Name of Department: Livestock Research Station, College of Veterinary Science & A.H., AAU, Anand

Profile (In Brief):

Established in 1979, this station is entrusted the responsibility of establishing a crossbred dairy herd which can thrive and produce good amount of milk in middle Gujarat Agro-climatic zone. Research has been taken up to study various aspects of management, reproduction, nutrition, adaptation and economics of milk production.

The farm started with two crosses viz. Jersey x Kankrej and Holstein Friesian x Kankrej. In 1984, HF x K crosses were removed from the herd and only J x K crosses were maintained. In 1991, looking to the performance of inter-se of J x K crosses, blood of HF animals was introduced in the animals building a cow with 25 % HF x 25 % J x 50 % K, the Triple bred. In 2006, the breeding policy of the farm was again revised and research was started on HF x K crosses. At present, the farm has HF x K crosses. Another scheme, entitled “Introduction of mechanization on a dairy farm” is going at the research Station to take care of the paucity of skilled labour since February 2011. Under this project introduce CCTV monitoring systems, installation of bulk milk cooler and automatic pipeline milking machine has been completed. In future, mechanization in feeding through Total Mixed Ration machine (TMR) and machine cleaning of floors will be taken up.

Third scheme “Conservation and improvement of indigenous cattle at Anand” was sanctioned in March, 2016 only. The major objective of the scheme is to work on A1 / A2 milk protein in indigenous and crossbred cattle of Gujarat. In addition studies on innet immunity in cattle will also be taken up.

Faculties:

Sr. No.	Name with photograph	Designation	Phone (O)	Cell No	E-Mail
1	Dr. S.V.Shah	Associate Research Scientist & Head	02692290112	9725203864	lrs:aau.in shail@aau.in
2	Dr. P.M. Lunagariya	Assistant Research Scientist	02692290112	9825892716	drpravinml@gmail.com
3	Dr. Y.G. Patel	Assistant Professor	02692290112	9428947160	ygpatel89@aau.in

Major Activities:

I. Teaching

A. UG Courses: Nil

B. PG Courses:

Following courses are offered at PG level fron this Dept.

Course No.	Title	Credits
LPM – 606	PRINCIPLES OF ENVIRONMENTAL HYGIENE AND WASTE MANAGEMENT	2 + 0
LPM – 607	CLIMATOLOGY AND ANIMAL PRODUCTION;	1 + 0
LPM 610	INTEGRATED LIVESTOCK FARMING SYSTEM	2 + 1
LPM – 612	WILDLIFE MANAGEMENT AND CONSERVATION	2 + 0
LPM – 706	ADVANCES IN ENVIRONMENTAL MANAGEMENT	1 + 1

II. Research

A. Research Projects Completed :

"Evaluation of fodder hybrids Nutrifeed, BMR/Jumbo and Sugar graze in terms of yield per hector, nutrient content, nutrient digestibility and effect on milk yield and fat content of milk of lactating Cows" (B.H. 18420) LRS, Veterinary College, Anand.

B. Research Projects On going

1. **Title: Livestock Research Station: Non-plan Scheme- B.H. 5353**

   Agency: State Government
   Period : Long term
   Budget outlay:20 lakh
   PI: Dr.S.V.Shah, Associate Research Scientist & Head
   Co-PI: Dr. B.S.Divekar, Assistant Research Scientist, LRS
   Dr. P.M.Lunagariya, Assistant Research Scientist, LRS

2. **Title: Strengthening of Livestock Research Station: Planned Scheme-**
   B.H. 12353

   Agency: State Government
   Period : Long term
   Budget outlay:20 lakh
   PI: Dr.S.V.Shah, Associate Research Scientist & Head
   Co-PI: Dr. B.S.Divekar, Assistant Research Scientist, LRS
   Dr. P.M.Lunagariya, Assistant Research Scientist, LRS

3. **Title: Conservation and Improvement of Indigenous Cattle Planned Scheme- B.H. 12973**

Agency: State Government
Period : Long term
Budget outlay:20 lakh
PI: Dr.S.V.Shah, Associate Research Scientist & Head
Co-PI: Dr. C. G. Joshi, Professor& Head, Dept. of Animal Biotechnology
Dr. D. N. Rank, Professor& Head, Dept. of Animal Genetics & Breeding
Dr. P. M. Lunagariya, Assistant Research Scientist, LRS
Dr. B. S. Divekar, Assistant Research Scientist, LRS
Dr. Nitin Patel, Senior Research Assistant, LRS
Period: Five years
Budget outlay:

4. **Title: Introduction of Mechanization on a dairy farm.**
Planned Scheme- B.H.12303-07
Agency: State Government
Period : Long term
Budget outlay: 231.6 lacs only
PI: Dr.S.V.Shah, Associate Research Scientist & Head
Co-PI: Dr. B.S.Divekar, Assistant Research Scientist, LRS
Dr. P.M.Lunagariya, Assistant Research Scientist, LRS

5. **Title: Vermi-compost A Source of Revenue and Soil Health**
B.H. 9510-A-38(RF)

C. **Number of M.V.Sc. & Ph.D. degrees awarded: 35** (The work is carried out at LRS but thesis are submitted at LPM Dept., Veterinary College, AAU, Anand)
D. **Research Publications (No.): 100**
E. **Research Recommendations:**

Recommendation for Scientific Community:

1. Crossbred cattle with 50 % kankrej and 50 % exotic inheritance developed at LRS, Anand are well adopted to agro-climatic condition of middle Gujarat. Under optimum feeding and management, production of 2500 kg and even higher milk per standard lactation(300 days), birth weight around 23 kg, growth rate 450 g/day, age and weight at first calving 41 months and 315 kg, respectively, and service period and calving interval of 120 and 407 days, respectively, were observed and thus these crossbred are recommended as suitable dairy animals for farmers of middle Gujarat.

