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सांख्यिकीय सूचना-पत्र

I. A. S. R. I.

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भारतीय कृषि सांख्यिकीय अनुसंधान संस्थान
(भा० कृ० अ० प०)
लाइब्रेरी एवेन्यू, नई दिल्ली-110012

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प्राक्कथन

यह भा० कृ० सां० अ० सं० सांख्यिकीय सूचना-पत्र का सत्ताईसवां अंक है। इसमें इस संस्थान की जुलाई-सितम्बर, 1981 की तिमाही गतिविधियों से सम्बन्धित जानकारी का विवरण दिया गया है।

मुझे आशा है कि यह सूचना-पत्र कृषि अनुसंधान सांख्यिकीविदों तथा अन्य प्रयोक्ताओं के लिए लाभदायक सिद्ध हो रहा है। इसके अगले अंकों में सुधार लाने हेतु, मैं किसी भी प्रकार की टिप्पणियों और सुझावों का आभार सहित स्वागत करूंगा।

मैं संस्थान् के उन सभी अधिकारियों तथा उन सदस्यों का आभारी हूं जिन्होंने भा० कृ० सां० अ० सं० सांख्यिकीय सूचना-पत्र के इस अंक के लिये अपेक्षित सामग्री प्रदान की है।

मैं श्री सोमदत्त, श्रीमती कुसुमलता और श्री फणीन्द्र पाल सिंह का भी आभारी हूं जिन्होंने इस सूचना-पत्र के संकलन एवं मुद्रण में अपना भरपूर सहयोग दिया है।

प्रेम नारायण
निदेशक
भारतीय कृषि सांख्यिकीय अनुसंधान संस्थान
नई दिल्ली-110012

PREFACE

This is the twenty seventh issue of 'IASRI Statistical Newsletter' and covers the activities and allied information in respect of this Institute during the quarter July-September, 1981.

I hope this Newsletter has been proving useful to the Agricultural Research Statisticians and other users. I would welcome and appreciate any comments and suggestions for its improvement in the subsequent issues.

I am thankful to all the officers and the staff of the Institute who supplied the requisite material for this issue of the "IASRI Statistical Newsletter".

I am also thankful to Shri Som Dutt, Smt. Kusum Lata and Shri Phanindra Pal Singh for the help rendered in compilation and printing of this Newsletter.

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DIRECTOR
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NEW DELHI-110012

CONTENTS

1. IMPACT OF MADHAVARAM MILK SUPPLY SCHEME, CHINGLEPUT (T.N.) ON THE RURAL ECONOMY OF ITS MILK SHED AREAS

In the context of modern animal husbandry development in the country, it has been recognised by the Government of India that a suitable pricing policy for milk may be evolved to sustain the farmer's interest. Dairying in India remained quite neglected until recently due to its being largely in the hands of millions of small milk producers owning one or two milch animals. It is found that often farmers producing milk are forced to sell it at below the cost price for lack of demand. This kills their incentives for increased milk production. The best way to offer an incentive price of milk is to organise marketing facilities and develop the ways and means for increasing the milk and fodder production. Accordingly to bring about greater participation of the small and marginal farmers in the country's programme of milk production, such farmers need to be provided with liberal loans for purchase of high yielding milch animals, readymade balanced cattle feeds, concentrates and improved fodder seeds at subsidies rates and above all an organisation for marketing of their milk. It is with this laudable objective that at the instance of the Working Group on Dairying set up for the formulation of Fourth Five Year Plan, a number of milk supply schemes were set up in different parts of the country. These milk supply schemes in urban areas draw upon their milk requirements from the neighbouring rural areas. As a consequence of which the farmers supplying milk to these schemes are assured of market and a guaranteed price of milk. This can lead to a certain impact on the milk production potential as well as the economy of the farmers in the rural areas.

With a view to develop a suitable sampling technique for estimating the changes in the rural economy that are taking place in the milk shed areas of these schemes, large scale sample surveys are being carried out by the Indian Agricultural Statistics Research Institute, New Delhi. For this purpose, it is necessary to conduct the bench mark survey followed by the repeat survey after a suitable interval of time. The surveys carried out in the milk collection areas of Madhavaram Milk Supply Scheme (MMS) Chingleput, in Tamil Nadu state during 1975-76 and 1979-80 respectively form the subject matter of this article. The information collected during the bench mark survey only in respect of various response indicators viz. milk production and its

utilisation, feed fed to milch animals, cropping and employment pattern in the area, gross annual income of various farmers in the area etc. is summarised here.

1. Structure of the population

The Madhavaram Milk Supply Seheme came into operation during 1959. About 17.5 tonnes milk per day was being supplied to this scheme out of 18.6 tonnes milk per day sold in the area. There are about 400 milk producer cooperative societies in the area covered by the scheme. About 17 per cent of the total villages in the district supply milk to MMS. The average daily milk supplied per village in coastal and interior zone was of the order of 52 to 60 liters and 10 to 25 liters respectively. About 1/3 of the households in both areas were milk producers. About 2/3 of the milk producers in the two areas were engaged in the cultivation of crops while among the non-milk producers, 20 per cent happened to be cultivators. In supplying area, about 75 per cent of the commercial milk producer in Coastal zone and 50 per cent in Interior zone supplied milk to the organised agencies. In non-supplying area, the milk supplied from 98 percent of commercial milk producers in Coastal and 90 percent in Interior zone went to the unorganised agencies. Among all types of milk producer households in supplying area of both the zones, 10 households maintained on an average 25 milch animals of which 55 percent were cattle and rest buffaloes. Non-supplying area, on the other hand kept slightly lesser number of milch animals. Non-commercial households kept appreciably lesser number of milch animals as compared to the commercial milk producer households. Over 96 per cent of the milch cows as well as buffaloes maintained in the area were non-descript and the rest either graded or crossbred.

2. Milk production and its utilisation

On an average 80 tonnes of milk per day was produced in Chingleput district of which 1/3 was from the supplying villages. Buffaloes contributed 54 per cent of the total milk produced in the area. About 43 per cent of the milk produced in supplying area was from the commercial households and the rest from the non-commercials, while that of the total milk produced in non-supplying area, 52 per cent was from the commercial households and the rest from the non-commercials. Further about 2/3 of the total production was from cultivator milk producer households, in commercial households, the average daily milk yield per cow in milk was 1.00 kg. and 0.87 kg. in supplying and non-supplying areas respectively. The corresponding figures in buffaloes were

1.49 kg. and 1.27 kg. In non-commercial households, the average daily yield per cow in milk was 0.83 kg. and 1.02 kg. in supplying and non-supplying areas respectively and the yield of buffaloes were same as in commercial households.

Of the total milk produced in commercial-cum-cultivator households, 20 to 25 per cent was consumed at home, 72 to 79 per cent was sold and the rest was converted into milk products. In non-cultivator households, the proportion of milk consumed was between 13 to 28 per cent while 72 to 92 per cent was sold. The per capita consumption of fluid milk in non-commercial families was more than double in comparison to the commercial families. The per head consumption of milk was between 25 to 76 grams only. The per head milk consumption among cultivators was higher than that in the non-cultivators.

3. Feeding pattern

The average daily feed per cow in milk in cultivator households of both the areas comprised of about 1.0 kg. greens, 3.0 kg. dry fodder and 1.3 kg. concentrates. In non-cultivator types of milk producers of supplying area, the feed fed to a cow in milk comprised of the same quantum of green as in cultivator households while that of dry fodder and concentrates, it was about half of that fed in the cultivator households. Dry cows in both the areas were fed with very little greens, about 3.0 kg. dry fodder and no concentrates. The daily feed of a buffalo in milk in cultivator households comprised of 1.6 kg. greens, 2.8 kg. dry fodder and 2.8 kg. concentrates. In non-cultivator households, the quantity of feed fed to buffaloes was about half. Dry buffaloes in the two areas had almost similar pattern of feeding as the dry cows.

The dry fodder mainly consisted of paddy straw, the green fodder mainly consisted of ordinary grasses grown in the area and the concentrates were mainly the groundnut cake and rice bran.

4. Employment pattern

The average family size of all types of households in the area followed between 5 and 6. About 55 per cent of the family members were literate. In the suyplying area, about 72 per cent workers were engaged in agricultural work, 11 per cent in field work, 8 per cent in service, 3 per cent in skilled work, 1 per cent in milk collection and the rest in other minor occupations. In milk producer families of the two areas, about 75 per cent were engaged in agricultural work, 2 per cent in milk collection, 7 per cent in field work and the rest

in other occupations. In non-milk producer families, about 63 per cent were engaged in agricultural work, 17 per cent in field work, 8 per cent in service and the rest in other occupations.

5. Cropping pattern

The cultivator households in the area were engaged in raising feed and cash crops only. The commonly grown crops in the area were Paddy, Ragi, Groundnut, Cholam, Maize and Varagu etc. The proportion of paddy growers in the supplying area in the Interior Zone was 32 to 63 per cent as against 22 to 52 per cent in Coastal area. These proportions in the non-supplying area were just the reverse. It was observed that the proportion of cultivator commercial milk producers engaged in raising food and cash crops was higher as compared to cultivator non-commercial milk producers in both the areas of two zones.

As regards, intensity of cropping, it was higher by 20 to 30 per cent in the Interior zone than in the Coastal Zone. Non-commercial households of non-supplying area had a lowest intensity of cropping.

