)	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
18.	Screening of *Brassica* sp. *(Brassica rapa, Brassica napus and Brassica carinata)* genotypes against aphids (*Lipaphis erysimi*) and Sawfly (*Athalia lugens proxima*)	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
19.	Screening of Mustard (*Brassica junceae*) genotypes against white rust (*Albugo candida*) and powdery mildew (*Erysiphe cruciferarum*)	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
20.	Screening of *Brassica* sp. *(Brassica rapa, Brassica napus* and *Brassica carinata)* genotypes against white rust (*Albugo candida*) and powdery mildew (*Erysiphe cruciferarum*)	Accepted.	Dept. of Botany (Biotech.), AAU, Anand
	Junagadh Agricultural University		
1.	QTL Mapping and Development of SCAR marker for Macrophomina root rot in Castor	Accepted with following suggestion/s : 1) SNP & RGA markers may be included in the studies if possible. 2) Instead of "linkage map" the word "identification of markers linked to specific resistance gene/s" may be used.	Prof. & Head, Dept. of Biochemistry & Biotechnology, JAU, Junagadh
2.	QTL Mapping and Development of SCAR marker for Fusarium wilt in Castor	Accepted with following suggestion/s : 1) SNP & RGA markers may be included in the studies if possible. 2) Instead of "linkage map" the word "identification of markers linked to specific resistance gene/s" may be used.	Prof. & Head, Dept. of Biochemistry & Biotechnology, JAU, Junagadh

3.	Sex Determination of Papaya (*Carica papaya*) through Molecular Characterization	Accepted with following suggestion/s : 1) The word "characterization" may be replaced with "markers" in the title.	Prof. & Head, Dept. of Biochemistry & Biotechnology, JAU, Junagadh
4.	Effect of foliar spray of organic and inorganic substances on yield of chickpea (GJG-3) under limited water supply	Accepted with following suggestion/s : 1) with a suggestion that desi cow may be used as the source of cow urine (T7).	Res. Scientist, Main Dry Farming Research Station, JAU, Targadhia
5.	Effect of seed treatment on sprouting and germination of Nirmali (*Strychnos potatorum* Linn.)	Accepted.	Prof. & Head, Dept. of Genetics & Plant Breeding, JAU, Junagadh
6.	Effect of foliar spray of plant growth retardants on growth and yield parameters of *Kharif* groundnut	Accepted.	Res. Sci. (G'nut), Main Oilseeds Res. Station, JAU, Junagadh
	Navsari Agricultural University		
1.	Effect of Nano-Micronutrients (Zn & Cu) on Physiology and Stevioside Production in Stevia	Accepted with following suggestion/s : 1) Control (Normal MS) should be included in the experiment.	Dept. of Biotechnology, ACHF, Navsari
2.	Characterization of Pectate lyase in Banana	Accepted.	Dept. of Biotechnology, ACHF, Navsari
3.	Biotechnological Applications for Transforming the most Abundant Bacteria from Industrial Waste Waters of South Gujarat for Bioremediation	Accepted.	Dept. of Biotechnology, ACHF, Navsari
4.	Micropropagation in Palmyra palm (Tadfali)	Accepted.	Dept. of Biotechnology, ACHF, Navsari
5.	Identification, Isolation and molecular characterization of RcPCS (*Ricinus communis phytochelatin synthase*) in Castor	Accepted.	Dept. of Biotechnology, ACHF, Navsari
6.	Incubation studies of Phosphate Solubilizing microorganisms form coastal, saline and sodic soil for managing soil health	Accepted with following suggestion/s : 1) Enlist details of observations.	Dept. of Microbiology, NMCA, Navsari
7.	Isolation of chitinase producing microorganisms from south Gujarat region and testing its efficacy against soil born pathogenic fungi	Accepted with following suggestion/s : 1) Enlist details of observations.	Dept. of Microbiology, NMCA, Navsari

8.	Isolation of important microorganisms in biodegrading crop residues	Accepted with following suggestion/s : 1) Enlist details of observations. 2) Correct “chitin” to “substrate” in the methodology.	Dept. of Microbiology, NMCA, Navsari
	Sardarkrushinagar Dantiwada Agricultural University		
1.	Effects and fate of bacterial plant growth promoting bioinoculants (PGPR) within rhizosphere	Accepted with following suggestion/s : 1) If the bacteria taken in the study are transgenic/ GMO, prior approval of IBSC and RCGM must be taken before undertaking the study.	Dept. of Biotechnology/ Microbiology, Sardarkrushinagar

