



भाकृअनुप - भारतीय कृषि सांख्यिकी अनुसंधान संस्थान
लाइब्रेरी एवेन्यू, पूसा, नई दिल्ली-110 012



ICAR – Indian Agricultural Statistics Research Institute
Library Avenue, Pusa, New Delhi-110 012

डॉ. लाल मोहन भर
निदेशक (कार्यकारी)

Dr. Lal Mohan Bhar
Director (Acting)

सं. निदेशक/भा.कृ.सां.अ.सं./एसजे/ट्रेनिंग/ 10/ 2018

दिनांक: 27 अक्टूबर, 2018

सेवा में,

भा.कृ.अ.प. के संस्थानों के निदेशक/राष्ट्रीय क्षेत्रीय केन्द्र/परियोजना निदेशक/राष्ट्रीय ब्यूरो/राज्य कृषि विश्वविद्यालयों के उपकुलपति/केन्द्रीय कृषि विश्वविद्यालयों के उपकुलपति

विषय: वैज्ञानिकों के लिए परीक्षात्मक अभिकल्पनाएँ एवं सांख्यिकीय आँकड़ों का विश्लेषण पर प्रशिक्षण कार्यक्रम

श्रीमान / श्रीमती,

भा.कृ.अ.प.-भारतीय कृषि सांख्यिकी अनुसंधान संस्थान जनवरी 03-16, 2019 के दौरान भा.कृ.अनु.प. की मानव संसाधन प्रबंधन इकाई के अंतर्गत परीक्षात्मक अभिकल्पनाएँ एवं सांख्यिकीय आँकड़ों का विश्लेषण पर एक प्रशिक्षण कार्यक्रम आयोजित कर रहा है। इस प्रशिक्षण कार्यक्रम का मुख्य उद्देश्य सहभागियों को परीक्षण अभिकल्पनाओं एवं अनुसंधान के आँकड़ों के विश्लेषण की अर्थपूर्ण व्याख्या करने से अवगत कराना तथा उनकी अनुसंधान, अध्यापन एवं प्रशिक्षण दक्षता का अद्यतन करना है। इससे कृषि वैज्ञानिकों को एक सांझा मंच भी मिलेगा जिसके फलस्वरूप उन्हें एक दूसरे के साथ अपने अनुभवों को बांटने का मौका मिलेगा और साथ ही अनुसंधान एवं शिक्षा का स्तर वर्तमान आवश्यकतानुसार और अधिक तर्कसंगत बनेगा।

आपसे अनुरोध है कि आप अपने संस्थान से दो वैज्ञानिकों/प्राध्यापकों को उक्त प्रशिक्षण कार्यक्रम में सहभागिता हेतु मनोनीत करें जो विवरणिका में दिए गए निर्धारित पात्रता सम्बन्धी मापदंडों को पूरा करते हों। इस पाठ्यक्रम के लिए कुल 25 सहभागियों का चयन किया जाएगा। प्रायोजित प्रत्याशियों का नामांकन विवरणिका के साथ संलग्न प्रपत्र में भरकर निम्नलिखित पते पर 1 दिसंबर, 2018 तक भिजवाने की कृपा करें :

डॉ. सीमा जग्गी
प्रभागाध्यक्ष (प.अ.प्र.) एवं पाठ्यक्रम निदेशक
भा.कृ.अनु.प.-भारतीय कृषि सांख्यिकी अनुसंधान
संस्थान, लाइब्रेरी एवेन्यू, नई दिल्ली-110012
seema.jaggi@icar.gov.in

अथवा

डॉ. अर्पण भौमिक
वैज्ञानिक एवं पाठ्यक्रम सह-संयोजक
भा.कृ.अनु.प.-भारतीय कृषि सांख्यिकी अनुसंधान
संस्थान, लाइब्रेरी एवेन्यू, नई दिल्ली-110012
arpan.bhowmik@icar.gov.in

भवदीय

लालमोहन
(लाल मोहन भर)

प्रति: उप महानिदेशक भा.कृ.अ.प. / सहा. महानिदेशक(एच.आर.एम.) भा.कृ.अ.प. - सूचनार्थ



भाकृअनुप - भारतीय कृषि सांख्यिकी अनुसंधान संस्थान
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ICAR – Indian Agricultural Statistics Research Institute
Library Avenue, Pusa, New Delhi-110 012

