



# IASRI

# newsletter



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No. 4

## Optimum Testing Procedures for Packages of Practices

Many a researchers like Rasmusson, D.C. and Lambert, J.W. (1961); Schutz, W.M. and Bernard, R.L. (1967) and a Tunde Obliana and Tunde Fatunla (1976) have studied testing procedures for different crops like barley, soyabean and maize based on the analysis of different populations or varieties evaluated at different locations in successive years. Khurana and Bhatnagar (1991) suggested the optimum testing procedures for different packages of practices applied for growing different crops or crop sequences. The study was based on the analysis of the data of 16 packages of practices (16 combinations of 4 agronomic factors at 2 levels each) at more than two locations in successive years. The data obtained under AICARP (ICAR) during the years

1982-86 were analysed using the analysis of strip-plot design. The analysis was carried out with the assumption of one more strip pertaining to environment factor i.e. years and locations in the strip-plot layout. Orthogonal to the two perpendicular strips of agronomic factors viz: (i) Date of sowing, (ii) fertilizer application, (iii) plant population (kharif)/irrigation (rabi) and (iv) weed control.

The effects of various components of agronomic factors and different interactions of year, location and year and location both with agronomic factors of different packages were estimated from the expected mean squares (Anderson and Bancroft, 1952).

An estimate of the number of replicates, years and locations which

may be the most efficient in package testing was obtained by determining their effect on the magnitude of the theoretical variance of package mean. The theoretical variance was computed by substituting the estimates of variance components in the formula (Obliana, A Tunde and Fatunla; Tunde—1976 PP-380, Exp. Agriculture)—Theoretical standard errors for different values of replications, years and locations were computed. Assuming a constant number of plots, the allocation into replicates, years and locations that resulted into smallest variance would be the most efficient ignoring time and cost. Similarly, the total number of plots allocated as desired, which were needed to obtain a desired standard error could be obtained.

## Post Harvest Foodgrain Losses (Wheat)

There are appreciable losses of crop due to various causes from field to consumer level. These losses could occur at pre-harvest, harvest and post harvest stages. The losses at harvest and post harvest stages may be due to different systems of harvesting, threshing, transportation, storing, etc. at farm, market and government/public agency level.

To develop a suitable statistical methodology for the estimation of foodgrain losses at different post harvest stages, a pilot sample survey for estimation of post harvest foodgrain losses in wheat crop was conducted during 1985-88 in Bullandshahr district of UP. Survey covered the rural areas, markets and government/public agency godowns in the district. At farm level, the losses were estimated at (i) harvesting, (ii) threshing, (iii) transportation and (iv) storage stages whereas at market and government/public agency levels the losses were estimated at storage stage only.

For estimating the losses at farm

level, sample of cultivators were selected by stratified multistage random sampling with groups of blocks as strata, 4 villages in each stratum as first stage units and 6 cultivators from each village as second stage units. The cultivators were selected after substratification into three categories viz. I (having area under wheat crop  $\leq 1.0$  hect), II (having area under wheat crop  $> 1.0$  hect and  $\leq 2.0$  hect) and III (having area under wheat crop  $> 2.0$  hect). For estimating the losses at harvest stage, one field of the selected cultivator was selected for crop cutting experiment. For estimating the losses at market level, wholesale markets were the first stage units and a group of 6 wholesalers from each market were the second stage unit. For estimating the losses at government/public agency level, from each godown, 2 sheds/compartments were selected randomly as first stage units and in each shed/compartment 2 stacks were selected randomly as second stage units and

from each stack, 5 samples one from each side namely, east, west, north, south and top were taken at quarterly intervals for laboratory analysis.

The total percentage losses at different post-harvest stages during 1985, 1986 and 1987 and pooled over years were estimated as 3.25, 3.97, 4.95 and 4.12% respectively. The corresponding total losses at farm level were 3.03, 2.96, 3.80 and 3.31 per cent respectively whereas losses in storage at market level were 0.22, 1.01, 1.15 and 0.81 per cent respectively. Total loss, pooled over years at farm and market levels were 0.3 and 19.7 per cent of the total loss at different post harvest stages. Losses pooled over years at harvesting, threshing, transportation and storage stages at farm level were estimated as 0.50, 0.34, 0.35 and 2.12 per cent respectively. These losses respectively formed 15.1, 10.3, 10.6 and 64.0 per cent of the total loss at farm level. The losses in storage at government/public agency godowns were negligible.