SOCIAL SCIENCE

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Diversification of cropping pattern during last decade in Middle Gujarat	Accepted with following suggestion/s : 1) Add an objective as "To estimate the crop wise and overall diversification indices."	Prof. & Head, Dept. of Agril. Economics, BACA, AAU, Anand
2.	Comparative study on behaviour of input cost and output prices of selected crops of Gujarat	Accepted.	Prof. & Head, Dept. of Agril. Economics, BACA, AAU, Anand
3.	An inquiry into the problems and prospects of contract farming in tomato: A case study	Accepted with following suggestion/s : 1) Increase sample size from 40 to 60.	Principal, IABM Institute, AAU, Anand
4.	A study of perception on organizational climate for scientists of AAU	Accepted.	Principal, IABM Institute, AAU, Anand
5.	A comparative study of organized and unorganized food retailing in Amadavad district of Gujarat	Accepted.	Principal, IABM Institute, AAU, Anand
6.	e-banking status of farmers in rural areas of Anand taluka	Accepted.	Principal, IABM Institute, AAU, Anand
7.	Suggestions of alternative cropping possibilities based on length of growing period for rain fed crop driven by graphical user interface	Accepted with following suggestion/s : 1) Modify the title as "Alternative cropping possibilities based on length of growing period for rain fed crop driven by graphical user interface."	Principal, College of Agril. IT, AAU, Anand
8.	Opinion of the undergraduate students about e-student corner (Web Application) for AAU	Accepted.	Principal, College of Agril. IT, AAU, Anand
9.	A study on computer technology awareness (Literacy and Competency) among the faculty of AAU	Accepted with following suggestion/s : 1) Modify the title as "Computer technology awareness (Literacy and Competency) among the faculty of AAU."	Principal, College of Agril. IT, AAU, Anand
10.	Web based AGRESCO reports	Not Accepted. These are the activities of the department.	Director, Information Technology, AAU, Anand
11.	Online job application system (OJAS) for Class II and above cadre of AAU	Not Accepted. These are the activities of the department.	Director, Information Technology, AAU, Anand

12.	Online hourly objectives / MCQ examination for students of AAU	Not Accepted. These are the activities of the department.	Director, Information Technology, AAU, Anand
13.	Online internet based repository of research publications/theses work published by the faculties and /or research scholars / students of AAU	Not Accepted. These are the activities of the department.	Director, Information Technology, AAU, Anand
14.	Status of food pulp and beverage industry in Gujarat state	Accepted.	Principal, College of Food Processing Tech. & Bio-Energy, AAU, Anand
15.	Adoption of Micro Irrigation Systems in Dahod district of Gujarat state	Accepted.	Principal, Polytechnic in Agril. Engg., AAU, Dahod
16.	Status of Farm Mechanization in Dahod district	Accepted.	Principal, Polytechnic in Agril. Engg., AAU, Dahod
17.	Variability study of medicinal and aromatic plants field experiments	Accepted.	Prof. & Head, Dept. of Agril. Statistics, BACA, AAU, Anand
18.	Modelling for estimation of incident photo synthetically active radiation (IPAR) using INSAT 3D data	Accepted.	Prof. & Head, Dept. of Agril. Meteorology, BACA, AAU, Anand
19.	Development of scale to measure attitude of the farmers towards Gir cow raising	Accepted.	Prof. & Head, Dept. of Ext. Education, BACA, AAU, Anand
20.	Development of scale to measure attitude of the farmers towards Graded Murrah buffalo	Accepted.	Prof. & Head, Dept. of Ext. Education, BACA, AAU, Anand
21.	Development of scale to measure attitude of the farmers towards HF crossbred cow raising	Accepted.	Prof. & Head, Dept. of Ext. Education, BACA, AAU, Anand
22.	Training ability of trainers performing at EEI, Anand as perceived by trainees	Accepted.	Director, Extension Education Institute, AAU, Anand
23.	Awareness about climate change and its effect on agriculture as perceived by the extension functionaries	Accepted with following suggestion/s : 1) Climate change should be defined in the scientific manner before conducting the study.	Director, Extension Education Institute, AAU, Anand

24.	Farmers' preferences towards private agricultural extension services	Accepted.	Director, Extension Education Institute, AAU, Anand
25.	Study on knowledge and adoption of SRI method in paddy by paddy growers in Anand district of Gujarat raised comparative study	Accepted with following suggestion/s : 1) Modify title as "Knowledge and adoption of SRI method in paddy by paddy growers in Anand district."	Director, Extension Education Institute, AAU, Anand
26.	Utility of training programme on training management as perceived by trainees in their operational area	Accepted with following suggestion/s : 1) Modify title as "Utility of training programme on Training Management as perceived by trainees."	Director, Extension Education Institute, AAU, Anand
27.	Attitude of farmers towards training organized by KVK, Devataj	Accepted.	Director of Extension Education, AAU & PC, KVK, AAU, Devataj
28.	Knowledge and adoption of improved technology of vegetable crops (Brinjal and Tomato) by vegetable growers of Ahmedabad district	Accepted with following suggestion/s : 1) Modify title as "Knowledge and adoption of improved technology by Brinjal and Tomato growers of Amadavad district."	PC, KVK, AAU, Arnej
29.	Knowledge and adoption of improved animal science practices by milk producers in Waghodia and Sankheda taluka of Vadodara district	Accepted with following suggestion/s : 1) Modify title as "Knowledge and adoption of improved animal husbandry practices by milk producers in Waghodia and Sankheda talukas of Vadodara district."	PC, KVK, Mangal Bharati, Vadodara
30.	A study on package of practices in Bt. cotton followed by the farmers	Accepted with following suggestion/s : 1) Modify title as "Package of practices of Bt. cotton followed by the farmers."	Res. Sci., ARS, AAU, Arnej
31.	Use of agricultural information by Krushi-Go-Vidya subscribers on their farming	Accepted.	Director of Extension Education, AAU, Anand
32.	Development of scale to measure attitude of extension personnel towards e- extension	Accepted.	Director, Institute of Distance Education, AAU, Anand
33.	Perception of P.G. students of Agriculture Faculty about educational environment of AAU	Accepted.	Director of Research & Dean, Faculty of PG Studies, AAU, Anand