डॉ. लाल मोहन भर
निदेशक (कार्यकारी)

Dr. Lal Mohan Bhar
Director (Acting)

No. Dir/IASRI/Training/SJ/10/2018

Dated: October 27, 2018

To

Directors of ICAR Institutes/ NRCs/ Project Directors/ National Bureaux/ Vice Chancellors of SAU's/ Vice Chancellors of CAU's

Subject: Training Programme on **Experimental Designs and Statistical Data Analysis** for Scientific Personnel

Sir/Madam,

ICAR-Indian Agricultural Statistics Research Institute is conducting a Training Programme on **Experimental Designs and Statistical Data Analysis** during January 03-16, 2019 under the HRM unit of ICAR. The aim of this training programme is to familiarize the participants with the experimental design and statistical analysis of experimental data for making valid inferences and to help them in upgrading the research, teaching and training skills. It will also provide a common forum for the agricultural scientist to interact and exchange experiences to make research and education more relevant to the current needs.

You are requested to kindly nominate one or two scientists/teachers of your institute who fulfill the eligibility criteria as given in the enclosed brochure for participating in the above training. In all, 25 participants will be selected for this course. **The nomination of the sponsored candidates through filled in application form enclosed with the brochure may please be sent by December 01, 2018 on the address given below:**

Dr. Seema Jaggi
–Head(DE) and Course Director
ICAR-Indian Agricultural Statistics Research
Institute. Library Avenue
New Delhi- 110012
seema.jaggi@icar.gov.in

Or

Dr. Arpan Bhowmik
Scientist and Course Coordinators
ICAR-Indian Agricultural Statistics Research
Institute. Library Avenue
New Delhi- 110012
arpan.bhowmik@icar.gov.in

Yours sincerely,


(Lal Mohan Bhar)
Director

Copy to:-
DDG's, ICAR / ADG (HRM), ICAR

Training Programme
on
**Experimental Designs and
Statistical Data Analysis**

for the Scientific Personnel of NARES

under the HRM unit, ICAR

(January 03-16, 2019)

Course Director
Dr. Seema Jaggi

Course Coordinators
Dr. Arpan Bhowmik
Dr. Anindita Datta

Last date for receipt of Applications December 01, 2018
Information to Selected Candidate December 05, 2018



ICAR- Indian Agricultural Statistics Research Institute
Library Avenue, Pusa, New Delhi
www.iasri.res.in



Introduction

Data analysis plays a crucial role in any scientific investigation. It is through the data collected from designed experiments that valid inferences are drawn about any newly developed technology. The use of efficient and cost effective designs and appropriate statistical techniques for analyzing the data are very crucial to obtain a meaningful interpretation of the investigation. The subject is now well developed and with the help of statistical software, one can handle any kind of analysis. It is very vital for the researchers, particularly agricultural researchers to be acquainted with the efficient design of experiments, modern statistical techniques and use of statistical software.

This course, therefore, aims to update the analytical skills of the agricultural researchers under National Agricultural Research and Education System (NARES) and to provide them with an opportunity to study and learn design of experiments and analytical techniques of experimental data along with the use of statistical software for data analysis mainly SAS. The course is practical oriented and more emphasis would be given on interpretation of the results.

Objectives

- To familiarize the participants with the experimental designs and statistical techniques for analysis of data for making valid inferences from their agricultural research
- To acquaint the participants with the use of statistical software packages for data analysis
- To help in upgrading the analytical skills of the participants under NARES

Course Contents

The course has been structured in a series of modules with classroom lectures and hands on session. The course deals with statistical tools and techniques and the use of statistical software packages. The main focus of the course will be on the statistical issues in agricultural research.

Besides laying the focus on concepts and applications, the focus would also be concentrated on analysis of data using statistical packages. Course material will be provided to all participants.

The participants are requested to bring with them one or two data sets of their own research. These data sets may be analyzed using appropriate statistical techniques and the results may be discussed during the course. The participants will be given opportunity to express their research experiences in the field of their specialization.