(Dhami, Parmar and Divekar**,** 2009**)**

2. Estrus Synchronization protocol involving i/vg insertion of CIDR for 7 days in combination with estradiol valerate i/m 1.0 mg on first day followed by i/m injection of $PGF_{2\alpha}$ 500µg on sixth day and estradiol valerate 0.75 mg 24 hrs later while removing CIDR with double inseminations performed at 48 and 72 hrs after $PGF_{2\alpha}$ injection resulted in 100 % ovulatory estrus induction and more than 50 % conception rate at induced estrus in postpartum anoestrus Kankrej cows and cost effective compared to Ovsynch or Ovsynch + CIDR protocol (CR 33.33 & 50.00 %). Hence CIDR is advocated.

(Dhami, Parmar**,** Divekar and Bhoraniya, 2011**)**

3. The transrectal ultrasound scanning using 5 MHz linear transducer on day 26 and 40 post – AI in kankrej cows revealed sensitivity up to 85.71 and 93.75 %, specificity 75.00 and 100.00 % and diagnostic accuracy up to 80.77 and 96.15 %, respectively, for early pregnancy. Hence, the use of USG at day 40 post – AI is advocated for early pregnancy diagnosis in cattle with its advantages of instant result and detecting fetal viability over plain rectal palpation.

(Dhami, Parmar, Divekar and Bhoraniya, 2011**)**

4. There is a reduction of 39.73 and 33.91 percent in feed cost per kilo gain in body weight of crossbred calves (HF X Kankrej) from birth to three months of age reared on self made milk replacer (1:10 dilution) consisting of 15 per cent milk, 11 per cent casein, 18 percent maize, 18 percent soyameal, 15 percent soya seed, 8 percent jiggery, 12 percent palm oil and 3 percent minerals, vitamins and salt over milk feeding (control) and feeding commercially available milk replacer.

(Shukla, Shah, Divekar, Lunagariya, 2015)

5. Minimum Temperature, Morning Relative Humidity and Wind Speed are responsible for 66 % of total climatic variations in milk yield. Minimum Temperature and Morning Relative Humidity are negatively correlated, while Wind Speed has positive impact on milk yield.

(Parmar Monika; Shah, S.V.; Divekar, B. S**.** and Lunagariya, P. M., 2016)

III. Extension

A. Refresher Training Courses / Summer-Winter Schools conducted:

NIL

B. Seminar/Symposia/Conference/Workshop organized: NIL

Training Programmes

Sr.No.	Title	Period	No. of Participants
1	Recent Trend in Livestock Production– Milch Animals: Cattle & Buffaloes	23-9-2000 to 27-9-2000	20
2	Gopalmitras' "Basic Training of Artificial Insemination"	6-09-2005 to 5-10-2005	30
3	Gopalmitras' "Basic Training of Artificial Insemination"	13-02-2006 to 12-03-2006	31
4	BRS Internees Training in Animal Husbandry and Dairying	One month	12-15 every year
5	Internees students of Final Year BVSc & AH Course	20 days	Every year 4-5 batches each of 7-9

C. Diagnostic Services / Clinical Camps/Farmers' advisory services/Ambulatory Clinics/Vaccination camps: NIL

D. NSS Camps/ Krishi Mahotsav/ Pashupalan Shibirs/Radio-TV Talks Delivered/Exhibitions/Farmers' meet-day/Kisan Call Center/Field Visits

TV Talks:

TV talks delivered by Dr. B.S.Divekar, on the topic of **"Gujarat ni desi Gayoni olado"** in Ahmedabad Doordarshan Kendra, Date 1-09-2010.

E. Expert services to State Government/Co-op. dairies/Other agencies /NGOs: NIL

F. No. of Publications of Popular articles: 25

Booklets: 01(SAFAL PASHUPALAN by Dr. A.J.Dhami, Dr. M.M.Trivedi and Dr. B.S.Divekar)

G. Visitors :

Livestock Research Station, Anand serves as a reputed model crossbred dairy farm for the visitors and farmers of middle Gujarat. More than 2500 progressive farmers/ women/ trainees visit this farm annually. Knowledge of latest technological innovations in dairy farming is also given to interested visitors/farmers/trainees.

H. Any other items

Achievements:

A. Awards/Honours/Recognitions/Appreciations:

Dr. B. S. Divekar, Assistant Professor was awarded for Best Paper Award-2014 entitled 'Monitoring postpartum plasma minerals profile and fertility without and with estrous synchronization therapies at day 90 in sucked anestrus/sub estrus Kankrej cows' by The Society for Veterinary Science and Biotechnology, RAJUVAS, Bikaner, Rajasthan, 7-8, October, 2015

B. Assignments as Subject Expert / Member (Selection Committee/Advisory Board)

C. Advanced Instrumentation / Lab Facilities

- Bulk milkcooler
- Pipeline milking machine

D. Patents filed / Technology Developed: -

E. Other Recognitions (SRC/NSS/AGRESCO Convener/Hostel Rector etc.)