34.	Constraints perceived by the farmers of Anand district in preparation of vermi-compost	Accepted.	Principal, Polytechnic in Agriculture, AAU, Anand
35.	Knowledge and adoption level of trained and untrained paddy growers of Nadiad taluka	Accepted.	Principal, Polytechnic in Agriculture, AAU, Vaso
36.	A study on adoption of latest maize technology developed by Main Maize Research Station, Godhra by the farmers	Accepted with following suggestion/s : 1) Modify title as "Adoption of latest technology of maize developed by Main Maize Research Station, Godhra."	Res. Sci., Main Maize Research Station, AAU, Godhra
37.	Improvement of Knowledge of Participants of Pashupalan Shibir at Tarapur Taluka	Accepted with following suggestion/s : 1) Modify title as "Improvement in knowledge of participants of Pashupalan Shibirs at Tarapur taluka."	Assoc. Prof., Dept. of Vet. Ext. Edu., Vet. Sci. College, AAU, Anand
38.	Technological gap in adoption of improved animal husbandry practices in Dahod and Panchmahals districts	Accepted.	Training Organizer, TRTC, AAU, Devgadh Baria
	Junagadh Agricultural University		
1.	Returns to research investment on groundnut crop in Gujarat	Accepted.	Prof. & Head, Dept. of Agri. Econ., JAU, Junagadh
2.	Testing the validity of crop yield forecasting model in wheat	Accepted.	Prof. & Head, Dept. of Agri. Stat., JAU, Junagadh
3.	Optimum plot size in wheat	Accepted.	Prof. & Head, Dept. of Agri. Stat.., JAU, Junagadh
4.	Analysis of interactive relationship among components of integrated farming system	Accepted.	Prof. & Head, Dept. of Agri. Ext.Edu., JAU, Junagadh
5.	Economic analysis of Cotton stalks burning practices	Accepted.	Res. Sci., Dry farming, JAU, Targhadia
6.	Evaluation of usefulness of an exhibition of College of Agricultural Engineering and Technology by visitors	Accepted.	Prof. & Head, Dept. of Agri. Engg.& Ext.Edu., CAET, JAU, Junagadh
7.	Economic analysis of wheat straw burning practices	Accepted with following suggestion/s : 1) Give detailed methodology for the second objective of the study.	Principal, PG Institute of ABM, JAU, Junagadh
8.	Comparative evaluation of wheat crop under canal and ground water irrigation systems in Saurashtra region	Accepted.	Principal, PG Institute of ABM, JAU, Junagadh
	Navsari Agricultural University		

1.	Economics of Goat Marketing in South Gujarat	Accepted with following suggestion/s : 1) In first objective the word goat farming should be replaced by goat rearing. 2) Remove the third objective.	Assoc. Prof. (Agri. Econ.), ACHF, NAU, Navsari
2.	Economics and Marketing of Turmeric in Nizar taluka of Tapi district	Accepted.	Professor, Agri. Econ., NMCA, NAU, Navsari
3.	A study on rate of adoption of newly released Nagli production technology	Accepted with following suggestion/s : 1) Title should be modified as; 'Adoption of newly released Nagli production technology'. 2) Finalize the variety in consultation with HoD, Dept. Extension Education, NMCA.	PC, KVK, NAU, Waghai
4.	Attitude of farmers towards developmental activities of AES, NAU, Paria	Accepted.	Res. Sci.. AES, NAU, Paria
5.	Plot technique study in chilli	Accepted.	Assoc. Prof. (Agri. Stat.), ACHF, NAU, Navsari
	Sardarkrushinagar Dantiwada Agricultural University		
1.	Knowledge gained by the ATMA beneficiaries through training programmes organized by SSK	Accepted with following suggestion/s : 1) Title should be changed as "Assessment of knowledge gained by the ATMA beneficiaries through training programmes." 2) Area of training should be specified in objective and methodology in consultation with HOD, Ext. Edu., CPCA, SDAU, SK Nagar.	DEE, SDAU, SK Nagar
2.	Information needs and processing behaviour of castor growers	Accepted with following suggestion/s : 1) Title to be modified as "Training needs of castor growers." 2) Specific objectives and methodology should be finalized in consultation with HOD, Ext. Edu., CPCA, SDAU, SK Nagar.	DEE, SDAU, SK Nagar
3.	Adoption of improved cattle management practice by women	Accepted with following suggestion/s : 1) Modify title as, "Adoption of improved cattle management practice by farm women."	DEE, SDAU, SK Nagar

