


**DIRECTORATE OF RESEARCH**  
**ANAND AGRICULTURAL UNIVERSITY**  
ANAND – 388 110

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**CIRCULAR**

All the units/sub units of Anand Agricultural University are hereby informed that the Summer School on “ Classical, molecular and recombinant DNA techniques for Stress resistance breeding” will be held at G.B.Pant University of Agriculture & Technology(GBPUA&T), Pantnagar (Uttarakhand) during 11<sup>th</sup> September to 1<sup>th</sup> October, 2015. Interested candidates can contact the Course Director Dr. H. S. Chawla (E-Mail ID :[chawlahs\\_pantnagar@rediffmail.com](mailto:chawlahs_pantnagar@rediffmail.com) or [chawlahs15@gmail.com](mailto:chawlahs15@gmail.com)). Similarly, a Winter School on “ Advances in Organic Production System and Conservation Agriculture” will be held at Assam Agricultural University, Jorhat during 24<sup>th</sup> September to 14<sup>th</sup> October, 2015. Interested candidates can see the website [http :// www.aau.ac.in](http://www.aau.ac.in).

No. AAU/DR/RES/T-2/<sup>2050</sup>/2015  
Date: 1 /06/2015

  
**Director of Research &  
Dean P.G. Studies**

**Copy to:**

1. All Unit / Sub unit heads of this University for information & necessary action
2. Director of Information and Technology to put up the circular on AAU website.

**Dr. H.S. Chawla**

**Professor & Head**

Off. Tel. : 05944-233242

Fax No. 05944 - 233473

E. Mail: chawlahs\_pantnagar@rediffmail.com  
chawlahs15@gmail.com



**Deptt. of Genetics & Plant Breeding**

**College of Agriculture**

GBPUA&T., Pantnagar - 263 145

Distt: U.S. Nagar  
(Uttarakhand)

No. CA/GPB/...**8729**

Dated: 13.05.2015

To,

1. Vice-Chancellors/Deans/Directors of Research of State/Central Agricultural Universities
2. Directors of ICAR Institutes/Project Directorates/National Bureaus/NRCs

**Subject: Summer School on "Classical, molecular and recombinant DNA techniques for stress resistance breeding" w.e.f. 11<sup>th</sup> Sep. - 1<sup>st</sup> Oct., 2015-regarding.**

Dear Sir,

It gives me immense pleasure to announce ICAR sponsored Summer School on "Classical, molecular and recombinant DNA techniques for stress resistance breeding" to be held during 11<sup>th</sup> Sep. - 1<sup>st</sup> Oct., 2015 at GBPUA&T., Pantnagar, U.S. Nagar (Uttarakhand).

I would request you to kindly nominate one to two scientists of your organization engaged in the relevant field who fulfill the eligibility requirements as mentioned in the enclosed brochure for participation latest by **August 16, 2015**.

As per recent ICAR guidelines, the nominated candidates have to apply online through Capacity Building Programme (CBP) Portal at <http://iasri.res.in/cbp/apply>. The link for CBP is also available at <http://icar.org.in> under quick links.

Programme may please be given wide publicity.

With due regards

Your's sincerely

  
(H.S. Chawla)  
Course Director

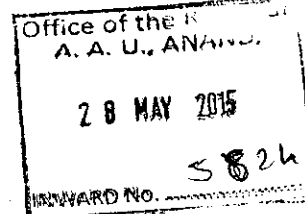
Encl: As above

CC: Assistant Director General (HRD), ICAR, Krishi Anusandhan Bhawan-II Pusa,  
New Delhi-110 012

D.S.W. OFFICE, AAU, Anand.

Inward No. 215

Date 28/5/15



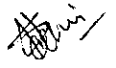
Office of the Directorate of Students' Welfare  
Anand Agricultural University, Anand-388 110.

No. AAU/DSW/267-77/2015

Dt. 29/5/2015

**Copy fws to information and necessary action please :**

1. The Director of Research & Dean, Faculty of PG Studies, AAU, Anand
2. The Dean, Faculty of Agriculture/Veterinary/Dairy Science /F.P.T.&B.E/  
Agri.IT/IABMI/Horticulture/AET, A.A.U. Anand / Godhra / Vaso / Jabugam.