6. Income

The annual cash income of all types of families in the district averaged Rs. 2558/- in supplying area and Rs. 2789/- in non-supplying area. Dairying, agriculture and other family occupations accounted for about 5 per cent, 30 per cent and 65 per cent respectively to the total cash income in both the areas. In commercial milk producer families, the annual cash income was Rs. 3124/- in supplying area and Rs. 4620/- in non-supplying area. Dairying accounted for 15 to 20 per cent of the total cash income in commercial families and non-commercial ones. Agriculture, however contributed 45 to 55 per cent of the total cash income of commercial milk producers. The cash income of those supplying milk to MMS was slightly higher than those not supplying milk to MMS. The income of non-milk producer families was lowest among all types in each zone.

Gross income of commercial milk producer families was Rs. 5200/- in supplying area and Rs. 7100/- in non-supplying area. In non-commercials, however, gross income was Rs. 5300/- and 4700/- in the respective areas. Dairying and agriculture contributed respectively 10 to 20 per cent and 60 per cent to the gross income of milk producers. As regards, the gross income of non-milk producer families, it was lowest among all types.

2. TRAINING AND BASIC RESEARCH

(i) Examinations :

Trimester examinations of M. Sc. and Ph. D. courses in Agril. Stat. were held in September. Also final examinations of Professional Statisticians' certificate Course and Senior Cetificate course were held in August.

(ii) Field Training

Students of P.S.C. and S.C. Courses were taken to Sagar, (M.P.), for imparting field training relating to evaluation of impact of I.C.D. programmes and other improved animal husbandry practices from 7.9.81 to 18.9.81. The students analysed the data collected by them and submitted their report. Also the above students were taken to Central Statistical Organisation to acquaint them with the work carried on by that organisation.

(iii) Admissions :

For the session 1981-82, 12 students in M. Sc. (Agril. Stat.) and 4 students in Ph. D. course were admitted.

(iv) Convocation :

The nineteenth convocation of the training courses was held on 29th September, 1981 at which Prof. U.N. Singh, Vice-Chancellor, Allahabad University was the Chief Guest and delivered the convocation address.

Dr. U.N. Singh, in his Convocation Address, at the outset congratulated the candidates who got the various certificates, diplomas, medals and prizes. He also appraised the work that the Institute has carried out over the years. In particular, he added that he was very happy to know that in this Institute a Computer is being used in a big way. He said in spite of the great efforts made by the research workers and farmers of the country in increasing food production, there are various problems of fundamental nature in the field of agriculture which still awaited solutions. One such problem in his opinion was the problem of floods and droughts. He mentioned that this Institute should take up statistical problems in water management, droughts and flood control to solve this very important problem of Indian agriculture. He also exhorted students to remain worthy of the distinction that they have achieved by having successfully completed the training at this premier Institute.

During this Convocation a total of 34 Candidates were awarded various Certificates and Diplomas—19 for Senior Certificate Course, 1 for Professional Statisticians' Certificate Course and 3 for Diploma Course.

Three gold medals were awarded to the best students in each of the Senior Certificate, Professional Statistician's Certificate and Diploma Courses. The best student in the Professional Statisticians' Certificate Course was also awarded the V.V.R. Murty Memorial prize of Rs. 100/- in the form of books. Cash prizes of Rs. 50/- each were awarded to the student getting the highest percentage of marks (and more than 75%) in Papers I, III and Practical papers (VII and VIII) in Professional Statisticians' Certificate Course examination.

As a part of the convocation programme an elocution contest was conducted on 26th September, 1981 at 10 A.M. in which students undergoing training at the Institute and those receiving Diplomas and certificates at the convocation, participated. The topic for the elocution was 'Can India achieve self-efficiency by 2000 A.D.'. The session was chaired by Dr. M.V. Rao, D.D.G. (CS), ICAR and prizes were given away to the three best speakers adjudged by Dr. D. Jha, Professor, Div. of Agricultural Economics, IARI, Dr. S.S. Pillai, Jt. Director (CS), IASRI and Sh. S.K. Raheja, Sr. Scientist, IASRI who were the judges. At an another session held on 26th at 2.45 P.M. students of Diploma and M. Sc. Courses whose theses were accepted, presented their significant results of research work. The proceedings were conducted by Dr. S.K. Mitra, I.S.I., Delhi as the Chairman of the Session. Prior to this session at 2.00 P.M. a film entitled 'Focus on the Sun' by Basu Bhattachariya, and introduced by Prof. P.K. Katti, Project Manager, Deptt. of Science and Technology, was screened.

On 28th September, 1981 after the meeting of the Advisory Board full dress rehearsal of the convocation was held at 4.00 P.M.

(v) Seminars

During the quarter under review, 30 seminars were delivered by the students of the Institute on various topics of interest in the field of Agricultural Statistics. In addition to these, one seminar talk was also delivered by the eminent scientist.

Sl. No.	*Speaker*	*Topic*
	Dr. B.D. Tikkiwal, Head, Deptt. of Statistics, University of ILO 'RIN, *Nigeria.*	"Statistics and Data gap".

VI. IASRI Hostel Annual Day

The students of IASRI Hostel organised the Annual Day Function on 29th September, 1981 in the evening. Dr. R.M. Acharya, Deputy Director-General (A.S), Indian Council of Agricultural Research was the Chief Guest. The function started with a few items of sport and light refreshment wherein the staff and students of the Institute took active part. The students who distinguished themselves in sports and other extra-curricular activities were awarded prizes. The prize distribution was followed by an excellent Cultural Programme in which a large number of students, artists from this Institute as well as from other Institutions like I.A.R.I. etc. took active part.

3. ADVISORY SERVICE

During the quarter under review, technical advice and guidance was rendered to research workers and students of the Research Institutes, Agricultural Universities and other research organisations in planning of their experimental investigations and statistical analysis/computerisation of their research data as also in regard to research projects referred to the Institute by the ICAR and other organisations. Some details of the technical advice and guidance given by the Institute during the quarter under review are given below in brief :—

Statistical Genetics

Sh. G.B. Lal, Scientist, Chandra Shekhar Azad Agri. Tech. Institute, Kanpur was given advice regarding analysis of pulses data (8 ×8 Diallel).

Crop Forecasting Methodology

Sh. V.K. Malhotra, Statistical Officer, Directorate of Plant Protection, Quarantive and Storage, Faridabad was given technical advice in regard to statistical design of a proposed survey for estimating the crop loss due to pests and diseases and procedure for estimation.

Sample Survey Methodology

Sh. G.S. Tiwari, Chief Statistical Officer, Directorate of Vety. Services, M.P. (Bhopal) was given advice for monitoring of special Animal Husbandry Development Programmes pertaining to (i) Cross-bred calves, (ii) Poultry programmes and (iii) Sheep rearing programmes in selected districts of Madhya Pradesh.

Econometric Analysis

Sh. S.B. Vashisht, Scientist, ORP, Sheep & Wool, Malpura was given advice regarding constraints involved in transfer of technology.

4. FIELD SURVEY WORK

(a) Field Training

During the quarter under review, field training was imparted in connection with the projects mentioned below at the places shown against them.

(i) "Pilot sample survey to study the impact of National Demonstration Trails on Crop Production in Rohtak district of Haryana" in Delhi.

(ii) Pilot sample survey for developing a sampling methodology for estimation of livestock products on the basis of data collected as a part of normal work of the field agency of animal husbandry deptt. -Hoshangabad (M.P.)

(b) Field work Inspection/Supervision

Field work inspection/supervision was carried out during the quarter under review in connection with the projects given below in the areas/places shown against them :—

(i) Pilot survey to study the performance of cross-bred cattle under village conditions in Palampur area (H.P.).

(ii) Index of cost of milk production in ICD area, Bhopal (Madhya Pradesh).

(iii) Collection of data pertaining to 'Study of assessment of yield constraints in transfer of new farm technology in ORP area Chittorgarh (Rajasthan)'.

(iv) Pilot sample survey for developing a sampling methodology for estimation of livestock products on the basis of data collected as a part of the normal work of the field agency of animal husbandry department-Hoshangabad (M.P.).

5. ABSTRACTS OF PAPERS PUBLISHED

1. IYER, V.N., SEHGAL, D.K. and JHA, U.N.—Direct, cumulative and residual effect in fertilizer economy through organic manures in rice, rice rotation, *Seeds & Farms, New Delhi, Aug., 1981.*

In a study undertaken at Bhavani Sagar (Tamil Nadu) and Mangalore (Karnataka) to economise fertilizer use through organic manure in rice-rice rotation, it was observed that at Bhavani Sagar there is no scope for substituting fertilizer even partially through F.Y.M. Application of N_{30} P_{15} K_{15} or F.Y.M. at 12 tonnes/ha, both of which gave more or less equal response was found advantageous at this centre. On the contrary at Mangalore combined application of N_{30} P_{15} K_{15} and 12 tonnes/ha of F.Y.M. was found economical and F.Y.M. 12 tonnes/ha can easily replace about 30 kg N+15 kg P_2O_5 + 15 kg K_2O/ha.

2. JHA, M.P., KUMAR ASHISH AND BAPAT, S.R.—Some investigations on response to fertilizer and determination of optimum dose using soil test values—*Jour. Ind. Soc. Agri. Stat. Vol. XXXIII* (2), *1981, pp. 60-70.*

Different regression models describing the relationship between the response to fertilizer and soil characteristics and soil test values are examined with a view to estimate the optimum dose of fertilizer for a given set of soil test values. Two methods are used. In the first method, the responses to different levels of phosphorous obtained at each site were used to fit regression models using the soil test values. Then for a given set of soil test values, the responses to different levels of phosphorous were determined and a quadratic response curve was fitted to obtain the optimum dose.