4.	Evaluation of farmers trained by SSK	Accepted with following suggestion/s : 1) Modify title as "Evaluation of farmers training programmes conducted by SSK."	DEE, SDAU, SK Nagar
5.	Economic evaluation of farmers through goat rearing practices in the Lakhpat taluka of Kutchh District of Gujarat	Accepted with following suggestion/s : 1) Modify the title as "Socio- economic study of goat rearing farmers." 2) Objectives and methodology should be modified accordingly in consultation with HOD, Ext. Edu., CPCA, SDAU, SK Nagar .	Prof. & Head, Ext. Edu., CPCA, SDAU, SK Nagar
6.	Entrepreneurial activities carried out by self help groups in Danta & Amirgadh talukas of Banaskantha	Accepted with following suggestion/s : 1) Modify title as "Socio- economic development through self help group among the beneficiaries of Banaskantha district."	Prof. & Head, Ext. Edu., CPCA, SDAU, SK Nagar
7.	Relative performance of T.V. viewer's towards agricultural programmes	Accepted with following suggestion/s : 1) Modify title as "Evaluation of agricultural programmes by T.V. viewers."	Prof. & Head, Ext. Edu., CPCA, SDAU, SK Nagar
8.	Constraints in adoption of drip irrigation system by the farmers of Banaskantha district	Accepted.	P.C., KVK, Deesa, SDAU, SK Nagar
9.	Knowledge and adoption of recommended green gram cultivation technology by tribal FLD beneficiary farmers of Sabarkantha District	Accepted.	P.C., KVK, Khedbrahma, SDAU, SK Nagar
10.	Capacity Building of Rural women of Dantiwada Taluka through entrepreneurship training - A Action Research	Accepted with following suggestion/s : 1) Modify title as "Capacity Building of Rural women of Dantiwada Taluka through entrepreneurship training."	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
11.	Sensitivity of rural adolescents towards elderly	Accepted with following suggestion/s : 1) Modify title as "Sensitivity of rural adolescents towards elders."	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
12.	Emotional stability of teenager students of Dantiwada taluka	Accepted with following suggestion/s : 1) Remove 120 from first objective.	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
13.	Skill development of rural women and its analysis in Dantiwada taluka by value addition of jute	Accepted with following suggestion/s : 1) Modify title as "Skill development of rural women about value addition in Jute."	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar

14.	Identification and scientific validation of indigenous knowledge of rural women in Dantiwada taluka	Accepted.	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
15.	Assessment of health status of pre-school children	Accepted.	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
16.	Analysis of drudgery among farm women and its alleviation through improved tools and technologies	Accepted.	Prof. & Head, Ext. Edu., Home science college, SDAU, SK Nagar
17.	Resource use efficiency of potato cultivation in Banaskantha district of north Gujarat	Accepted with following suggestion/s : 1) Add one more objective as "To examine the costs and returns in potato cultivation."	Prof. & Head, Agril. Econ., CPCA, SDAU, SK Nagar
18.	Economic analysis of production and marketing of tomato crop in Mahesana district	Accepted.	Prof. & Head, Agril. Econ., CPCA, SDAU, SK Nagar
19.	Export competitiveness of Isabgol husk at global level	Accepted with following suggestion/s : 1) To modify title as "Growth and instability in area, production and productivity of Isabgol." 2) Remove third objective. 3) Specify the methodology for calculating instability.	Prof. & Head, Agril. Econ., CPCA, SDAU, SK Nagar
20.	Resource use efficiency and profitability of carrot farming in north Gujarat	Accepted with following suggestion/s : 1) Modify title as "Economic analysis of Summer Bajra cultivation in North Gujarat." 2) Change the objectives and methodology accordingly.	Prof. & Head, Agril. Econ., CPCA, SDAU, SK Nagar
21.	Characterization and evaluation of existing farming systems in Mehsana district	Accepted with following suggestion/s : 1) Modify title as "Identification and Characterization of existing farming systems in Mehsana district."	Prof. & Head, Agril. Econ., CPCA, SDAU, SK Nagar
22.	Economics of milk production in Banaskantha district	Accepted with following suggestion/s : 1) Modify title as "Economics of milk production in Banaskantha district- A comparative study of tribal and non tribal area".	Dean, ABM, SDAU, SK Nagar

23.	Pre-harvest forecasting of mustard crop yield in Banaskantha district of north Gujarat	Accepted.	Prof. & Head, Agril. Stat., CPCA, SDAU, SK Nagar
24.	Plot size study from uniformity trial data in Rustica tobacco	Accepted.	Prof. & Head, Agril. Stat., CPCA, SDAU, SK Nagar
25.	Plot size study from uniformity trial data in Sesamum	Accepted.	Principal, Agri. Polytechnic, Khedbrahma, SDAU, SK Nagar

ANIMAL PRODUCTION & FISHERIES

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	Pure breeding of elite Gir cows and supply of male calves to the farmers	Dropped.	Res. Sci. & Head, LRS, Vet. College, AAU, Anand
2.	Effect of individual feeding on production and reproduction performance of Gir cows	Accepted.	Res. Sci. & Head, LRS, Vet. College, AAU, Anand
3.	To study follicular dynamics in superovulated buffaloes	Dropped.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
4.	To study the effect of hormonal and managemental factors on reduction in age at first calving in heifers under field conditions	Accepted with following suggestion/s : 1) Detail plan of work to be incorporated.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
5.	Hormonal treatment in buffaloes to augment reproductive efficiency in infertile buffaloes at farmers doorsteps	Deferred. 1) Detail plan of work to be incorporated.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
6.	To find relation of nutrition with reproductive efficiency in cattle and buffaloes and to suggest ameliorative measures to the farmers	Deferred. 1) Detail plan of work to be incorporated.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
7.	To detect early pregnancy in goats by using Ultrasonography and to develop package of practices	Accepted with following suggestion/s : 1) Detail plan of work to be incorporated.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
8.	To study reproductive behavior in goats along with ethology study and hormonal profiles	Accepted with following suggestion/s : 1) Detail plan of work to be incorporated.	Res. Sci. & Head, RBRU, Vet. College, AAU, Anand
9.	Effect of feeding bypass fat on milk production from buffaloes of tribal areas of Panchmahal and Vadodara districts (TSP)	Accepted with following suggestion/s : 1) All objectives to be clubbed in to single objective	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand
10.	Effect of feeding bypass protein on milk production from buffaloes of tribal areas of Panchmahal and Vadodara districts (TSP)	Accepted with following suggestion/s : 1) All objectives to be clubbed in to single objective	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand
11.	Study on compensatory growth in crossbred calves fed crop residue based total mixed ration (TMR) with strategic approach using bypass fat	Accepted.	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand
12.	On-farm trial to study the effect of supplementation of *Jatropha curcas* meal to buffaloes on milk production	Accepted.	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand

13.	To study the effect of enzyme supplementation on the performance of lactating dairy animals	Accepted.	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand
14.	To study the effect of Solid State Fermentation (SSF) biomass supplementation on growth performance of weaner kids	Accepted.	Res. Sci. & Head, ANRS, Vet. College, AAU, Anand
15.	To study the Effect of Solid State Fermentation (SSF) biomass on digestibility and nutrient utilization in sheep	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
16.	To evolve area specific mineral mixture for dairy animals in Kheda district	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
17.	Estimation of rumen microbial protein production from purine derivatives in urine of dairy animals	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
18.	Estimation of rumen microbial protein production from purine derivatives in urine of sheep and goats	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
19.	Animal Nutrition survey in Vadodara district	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
20.	Effect of fibrolytic enzyme supplementation on nutrient utilization of sheep	Accepted.	Res. Sci. & Head, ANRS, AAU, Anand
21.	Investigation of endurance related genes in Kathiawadi horse	Accepted.	Prof. & Head, AGB, Vet. College, AAU, Anand
22.	Isolation and characterization of canine Mesenchymal Stem cells (MSCs) originated from abdominal/falciparum ligament fatty tissue	Approved with following suggestion/s: 1) To include method of stem cell study, period of study and details of observations to be recorded. 2) To specify the stem cell markers.	Prof. & Head, Animal Biotechnology, AAU, Anand
23.	Reducing myostatin expression in chicken by RNAi technique	Accepted.	Prof. & Head, Animal Biotechnology. AAU, Anand
24.	Sequencing of rumen bacterial genome	Accepted.	Prof. & Head, Animal Biotechnology. AAU, Anand
25.	Metagenome of mastitic organisms	Accepted.	Prof. & Head, Animal Biotechnology. AAU, Anand
	Junagadh Agricultural University		
1.	Estimation of Bulk milk Somatic Cell Count (SCC) from the raw milk of Gir cattle and Jaffrabadi buffalo	Accepted with following suggestion/s : 1) Objectives and experimental details to incorporate seasonal variation in somatic cell count in bulk row milk	Res. Sci. (AGB), CBF, JAU, Junagadh

2.	Impact of insectivorous Birds on Fish Drying Grounds in Veraval	Accepted with following suggestion/s : 1) In observations, source of invertebrates infestation needs to be specified.	Principal, College of Fisheries Sci., Veraval
3.	Growth, mortality and stock assessment of Soldier catfish Osteogeneiosus militaris (Linnaeus, 1758) off Veraval coast	Accepted with following suggestion/s : 1) Weight should be taken with standard length.	Principal, College of Fisheries Sci., Veraval
4.	Documentation and seasonal availability of commercially important shellfish species at Veraval fish landing centre	Accepted.	Principal, College of Fisheries Sci., Veraval
5.	Antibacterial activity of some available seaweeds from Veraval coast	Accepted with following suggestion/s : 1) Bacterial strain Vibrio harveyii should also incorporated to check antibacterial activity.	Principal, College of Fisheries Sci., Veraval
6.	Study the effect of some natural cryoprotectants on quality of Japanese threadfin beams (*Nemipterus japonicus*) surimi during frozen storage	Accepted with following suggestion/s : 1) In treatment-1 polyphosphate should be 0.2 % instead of 0.3 %.	Principal, College of Fisheries Sci., Veraval
7.	Study on Biodiversity of shell fishes in Rocky Intertidal zone of Veraval coast	Accepted.	Principal, College of Fisheries Sci., Veraval
8.	Length-weight relationships and stomach content analysis of *Nemipterus japonicas*, Japanese threadfin beam	Accepted.	Principal, College of Fisheries Sci., Veraval
9.	Estimation of agar and alginic acid from the seaweeds available at coast of Okha	Accepted.	Res. Officer, Fisheries Res. Station, Okha
10.	Study of seaweed diversity at selected intertidal areas of Saurashtra and Diu (UT)	Accepted.	Res. Officer, Fisheries Res. Station, Okha
11.	Diversity and distribution of Brachyuran crabs at off shore Sikka	Accepted.	Res. Officer, Fisheries Res. Station, Sikka
12.	Aspect of Biology and fishery of *Scylla serrata* (Forskal) and *Portunus pelagicus* in and around Sikka	Accepted.	Res. Officer, Fisheries Res. Station, Sikka
13.	Survey for cultivable seawater shrimps seed along Jafrabad and Mahuva coast	Accepted with following suggestion/s : 1) Drag netting should be used instead of cast netting.	Res. Officer, Fisheries Res. Station, Mahuva
	Navsari Agricultural University		
1.	Effect of body condition score on health, production and reproduction performances in Surti buffaloes	Approved	Res. Sci., LRS. NAU, Navsari