## Optimum Utilisation of Land Resources

The availability of cultivable land is subject to various pulls and pressures of the society such as industrial development, growth of urban centres, etc. Sub division and fragmentation of land holdings also adversely affect the crop production.

Though the country has attained near self-sufficiency in foodgrain production, the additional foodgrains are needed to alleviate the hunger of poor whose main item of expenditure is food. The additional production has to be obtained in

most cost effective manner to facilitate employment oriented economic growth. Since horizontal growth in culturable area is not possible, the only option lies in the vertical growth i.e. growth in the productivity level of land which can be attained by the sustainable optimum utilisation of land resources.

The present study is based on the land utilisation pattern observed in different categories of selected farmers in three tehsils of Gurgaon district (Haryana).

The average size of irrigated land holding for small category farmers in these three tehsils was about 0.676 ha. and that of unirrigated type was about 0.356 ha. In medium category of farmers the mean irrigated holding size was 1.623 ha. and unirrigated size was about 0.866 ha. while in large category of farmers these were 3.663 ha. and 2.396 ha. respectively.

Seasonwise cropping pattern showed that bajra crop was the predominant crop of the kharif season

followed by guar and jowar. In rabi season wheat was the leading crop in all categories of farmers followed by barley, mustard and gram.

The optimum land use plan indicated that there was not much variation in the land utilisation under wheat (irrigated) crop between the existing and optimum plans. The optimum plan allocates significant land to gram crop in two tehsils. Similarly, a significant allocation gives for mustard crop in two

tehsils while no land allocation under mustard crop in third Nuh tehsil.

The study showed that farmers of all the three categories had consideration part of their holdings under un-irrigated conditions and this part remained constant irrespective of the holding size. The extent of irrigation shows that the irrigated area was lowest in tehsil Ferozepur Zhirka which constituted 55.97% of gross cropped area and was highest (about 75% of the gross

cropped area) in Nuh tehsil.

The existing land use pattern indicated that crops like mustard and gram are allocated to marginal or low fertility land whereas good portion of cultured land is allocated to wheat crop.

However, the optimum plan also indicated that wheat continues to be the stable crop and occupies considerable area in all the categories of farmers. Gram and mustard are the other crops included in the optimum plan.

## Statistical Package for Agricultural Research Data Analysis (SPAR 1)

One of the most important disciplines in agriculture, where extensive research is being done, is genetics and plant breeding. Plant breeders wish to use a number of biometrical methods to analyse data, and estimate different parameters from them. Some relevant methods and techniques used are.

### 1. Diallel analysis

- (i) The basic analysis of variance for treatment.
- (ii) Diallel analysis—Griffings approach.
- (iii) Diallel analysis—Hayman's approach.
- (iv) Heterosis and inbreeding depression.
- (v) Combined analysis of variance of parents,  $F_1$  and  $F_2$  crosses.
- (vi) Analysis of variance and covariance for treatments.

### 2. Multivariate analysis

- (i) D-square statistics.
- (ii) Canonical variate analysis.
- (iii) Geno/phenotypic studies.

(iv) Correlations.

(v) Heritability.

(vi) Path coefficient analysis.

(vii) Discriminant analysis.

### 3. Multiple linear regression analysis by L.S.Q. technique

(i) Correlations.

(ii) Step-down regression analysis

(iii) Durbin Watson statistics.

### 4. Non-hierarchical euclidean cluster analysis (Beale 1969)

### 5. Line tester analysis (with parents)

### 6. Path analysis

### 7. Fisher's discriminant function analysis

### 8. Stability analysis

(i) Eberhart and Russell's model

(ii) Perkins and Jinks model

### 9. Partial diallel analysis

### 10. Triple test cross analysis

### 11. Combining ability

(i) Griffings method 3

(ii) Griffings method 4

### 12. Generation means scaling tests and joint scaling tests

(i) Heterosis and inbreeding depression analysis

(ii) A, B, C, D scaling tests

(iii) Components of generation means

(iv) Joint scaling tests as suggested by Cavelli (1952)

Most of these programs were developed at IASRI in FORTRAN II for use on IBM 1620 and in FORTRAN IV for use on Burroughs B-4700 system.

