



Agricultural Statistics in Practice

Agricultural Statistics in Practice

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COMMONWEALTH OF LEARNING (COL)



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Introduction



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Course Description

Agricultural statistics training and instruction are crucial in improving global agricultural systems. Farmers and agricultural practitioners are now keen to prowess in research and learning in agricultural statistics and computer applications. Understanding recent statistical applications for descriptive and predictive analyses on yield and productivity is vital for their existence and this knowledge helps farmers make better statistical assumptions. This course explores to the industry key insights to develop a broader and deeper understanding and a strong comprehension of essential principles of data and statistics in agriculture, with an emphasis on used examples and possible impact. Foundations are covered first, followed by agricultural applications. Candidates learn forecasting approaches to boost production, efficiency, and competitiveness. Analysis methodologies using soft tools are covered which educate farmers boost their farm output.

Course Content

- Index Numbers & Forecasting
- Forecasting Techniques in Agriculture
- Analysis of VAriance
- Regression Path Analysis
- Multivariate Analysis

- Stability and Sustainability Analysis

Course Audience

- Farmers attempting to increase yield
- Faculty of Agriculture Universities
- Professionals at State and Central Departments of Agriculture
- NGOs in Agriculture
- Undergraduate and Graduate Students of Agriculture and Allied Sciences
- Agriculture Scientists at ICAR
- KVK Specialists
- Progressive Farmers/Farming Community

Outcomes of this Course

- Identify the statistical analysis techniques for their data
- Select agricultural forecasting techniques
- The fundamentals of statistics for use in agriculture
- Knowledge of regression and multivariate analysis soft tools

PART I

WEEK 1: INDEX NUMBERS AND FORECASTING

1 Index Numbers – An Introduction



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2 Identifying Good Index Numbers



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3 Chain Based Index Numbers and Cost of Living Index with Special Reference to Farmers



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4 Measurement or Isolation of Trend



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5 Time Series Analysis



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6 MS Excel Program Showcasing an Example



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PART II

WEEK 2: FORECASTING TECHNIQUES IN AGRICULTURE

1 Measurement of Seasonal Component



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2 Measurement of Forecasting Components



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3 Forecasting in Agriculture



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4 Forecasting Methods



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5 Forecasting Accuracy and Its Need



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6 MS Excel Demonstration



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WEEK 3: ANALYSIS OF VARIANCE

I Introduction and Assumptions



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2 One Way Classification



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3 Two-way ANOVA with One Observation Per Cell



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4 ANOVA Part – 2



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[PDF: Two Way ANOVA with More Than One Observation Per Cell](#)

5 Effect of Change of Origin and Scale in ANOVA



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6 MS Excel Program for 1- Way and 2-Way ANOVA



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PART IV

WEEK 4: REGRESSION PATH ANALYSIS

I Introduction



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2 Path Diagrams and Calculation of Path Coefficient



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3 Calculation of Residual



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4 Regression Path Coefficient Analysis



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5 Types and Interpretation of Path Coefficient



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6 Excel Program for Determination of Regression Path Coefficients



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[PDF: MS Excel Program for Determination of Regression Path Coefficients](#)

PART V

WEEK 5: STABILITY AND SUSTAINABILITY ANALYSIS

I Problem of Measuring Stability



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2 Models Assessing Stability Classical Model-Wricke Model



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3 Models Assessing Stability Classical Model-Perkins and Jinks Model



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4 Sustainability – Introduction



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5 Measuring Yield Sustainability of Different Treatments



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6 MS Excel Demonstration for Measurement of Yield Sustainability



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[PDF: MS Excel Demonstration for Measurement of Yield
Sustainability](#)

PART VI

WEEK 6: MULTIVARIATE ANALYSIS

I General Idea and Classification of Multivariate Analysis



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2 Multivariate Regression Analysis



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3 Factor Analysis and its Types



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4 Principal Component Analysis-Scree Plot



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5 Multivariate Analysis – Lecture Notes

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6 Summary of the Course



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