2.	Effect of polyherbal ecbolic, minerals and vitamins supplementation as a prophylactic treatment regimen (PTR) at time of calving on reproductive performance in Surti buffaloes	Approved	Res. Sci., LRS. NAU, Navsari
3.	Influence of body condition score on performance and blood biochemical profile in Surti buffalo	Approved	Prof. & Head, LPM, NAU, NAvsari
4.	Study on milking behaviour of Surti buffalo	Approved	Prof. & Head, LPM, NAU, NAvsari
5.	Study on dairy husbandry practices in Chikhli taluka of Navsari district	Approved	Prof. & Head, LPM, NAU, NAvsari
6.	Studies on supplementation of herbal feed additives on growth performance and gut microbial health of Broilers	Approved	Asso.Prof. & Head, AN, NAU, NAvsari
7.	Effect of dietary supplementation of bypass protein on growth and reproductive performance in buffalo heifers	Approved	Asso.Prof. & Head, AN, NAU, NAvsari
8.	Cytological screening of Surti buffalo	Approved	Prof. & Head, AGB, NAU, NAvsari
9.	Molecular characterization of major genes related to milk production in Surti buffalo at Livestock Research Station, Navsari	Accepted with following suggestion/s : 1) To shortlist the major genes to be studied.	Prof. & Head, AGB. NAU, Navsari
10.	National Initiative on Climate Resilient Agriculture (NICRA) Under B.H. 2064	Dropped (Being ongoing ICAR project)	
11.	To study diaphoretic pattern of Surti buffalo vis-à-vis environmental and body condition	Approved	Prof. & Head, Physiology and Biochemistry, NAU, Navsari
12.	In Vitro Maturation (IVM) of Oocytes Retrieved from Non Atretic Surface Follicles of Goat Ovaries	Approved	Prof. & Head, Physiology and Biochemistry, NAU, Navsari
	Sardarkruhinagar Danwitada Agricultural University		
1.	Metagenome analysis of Ruminal microbes in Mehsana buffaloes	Dropped.	
2.	Water sprinkling (Foggers) impact on performance of Mehsana buffaloes in summer season	To be continued as a ongoing programme	Res. Sci., LRS,SDAU, Sardar Krishinagar

3.	Study on variations of haemato-biochemical profile in lactating Mehshani buffoloes	Accepted.	Prof. & Head, Physiology and Biochemistry, SDAU, Dantiwada

ANIMAL HEALTH

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
1.	*In-vitro* antibacterial activity of selected indigenous medicinal plants [*Lageneria vulgaris* (Dudhi) and *Enicostema littorale* (Mamejavo)]	Accepted with following suggestion/s : 1) Procure the authentic strains of organisms.	Head, Dept. of Pharmacology, AAU, Anand
2.	Toxicopathological studies of ketoprofen in broiler chicks	Accepted.	Head, Dept. of Pathology, AAU, Anand
3.	Toxicopathological studies of melamine in broiler chicks	Accepted.	Head, Dept. of Pathology, AAU, Anand
4.	Whole genome sequence characterization of *Pasteurella multocida* isolated from different animal species	Accepted with following suggestion/s : 1) Specify the number of samples to be studied.	Head, Dept. of Microbiology, AAU, Anand
5.	Cultural isolation, identification and molecular characterization of bacterial pathogens from clinical and subclinical mastitis milk of goats	Accepted.	Head, Dept. of Microbiology, AAU, Anand
6.	Detection of Brucellosis among sheep and goats in Gujarat state by cultural isolation, serological tests and molecular techniques	Accepted with following suggestion/s : 1) Specify the area/region i.e. Central Gujarat in the title.	Head, Dept. of Microbiology, AAU, Anand
7.	Comparative Analysis of Intradermal Tuberculin Test and γ Interferon Assay for Diagnosis of Bovine Tuberculosis	Accepted.	Head, Dept. of Microbiology, AAU, Anand
8.	Isolation, Identification, membrane protein profiling & molecular characterization of *Mycoplasma agalactiae* from goats of Gujarat state	Accepted.	Head, Dept. of Microbiology, AAU, Anand
9.	Cultural isolation, identification, biotyping and molecular characterization of *Cryptococcus* spp. from various avian species	Accepted with following suggestion/s : 1) Make change in the title as captive zoo birds instead of various avian species.	Head, Dept. of Microbilogy, AAU, Anand
10.	Standardization and clinical use of CO_2 Laser Unit	Accepted.	Head, Dept. of Surgery & Radiology, AAU, Anand
11.	Use of Tip Chute for management of hoof disorders in organized dairy farms	Accepted.	Head, Dept. of Surgery & Radiology, AAU, Anand
12.	Ocular Ultrasonographic Biometry in dogs and horses	Accepted.	Head, Dept. of Surgery & Radiology, AAU, Anand