  
**Director  
Students' Welfare**

Application form for participation in Summer School on  
**Classical, molecular and recombinant DNA  
techniques for Stress resistance breeding**  
(September 11, 2015 to October 01, 2015)

1. Full Name (In block letters): .....
2. Designation: .....
3. Present employer and address: .....
4. Address for communication (including telephone, Mob.  
& e-mail address): .....
5. Permanent Address: .....
6. Date of birth: .....
7. Sex: .....
8. Teaching/research/professional experience  
(Mention posts held in last 5 years): .....
9. Area of research presently in and No. of publication: .....
10. Mention if you have participated in any summer/  
winter school/short course etc. during previous year under  
ICAR/any other organization (Give details of course,  
organizers, duration, days, year etc.) .....
11. Registration Fee: ... Postal order No. .... date: .....
12. Academic Record (Indicate in tabular form examinations  
passed from B.Sc. degree onwards, main subjects, year of  
passing, class/Rank/distinction, university/Institution,  
other information)

Examination passed	Main Subject	Year of passing	Class, rank distinction etc.	Univ. or Ins.	Other Infor.
Bachelor's degree					
Master's degree					
Ph.D.					

Date \_\_\_\_\_  
Place \_\_\_\_\_

Signature of applicant

14. Recommendations of forwarding authority:

(Signature with date, designation/address)

**Course Director:** Dr. H.S. Chawla

Professor & Head  
Department of Genetics & Plant Breeding  
College of Agriculture  
GBPUA&T., Pantnagar – 263 145  
Distt: U.S. Nagar (Uttarakhand)  
E-mail: chawlahs15@gmail.com  
Phone: 05944-233242,  
M: 09411159049  
Fax: 05944-233473 / 233363

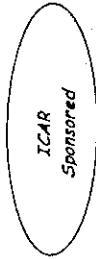
**Course Coordinators**

1. Dr. Ram Bhajan, Professor,  
Genetics & Plant Breeding,  
rbhajan@rediffmail.com
2. Dr. P. K. Shrotria, Professor,  
Genetics & Plant Breeding  
shrotria\_pk@rediffmail.com
3. Dr. A.S. Jeena, Professor,  
Genetics & Plant Breeding  
dr.asjeena@gmail.com
4. Dr. N. K. Singh, Professor,  
Genetics & Plant Breeding  
narendraskingh2@rediffmail.com

**All correspondence should be directed to:**

Dr. A.S. Jeena, Co- Course Director,  
dr.asjeena@gmail.com  
Mob: 07500241511

Dr. Ram Bhajan, Co- Course Director  
rbhajan@rediffmail.com  
Mob: 09415720268



*Summer School*

on

**"Classical, molecular and  
recombinant DNA techniques for  
Stress resistance breeding"**

11<sup>th</sup> Sept. – 1<sup>st</sup> Oct. 2015

*Course Director: Dr. H.S. Chawla*

**Department of  
Genetics & Plant Breeding  
College of Agriculture  
G.B. Pant University of Agriculture &  
Technology, Pantnagar – 263 145  
Distt: U.S. Nagar  
Uttarakhand (INDIA)**

## Introduction

If global welfare is to be maintained or improved, an increased production efficiency of crop plants per unit area is required. At the same time, climatic changes will result in a significant increase in problems caused by biotic and abiotic stresses, which will inevitably limit yield levels. Thus improvement of cultivars to withstand against these stresses becomes an important feature. Breeding programmes are currently set out to meet the new challenges. Biotechnological approaches have opened new avenues for further and faster advances in crop breeding. Cultivars with better resistance to biotic and abiotic stresses are becoming a real option. Although the power and potency of classical breeding approaches in combating the problems of stresses can't be undermined as several successful examples are evident. However, a comprehensive approach to address the plant responses to the stresses call for harnessing the recent developments in the area of molecular and recombinant DNA techniques.

Plant adaptation to environmental stresses is controlled by cascades of molecular networks. These activate stress responsive mechanisms to re-establish homeostasis and to protect and repair damaged proteins and membranes. In contrast to plant resistance to biotic stresses, which is mostly simply inherited traits, the genetically complex responses to abiotic stresses are multigenic and thus more difficult to control and engineer. Plant engineering strategies for abiotic stress tolerance rely on the expression of genes that are involved in signaling and regulatory pathways or genes that encode proteins conferring stress tolerance or enzymes present in pathways leading to the synthesis of functional and structural metabolites. Current efforts to improve plant stress tolerance by genetic transformation have resulted in several important achievements; however, the genetically complex mechanism of abiotic stress tolerance makes the task extremely difficult. For this reason, biotechnology should be fully integrated with conventional plant breeding.

