

## **BIOSTATISTICS**

### **Unit I**

Purpose of statistical investigations, The arithmetic mean, The mean of grouped data, The median, The mode. Necessity to study variability, range, mean deviation, variants and standard deviation, quartile deviation.

### **Unit II**

Scatter diagram, correlation between two random variables, rank correlation, linear regression, Principles of least squares, time series data. Applications of statistics in biology.

### **Unit III**

Curve fitting – least square method – finite differences – difference operators Newton's forward and backward formula. Basics of the application of statistical computer programme (eg. SPSS).

### **Unit IV**

Ms-Excel for computing data. Newton Raphson method, false position method – solution of simultaneous algebraic equations.

### **Unit V**

Types of gene interactions, allele interactions, complementary and Supplementary genes, epistasis, duplicate genes, polygenes and pleiotropy , penetrance and expressivity, multiple alleles. Linkage maps, Chi-square test for linkage maps.

### **Suggested Reading :**

1. Statistical Methods : S.P. Gupta, Schaw & Co.
2. Biostatistics – P. Gurumani, Tamil Nadu Book House.
3. Introduction to Biostatistics by Sokal & Sohif Toppan Co. Japan.