With the installations of personal computer's PC(XT)'s or PC(AT)'s in almost all the agricultural universities and ICAR institutes, it was felt that self instructive and user oriented programs for above analysis may be developed. Statistical package for Agricultural Research (SPAR 1) is one such effort. The system can be installed on any IBM compatible PC(XT) or PC(AT) with 640 kb RAM and with Maths Coprocessor. The system is on four floppies with user manual to support.

## Computing Science

### Computing Facilities

The process of installation of new computer system and linking them through a local area network (ETHERNET) is still in progress. The Computing help through computing labs, graphics labs etc. were provided to users. Statistics regarding the same are:

- (i) No. of PC user bookings : 1821
- (ii) No. of hours PC's used : 3028

Besides this for all regular and ad-hoc training programs for computer applications conducted at IASRI, PC's and computing labs

were used for practical classes and demonstration purposes.

### Scientific Support

During the quarter 2 Ph.D., 9 M.Sc. students and 6 other research workers from various agricultural universities and ICAR Institutes were provided with programming and EDP help in their research data analysis. Two new computer programs were developed for data analysis on PC's.

### Data-entry Unit

Data entry unit of the division used data entry machines for data

preparation on floppies and carried out the following jobs:

- (i) Number of data batches created : 216
- (ii) Total number of records created on floppies : 92,614
- (iii) Number of batches transferred to floppies from tape : 31
- (iv) Total number of records transferred from tapes to floppies : 54,587

## Field Survey Work

### Field Training

The field training was imparted in connection with the following projects:

- Survey methodology to study economics of keeping goats at CIRG, Makhdoom and IASRI, New Delhi.
- Pilot sample survey for estimating yield and study of cultivation practices of pepper at Odagamandalam (TN) and Sindhudurg (Maharashtra).
- Study of farmer behaviour towards risk and its impact on cropping pattern, level of resource use and farm income

at district Alwar (Raj) and Ghaziabad (UP).

- Pilot sample survey for developing a sampling methodology for estimation of post production losses of milk in rural areas in district Rohtak (Haryana) at IASRI, New Delhi.

### Field supervision/Inspection

The field work of the following projects were inspected/supervised by the officers of the Institute:

- Estimation of cost of production of sheep and wool at Malpura and Tonk tehsils of district Tonk (Rajasthan).

- Pilot sample survey for developing a sampling methodology for estimation of post production losses of milk in rural areas at district Rohtak (Haryana).
- Pilot sample survey for estimating yield and study of cultivation practices of pepper at Sindhudurg (Maharashtra).
- Study of farmers behaviour towards risk and its impact on cropping pattern, level of resource use and farm income at district Alwar (Rajasthan) and Ghaziabad (UP).

## Library and Documentation Services

### Resource Building

1. Books procured	12
2. Reports procured	40
3. Journals procured	350
4. Number of reprints issued to users	50

### Library Services

1. Number of documents borrowed or lent out on inter library loan	25
2. Number of pages of scientific and technical nature rephotographed	15665

### Library Usage

1. Number of readers who consulted the library	6700
2. Number of publications issued from the library	7300

## IASRI Publications

- Studies on comparative performance of mixed farming involving crops, livestock, poultry and fish (1989)  
by Shivtar Singh, RL Rustagi and HO Agarwal
- Pilot survey to develop statistical models for production and culling patterns in poultry (1991)  
by KPS Nirman, JP Jain and Balbir Singh
- Estimation of area of grazing land and its utilisation, Chingleput district, Tamil Nadu (1991)  
by Anand Prakash, BC Saxena and JS Maini

## Papers Published

- Narain, P (1991). Some theoretical studies in population genetics. *Proceedings of Seminar on Genetic Studies in India—Impact of Haldane, Ed. JS Murty, Osmania University, Hyderabad (1990)*.
- Narain, P, Bhargava, PN and Bhatnagar, KC (1991). Economics of zinc use in cereal crops. *Proc. National Seminar on 'Importance of Zinc in Agriculture', Lucknow: 65-81*.
- Sharma, BS and Pirchner, F (1991). Heterosis in Friesian X Sahiwal crosses, *J. Animal Breed. Genet.*, 108 : 241-252.
- Wahi, SD and Kher, KK (1991). A comparison of clustering procedures based on multiple traits in Gerbera and Dohlia. *Indian J. Genet.*, 51(3) : 61-69.

