

AN ANALYSIS OF THE RESULTS OF CROP CUTTING EXPERIMENTS

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PREFACE

During June 2002, the Government of Karnataka, expressed desire to look into the data on Crop Cutting Experiments in order to locate the number of experiments conducted in each of the Grama Panchayats in the State. This was planned to increase effectiveness and efficiency of the Comprehensive Crop Insurance Scheme in Karnataka. This exercise was tedious and time consuming as the number of experiments were spread over 175 taluks and 744 hoblies. The total number of experiments conducted were 52,106. The original schedules of the crop cutting experiments were stored at the Directorate of Economics and Statistics. The entire data had to be retabulated in order to obtain the required information. The experiments were conducted across crops, seasons, seed varieties, rainfed & irrigated conditions, and pure & mixed crop types and thus the task was tedious, voluminous and spread over the entire State pertaining to 2000-01.

We obtained original schedules on crop cutting experiments from the Directorate of Statistics Unfortunately, about 1,500 schedules covering 3,000 experiments could not be traced as some time had lapsed. The data were manually tabulated in order to avoid any of the errors due to reading the handwriting of the investigators. These were scrutinised twice and then fed to the computer in order to obtain final tables. A complete software was developed to classify the experiments on various counts and to obtain information required for the policy purpose. The software was developed by M/s Solution Space.

The present report provides largely the data tabulated according to the objectives that have been set for the project by the Government of Karnataka and provides a brief introduction about the findings. The findings are largely in terms of tables and thus the report contains largely data and tables. The report has two components viz., Consolidated Report at the State level and 27 District reports of all the districts of the State. We have provided the Ready-to-Use Software in order to obtain the same information in future from the data on Crop Cutting Experiments. The entire software is developed in Visual Basic as front end and SQL Server as back end. The software is explained in the consolidated report as well as in the district level reports.

I hope this will be of use to the State Government and in future we shall have quick analysis of the Crop Cutting Experiments data base with the help of this software.

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ACKNOWLEDGEMENT

The project was initiated in order to get crop cutting experiments data at village and taluk level tabulated to find out if sufficient number of experiments are conducted up to Grama Panchayat level for each crop and crop condition. We are grateful to the Commissioner of Agriculture, Government of Karnataka for the grant given for the project and continuous help in obtaining the records and basic data. We are grateful to Dr.S.Subramanya, Commissioner for Agriculture, Government of Karnataka, and Dr S C V Reddy, Additional Director, Government of Karnataka and others at the Commissionerate of Agriculture is gratefully acknowledged for their encouragement. They have helped us throughout the study in terms of administration of the study. We are also grateful to Shri H D Ganesh, Director, Directorate of Economics & Statistics, who spared no efforts to locate and hand over all the original schedules despite lot of inconvenience to his staff due to many other pressing work. We are grateful to him.

Dr K N R Sastry worked as a Consultant on the project and has shouldered the full responsibility of giving the final product. His association with the conduct of the crop cutting experiments, method of schedule filling and distribution of experiments apart from the thorough knowledge of all the taluks in Karnataka helped us to scrutinise and tabulate the data in most efficient manner. We are grateful to him for this untiring work and extreme zeal in completing this task. We hired the services of M/s Solution Space in order to get these data tabulated. It was a difficult task and they had to re-do a lot of tabulation work due to some of the difficulties. However, they withstood all these iterations. We are thankful to them for their help.

Mr S K Krupashankar, a Software Specialist was hired for the project as a Research Assistant and he spared no efforts to get this project completed as his personal commitment to the work. His sincerity and adherence to time have been greatly appreciated by all of us and we are grateful to him for his work beyond the call of his duties. Mr M K Mohan Kumar has always been on my right side to help and bring out the best possible out of scribbles that I hand him over. I am grateful to him for his services in the project and bringing it out in this neat form.

I hope this research report will be useful to larger research community and that will be the best returns we can expect.