In the second method, orthogonal polynomials were fitted to describe the yield dose relationship, the co-efficients of polynomial then regressed to soil test values. Then for a given set of soil test values, estimates of co-efficients of orthogonal polynomial were obtained and the optimum dose of fertilizer worked out.

The methods are illustrated using phosphorous response data of 24 fertilizer experiments on farmers' fields conducted in Sangrur district of Punjab on wheat.

3. MAHAPATRA, I.C., PILLAI, K.G., BHARGAVA, P.N. AND JAIN, H.C.—Fertilizer use in rice—rice cropping system. *Fertilizer News, special number on Fertilizer Use in cropping system . Sept., 1981, pp 3-15.*

Rice being the most important crop in India in respect of its area and production, fertilizer management is very important in rice based cropping system. Fertilizer use trend, production potential of intensive cropping system both under optimum and resource constraints conditions, long term effect of continuous rice cropping on productivity and fertility, manurial requirement

of fixed single year two crop system, lessons from 'on farm trials', fertilizer economy through organic source and bio-fertilizer, effect of fertilizer constraints on yield and balance sheet of macro and micro-nutrients in rice—rice cropping system have been highlightened. The results of the experiments planned on rice—rice cropping system on residual effect and that of the effect of preceding crop on the succeeding crop at the Model Agronomic Research Centres and on farmers' fields in the districts covered under the All India Co-ordinated Agronomic Research project and the All India Co-ordinated Rice Improvement Projects have been presented and discussed.

4. NARAIN, P.—''Cross-breeding in buffaloes—A breeding plan". *Ind. Jour. Animal Genetics and Breeding, Vol. 2 (2) July, 1980, pp 47-50.*

The paper describes a proposal for undertaking crossbreeding among three important breeds of buffaloes, viz. Murrah, Surti and Bhadawari, to study general and specific combining ability and breed x location and size x location interactions, and possibly combine the desirable characters of the three breeds either through evolving a new breed from 3-breed crossbred base or through systematic crossbreeding.

5. NARAIN, P. AND ARYA, A.S.—"Truncated Triangular Association Scheme and related Partial Diallel Crosses"—*Sankhya, The Indian Journal of Statistics, Volume 43, Series B, 1981, pp. 93-103.*

A new association scheme called truncated triangular (TT) with five associate classes when $v=p(p-2)/2$ with p an even positive integer 8, has been discussed and used to construct partial diallel crosses (PDC). The analysis of the design is based on the characteristic roots and indempotent matrices of the matrix $A=NN'$ where N is the incidence matrix of the design. Of the three designs for PDC constructed with the help of TT association scheme, Design I is found to be consistently more efficient than the other one.

6. PRAKASH ANAND, AND BOKIL, S.D.—"Stratification in survey on cultivated fodders. *Jour. Ind. Soc. Agri. Stat., Aug., 1981.*

Different methods of construction of strata on the basis of auxiliary character have been studied to determine number of strata and strata boundaries. Efficiency of different methods of estimation of area under fodders as compared to the method of simple random sampling has also been studied. The method 'Equal interval of cumulative' in general gave less variance as compared with other methods. The regression estimates provided an estimate of area under cultivated fodder with the smallest variance.

7. RAI, S.C. AND BHATIA, V.K.—Economics of Mushroom cultivation. *Eastern Economist, Vol. 77 (8), pp. 383-385.*

The production of Mushroom, a valuable source of food being rich in proteins, vitamins and minerals, had attained special economic importance in countries with high potential for agricultural production. In order to commercialise mushroom production in India, the present study seeks to explore the possibility whether mushroom cultivation can provide an answer to the economic problems of small farmers. This study, therefore, relates to estimation of costs and returns of mushroom farming in Himachal Pradesh, having ideal Agro-Climatic condition for mushroom cultivation. The importance of various factors responsible for slow progress of mushroom cultivation was also studied.

8. RAUT, K.C., SINGH, SHIVTAR AND RUSTOGI, R.L.—Estimates of milk production in India—*Cooperative Dairying, Vol. IV (3), July, 1981.*

The estimates of milk production for the country as a whole as well as for individual States have been worked out utilising the results of surveys carried out by different States and the I.A.S.R.I. The annual milk production in 1977 was estimated to be 27.75 million tonnes of which 10.98 million tonnes was cow milk and 16.77 million tonnes buffalo milk. For the country as a whole the average daily milk yield was estimated to be 1.3 kg. per cow in milk and 2.7 kg. per buffalo. The estimates of annual milk yield per cow and per buffalo are 217 kg. and 517 kg. respectively. The per capita availability of milk in 1977 was 121 gm. and that in 1980-81 was 117 gm.

9. SARUP, SHANTI AND RAI, S.C.—Economic analysis—Lags in groundnut cultivation. *Eastern Economist, Vol. 77 (11), Sept., 1981, pp. 492-95.*

This paper attempts to examine the trends and variability in area, production and productivity of groundnut crop in different states of the country during the period 1968-79. The study reveals that the area, production and productivity of the crop are characterised by violent annual fluctuations with a few exceptions. It is further observed that the high variability in production has occured mostly due to the wild fluctuations in productivity. The area under groundnut has shown an increasing tendency in recent years in the states of Orissa, Rajasthan, Karnataka and Madhya Pradesh. In the dominating groundnut states of Gujarat and Andhra Pradesh, it has exhibited a downward trend. To introduce stability in groundnut production and to improve the productivity of the crop, there is a need to incourage scientific cultivation. The possibility

of extension of cultivation of groundnut under irrigated conditions need to be explored and favourable public policies with regard to assure marketing at remunerative prices ought to be adopted as a strategy.

10. SAXENA, B.C., SINGH, H.P. AND KRISHAN LAL—Effect of milk supply to urban milk schemes on fluid milk consumption in rural areas. *Ind. Jour. Dairy Sci., Vol. 34 (2)-1981.*

The paper is based on the data collected in the survey, "Study of the Impact of Milk Supply Scheme on rural economy in the milk collection areas of Madhavaram Milk Supply Scheme, Tamil Nadu". The main findings of the paper are that among milk producers and non-milk producers, the class of commercial milk producers having marginal holding were found to be effected in respect of fluid milk consumption. The per head milk consumption in commercial milk producers was lowest in comparison with non-commercial as well as non-milk producer. Commercial milk producers supplying milk to urban dairies were found to be much below the nutritional requirement level of milk viz. 280 gm. per head per day. The likely reason for low fluid milk consumption in commercial milk producers may be that their main source of income is dairying, as is revealed from the study also that large portion of total income is through dairying only.

6. PAPERS ACCEPTED FOR PUBLICATION

1. GUPTA, V.K., NIGAM, A.K. AND KUMAR PRANESH—On a family of inclusion probability proportional to sire sampling schemes—*Biometrika.*
2. JAIN, J.P., NARAIN, P. AND MALHOTRA, J.C.—Some aspects of progeny testing of dairy bulls under field conditions—*Ind. Jour. Anim. Sci., Vol. 52 (7), July, 1981.*
3. LAL, BASANT—A note on qualitative-cum-quantitative—*Ind. Jour. Agri., Stat.*
4. PANDEY, R.K.—Changes in the pattern of land holdings in relation to productivity in India—*Ind. Jour. Agril. Eco., Oct.—Dec., 1981.*
5. RAI, S.C.—An analysis of ordered observations in block designs—*Jour. Ind. Soc. Agri. Stat.*
6. RAI, S.C.—Evaluation of taste quality of different Mango juice—*Jour. Food, Farming and Agri.*
7. SINGH, D. AND KHOSLA, R.K.—Crop pests, diseases and losses—A discussion—*Jour. Ind. Soc. Agri. Stat.*

7. COMPUTER SCIENCE AND NUMERICAL ANALYSIS

(i) Data Processing

During the quarter ending 30th Sept, 81 the Division of Computer Science & Numerical Analysis continued to give facilities for Data processing and Computer Programming to the Scientists and research scholars from various institutes under I.C.A.R., Agri. Universities, Colleges, Directorate of Economics and Statistics, Min. of Agriculture and U.P. State Deptt. of Agriculture. A few non-Agricultural users like DCM, NCERT, NPL and CSO used the computers on payment basis.

(ii) Computer Utilization

During the quarter, 2826 production jobs and 542 testing jobs were undertaken on B-4700 system and IBM-1620 computer. Due to frequent power break downs and erratic supply, the working of the computer system was greatly affected during the quarter.

(iii) Programming Facilities

During the quarter, 60 Ph. D., 14 M. Sc. and 22 other research workers were given programming and Data Processing help.

(iv) Software Development

To meet the requirements of the users, 11 new programs were developed and a few old programs were modified.

(v) User's Manuals

For the benefit of users and programmers, the following were published during the quarter :—

(a) User's Manual and FORTRAN subroutines for Matrix Algebra.

(b) User's Manual and FORTRAN programs for classifactory analysis.

(c) User's Manual and FORTRAN programs for regression analysis.

(d) User's Manual and FORTRAN programmes for :—

(i) Line X Tester data analysis

(ii) Double-cross-Hybrids data analysis

(e) Program package for the analysis of Diallel data.

(f) User's Manual for solving linear programming problems on B-4700 computer system.

(g) Computer programs for animal Breeding data analysis. These manuals are priced publications. The copies of the manual can be obtained from Admn. Section, I,A.S.R.I.

(vi) Training

(i) Two trainees of Junior certificate course from C.S.O. were given one day orientation training in Data processsing.

(ii) One student from I.S.I. was given practical training for Advanced diploma in Computer Programming.