## Papers Accepted for Publication

- Bhatia, DK, Nigam, AK, Bajpai, SN and Mathur, DC —Statistical evaluation of animal nutrition experiments. *Indian J. Animal Sci.*
- Chaudhary, BL and Bhatia, AK—Mixed versus inter-cropping for wheat and mustard. *J. Annals Agril. Res.*
- Kutaula, SS—Application of stochastic transfer for the measurement of technical efficiency of paddy crop grown under land reclamation technology. *J. Agril. Econ. Res. Review*.
- Pandey, RK and Sarup, Shanti—Study of growth and factors affecting rice production in Orissa. *J. Agril. Issues*.

## Seminars/Workshops/Symposia/Conferences Attended by the Scientists

S.No.	Name of the Scientist	Programme Title	Place	Period
1	2	3	4	5
1.	Dr SK Raheja	National Consultation on Fertilizer Pricing: An Aspect of Public Policy	Jaipur	Oct 01
2.	Dr SK Raheja Sh PN Bhargava Sh KC Bhatnagar	National Seminar on 'Importance of Zinc in Agriculture'	IISR, Lucknow	Oct 10
3.	Dr JP Jain	UNESCO/STEPAN workshop on 'Science and Technology for Development and Science and Technology Information Management in Asia', organised by NISTADS	Park Hotel, New Delhi	Oct 14-25

1	2	3	4	5
4.	Prof Prem Narain Dr SK Raheja	Symposium on 'Population, National Resources and Food Security', organised by the National Academy of Agricultural Sciences	IARI, New Delhi	Oct 21-22
5.	Prof Prem Narain <sup>+</sup> Dr RK Pandey* Dr JP Jain Sh Jagmohan Singh Dr SS Kutaula	National Seminar on 'Agriculture in Nineties : Challenges and Research Needs' organised by the Indian Society of Agricultural Science	IARI, New Delhi	Oct 23-25
6.	Sh Mahesh Kumar	National Seminar on 'Policy Issues in Generation, Reliability and Retrieval of Database on Indian Agricultural Sector for Social Science Research	NAARM, Hyderabad	Nov 13-15
7.	Sh PN Bhargava Sh KC Bhatnagar	National Conference on 'Agricultural Resources and Products— A Quality Analysis'	Calcutta University, Calcutta	Nov 23-24
8.	Prof Prem Narain Dr OP Kathuria Dr PR Sreenath Sh R. Gopalan** Dr AK Srivastava Dr Shivtar Singh Sh TB Jain Sh RL Rustagi Dr GC Chawla Dr VK Bhatia*** Sh Jagmohan Singh Sh GL Khurana Sh DK Bhatia Sh Tribhuvan Rai Sh Satya Pal Sh CH Rao Dr Jagbir Singh	The 45th Annual Conference of Indian Society of Agricultural Statistics	NDRI, Karnal	Nov 27-29
9.	Prof Prem Narain Dr SK Raheja Dr RK Pandey Sh PN Bhargava Dr VK Sharma	FAI - National Seminar on 'Optimizing Fertilizer Production Distribution and Usage'	Taj Palace Hotel, New Delhi	Dec 05-07
10.	Dr RK Pandey Sh SP Bhardwaj	The 51st Annual Conference of Indian Society of Agricultural Economics	Andhra Pradesh Agril. University, Hyderabad	Dec 18-20

<sup>+</sup>Presided the Inaugural Function.

\*Acted as Rapporteur in the Plenary Session.

\*\*Convened a session on 'Statistical Computing' during the Conference.

\*\*\*Convened a symposium on 'National Selection for Evolution of Quantitative Characters' during the Conference.