This training programme designed to cover topics from the fields of plant breeding, crop protection, crop physiology and crop plant biotechnology.

## Objectives

The training module aims to expose the participants with strategies and approaches to address the problems of biotic and abiotic stresses in the wake

of recent developments in classical, molecular breeding and recombinant DNA techniques for genetic enhancement of stress tolerance in crops/varieties.

## About the training

The training module is synthesized to be more towards interactive lectures and demonstrations/ practical sessions in the field and laboratory, by senior faculty from the University as well as by invited experts from outside on various aspects of classical and molecular breeding including recombinant DNA techniques to mitigate the adverse effects of stresses through genetic amelioration of crop plants.

## Date and Venue

The training programme will be organized for 21 days from 11<sup>th</sup> Sept. – 1<sup>st</sup> Oct., 2015 in the Department of Genetics and Plant Breeding, GBPUA&T, Pantnagar-263145, Distt: U.S. Nagar, Uttarakhand.

## Eligibility

Participants are invited from SAUs/ ICAR Institutes/National Institutes having M. Sc. / Ph.D. degree in Plant Breeding & Genetics/ Genetics/ Seed Science/ Agricultural Botany/ Vegetable Science/ Horticulture/ Biotechnology/ Plant Physiology or related disciplines and presently working not below the rank of Assistant Professor/Scientist/lecturer with at least 2 years experience as per a valuable guidelines of ICAR.

## Registration

The interested candidates have to apply through CBP portal ([www.icar.org.in](http://www.icar.org.in) / [www.iastri.res.in/cbp](http://www.iastri.res.in/cbp)). After online filling of application form through CBP portal, printout of the application form along with registration fee of Rs 50/- may please be sent to Course Director of training programme through proper channel. The registration fee (Rs. 50/-) will be deposited in the form of postal order in favour of Course Director, Summer school on Classical, molecular and recombinant DNA techniques for Stress resistance breeding, payable at Pantnagar.

## Accommodation and Traveling Allowance

The participants will be provided free boarding and lodging in the University Guest House, besides the reimbursement of expenditure on travel limited to AC III Tier/AC Bus by the shortest route, for attending the Summer school.

## How to Reach Pantnagar

Pantnagar is about 250 Km from Delhi, 360 km from Lucknow. It is well connected through Delhi - Nainital Highway and Lucknow-Nainital Highway. Large number of State & Interstate buses ply from Delhi (Anand Vihar Bus Terminal) towards Haldwani/Nainital. If traveling by Bus, please get down at Rudrapur Bus Stand. Nearest Railway Station is Haldi Road/Pantnagar which is 4 Km from main campus, other nearby Railway Stations are Lalkuan (12 Km) and Rudrapur (16 Km).

## Trains from Delhi

Train No.	Name of Train	Departure	Arrival
15013	Ranikhet Express	Delhi Jn (Daily)	Haldi road 3:40 AM
15035	Uttaranchal Sampark Kranti Express	Delhi Jn (Daily)	Lal Kuan 9:35 PM
12040	Anand Vihar Kathgodam Shatabdi	Delhi (Anand Vihar Terminus)	Lal Kuan 10:55 AM

## Trains from Lucknow/Kanpur

Train Number	Name of Train	Departure	Arrival
12209	Kanpur Kathgodam Garb Rath	Kanpur Central (only Tuesday)	Lal Kuan 6:15 AM
13019	Bagh Express (Howrah Kathgodam Express)	Lucknow (daily)	Haldi Road 7:26 AM
15043	Kathgodam-Lucknow express	Lucknow (Wed, Thu & Sunday only)	Pantnagar 08:05 AM
			Lal Kuan 13:55 AM

## Weather

The weather during the months of Sept-Oct will be hot and humid but pleasant.

## How to apply:

The application for participation may be sent in the prescribed format, duly forwarded by their employer. Application must be uploaded in CBP portal of ICAR website: [www.icar.org.in/](http://www.icar.org.in/) [www.iastri.res.in/cbp](http://www.iastri.res.in/cbp). Last date for receiving application is 16<sup>th</sup> August, 2015. Advance copy can be sent by E-mail. The selected candidates' list will be uploaded on CBP portal of ICAR and also informed by e-mail.