(vii) M.T. Unit

About 3 lakh cards relating to various schemes in I.A.S.R.I., Research Scholars and other agencies were punched and verified during the quarter. In addition, about 550 jobs related with sorting, reproduction and listing were taken.

8. PAPERS PRESENTED AT INTER-ORGANISATIONAL SEMINARS, WORKSHOPS, ETC.

The title and authorship of papers presented and the particulars of the workshops, seminars at which these were presented, are given below :—

1. First National Seminar on 'Wheat Agronomy' held at IARI, New Delhi from 6th to 8th July, 1981.

(i) MAHAPATRA, I.C., BHARGAVA, P.N. AND JAIN, H.C.—Fertilizer Management in rice-wheat rotation,

(ii) MAHAPATRA, I.C., BHARGAVA, P.N. AND JAIN, H.C.—Nutrient use efficiency in wheat under different agro-climatic regions.

9. CONFERENCES/SEMINARS/SYMPOSIA/WORKSHOPS, ETC. ATTENDED BY THE SCIENTISTS

Date	*Name of the seminars, etc.*	*Name of scientists with designations*
July, 24th	One day Workshop on 'Professional Associations Today' announced by Vishwa Yuvak Kendra, New Delhi.	Dr. D. Singh, Director.
July, 29th to Aug., 1st.	National workshop on "Agricultural Problems and Future Prospects" held at Division of Agricultural Economics, IARI, New Delhi.	Sh. Shanti Sarup, Scientist (S-1), Dr. Bhagat Singh, Scientist (S-1), Sh. B.L. Kaul, Scientist (S-1)
Aug., 11th	National Seminar on "Soil Science" held at I.A.S.R.I., New Delhi.	Dr. Prem Narain, Joint Director.
Aug., 22-24	3rd Annual Conference of "Indian Society for Theory of Probability and its Applications" held at the University of Delhi.	Dr. B.B.P.S. Goel, Scientist (S-3), Sh. S.K. Raheja, Scientist (S-3).
Sept., 17th	Colloquim on "Arts and the Media" —A challenge to creativity at India International Centre, New Delhi organised by Dy. Advisor (Media of communication) Planning Commisssion, New Delhi.	Dr. Bhagat Singh, Scientist (S-1).

10. LIBRARY

(A) During the quarter 21 books on various subject fields of the Institute were added.

(B) The Library has procured the following reprints published in Scientific Journals for distribution among scientists on exchange basis.

Sl. No.	*Author*	*Tital*	*Source*
(1)	Dharmendra Kumar & Prem Narain.	Different methods of sire evaluation.	Ind. Jr. Dairy Sci. Vol. 33, No. 4, 1980.
(2)	Fauran Singh & D. Singh.	Acceptable sequential estimators of population mean.	Jr. of Ind. Socy. Agri. Stat. Vol. 33, No. 1, April, 1981.
(3)	Kaistha, A.C. & Goel, B.B.P.S.	Estimation of vegetable production using partial harvest data.	Jr. of Ind. Socy. of Agri. Stat. Vol. 33, No. 1, April, 1981.
(4)	Arora, Lokesh & D. Singh.	Estimation of frequency distributions for the current occasion under successive sampling approach for some selected sampling designs.	Jr. of Ind. Socy. of Agri. Stat. Vol. 33, No. 1, April, 1981.
(5)	Raut, K.C. & Shivtar Singh, etc.	Calf mortality affecting milk yield and some production traits of cows under village conditions.	Ind. Dairyman Vol. 33, No. 5, 1981.

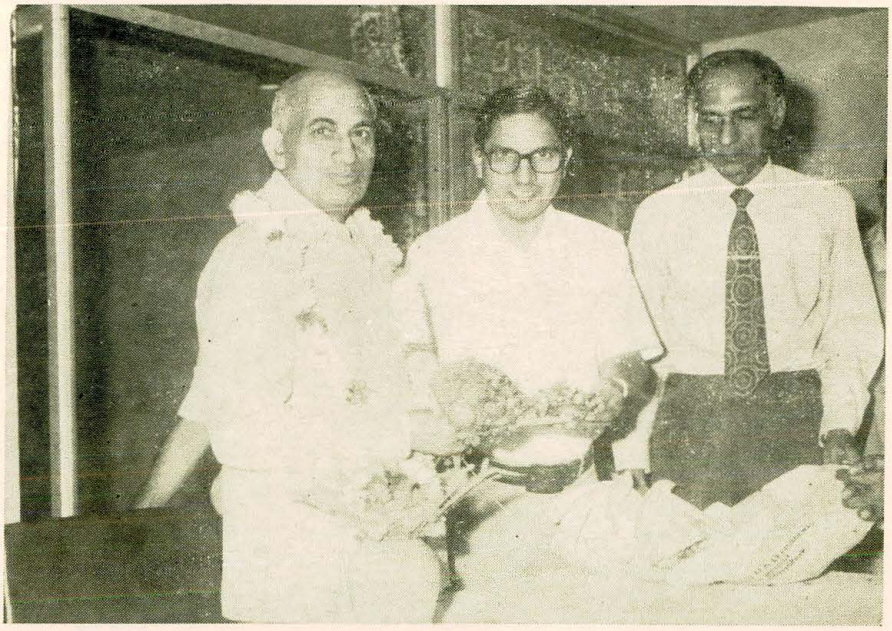
(C) The reprographic unit of the Library has attended 52 Jobs covering 850 pages sent by Scientific, Technical and Administrative officers of the Institute.

(D) Shri S.S. Srivastava, Librarian (T-6) who had proceeded on study leave for doing Associateship in Information Science have resumed his duty, on 17th Aug. 1981, after completing the course.

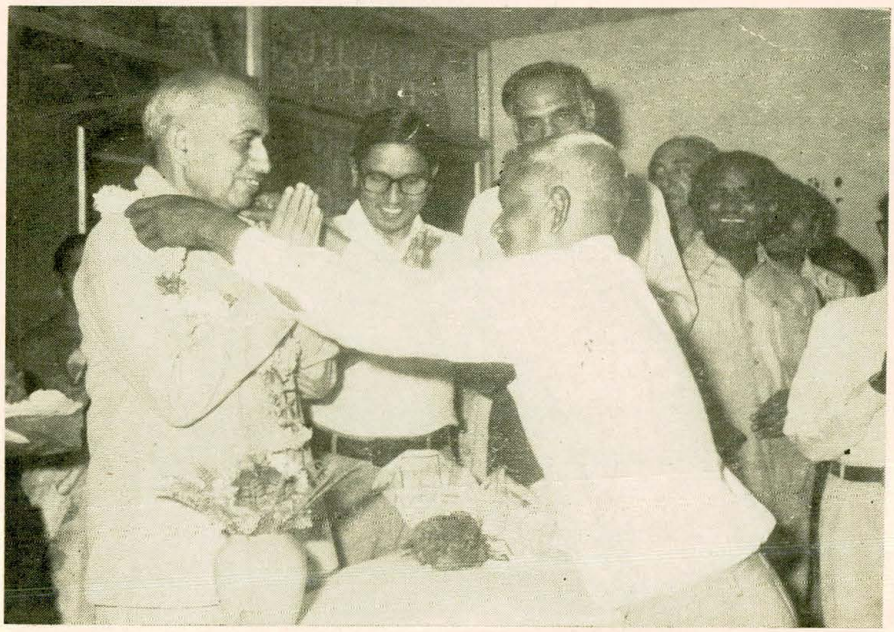
(E) The issue and return work at Library counter involved transaction of approximate 6000 publications.

(F) During the Quarter under report Approximately 5550 persons visited the Library.

Farewell to Dr. Daroga Singh, Director, I.A.S.R.I. by the Staff and officers of the Institute.



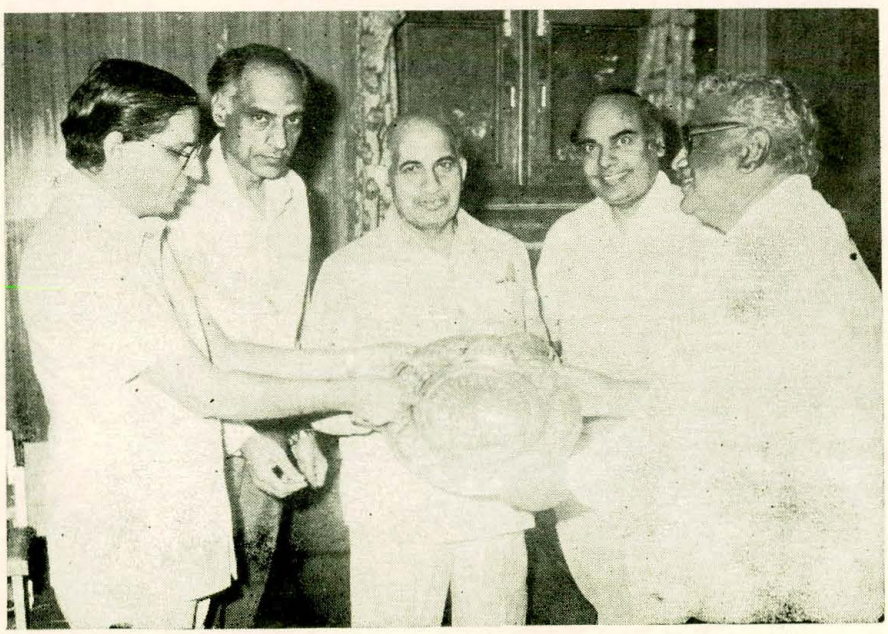
Dr. Prem Narain presenting the plaque to Dr. Daroga Singh



Sh. Mani Ram garlanding Dr. Daroga Singh on behalf of the staff of the Institute.