## Papers Presented at Workshops/Symposia/Conferences/ Seminars

S. No.	Author (s)	Paper Title	Programme Title	Venue	Period
1	2	3	4	5	6
1.	Raheja, SK	Output elasticities of fertilizer use in India	National Consultation on Fertilizer Pricing : An Aspect of Public Policy	Institute of Development Studies, Jaipur	Sep 30- Oct 02
2.	Narain, P Bhargava, PN Bhatnagar, KC	Economics of zinc use in cereal crops	National Seminar on 'Importance of Zinc in Agriculture'	IISR, Lucknow	Oct 10
3.	Kutaula, SS	Efficiency and its relevance in agriculture	National Seminar on 'Agriculture in Nineties : Challenges and Research Needs' organised by Indian Society of Agricultural Science	IARI, New Delhi	Oct 23-25
4.	Narain, P Jain, JP Pandey, RK	Statistical research in agriculture in the nineties	"	"	"
5.	Singh, Jagmohan Mehrotra, PC	A new multi-purpose scheme for collection of agricultural statistics	"	"	"
6.	Sharma, VK	Estimation of seemingly unrelated regressions when numbers of observations are unequal	The 28th Annual Conference of the Indian Econometric Society	University of North Bengal, Raja Ram-mohanpur Roy, Darjeeling	Oct 29-31
7.	Malhotra, PK Mahesh Kumar	Methodology of data collection and development of data bases in dairying	National Seminar on 'Policy Issues in Generation, Reliability and Retrieval of Data Base on Indian Agricultural Sector for Social Science Research'	NAARM, Hyderabad	Nov 13-15
8.	Bhargava, PN Bhatnagar, KC	Experiments on cultivator's fields—A linkage in research development	National Conference on 'Agriculture Resources and Products—A Quality Analysis' organised by Indian Association for Productivity, Quality and Reliability, Deptt. of Statistics, Calcutta	Calcutta University, Calcutta	Nov 23-24

1	2	3	4	5	6
9.	Amrit Pal Kaur Narain, Prem	Index selection with continuous and all- or-none traits	The 45th Annual Conference of Indian Society of Agricul- tural Statistics	NDRI, Karnal	Nov 27-29
10.	Bhatia, DK Arya, SN Singh, HP	Livestock epidemio- logy : Trends in intensity of diseases in Tamil Nadu	"	"	"
11.	Chawla, GC	Change-over designs	"	"	"
12.	Chawla, GC	Use of mixed model for studying the pro- tein levels and litter- floor densities for poultry production	"	"	"
13.	Jain, TB	Cost of rearing a non- descript pig upto different ages	"	"	"
14.	Kathuria, OP Bathla, HVL Kher, KK	Sample survey for estimation of area under fish ponds and catch from them	"	"	"
15.	Khurana, GL Bhatnagar, KC Bhargava, PN	Applications of analysis of means in agricultural field experiments	"	"	"
16.	Khurana, GL Bhatnagar, KC Bhargava, PN	Interactions at re- duced levels of agronomic factors for higher productivity	"	"	"
17.	Pandey, PS Kathuria, OP	Some composite esti- mators for small area estimation	"	"	"
18.	Prajneshu, Das, PK	Modelling wheat pro- duction in India	"	"	"
19.	Rai, Anil Kathuria, OP	An evaluation of modified chisquare test statistics for survey data	"	"	"
20.	Rai, T Batra, MS Mohan Lal Pathak, GM	Economic return through intercropp- ing in chikoo orchard	"	"	"
21.	Rajendra Prasad Gupta, VK Prasad, NSG	On A-efficiency of balanced test treat- ment incomplete block designs	"	"	"
22.	Rao, CH Bhatnagar, KC	An approach for the evaluation of com- posite yardsticks	"	"	"