The course content will be divided into three modules as follows:

Module I: Basic Statistical Tools for Data Analysis

- Descriptive Statistics
- Exploratory Data Analysis
- Testing of Hypothesis (t-test, F- test, Chi-square test)
- Analysis of Variance
- Data Diagnostics and Remedies
- Correlation and Regression Analysis
- Non-parametric Tests

Module II: Data Generation and Analytical Techniques

- Planning and Designing of Experiments
- Basic Experimental Designs
- Multiple Comparison Procedures
- Incomplete Block Designs: BIB and PBIB Designs
- Resolvable Designs: Alpha and Lattice Designs
- Groups of Experiments
- Row-Column Designs
- Factorial Experiments and Fractional Factorial Plans
- Split and Strip Plot Designs
- Response Surface Designs
- Designs for Breeding Trials
- Augmented Designs
- Analysis of Covariance
- Analysis of Repeated Measures Data
- Multivariate Analytical Techniques

Module III: Statistical Software/ Online Resources for Data Analysis

- MS Excel
- SAS
- SPSS

Venue

ICAR - Indian Agricultural Statistics Research Institute,
Library Avenue, Pusa, New Delhi-110 012.

Accommodation

Efforts to The arrangement for accommodation will be made in the ICAR-IASRI/NASC guest house. The charges for the same to be paid by the participants.

Number of Participants: 25

Climate at Delhi

The climate in Delhi is cold in the month of January. The average temperature ranges between 6 to 16° C.

ICAR-IASRI, New Delhi (<http://www.iasri.res.in>)

ICAR-IASRI is a premier Institute, established in 1959, mainly responsible for conducting research and imparting education/ training in the field of Agricultural Statistics, Computer Applications and Bioinformatics. There are six divisions in the Institute and the Institute is equipped with the modern facilities that include:

- *Computing facilities:* The Institute has several computer laboratories well equipped with latest hardware and software packages along with modern teaching aids.
- *Library:* The e-library has rich collection of books and journals on Statistics, Computer Science, Bioinformatics and other related disciplines including on-line journals and bibliographic databases.
- *Guest house:* The Institute has a guest house with modest facilities to cater to the needs of the participants.

Eligibility

- Master's Degree in any discipline of Agricultural Sciences/ Animal Sciences/ Fishery Sciences/ Agricultural Statistics/ Statistics.
- Working in a position not below the rank of Scientist/ Assistant Professor in ICAR Institute/SAU/ CAU.
- Working knowledge of Statistics and Computer.

Nominations

Interested personnel fulfilling the eligibility conditions may apply through proper channel

Financial Liability

- TA/DA have to be met out by the participants from their respective institutes.
- Expenditure towards lunch, session tea, study material etc. will be borne by the organizing institute from the HRD funds available.

NOTE

Participants from SAUs/ CAUs will have to pay a fee of Rs. 6500/- per person which includes training material, working lunch and session tea.

All correspondence may be addressed to:

- Dr. Lal Mohan Bhar,
Director(A), ICAR-IASRI
E-mail: director.iasri@icar.gov.in
Fax: 011-25841564

Or

- Dr. Seema Jaggi,
Head (A), Division of Design of Experiments, ICAR-IASRI
E-mail: seema.jaggi@icar.gov.in
Phone: 011-25847284; 9873169418

Or

- Dr. Arpan Bhowmik,
Scientist, Division of Design of Experiments, ICAR-IASRI
E-mail: Arpan.Bhowmik@icar.gov.in
Phone: 9968700360

Or

- Dr. Anindita Datta,
Scientist, Division of Design of Experiments, ICAR-IASRI
E-mail: anindita.datta@icar.gov.in
Phone: 9013593351

Application Form for Training Programme on "Experimental Designs and Statistical Data Analysis" (January 03-16, 2019)

under the HRM unit, ICAR for the Scientific personnel

1. Full Name (in block letter):
2. Designation:
3. Present Employer and Address:
4. Address to which reply should be sent (in block letters):
5. Permanent Address: _____

- Telephone No. (off.): _____ (Res.): _____
(Mob): _____ Fax No.: _____
- E-mail: _____
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 training/ Summer/ Winter School/ Short Course, etc. during last 5 years under ICAR / other organizations:
11. Academic Record:

Exam. passed	Subjects	Year of Passing	University / Institution
Ph.D. Masters degree Other (specify)			

12. Discipline:
13. Level of knowledge of Statistics and Computer usage:

Signature of the Applicant with Date

14. Recommendations of the forwarding Institute

Signature of the Forwarding Authority
with Seal and Date

CERTIFICATE

It is certified that the information furnished above is correct. Traveling allowances and dearness allowances for the entire period of stay during the training will be paid by this office.

Signature of the sponsoring Authority
with Seal and Date