	Junagadh Agricultural University		
1.	Evaluation of antibacterial activity of different extracts of *Rauvolfia tetraphylla* L. and *Jatropha curcas* L., against bacterial isolates from animals	Accepted with following suggestion/s : 1) Project can be a pilot trial with incorporating the botanical names.	Head, Dept. of Pharmacology, JAU, Junagadh
	Navsari Agricultural University		
1.	Diagnosis and management of liver disorders in canine	Accepted.	Head, Dept. of Vet. Surgery & Radiology, CVSAH, Navsari
2.	Ultrasonographic diagnosis of abdominal disorders in bovines	Accepted.	Head, Dept. of Vet. Surgery & Radiology, CVSAH, Navsari
3.	Medical and Surgical management of corneal affections in canines	Accepted.	Head, Dept. of Vet. Surgery & Radiology, CVSAH, Navsari
4.	Diagnosis of various udder and teat disorders using ultrasonography in bovines	Accepted.	Head, Dept. of Vet. Surgery & Radiology, CVSAH, Navsari
5.	Clinical studies on rhino-pharyngeal endoscopic procedures under surface anesthesia in farm animals	Accepted with following suggestion/s : 1) Use the word large ruminants in place of farm animals.	Head, TVCC, NAU, Navsari
6.	To study the incidence of intestinal obstruction and its surgical management in bovines	Accepted.	Head, TVCC, NAU, Navsari
	Sardarkrushinagar Dantiwada Agricultural University		
1.	Serological, cultural and molecular detection of *Brucella* infection of Sheep in Gujarat	Accepted with following suggestion/s : 1) The scheme in-charge should be a Principle Investigator. 2) Specifying the area/region i.e. North Gujarat in the title of new technical program	I/C RADIC, SDAU, SKNagar

2.	Studies on streptozotocin-nicotinamide induced diabetes in Wister rats and its amelioration by garlic, fenugreek, black cumin and their mixture	Accepted with following suggestion/s : 1) The scheme in-charge should be a Principle Investigator. 2) The house approved the new technical program only if the objectives of the scheme i.e. Regional Animal Disease Investigation Centre are in accordance with the program.	I/C RADIC, SDAU, SKNagar

DAIRY SCIENCE/DAIRY TECHNOLOGY & FOOD PROCESSING/FOOD TECHNOLOGY

Sr. No.	Title	Suggestions	Action to be taken by
	Anand Agricultural University		
	Dairy Science/Dairy Technology		
1.	Metagenomic and Clinical investigation of synbiotic fermented dairy product containing probiotic Lactobacillus helveticus MTCC 5463 in geriatric volunteers	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
2.	Formulation of dried probiotic mix containing Lactobacillus helveticus MTCC 5463	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
3.	Selection of excipients for the preparation of starter culture tablets containing Lactobacillus helveticus MTCC 5463	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
4.	Designing and validating real time PCR primers for the precise identification of Lactobacillus helveticus MTCC 5463	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
5.	Prevalence of Listeria spp. in raw and pasteurized milk in Anand town	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
6.	ACE inhibitory activity of L. helvetcius MTCC 5463 in fermented milk with or without added honey	Accepted.	Dairy Microbiology, SMC Coll. of Dairy Sci., AAU, Anand
7.	Performance evaluation of refrigeration system of bulk milk cooler with evaporative cooling system	Accepted.	Dairy Engineering, SMC Coll. of Dairy Sci., AAU, Anand
8.	Dehydration behaviour of Dairy products in fluidized bed dryer and its energy analysis	Accepted.	Dairy Engineering, SMC Coll. of Dairy Sci., AAU, Anand
9.	Mechanization and optimization of parameters for preparation of Burfi in Multipurpose Scraped Surface Heat Exchanger	Accepted.	Dairy Engineering, SMC Coll. of Dairy Sci., AAU, Anand

10.	Evaluation of energy conservation potential of soft starter in dairy industry	Accepted.	Dairy Engineering, SMC Coll. of Dairy Sci., AAU, Anand
11.	Study on use of probiotic culture for shrikhand manufacture and its quality	Accepted.	Dairy Technology, SMC Coll. of Dairy Sci., AAU, Anand
12.	Studies on utilization of sweet cream buttermilk solids in the manufacture of Frozen Delicacies	Accepted.	Dairy Technology, SMC Coll. of Dairy Sci., AAU, Anand
13.	Shelf-life study of Peda using selected packaging techniques	Accepted.	Dairy Technology, SMC Coll. of Dairy Sci., AAU, Anand
14.	Iron fortification in Kulfi	Accepted.	Dairy Technology, SMC Coll. of Dairy Sci., AAU, Anand
15.	Process standardization for the manufacture of Thabdi Peda	Accepted.	Dairy Technology, SMC Coll. of Dairy Sci., AAU, Anand
16.	Studies on physico-chemical and sensory characteristics of iron rich biscuits	Accepted.	Dairy Chemistry, SMC Coll. of Dairy Sci., AAU, Anand
17.	Study on distribution pattern of nitrogenous components in milk	Accepted.	Dairy Chemistry, SMC Coll. of Dairy Sci., AAU, Anand
18.	Standardization of formulations for preparation of ice candy type product using whey.	Accepted.	Dairy Chemistry, SMC Coll. of Dairy Sci., AAU, Anand
19.	Studies on composition and properties of camel milk	Accepted.	Dairy Chemistry, SMC Coll. of Dairy Sci., AAU, Anand
20.	Studies on selected processing related properties, keeping quality and sensory attributes of camel milk.	Accepted.	Dairy Chemistry, SMC Coll. of Dairy Sci., AAU, Anand
21.	Formulation of ready mix carrot halwa from dried carrot shreds	Accepted.	Dairy Processing Operations, SMC Coll. of Dairy Sci., AAU, Anand
22.	Enhancement of shelf-life of Paneer	Accepted.	Dairy Processing Operations, SMC Coll. of Dairy Sci., AAU, Anand