1	2	3	4	5	6
23.	Rao, CH Bhatnagar, KC	Economics of fertiliser application to wheat	The 45th Annual Conference of Indian Society of Agricultural Statistics	NDRI, Karnal	Nov 27-29
24.	Rustagi, RL Singh, Shivtar	Farming efficiency in crop-dairy-poultry-fish enterprises	"	"	"
25.	Satya Pal Rai, T	Adopted doses of fertilizer nutrients for optimum wheat production	"	"	"
26.	Singh, Jagbir Kathuria, OP	Sampling on two occasions with two correlated characters	"	"	"
27.	Singh, Jagmohan Singh, BH	Forecasting the effects of inputs on yield of crops in flood affected and un-affected fields	"	"	"
28.	Singh, Randhir Al Abraham	Use of remote sensing data in Markov Chain model for crop yield modelling	"	"	"
29.	Singh, Shivtar	Small area estimation : application to milk production	"	"	"
30.	Sreenath, PR Handa, DP Rajpali, SK	Efficiency of latin square design for experimentation with natural grasses	"	"	"
31.	Srivastava, AK	Multiplicity sampling and overlapping clusters	"	"	"
32.	Bhatia, VK	Use of spatial pattern analysis techniques in studying the evolutionary processes of natural populations	Symposium on 'Natural Selection for Evolution of Quantitative Characters' during the above conference	NDRI, Karnal	Nov28
33.	Narain, Prem	On evolutionary dynamics of quantitative traits	"	"	"
34.	Prajneshu	A stochastic Lotka-Volterra prey-predator of model with switching effect	The 12th Indian Conference of Society for Probability and Statistics	Cochin University, Cochin	Dec 09-12
35.	Bhardwaj, SP Gupta, HC Dixit, UN	Optimum utilisation of land resource—A micro level study	The 51st Annual Conference of Indian Society of Agricultural Economics	APAU, Hyderabad	Dec 18-20

1	2	3	4	5	6
36.	Bhardwaj, SP Dixit, UN Gupta, HC	Impact of risk on resource allocation and cropping pattern —A case study	”	”	”
37.	Pandey, RK Kiresur, V	Economic study of land markets in Karnataka	”	”	”

## Seminar Association

Twenty seminar talks were held in Institute which constituted 18 seminars by students, 1 by the scientist of the Institute and one entitled

‘The most generalized matrix eigen value problem and its applications’ by Dr Joseph Kurian, Associate

Professor in the Department of Maths and Computer Science, Grambling University, (USA).

## Dissertation Approved

**M.Sc. (Ag. Stat.)**

Murlidhar, JB—Sampling methodo-

logy for estimation of total number of pigs and number of

pigs slaughtered in a district.

(Guide : Sh VS Rustogi)

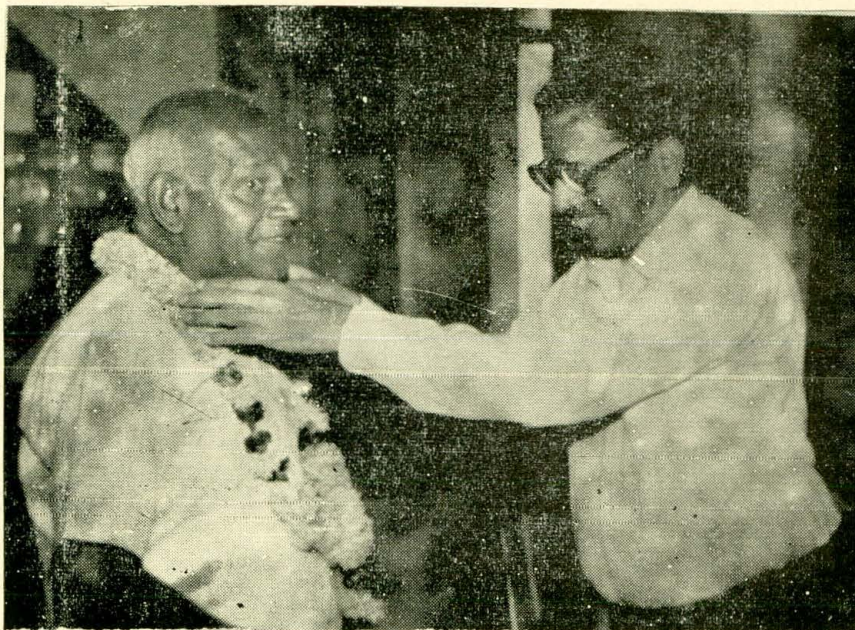
## Miscellaneous

### Retirement

—Sh Jagan Nath, SS Grade III retired on October 31

### Ad-hoc Training Programme/Lectures

Sl. No.	Name of the Programme	Dates	No. of trainees	Agency sponsoring the Programme	Lectures delivered by
1.	Participants of regular course of International Statistics Education Centre, Calcutta	Oct 10 and Nov 06	12	CSO, New Delhi	Sh PN Bhargava, Dr HP Singh, Dr PC Mehrotra, Dr VK Sharma, Sh R Gopalan, Dr (Mrs) R. Agarwal, Dr VK Bhatia, Dr RC Jain.



