Annual Abridged Report of Statistical Section, AARI, Faisalabad 2016-17

OVERVIEW

Realizing the importance of the application of statistical techniques in Agricultural Research, Statistical Section was established in 1946.

OBJECTIVES

This Section extends help to agricultural researchers in planning and designing of research experiments, analysis of research data obtained thereby and interpretation of results. Vetting of annual research programs of the institute, evaluation / identification of problem data and physical verification of layout of research experiments are key responsibilities of the section. Training of Research Scientists of Ayub Agricultural Research Institute on data analysis and interpretation of results are also being conducted. Data regarding area, production, yield etc. of all crops is being maintained.

ACHIEVEMENTS

Advisory services for Designing of Experiments.

There are number of factors which contribute a lot in minimizing experimental error but the choice of suitable design is the important one. For this purpose, advisory services were provided to 280 research scientists for designing their research experiments. Guidance was also provided to researchers in collection of data, interpretation / presentation of results for writing research papers, articles etc.

Evaluation / Identification of Problem Data.

To ensure the validity of the research data collected by the Agri. Scientists, the data of research experiments received from various Institutes were examined, evaluated with statistical standards and problem data were identified.

Physical verification of layout of field experiments.

The layout of field experiments was physically checked /verified according to the vetted annual program of research work by paying visits to the experimental areas of different Directorates/Sections at Ayub Agricultural Research Institute, Faisalabad. The difficulties faced by the researchers were discussed in detail and suitable solutions were suggested at the spot. Various points of mutual interest pertaining to the number of replications and shape & size of plot were also discussed. Technical staff was also suggested to send their layout plans to the Statistician for approval / vetting before sowing. The discipline wise detail is as under:

Sr. No	Name of Institute/Station	No. of Experiments
1.	Cotton Research Institute, Faisalabad	18
2.	ISCES, Faisalabad	10
3.	Oilseed Research Institute, Faisalabad	21
4.	Vegetable Research Institute, Faisalabad	17
5.	Pulses Research Institute, Faisalabad	20
6.	Wheat Research Institute, Faisalabad	20
7.	Agronomic Research Institute, Faisalabad	11

Statistical Analysis of Data

The staff remained busy throughout the year due to the pouring of a large number of data sets for statistical analysis. A total of 1457 data sets/tables/parameters of experiments conducted by different institutes under the umbrella of Ayub Agricultural Research Institutes were analyzed.

All the data of 1457 tables/parameters of research experiments received in the section during the year under report were timely and efficiently examined, evaluated, discussed with the specialists concerned and analyzed statistically keeping in view the objectives of the experiment. Behavior of individual factors and their interaction was also studied. Design wise detail of these data sets processed statistically during the year 2016-17 is as under:

Sr. No	Name of Experimental Design / Statistical Procedure	No. of parameters / tables processed statistically
1	RCBD	600
2.	C.R.D	16
3.	Factorial Experiments (CRD & RCBD)	27
4.	Split Plot Design	112
5.	Non Additivity Test	24
6.	Combined ANOVA	15
7.	Multiple Comparison Test	577
8.	Correlation Analysis	6
9.	Cluster Analysis	7
10.	Principal Component Analysis	14
11.	Path Analysis	11
12.	Descriptive Analysis	14
13.	Line x Tester Analysis	13
14.	Augmented Design	1
15.	Two sample T-Test	20
Total		**1457**

Vetting of Annual Program of Research Work

Annual program of research work of Rabi and Kharif, 2016-17 of various disciplines of Ayub Agricultural Research Institute were vetted and improvements/ modifications were suggested where deemed necessary.

Assignments

Various assignments regarding different aspects were prepared and provided to Director General Agri. (Research) as directed. Fortnightly PCGA reports also maintained and sent to   DGA (R) from September, 2016 to May, 2017.

Training of Research Scientists

One of the thrust areas of this section is to develop trained scientists of AARI in the disciplines of Agricultural Statistics to meet the challenges of Agricultural Research. Trainings were conducted on monthly basis for agri. researchers to enhance statistical aptitude and necessary understanding of design of experiments and interpretation of results to make them able to cope with the practical difficulties faced during experimentation.

The course covers the fields of Design of Experiments, Regression Analysis and Multivariate Techniques etc. and lays more emphasis on statistical computation by using different statistical software.

Discipline wise distribution of 63 trained scientists under this program is as under:-

Month	Institute/Directorate	No. of Scientists
Jul, 2016	Arid Zone Research Institute, Bhakkar	4
	Maize Research Station, AARI, Faisalabad	
Aug, 2016	Fodder Research Institute, Sargodha	5
	Maize Research Station, AARI, Faisalabad	
Sep, 2016	SAWCRI, Chakwal	6
Oct, 2016	Soil Fertility Survery & Soil Testing Institute, Lahore	3
Nov, 2016	Barani Agricultural Reseach Institute, Chakwal	5
Dec, 2016	Maize & Millet Research Institute, Sahiwal	6
Jan, 2017	Mango Research Institute, Multan	4
Feb, 2017	Cotton Research Institute, Multan	7
Mar, 2017	Vegetable & Horticulture Research Institute, FSD	6
Apr, 2017	Horticulture Research Institute, FSD	6
May, 2017	Oilseed Research Institute, Faisalabad	5
	Vegetable Research Institute, Faisalabad	
	Oilseed Research Institute, Faisalabad	
Jun, 2017	Wheat Research Institute, Faisalabad	6

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