23.	Standardization of technology for manufacture of "Low Fat" and "Sugar Free" shrikhand.	Accepted.	Dairy Processing Operations, SMC Coll. of Dairy Sci., AAU, Anand
24.	Manpower analysis in the Dairy sector	Accepted.	Dairy Business Management, SMC Coll. of Dairy Sci., AAU, Anand
25.	Financial Analysis of the Dairy Sector to their performance and status	Accepted.	Dairy Business Management, SMC Coll. of Dairy Sci., AAU, Anand
	Food Processing/Technology		
1.	Shelf-life enhancement of Sapota and Capsicum using different edible coatings.	Accepted.	PHET, Coll. of Food Processing Tech. & Bioenergy, AAU, Anand
2.	Status of fruit beverage sector in Gujarat state.	Accepted.	FPT, Coll. of Food Processing Tech. & Bioenergy, AAU, Anand
3.	Development of preservation technique of *Idli batter* for enhanced shelf life.	Accepted.	FPT, Coll. of Food Processing Tech. & Bioenergy, AAU, Anand
4.	Mechanization of *kaju katli* production system.	Accepted.	FPE, Coll. of Food Processing Tech. & Bioenergy, AAU, Anand

PLENARY SESSION

Chairman : Dr. A. R. Pathak, Hon'ble Vice Chancellor, NAU, Navsari
Dr. K. Sreedharan, Hon'ble Vice Chancellor, SDAU, Sardarkrushinagar

Rapporteurs : Dr. M. M. Pathak, ADR (Animal Science), AAU, Anand
Dr. A. Das, Res.Sci. (Soil Sci.), NAU, Navsari

Speakers : Respective convener, AAU/JAU/NAU/SDAU

The plenary session (Technical Session-II) was held at seminar hall, NMCA, NAU, Navsari on 21st April, 2012. Due to pre-occupation elsewhere in some other piece of business, Dr. A. M. Shekh, Hon'ble Vice Chancellor, AAU, Anand and Dr. N. C. Patel, Hon'ble Vice Chancellor, JAU, Junagadh could not remain present in the session. Dr. R. L. Patel, Director of Research, SDAU, Sardarkrushinagar, Dr. K. B. Kathiriya, Director of Research, AAU, Anand and Dr. A. N. Sabalpara, Director of Research, NAU, Navsari were present during this session.

At the outset Dr. A. N. Sabalpara, Director of Research, NAU, Navsari heartly welcomed all the Hon'ble Vice Chancellors, Director of Research, Director of Extension Education, Deans of various faculties of four SAU's of Gujarat, Faculty members, Senior Professors, Research Scientists from four SAUs and representative of all the line departments of Govt. of Gujarat. He expressed his happiness over the good numbers of recommendations which have emerged out after thorough and fruitful deliberation during 8th Combined Joint Agresco Meeting from 19th to 21st April, 2012, for real dissemination among farming community, entrepreneurs, industrialists He emphasized further on the points that very good need based farmers' demand-oriented new technical programmes have been finalized during three days deliberation. He congratulated all the Professors/Scientists of SAU's whose recommendations have been approved. All the dignitaries on the dais were welcomed with floral presentation. After the floral welcome, the session starts with the various conveners' report on different disciplines as below:

Convener's Report

Crop Improvement	: Dr. A.M. Mehta, AAU, Anand
Crop Production/NRM	: Dr. R.G. Patil, NAU, Navsari
Horticulture/Forestry/Agro-forestry	: Dr. R.S. Chovatia, JAU, Junagadh
Plant Protection	: Dr. B.A. Patel, AAU, Anand
Agril. Engineering	: Dr. R. Subbaiah, JAU, Junagadh
Basic Sci./Plant Phy./Bio-chem./Bio-tech.	: Dr. V. Kumar, NAU, Navsari
Social Science	: Dr. A.J. Patel, SDAU, SKNagar
Animal Health	: Dr. K.B. Patel, SDAU, SKNagar
Animal Production & Fisheries	: Dr. A.B. Fulsoundar, NAU, Navsari
Dairy Sci./Tech. & Food Proce./Tech.	: Dr. J. B. Prajapati, AAU, Anand

They presented recommendations and brief account of new technical programmes finalized/approved during Technical Sessions of different disciplines. All the recommendations and new technical programmes presented in Plenary Session were approved and respective conveners were requested to incorporate few minor corrections/modifications suggested during the session.

General suggestions:

(1) Breeding material 1st, 2nd and 3rd generation should be maintained.
(2) Fruit breeding research need to be initiated.
(3) Agril. Engineering, Food processing and Dairy science & Engineering should be clubbed.
(4) A committee comprising of following members may be formed from next year onwards to look after the resistance of various fungicides, insecticides and pesticides in different crops.
    1) Dr. Paresh Shah, AAU, Anand
    2) Dr. K. B. Jadeja, JAU, Junagadh
    3) HOD of Agril. Entomology of four SAUs
    4) HOD of Plant pathology of four SAUs

The plenary session ended with the vote of thanks proposed by Dr. S. R. Chaudhary, ADR (Veterinary), NAU, Navsari.

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