Shri Jagan Nath, SS Grade III was given affectionate send off on his retirement

#### Summer Institute on 'Forecasting Technology with special reference to Agriculture'

The Summer Institute was sponsored by Indian Council of Agricultural Research, New Delhi and held at IASRI, New Delhi during November 11 to 30. It was taken up with the objectives to educate the participants on the state of art in forecasting, to acquaint the participants on latest developments in related fields, and to identify gaps and needs in the field of forecasting research.

The Summer Institute consisted of lectures/practicals/demonstrations/group discussions on various topics. In all, there were 60 lectures and 10 practicals. The topics covered were:

- (i) Use of software packages on PC, statistical methods, sampling techniques and planning of experiments relating to forecast studies.
- (ii) Agrometeorology and weather forecasting.

- (iii) Crop physiology, growth conditions and major diseases/pests of the crop.
- (iv) Crop growth simulation models.
- (v) System dynamics.
- (vi) Agrometeorological crop monitoring.
- (vii) Time series analysis.
- (viii) Various approaches to forecasting.

The faculty was drawn from IASRI, IARI, ICAR, DES, DST, IMD, NISTADS, CSIR, IRMS (ICMR), ISI and Delhi University.

Dr A. Ahmed, DDG (Education), ICAR was the Chief Guest at the Valedictory function held on Nov 30. He addressed the trainees and distributed certificates to 23 participants representing various organisations from 14 states and New Delhi.

#### Monitoring Cell

The following items of work were undertaken:

- The revised EFC Memo for the 8th plan (1992-97) for the

Institute was prepared and sent to ICAR.

- Supplied information in respect of the subject—Agricultural Statistics, needed by ICAR in respect of 8th plan for discussion with the principal advisor (Agriculture).
- RPF's for the division of Statistical Economics for the years 1987 to 1990 were sent to ARIC (ICAR).
- A meeting of the Heads of Divisions regarding 'Co-ordinating' scheme on primary data collection involving ad-hoc field staff during the 8th plan 1992-97 was convened.

#### UNDP Cell

Ten PCs have been received under the UNDP funds and the action for CVT procurement is under way.

Revised Terminal Report of the project is under preparation.

#### Staff Research Council

Meetings of the Staff Research Council were held on Dec. 4 and Dec. 7 under the chairmanship of Prof Prem Narain, Director of the Institute. The progress of all the on-going research projects was reviewed.

#### Joint Staff Council

A meeting of the Joint Staff Council was held on Nov 1 under the chairmanship of Prof Prem Narain, Director. At the outset hearty felicitations were offered to Prof Narain on his selection for 'Shri Om Prakash Bhasin Foundation Award' for his outstanding contribution in the field of Agriculture and Allied Sciences for the year 1990 by Secretary (Official side) who hailed the event as making, for the discipline of Agricultural Statistics as

well as the Institute, a place in the sun. Various agenda items were then discussed to arrive at certain decisions. An appraisal report on the activities of the council during its present term was also presented.

#### Grievance Committee

A meeting of Grievance Committee was held on Nov 22.

#### Lectures delivered by the Scientist of the Institute

Prof Prem Narain

— Delivered

\* Lectures entitled 'Computerisation of databases for agricultural survey planning' on Oct 1 and 'Human Genetics' on Oct 4 to the participants of CSO-ISAS Training Course on 'Organisation of Surveys—Recent Developments in Sample Survey Methods and their Applications' held at New Delhi.

\* A lecture entitled 'International Statistical Institute—Deliberations' at its 48th Session at IASRI on Oct 11.

#### Participation in Meetings, Discussions, Committees, etc.

Prof Prem Narain

— Attended

\* As President in the meeting of the Executive Committee-cum-Editorial Board of the Indian Society of Agricultural Science on Oct 1, 4 and 15.

\* The 57th Annual Meeting of the Indian Academy of Sciences at Pune during Nov 8-10 and took active part in the deliberations of its various sessions.