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AN ANALYSIS OF THE CROP CUTTING EXPERIMENTS

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Upgrading and stabilizing the agricultural production at a faster pace is one of the basic conditions for agricultural development. Production of any crop is lead either by extension of area or improvement in productivity or both. In India, the possibility of extending the area under any crop, almost, does not exist except by resorting to increased cropping intensity or crop substitution. Moreover, area and productivity of different crops are the results and, as well as, the reflection of the combined effect of many factors like agro-climatic conditions, resource endowment, technology level, techniques adopted, infrastructure, social and economic conditions. Many schemes have been devised to maximize the productivity of various crops in different agro-climatic regions. State departments, credit institutions, seed/ fertilizer/pesticide agencies, and many other partners in public and private sectors are actively engaged in enhancing the productivity of different crops in different regions and under different conditions. However fluctuations in crop productivity continue to dog the sector and create severe distress.

Estimation of productivity of different crops is one of the important activities undertaken by the government departments in order to monitor the progress of the sector and provide insurance to the sector. Revenue, Agriculture, and Economics and Statistics departments are jointly involved in the estimation process. Researchers and many other agencies use the data so generated by the government departments. But these are usually available only in an aggregate form and maximum at taluka level. Satellite imageries, of late, are being used increasingly to estimate the area but productivity data have to come from the crop-cutting experiments.

Article 243-g of the Constitution of India requires the Panchayat Raj Institutions to be the decision-making bodies in various aspects of agricultural sector

and especially the implementation of the schemes. Crop Insurance is one of the important schemes of in the agricultural sector. The debate on implementation of this scheme indicated requirement of the yield estimates at lower than the taluka level, nad especially at Panchayat level. The Statistical Commission recommended minimum 8 experiments as necessary minimum at the Panchayat level, if yield estimates have to be arrived at Hobli level. Therefore, the state government felt it necessary to ascertain the distribution of experiments already conducted in the State across districts, talukas, hobalies, panchayats and villages in the State.

In the above context, a detailed analysis of the data available on the crop cutting experiments conducted by the Government of Karnataka during 2000-2001. The main objectives of the study was to find out the number of crop cutting experiments conducted, with the present strength of field staff, at gramapanchayat, hobli, taluka and district level. These have to be grouped by crops (variety wise), seasons and conditions (Irrigated and rainfed). The project was to provide tables to the State Government in the required format and also user-friendly software to get such analysis done with ease at district level.

A total of 52,106 experiments conducted on 26 agricultural crops in 27 districts of Karnataka State during 2000-2001 were included in the present analyses. The details provided in the prescribed schedules were: identification of the field (farmer, survey number, village, hobli, taluk, district), name of the crop, season (kharif, rabi, summer, annual), pure or mixed (proportion if mixed), seed variety (hybrid, high yielding or local), irrigated or dry, method of sowing (broadcasting, hand sowing, drill sowing, dibbling, transplanting), fertilizer doze (name and quantity of fertilizers), percentage crop loss due to pests, yield in kilograms per plot, name of the field worker in charge of the experiment. Invariably at least two experiments are conducted in any given village and the data are entered in a prescribed schedule. About 1500 schedules (3000 experiments) were not included in the analyses since they were not made

available. However, it is possible to include the details of remaining experiments conducted during 2000-2001 with the help of user manual provided in the report

The following details are provided in the report (hard copy) up to grama panchayat level and all the details are provided experiment-wise up to village-wise in the CD-ROM.

1. Number of experiments conducted crop-wise of Gramapanchayat, hobli, taluk and district levels.
2. Number of experiments conducted season-wise and crop-wise using hybrid, high yielding and local varieties under irrigated and rainfed conditions as pure and mixed crop at village, grama panchayat, hobli, taluk and district level. Range and coefficient of variation of yields under the above conditions are also provided.
3. Crop-wise yields in different ranges at state level.
4. Crop-wise fertilizer nutrients used per hectare under different ranges of crop yield.
5. Yield loss (in per cent) due to pests at taluk level.

A state level report containing the tables across districts was prepared. In addition to this reports were prepared for each of the districts giving the data in the required format along with the User friendly software to obtain such tables from the future experiments.