**ASSAM AGRICULTURAL UNIVERSITY**

*Department of Agronomy*  
Jorhat- 785 013, Assam, India

**Dr. N.N. Sarmah**  
Professor and Head

e-mail: headagronomyaau@gmail.com

No.AAU/FA/Agron/F-35/2014-15/ 194 / Dtd. 12/05//2015

To

The Vice Chancellor  
Anand Agricultural University  
Anand - 388110  
Gujarat

Sub: Winter School on 'Advances in Organic Production System and Conservation Agriculture' - inviting application for participation

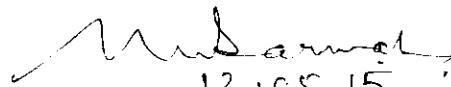
Sir,

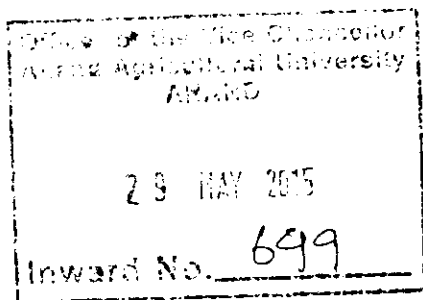
The Department of Agronomy, Assam Agricultural University, Jorhat is organizing an winter school of 21 days duration sponsored by the ICAR, New Delhi on '**Advances in Organic Production System and Conservation Agriculture**' w.e.f. 24.09.2015 to 14.10.2015. The objective of the Winter School is to refresh the knowledge of teachers/scientists and extension scientists in the field of organic production system and conservation agriculture.

The brochure of the Winter School is enclosed herewith for circulation among the teachers and scientists of your institute. I also request you kindly to nominate the interested teachers/scientists of the concerned disciplines for the said Winter School.

With regards,

Yours faithfully,

  
12.05.15  
(N.N. Sarmah)  
Course Director



Tele: 0376-2340030 (off), 09435051811(M)



## Registration Form

### APPLICATION FOR PARTICIPATION IN ICAR SPONSORED WINTER SCHOOL ON

Advances in Organic Production System and  
Conservation Agriculture

(September, 24 to October, 14, 2015)

1. Full Name  
(in block letters) :
2. Designation :
3. Present employer and address :
4. Address to which reply should be sent :  
Postal address with PIN :  
Phone/Mobile No. :  
Fax No. :  
E-mail :
5. Permanent address :
6. Date of birth :
7. Sex (Male/Female) :
8. Teaching/research/professional experience  
(Mention post held during last 5 years and number of publications)
9. Marital status (Married/Unmarried) :
10. Mention if you have participated in any Research seminar,  
Summer school/Winter School/ Short course etc. during the  
previous year under ICAR/other organization :
11. Postal order No. .... Dtd.....  
of Rs 50/- (Non-refundable) for registration.
12. Academic record :-

Examination Passed (M.Sc onwards)	Subjects Main/ subsidiary	Year of passing	Class, Rank, Distinction etc	University /Institute	Other Information

Signature of the applicant

#### CERTIFICATE

It is certified that the information have been verified from the office record  
and are found correct.

Signature and designation of sponsoring authority

Note : Application with above details may be typed on good quality  
A-4 size paper and sent to the Course Director of the Winter School

All correspondence should  
be addressed to :

**Dr. N. N. Sarmah**

Course Director & HoD  
Department of Agronomy  
Assam Agricultural University

Jorhat – 785 013

Phone : 0376 -2340030

Mobile : 09435051811

Email : headagronomyaau@gmail.com

**Dr. K. Kurmi**

Course Coordinator & Professor  
Department of Agronomy  
Assam Agricultural University

Jorhat – 785 013

Mobile : 09435350675

Email : kkurmi7@gmail.com

**Dr. Abhijit Sarma**

Course Coordinator & Senior Scientist  
Department of Agronomy  
Assam Agricultural University

Jorhat – 785 013

Mobile : 09435205749

Email : abhijitaau@gmail.com

WINTER SCHOOL  
ON

## Advances in Organic Production System and Conservation Agriculture

SEPTEMBER 24 to OCTOBER 14, 2015

Sponsored by

Education Division

Indian Council of Agricultural Research  
New Delhi – 110 012



Course Director:

**Dr. N. N. Sarmah**

Course Coordinators

**Dr. K. Kurmi**

**Dr. A. Sarma**



Department of Agronomy

Assam Agricultural University

Jorhat – 785 013

<http://www.aau.ac.in>



## ASSAM AGRICULTURAL UNIVERSITY, JORHAT

Assam Agriculture College was established on 16th August, 1948 at Borbhetta, Jorhat, the present head quarter of Assam Agricultural University. The University comprises 3 Agriculture Colleges, 2 Veterinary Colleges, 1 each of Home Science College, Fishery College, Sericulture College and Horticulture College. It is the first Agricultural University in the entire North East India catering to the needs of research, education and extension education of the state in agriculture and allied sciences. It awards graduate, post graduate and doctoral degrees in different fields. It has 6 Zonal Research Stations, 5 Commodity Research Stations and 23 Krishi Vigyan Kendras, spreading over the entire state.

### CLIMATE

The climate of Jorhat is pleasant round the year. The winter is about three months from November to February and summer starts from April. Heavy rainfall occurs between June to August. During the month of September-October, climate will be pleasant. The normal maximum temperature ranges between 29.9 to 31.3°C and minimum temperature ranges between 21.8 to 23.6°C during 24 Sep – 14 Oct. It is advisable to carry light warm clothing

### THE WINTER SCHOOL

As a sequel to the realization for a sound environment and food for all efforts are now being made to find ecologically sound, economically viable and technologically improved methods of agricultural farming system. Organic agriculture, in the process, has come out to be the viable alternative to address the issues thrown as the after effects of

chemical rich agriculture practiced. In order to find solutions to health and environmental hazard created by chemical based agricultural system and some other related issues, organic concept of food production was developed with its base mainly on zero use of insecticides and pesticides, replacement of chemical fertilizers through organic fertilizers to rejuvenate/maintain soil health, avoidance or exclusion of growth regulators, livestock feed additive etc, restoring to crop rotation, use of off farm wastes, mineral bearing rocks, mulching technique for moisture conservation, weed control and keeping the top soil layer moderately coolers to provide space for earthworm and other friendly micro-organism to grow, harvesting solar energy, building soil wealth through recycling process and harvesting, conserving and utilizing water resources. Conservation technologies involve providing a soil cover through crop residues or other cover crops, minimum soil disturbance and crop rotation for achieving higher productivity while protecting natural resources and environment. This has emerges as way for transition to the sustainability of intensive cropping systems.

The course will broadly cover the following topics:

- Nutrient management in organic agriculture
- Pest, disease and weed management in organic agriculture
- Water conservation and management in organic production system
- Certification procedure of organic agriculture
- Conservation agriculture

### INSTRUCTIONS TO PARTICIPANTS

Interested candidates shall apply in the prescribed performa enclosed in this brochure along with a non-refundable registration fee of Rs. 50/- (Rupees fifty only) in the form of a Demand Draft/Indian Postal Order in favour of Dean, FA, payable at SBI AAU Jorhat Branch. The application duly forwarded by the competent authority of the

sponsoring organization should reach the Course Director on or before 30th June, 2015. Additionally an advance copy of the application may also be sent electronically to [headagronomyaaugmail.com](mailto:headagronomyaaugmail.com). Selected candidates will be intimated by 15th of July, 2015.

### ELIGIBILITY

Applicants should be postgraduate in any discipline of agriculture, preferably Agronomy/Soil Science/Horticulture and working not below the rank of Assistant Professor/SMS or equivalent in ICAR institutes, SAUs, CAUs, KVKS, Agriculture Faculty of AMU, BHU, Vishwa Bharati and Nagaland University.

### TRAVEL, LODGING AND BOARDING

The selected participants will be provided free boarding and lodging in the university. Food expenses will be borne by the organizer as per ICAR norms. All participants will be reimbursed to and fro travel fare for journey to Jorhat by rail or bus by shortest route. The payment will be made as per the entitled class of travel, but restricted to the maximum AC-III tier train fare, bus fare (as per actual). Local participants are not eligible for boarding and lodging. However, they will be provided lunch and inter session tea. Participants are requested not to bring family members with them.

### HOW TO REACH AAU, JORHAT

Jorhat is well connected by road and rail from all the major cities of Assam. AAU, Jorhat is 5 kms away from Jorhat Railway station. The campus is about 5 kms from Jorhat Town. Taxi / Auto service is available from the Railway station.