Felicilation to Dr. Daroga Singh on occasion of prior to his F.A.O. assignment in Jordon

Bouquet being presented to Dr. Daroga Singh, Secretary, I.S.A.S.
by Dr. Prem Narain



Wall plate being presented to Dr. Daroga Singh, Secretary, I.S.A.S.
by the Executive Council.

11. 'LAB TO LAND' PROGRAMME

Under the I.C.A.R. 'Lab-to-Land' Programme, the Institute carried out the following activities in the adopted village, Garhi Randhala in Kanjhawala block of Delhi during the quarter under report.

Organisation of Field Day

One field day each in the months of July and August 1981, was organised to educate the farmers about the package of practices of Bajra and Vegetable crops.

Supplementing Income of Farmers

937 euclyptus plants were distributed to the adopted families in July, 1981 to provide them with an additional source of income.

Preventive Measures Against Diseases

Vaccination Programmes against H.S. and Foot & Mouth diseases of animals were carried out in the village in the months of July and Sept. 1981.

Inter-Cropping (Vegetables)

The cultivators were persuaded to include vegetable crops in their cropping pattern. As a result, twelve cultivators had sown different vegetables in the month of Sept., 1981. A number of cultivators would be sowing potato and other vegetables during the month of Oct., 1981.

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12. FAREWELL TO DR. DAROGA SINGH, DIRECTOR, IASRI

Dr. Daroga Singh, Director, IASRI was given touching farewell on his retirement from Council's service w.e.f. September 30, 1981 after rendering more than 30 years of yeoman service to the Institute to join as Senior Statistical Advisor to Hashemite Kingdom of Jordon, Amman on FAO assignment.

The following functions were held :

(i) On 29th September, 1981 a farewell function was organised by I.A.R.I. to give farewell jointly to Dr. Daroga Singh, Director, IASRI and Dr. R.N. Singh, Jt. Director (Research), IARI in which eminent scientists of I.A.R.I., I.A.S.R.I. and other agranisations participated. Dr. M.S. Swaminathan, Member Planning Commission was the chief

guest who paid rich tributes to the contributions of Dr. Daroga Singh as a scientist par excellance. Dr. M.L. Sahare, Chairman, U.P.S.C., Dr. H.K. Jain, Director IARI and Dr. Prem Narain, Director IASRI also delivered speeches on the occasion.

(ii) On 30th September, 1981 a function was organised by the members of the Executive Council of the Indian Society of Agricultural Statistics, New Delhi to felicitate and honour Dr. Daroga Singh, Secretary, I.S.A.S. on his F.A.O. assignment in Amman, Jordan.

(iii) On 3rd October, 1981, a grand farewell was accorded to Dr. Daroga Singh by the staff and officers of IASRI. His contributions in the field of statistical research in Agriculture were grealty lauded by different speakers including Dr. Prem Narain who highlighted the role of Dr. Daroga Singh in making I.A.S.R.I. a premier Statistical Research Institute of International repute and expanding its activities in various fields as a Director of the Institute which gave philip to research work.

(iv) On 3rd October, 1981, Warden Dr. Prem Narain and the students of I.A.S.R.I. hostel organised a farewell function on the retirement of Dr. Daroga Singh, Director.

13. MISCELLANEOUS

1. Personnel Information

(a) **Appointment, Promotions, Retirement, Transfers, etc.**

(i) **Appointment**

Shri Chanan Lal was appointed as Chief Administrative Officer, IASRI w.e.f. July 29, 1981.

(ii) **Promotions**

Dr. Prem Narain, Joint Director was appointed as Director, IASRI w.e.f. September 30, 1981.

Dr. H.P. Singh, promoted to S-3 Grade of A.R.S. w.e.f. July 1, 1979.

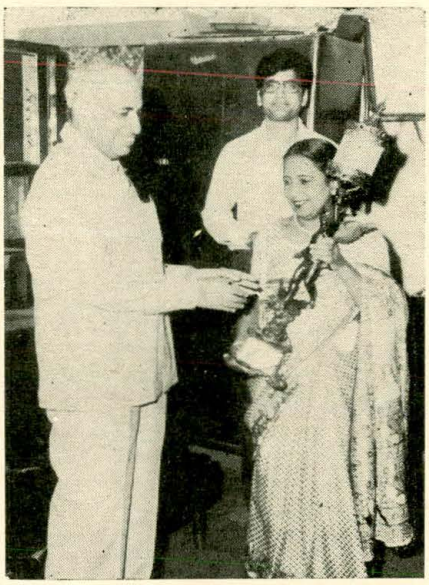
(iii) **Retirement**

Dr. D. Singh, Director, IASRI, sought premature retirement from Council's service at IASRI w.e.f. September 30, 1981 to join as Sr. Statistical Adviser (FAO Assignment) Amman, Jordan.

FAREWELL TO DAROGA SINGH, DIRECTOR, I.A.S.R.I. BY THE WARDEN AND STUDENTS OF THE I.A.S.R.I. HOSTEL.

Warden Dr. Prem Narain presenting the bouquet to Dr. Daroga Singh

MRS PREM NARAIN PRESENTING THE GIFT TO DR. DAROGA SINGH



Mrs. Prem Narain presenting the gift to Dr. Daroga Singh

(iv) **Transfers**

Shri Ashok Kumar-I and Smt. Rajinder Kaur, Technical Assistants (Stat.) have been inducted into Grade (S) of A.R.S. in the pay scale of Rs. 550-900 and transferred to N.D.R.I., Karnal w.e.f. 29th July, 1981 (A.N.) and 30th September, 1981 respectively.

Smt. Abha Kant, Technical Assistant (Stat.) has been transferred to C.M.F.R.I ., Cochin w.e.f. 23rd September, 81 (A.N.).

Consequent upon his appointment to the post of Programmer in the pay scale of Rs. 650-1200 in Electronics Commission (IPAG), New Delhi, Shri Ravi Kant was relieved of his duties at I.A.S.R.I. w.e.f. 17th September, 1981.

The following Scientists (S-1) have been transferred by the ICAR to other Institutes of the Council, as indicated below :

Sl. No.	*Name of the Scientist*	*Institute to which transferred.*
(1)	Miss Geeta Bisaria	I.A.R.I., New Delhi.
(2)	Shir U.N. Dixit	I.A.R.I., New Delhi.
(3)	Shri D.P. Singh	C.R.R.I., Cuttack.
(4)	Shri K.C. Bhatnagar	N.D.R.I., Karnal.
(5)	Shri R.C. Goyal	C.A.R.I, Izatnagar.
(6)	Shri R.P. Jain	C.S.W.R.I, Avikanagar.
(7)	Shri Prabhat Kumar	I.V.R.I., Izatnagar.
(8)	Shri Jose Abraham	C.P.C.R.I., Kasaragod.
(9)	Shri R.P. Singh	I.I.H.R. Bangalore.
(10)	Shri Lal Chand	C.S.W.R.I., Avikanagar.
(11)	Shri Khubi Singh	Directorate of Oilseeds Research, Hyderabad.
(12)	Shri A.S. Gupta	—do—
(13)	Shri J.P. Goyal	I.V.R.I., Izatnagar.
(14)	Shri D.P. Malhotra	I.V.R.I., Izatnagar.
(15)	Miss N.K. Choudhary	C.I.F.E., Bombay.
(16)	Shri J.K. Kapoor	I.V.R.I., Izatnagar.
(17)	Shri S.R.S. Arya	C.RR.I., Cuttack.
(18)	Shri H.C. Gupta	C.I.F.T., Chochin.
(19)	Shri Satyandra Kumar	I.C.A.R. Research Complex, Shillong.
(20)	Shri R.L. Rastogi	I.V.R.I, Izatnagar.

Note : Scientists mentioned at Serial Nos. 3,10,11,12,13,14,15,17,18,19 and 20 have not so far reported for duty to their respective institutes.

(b) The scientists of IASRI deputed to attend training/study tour/meetings and to deliver lectures etc. during July-Sept., 1981.

1.	Dr. Daroga Singh, Director.	(i) Attended the Sujan Singh committee meeting in the month of Sept., 1981.
2.	Dr. Prem Narain, Joint Director	(i) Attended Anniversary Meeting of the Indian National Science Academy at New Delhi on 1st August, 1981.
		(ii) Attended a meeting of the Executive Committee of the Indian Society of Animal Genetics and Breeding on 25th August, 1981.
		(iii) Attended a meeting of the Programme Committee of the XV International Genetics Congress (1983), on 27th August, 1981 at IARI, New Delhi.
		(iv) Appointed a member of the Committee of the Ministry of Agriculture to look into the methodology for determining the requirements of fertilizers in view of the observations of the Public Accounts Committee, (1980-81)-(7th Lok Sabha). First Meeting was attended on 28th August, 1981.
		(v) Attended as a Working Group Member of the Conference of National Sample Survey Organisation at New Delhi on 23rd September, 1981 in connection with the training of the staff for the 37th round of the survey.
		(vi) Attended a meeting on 25th September, 1981 in the Ministry of Agriculture regarding finalisation of the programme of Quinquennial Livestock Census.

(vii) Attended the Conference of the Directors of ICAR Research Institutes held at ICAR, Krishi Bhavan, New Delhi on 30th September, 1981 and 1st October, 1981.

3. Dr. S.S. Pillai, Jt. Director.

(i) Attended a series of meetings of the standing committee set up by the Deptt. of electronics, Govt. of India, to examine the proposals regarding revised policy and procedure for software export projects including import of computers for such projects.