\* The meeting of the Standing Committee for Emeritus Scientists of the Council of Scientific and Industrial Research held at New Delhi on Dec 13.

— Chaired

\* The Institute's Joint Staff Council meeting on Nov 1.

\* The Staff Research Council meetings of the Institute on Dec 4 and Dec 7.

Dr RK Pandey

— Attended the meeting of Executive Committee-cum-Editorial Board of Indian Society of Agricultural Science held at New Delhi on Oct 1, Oct 15 and Dec 30.

Sh TB Jain

— Attended the Staff Research Council meeting of CSWRI, Avikanagar on Nov 13 and participated in the discussion on the progress of collaborative research project 'Estimation of cost of production of sheep and wool'.

Sh SN Arya

— Convened the Joint Staff Council meeting held on Nov 1.

#### Honours/Award

Prof Prem Narain

— Honoured with the 'SANKHYIKI BHUSHAN AWARD' by the Indian Society of Agricultural Statistics for significant contribution in the field of Agricultural Statistics. The award was given by the Hon'ble Union Minister of State for Agriculture, Animal Husbandry and Dairying, Shri KC Lenka on Nov 27 during the Inaugural Function of the 45th Annual Conference of the Indian Society of Agricultural Statistics at NDRI, Karnal.

#### Other Information

Prof Prem Narain

— Delivered the Presidential address in the inaugural function of the Seminar on 'Agriculture in Nineties: Challenges

and Research Needs' organised by the Indian Society of Agriculture Science at IARI, New Delhi from Oct 23-25.

— Addressed the participants of the Summer Institute on 'Forecasting Technology with special reference to Agriculture' in the Orientation Programme on Nov 11.

— Presided over the inaugural function of the two-week training course 'RFLP Mapping in wheat' in the Biochemistry Division of IARI on Dec 30 sponsored by the Department of Biotechnology, Govt. of India, New Delhi.

Dr SK Raheja

— Nominated as a member of National Organising Committee and Finance and Administration Committee for organising the V International Conference on Goats to be held at New Delhi from March 2-8, 1992.

Dr RK Pandey

— Attended the meeting of Board of Studies for Division of Agriculture Economics, IARI held on Nov 26.

Dr GC Chawla

— Participated in the ICAR Scientific Panel on 'Annual Physiology' on Dec 30.

Dr KK Tyagi

— Nominated as Chef-de-Mission of IASRI Sports Contingent in the ICAR Zone-II Inter Institutional Tournaments held at CSWCR and TI, Dehradun.

Dr KK Tyagi and Shri GM Pathak

— Participated in the 'Pusa Table-Tennis Open Tournament' organised at Pusa Campus, New Delhi during Dec 19-20 and won the Open Doubles Title.

## CALENDER OF FORTHCOMING TRAINING PROGRAMMES/CONFERENCE

Date	Name of the Training Programme/Conference
June 1-August 22, 1992	V Refresher Course in Agricultural Statistics for Agricultural Scientists (12 weeks)
October, 1992 (Tentative)	Tenth National Conference of Agricultural Research Statisticians (venue to be decided)
September 1-15, 1992 (Delhi based Institutions)	XVI and XVII short term courses on 'Use of Computer in Agricultural Research'
September 16-30, 1992 (outside Institutions)	
October 1, 1992 to March 15, 1993	Certificate course in Statistical Computing

# हिंदी के प्रगामी प्रयोग में प्रगति

LEKHEL  
1978

संस्थागत रूप निम्नलिखित के दौरान, संस्थागत हिंदी के प्रसार, अद्यतनकार, हिंदी में विशेष कार्य करने वाले अधिकारियों एवं कर्मचारियों को प्रेरित करने के लिए प्रगामी प्रयोगों को प्रसार एवं प्रयोग में लाने का प्रयत्न किया गया। इस दौरान अद्यतन करने वाले कर्मचारियों को प्रेरित करने के लिए प्रगामी प्रयोगों को प्रसार एवं प्रयोग में लाने का प्रयत्न किया गया। इस दौरान अद्यतन करने वाले कर्मचारियों को प्रेरित करने के लिए प्रगामी प्रयोगों को प्रसार एवं प्रयोग में लाने का प्रयत्न किया गया।

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