2. Distinguished Visitors

Dr. B.P. Adhikari, Director, ISI, Calcutta visited this Institute in the fore-noon of 11th Sept., 1981. He was acquainted with the functions and activities of the Institute and also with the salient features about the major projects/studies being carried out in the various divisions.

Seven members of Mexicon Delegation of Agricultural Experts, viz ; (i) Head of Mission—General Coordinator of the National Programme of National Development—Dr. Antonio Turrent ; (ii) Joint Director Research and Training—National Commission Fruitculture—Dr. Gabriel Siado ; (iii) Joint Director of Research of the Agricultural University—Dr. Antonio Narro Victor Manuel Serrato ; (iv) National Coordinator of the Programme of Wheat from the National Institute of Agricultural Research—Dr. Jesus Maria Sixto Martinez ; (v)Research Secretary of the College of Tropical Agriculture—Dr. Ricardo Almeida ; (vi) Senior Scientist of the Post-Graduate College of Chapingo—Dr. Jaime Matus and (vii) Official of the Division of Scientifical Development of National Council of Science and Technology—Dr. Jorge Nacif ; accompanied by Mrs. Mirriam Welsbekg, Scientific Counsellor, Maxican Embassy, New Delhi and Shri P.P. Johar, Protocol Officer, I.C.A.R., New Delhi visited this Institute in the afternoon of 29th Aug., 1981, and discussed several problems and their solutions.

Mr. Tim Merchant, Market Research Export, F.A.O., New Delhi visited the Institute on 25th Sept., 81 and discussed with the Director regarding marketing of fruits & vegetables surveys.

Dr. G.D. Badhwa, Scientist, National Aeronautics & Space Administration (NASA), Johnson Space Centre, Houston, Texas, U.S.A. visited the Institute and discussed with Sh. M.P. Jha on problems relating to forecasting of crop yields and gave a talk on "Remote sensing for Crop Forecasting State-of-the-Art" to the scientists of the Division and other senior scientists of the Institute.

3.

Meetings	*Body*
(i) July-3rd.	Grievence Cell.
(ii) July-14th.	HDS. and Senior Scientists.
(iii) July-29th.	HDS. and Senior Scientists.
(iv) Aug.-20th.	Joint Council.
(v) Aug.-27th.	HDS. and Senior Scientists.
(vi) Aug.-28th.	Grievence Cell.
(vii) Aug.-29th.	HDS. and Senior Scientists.
(viii) Sept.-5th.	Monitoring Cell.
(ix) Sept.-11th.	HDS. and Senior Scientists.
(x) Sept.-19th.	HDS. and Senior Scientists.
(xi) Sept.-29th.	XIX Convocation of IASRI Training Courses.

4. I.A.S.R.I. REPRESENTATIVES AT SCIENTIFIC PANEL/MEETINGS OF THE I.C.A.R.

Name of the officer	*Name of scientific panel*
(i) Sh. P.N. Soni	Scientific Panel on "Microbiology".
(ii) Sh. J.C. Malhotra	Scientific Panel on "Animal Breeding".
(iii) Dr. K.C. Raut	Scientific Panel on "Dairy and Livestock Products—Technology".

5. Other Information

(i) Dr. D. Singh has been nominated as an expert for the assessment of teacher in the discipline of Agril. Stat. by Gujarat Agril. University.

He was elected a member for "Project Advisory Committee for the data Management System for Natural Resources", Department of Science & Technology, Government of India vide their Office Memo No. 11/Dir./ES/81 dated the 27th August, 1981.

Dr. Singh was elected a member for "High Level Coordination Committee on Crop Estimation Surveys", Agriculture Department, Haryana Government, Chandigarh, vide their notification No. 3491/ Agri. I (5)/81/13545 dated the 3rd Sept., 1981.

(ii) Dr. P. Narain acted as Director, I A.S R.I. from 5th September to 23rd September, 1981 during the absence of regular Director Dr. D. Singh, who was indisposed.

Dr. Narain organised the XIX Convocation of IASRI Training Courses as well as Hotels' Annual Day Function on 29th September, 1981.

(iii) Sh. R.C. Jain was elected as a member secy. of M. Sc./Ph. D. Selection Committee of I.A.R.I. in Agril. Statistics for the year 1981-82.

Sh. Jain was also elected a member of editorial board of Hindi Prasarika.

(iv) Sh. S.D. Bokil was nominated a member by the Director of Technical working group for improvement of data base for State Income and related aggregates set up by C.S.O.

14. भा०कृ० साँ० अ० सं० में संगणक का उपयोग—पशु प्रजनन आँकडों का संगणक विश्लेषण

संस्थान ने सन् 1933 में साधारण सी शुरुआत की और तभी से विभिन्न क्षेत्रों में यह उन्नति करता आ रहा है। सन् 1966 में आइ० बी० एम० 1620 II डी माडल के इलेक्ट्रॉनिक संगणक के प्रतिष्ठापन से संस्थान के क्रिया-कलापों ने एक नवीन क्षेत्र में प्रवेश किया।

कृषि अनुसंधान अध्ययनों का तेजी से संगणकीकरण करने की माँग पूरी करने की दृष्टि से अब बरोह निगम का तीसरी पीढ़ी का एक बी-4700 संगणक मार्च, 1977 में लगाया गया। इस नवीन प्रणाली को प्राप्त कर लेने के बाद उत्पात (**डाटा**) संगठन एवं विश्लेषण के बीच समय अन्तराल में बड़ी भारी कमी हुई है। इससे हमारे केन्द्र में विभिन्न अनुसंधान कर्त्ताओं के लिए यह भी संभव हो गया है कि वे अपने आँकड़ों का शीघ्र विश्लेषण कर अविलम्ब ही अपने अनुसंधान निष्कर्षों को लागू कर सकें।

हमारे केन्द्र में साफ्टवेयर की एक लाईब्रेरी है जिसकी मदद से उपयोग कर्त्ता प्रोग्रामिंग की जानकारी लिए बिना ही परिशुद्ध परिणाम शीघ्र प्राप्त कर सकता है।

फिलहाल, पशु प्रजनन आकड़ों के लिए संगणक विश्लेषण हमारे पशु प्रजनकों का ध्यान आकर्षित कर रहा है। यह आँशिक रूप से इसलिए है क्योंकि इन संगठनों द्वारा एकत्रित आंकड़े असामान्य रूप से विपुल आयतनी हैं और विभिन्न यादृच्छिक एवं असंतत चर को ध्यान में रखा जाता है, ताकि वर्तमान संततियों के कार्यनिष्पादन का अनुमान लगाया जा सके और बेहतरीन प्रबन्ध कार्यों के उद्देश्य से भविष्य में प्रजनन योजनाओं का भी अनुमान लगाया जा सके। इससे पहले अनुसंधान कर्त्ताओं ने ऐसे अध्ययन, अनेक आव्यूह (**मेट्रिक्स**) एवं अन्य कठिन गणित की गणनाओं के कारण नहीं दिये।

अनेक वर्षों से हमारा संस्थान पशु प्रजनन कार्यक्रमों के निम्नलिखित क्षेत्रों में सहायता प्रदान करता आ रहा है :—

1. हमारे देश के अनेक झुण्डों/अनुवांशिकों के अनुवांशिक ढाँचे का मूल्यांकन।
2. पशुओं में मृत्यु एवं उर्वरता दर।
3. बाजार योग्य मीट उत्तरदायी प्रचाल।
4. वंशागति, पुनरावृत्ति और अनुवांशिकी, तथा भारत में व्यवहारिक रूप से विदेशी एवं मिश्रित नस्लों की पशु संख्या के लिए समलक्षणों एवं वातावरणीय सहसंबंधों की गणना।

15. दूध की कमी वाले क्षेत्रों की ग्रामीण अर्थ-व्यवस्था पर माधावरम् दुग्ध आपूर्ति योजना चिंगलपट्ट (त० ना०) का प्रभाव

देश में आधुनिक पशुपालन विकास के संदर्भ में भारत सरकार द्वारा वह मान लिया गया है कि किसानों के हितों को बनाए रखने के लिए दूध के लिए उपयुक्त मूल्य नीति बनाई जाय। भारत में डेयरी व्यवस्था फिलहाल तब तक तिरस्कृत रहेगी जब तक कि एक या दो दुधारू पशु रखने वाले ऐसे लाखों छोटे दुग्ध उत्पादकों के हाथ में दूध का उत्पादन रहेगा। ऐसा देखा गया है कि दुग्ध उत्पादक कृषक अक्सर दूध की मांग की कमी के कारण दूध, लागत मूल्य से, कम मूल्य पर बेचने को विवश होते हैं। इससे दुग्ध उत्पादन बढ़ाने का उनका उत्साह ठंडा पड जाता है। दुग्ध उत्पादक कृषकों को दूध का प्रोत्साहन मूल्य देने का सब से अच्छा तरीका, विपणन सुविधाओं को संगठित करना और दुग्ध एवं चारा उत्पादन में वृद्धि करने के तौर तरीकों को विकसित करना है। तद्नुसार यदि हम चाहते हैं कि देश के दुग्ध उत्पादन कार्यक्रम में छोटे और सीमांत कृषक हिस्सा लें तो आवश्यकता इस बात की है कि ऐसे कृषकों को अधिक दूध देने वाले दुधारू पशु एवं तैयार संतुलित पशु चारा खरीदने के लिए उदार ऋण उपलब्ध किए जाएँ। साथ ही समोन्नत चारे के बीज उचित दरों पर दिये जाएं और इन सबसे ऊपर उनके दूध के विपणन के लिए संगठन की आवश्यकता है। इस भारी लक्ष्य के साथ कार्यरत दल को देखते हुए डेयरी खोलने के लिए चौथी पचवर्षीय योजना में देश के विभिन्न भागों में अनेक दुग्ध योजनाएं स्थापित की गयीं। शहरी क्षेत्रों में ये दुग्ध योजनाएं अपनी-अपनी दुग्ध आवश्यकताओं की पूर्ति के लिए अपने पड़ोसी ग्रामीण क्षेत्रों से दूध लिया करती हैं जिसके परिणामस्वरूप इन योजनाओं को दूध देने वाले किसान इस बात से आश्वस्त रहते हैं कि उनका दूध बाजार एवं प्रत्याभूत दर पर ही जा रहा है। यह दुग्ध उत्पादन की क्षमता के साथ-साथ ग्रामीण क्षेत्रों के कृषकों की अर्थव्यवस्था पर एक निश्चित प्रभाव डाल सकता है। इन योजनाओं के कम दूध वाले क्षेत्रों में जहाँ ग्रामीण अर्थव्यवस्था अदलती बदलती रहती है, का आँकलन करने के लिए उपयुक्त प्रतिदर्श तकनीकी का विकास करने की दृष्टि से भारतीय कृषि सांख्यिकीय अनुसंधान संस्थान, नई दिल्ली द्वारा बड़े पैमाने पर प्रतिदर्श सर्वेक्षण किये गए। इस उद्देश्य से यह आवश्यक है कि उपयुक्त समय के बाद निर्देश चिन्ह सर्वेक्षण और उसके बाद पुनर्वृत्त सर्वेक्षण आयोजित किए जाएं। तमिलनाडु राज्य में माधावरम् दुग्ध आपूर्ति योजना (म० दु० यो०) चिंगलपट्ट के दूध एकत्रित करने वाले क्षेत्रों में क्रमशः 1975-76 और 1979-80 के दौरान किये गए सर्वेक्षण ही इस लेख की विषयवस्तु हैं। दुग्ध उत्पादन एवं इसका उपयोग, दुधारू पशुओं को खिलाया गया चारा, क्षेत्रों में शस्य एवं रोजगार स्वरूप, क्षेत्र में विभिन्न कृषकों की कुल वार्षिक आय जैसी विभिन्न अनुक्रिया निर्देशकों के संबंध में केवल निर्देश चिन्ह सर्वेक्षणों के दौरान एकत्रित सूचना को यहाँ संक्षिप्त रूप से दिया जा रहा है।

1. जनसख्या की संरचना :—

1959 के दौरान माधावरम् दुग्ध आपूर्ति योजना का प्रचालन आरम्भ हुआ। प्रतिदिन क्षेत्र मे बेचे गये 18.6 टन दूध में से लगभग 17.5 टन दूध इस योजना के लिये संभरण किया गया। योजना के अधीन आने वाले क्षेत्र में लगभग 400 दुग्ध उत्पादक सहकारी समितियाँ हैं। जिले में स्थित कुल गांवों में से लगभग 17 प्रतिशत गांवों ने मा० दु० यो० को दूध की आपूर्ति की। सीमांत एवं आन्तरिक क्षेत्र में प्रति गांव दैनिक औसत दुग्ध आपूर्ति क्रमशः 52 से ८0 लीटर और 10 से 25 लीटर के क्रम में थी। दोनों ही क्षेत्र में लगभग $\frac{1}{3}$ परिवार दुग्ध उत्पादक थे। दोनों क्षेत्रों में लगभग $\frac{2}{3}$ दुग्ध उत्पादक कृषि कार्य में संलग्न थे जबकि गैर दुग्ध उत्पादकों में से 20 प्रतिशत खेतीहर थे। आपूर्ति क्षेत्र में सीमांत क्षेत्र के व्यवसायिक दुग्ध उत्पादकों में से 75 प्रतिशत और आंतरिक क्षेत्र के 50 प्रतिशत दुग्ध उत्पादकों ने संगठित अभिकरणों को दूध की आपूर्ति की। गैर आपूर्ति क्षेत्र में सीमांत क्षेत्र के व्यवसायिक दुग्ध उत्पादकों में से 98 प्रतिशत और आंतरिक क्षेत्रों के 90 प्रतिशत उत्पादकों ने अपना दूध असंगठित अभिकरणों को दिया। दोनों ही क्षेत्रों में दूध की आपूर्ति करने वाले क्षेत्र के सभी दुग्ध उत्पादक परिवारों में से प्रति दस परिवार औसतन 25 प्रतिशत दुधारू पशु रखते हैं जिसमें से 55 प्रतिशत गाय और भैंस रखते थे और बकाया भैंसें। दूसरी ओर उन क्षेत्रों में जहाँ से दूध की आपूर्ति नहीं होती कुछ कम दुधारु पशु रखे जाते हैं। गैर व्यवसायिक दुग्ध उत्पादक परिवार व्यवसायिक दुग्ध उत्पादक परिवारों की तुलना में काफी कम दुधारु पशु रखते हैं। संबद्ध क्षेत्र में पाली गयी लगभग 96 प्रतिशत गायें और भैंसें अज्ञातवंशी थी शेष या तो श्रेणीगत थीं या फिर संकर नस्ल की थीं।

2. दुग्ध उत्पादन एवं इसका उपयोग :—

चिंगलपट्ट जिले में औसतन प्रतिदिन 80 टन दूध का उत्पादन हुआ जिसमें से $\frac{1}{3}$ भाग दूध आपूर्ति करने वालें गाँवों से था। क्षेत्र से कुल उत्पादित दूध में से 54 प्रतिशत दूध भैंसों का था। दूध की आपूर्ति वाले क्षेत्र में उत्पादित दूध में लगभग 43 प्रतिशत दूध व्यवसायिक परिवारों से और शेष गैर-व्यवसायिक परिवार से प्राप्त हुआ जबकि गैर आपूर्ति वाले क्षेत्र में उत्पादित कुल दूध का 52 प्रतिशत दूध व्यवसायिक परिवारों से और शेष गैर व्यवसायिक परिवारों से प्राप्त हुआ। व्यवसायिक कृषक दुग्ध उत्पादक परिवारों से कुल उत्पादन का $\frac{2}{3}$ दूध प्राप्त हुआ, आपूर्ति एवं गैर आपूर्ति क्षेत्रों में प्रति गाय औसतन दैनिक दुग्ध उत्पादन क्रमशः 1.00 किलोग्राम और 0.87 किलोग्राम था। गैर व्यवसायिक परिवारों में भैंसों का दूध 1.49 किलोग्राम और 1 27 किलोग्राम था। आपूर्ति और गैर आपूर्ति वाले क्षेत्रों में प्रति दुधारु गाय के दूध का दैनिक औसत उत्पादन क्रमशः 0.83 किलोग्राम और 1.02 किलोग्राम था और भैंस के दूध का उत्पादन, व्यवसायिक परिवारों के समान ही था।

व्यवसायिक एवं खेतीहर परिवारों में कुल दुग्ध उत्पादन के 20 से 25 प्रतिशत दूध की खपत घर में ही हुई। 72 से 79 प्रतिशत दूध बेचा गया और शेष को दुग्ध उत्पादों में

परिवर्तित किया गया। गैर खेतीहर परिवारों में दूध की खपत का अनुपात 13 से 28 प्रतिशत था जबकि 72 से 92 प्रतिशत दूध बेचा गया। व्यवसायिक परिवारों की तुलना में गैर व्यवसायिक परिवारों में प्रति व्यक्ति दूध की खपत दुगुनी से अधिक थी। प्रति व्यक्ति दूध की खपत 75 से 76 ग्राम के बीच थी। खेतीहरों में प्रति व्यक्ति दूध की खपत गैर खेतीहरों की अपेक्षा अधिकतम थी.

3. चारे की पद्धति

दोनों ही क्षेत्रों के खेतिहर परिवारों में प्रति दुधारु गाय को दिया गया औसतन चारा लगभग 1.0 कि० ग्रा० हरा, 3 0 कि० ग्रा० शुष्क और 1.3 कि० ग्रा० सान्द्र था। आपूर्ति वाले क्षेत्रों के गैर-खेतीहर दुग्ध उत्पादकों द्वारा दुधारु गाय को खिलाए गए हरे चारे की मात्रा खेतीहर परिवारों द्वारा खिलाए गए चारे के समान ही थी जबकि शुष्क एवं सान्द्र चारे की मात्रा खेतीहर परिवारों द्वारा खिलाए गए चारे का लगभग आधा था। दोनों ही क्षेत्रों में शुष्क गायों को बहुत ही कम हरा चारा खिलाया गया। लगभग 3.0 कि०ग्रा० शुष्क चारा खिलाया गया और सान्द्र चारा तो दिया ही नहीं गया। खेतीहरों के परिवारों द्वारा दुधारु गायों को खिलाया गया दैनिक चारा था—1.6 कि० ग्रा० हरा, 2.8 कि० ग्रा० सूखा और 2.8 कि० ग्रा० सान्द्र चारा। गैर-खेतीहर परिवारों द्वारा भैंसों को खिलाए गये चारे की मात्रा ठीक आधी थी। दोनों ही क्षेत्रों में शुष्क भैंसों को खिलाया गया चारा ठीक वैसा ही था जैसा शुष्क गायों को खिलाया गया था।

शुष्क चारे के अन्तर्गत धान का भूसा, हरे चारे के अन्तर्गत उगायी गई सामान्य घास और सान्द्र चारे के अन्तर्गत मूंगफली की खली और चावल की चोकर आती है।

4. रोजगार पद्धति :—

क्षेत्र में सभी प्रकार के परिवारों का औसतन परिवार आकार 5 से 6 के बीच आंका गया। लगभग 55 प्रतिशत परिवारों के सदस्य शिक्षित थे। आपूर्ति के क्षेत्र में लगभग 72 प्रतिशत कार्यकर्त्ता कृषिकार्य में, 11 प्रतिशत क्षेत्रीय कार्य में, 8 प्रतिशत सेवा में, 3 प्रतिशत शिल्प कार्य में, एक प्रतिशत दूध एकत्रित करने में तथा शेष अन्य छोटे-मोटे व्यवसाय में लगे हुए थे। दो क्षेत्रों के दुग्ध उत्पादन परिवारों में लगभग 75 प्रतिशत कृषि कार्य में, 2 प्रतिशत दुग्ध एकत्रित करने में, 7 प्रतिशत क्षेत्रीय कार्य में तथा शेष अन्य व्यवसाय में लगे हुए थे। गैर-दुग्ध उत्पादन परिवारों में लगभग 63 प्रतिशत कृषि कार्य में, 17 प्रतिशत क्षेत्रीय कार्य में, 8 प्रतिशत सेवा में तथा शेष अन्य व्यवसाय में लगे हुए थे।

5. फसल पद्धति :—

क्षेत्र में खेतीहर परिवार केवल संफुल्लन चारे और नकद फसलों में लगे हुए थे। क्षेत्र में

आमतौर पर पैदा होने वाली फसलें धान, रागी, मूंगफली, चोलम, मक्का और वारग आदि थी। आन्तरिक मंडल में आपूर्ति क्षेत्र में धान उत्पादकों का अनुपात, तटीय क्षेत्र में 22 से 52 प्रतिशत तक के मुकाबले, 32 से 63 प्रतिशत था। गैर-आपूर्ति क्षेत्र में यही अनुपात बिलकुल विपरीत थे। दो मंडलों के दोनों क्षेत्रों में यह आँका गया कि संफुल्लन और नकद फसलों में लगे हुए खेतीहर व्यवसायी दुग्ध उत्पादकों का अनुपात, खेतीहर गैर-व्यवसायी दुग्ध उत्पादकों की तुलना में अधिक था।

जबकि आन्तरिक क्षेत्रों में फसल उत्पादन की तीव्रता तटीय क्षेत्रों की अपेक्षा 20 से 30 प्रतिशत अधिक थी। गैर-आपूर्ति क्षेत्र के गैर-व्यवसायी परिवारों की फसल उत्पादन की तीव्रता कम थी।

6. आय :—

जिले में सभी प्रकार के परिवारों की वार्षिक नकद आय आपूर्ति क्षेत्र में रुपए 2558/- तथा गैर-आपूर्ति क्षेत्र में रुपए 2789/-औसतन थी। दोनों क्षेत्रों में कुल नकद आय को डेरी-उद्योग, और अन्य पारिवारिक व्यवसायों के लिए क्रमशः लगभग 5 प्रतिशत, 30 प्रतिशत और 65 प्रतिशत परिकलित किया गया। व्यापारिक दुग्ध उत्पादक परिवारों में वार्षिक नकद आय-आपूर्ति क्षेत्र में रु० 3124/- और गैर आपूर्ति क्षेत्र में रु० 4620/- थी। व्यापारिक परिवारों और गैर व्यापारिक परिवारों में डेरी-उद्योग को कुल नकद आय का 15 से 20 प्रतिशत तक परिकलित किया। जबकि व्यापारिक दुग्ध उत्पादकों की कुल नकद आय का कृषि से 45 से 55 प्रतिशत तक योगदान रहा। एम० एम० एस० को दुग्ध आपूर्ति करने वालों की नकद आय, एम० एम० एस० को दुग्ध की आपूर्ति नहीं करने वालों की अपेक्षा कुछ अधिक थी। गैर-दुग्ध उत्पादक परिवारों की आय प्रत्येक क्षेत्र में सभी प्रकार से कम थी।

व्यापारिक दुग्ध उत्पादक परिवारों की कुल आमदनी आपूर्ति क्षेत्र में रुपए 5200/- और गैर-आपूर्ति क्षेत्र में रूपए 7100/- थी जबकि गैर-व्यापारिक परिवारों में कुल आमदनी दोनों क्षेत्रों में क्रमशः रु० 5300/- और रुपए 4700/- थी। डेरी उद्योग और कृषि का दुग्ध उत्पादकों की कुल आमदनी में क्रमशः 10 से 20 प्रतिशत और 60 प्रतिशत का योगदान रहा। जबकि गैर-दुग्ध उत्पादक परिवारों की कुल आमदनी, सभी प्रकार से कम थी।

अनुवादक : श्री अखिलेन्द्र पाल सिंह

निरीक्षक : श्री महाराज स्वरूप एवं श्री फणीन्द्र पाल सिंह

संस्थान में हिन्दी प्रगति

गत तिमाही में संस्थान के कर्मचारियों ने हिन्दी को अपने काम-काज का माध्यम बनाने में हिन्दी एकक को जो सहयोग दिया है, यह अन्य तिमाहियों से कहीं अधिक रहा। कर्मचारियों में

हिन्दी के प्रति जो स्नेह एवं आदर उत्पन्न हुआ है उसकी जितनी प्रशंसा की जाए उतनी ही कम है। सभी अनुभागों के अधीक्षकों ने जिस प्रकार टिप्पणी केवल हिन्दी में लिखना आरम्भ किया है, वह काफी सराहनीय है। कुछ अर्से से कर्मचारियों को इस बात से बड़ी परेशानी थी कि उपयोग में आने वाले कुछ शब्दों को शब्द कोश में से देखना पड़ता था और उससे समय काफी बरबाद हो जाता था। इसी प्रकार कुछ पुराने परिपत्रों में संशोधन करके हिन्दी में जारी करने में भी परेशानी रही। अतः इन परेशानियों को दूर करने के लिए हिन्दी एकक ने राजभाषा कार्यान्वयन समिति एवं केन्द्रीय सचिवालय हिन्दी परिषद की शाखा की बैठक में प्रस्ताव रखा कि संस्थान के कर्मचारियों की सहायतार्थ एक तिमाही पत्रिका का प्रकाशन किया जाये। इस प्रस्ताव को सभी ने सर्वसम्मति से मान लिया। अन्त में निर्णय लिया गया कि संस्थान में गठित केन्द्रीय सचिवालय हिन्दी परिषद् की शाखा के वार्षिक महोत्सव पर, प्रस्तावित पत्रिका जिसका नाम "हिन्दी प्रसारिका" रखा गया है, का विमोचन करा लिया जाये।

24 सितम्बर, 1981 को सायं 4 बजे केन्द्रीय सचिवालय हिन्दी परिषद् की शाखा का वार्षिक महोत्सव मनाया गया। इस समारोह में हमारे मुख्य अतिथि संसद सदस्य एवं नागरी प्रचारिणी सभा के अध्यक्ष डा० सुधाकर पाण्डेय रहे। इस अवसर पर उन कर्मचारियों को पुरस्कार दिये गये जिन्होंने वर्ष भर में सर्वाधिक हिन्दी को अपने दैनिक काम-काज का माध्यम बनाया और जिन्होंने संस्थान में आयोजित सामान्य हिन्दी लेखन प्रतियोगिता में सफलता प्राप्त की। इस प्रतियोगिता में प्रथम स्थान हिन्दीतर भाषी कु० टी० विजयलक्ष्मी ने तथा द्वितीय तृतीय स्थान भी क्रमशः कु० हरिन्दर कौर और श्रीमती शकुन्तला अरोड़ा ने प्राप्त किये। ये दोनों भी हिन्दीतर भाषी थीं। इस प्रकार हिन्दीतर भाषी कर्मचारियों ने ये प्रथम तीन स्थान प्राप्त कर दिखा दिया कि हिन्दीतर भाषी भी हिन्दी के प्रति स्नेह एवं आदर का भाव रखते हैं और हिन्दी को राजभाषा के रूप में देखने के लिए लालायित हैं।

इसी अवसर पर "हिन्दी प्रसारिका" का विमोचन किया गया। विमोचन करते हुए डा० सुधाकर पाण्डेय जी ने सस्थान में हो रहे हिन्दी प्रसार की और पत्रिका की भूरी-भूरी प्रशंसा करते हुए कहा कि यदि इसी प्रकार का उत्साह सम्पूर्ण भारत में देखा गया तो वह दिन दूर नहीं जब हमारी मातृभाषा सभी की प्रिय भाषा होगी और उसे देश-विदेश में बताकर हम गौरवान्वित होंगे। "हिन्दी प्रसारिका" के सम्बन्ध में मिले विभिन्न विचारों से यह विदित होता है कि यह पत्रिका कर्मचारियों के लिए काफी उपयोगी साबित हुई है। इस प्रकार अब संस्थान के कर्मचारियो में हिन्दी के प्रयोग के लिए दुगना उत्साह है।

इस सब के अतिरिक्त गत तिमाही में द्विभाषी रूप में जारी किये गये परिपत्रों/ज्ञापनों इत्यादि की संख्या में 2 प्रतिशत की वृद्धि हुई। कुछ नवीन प्रपत्रों का भी अनुवाद किया गया। गत तिमाही में राजभाषा कार्यान्वयन समिति की बैठक भी नियमति रूप से की गयी थी। कुल मिलाकर देखा जाये तो गत तिमाही में हिन्दी के प्रयोग में काफी वृद्धि हुई है।

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