

QUALITATIVE AND QUANTITATIVE CHARACTERS

The phenotype of any individual can be classified into two types:

1) Qualitative characters and 2) Quantitative characters

1. Qualitative characters: The characters that show discontinuous variation and which cannot be measured easily are known as qualitative characters. These are also known as classical mendelian traits.

Eg: Corolla colour – Red white or pink no continuous variation

Seed shape – Round wrinkled variation is not continuous

2. Quantitative characters are those showing continuous variation and

Which can be measured easily. These characters are also known as metric traits. The data obtained from such characters is known as quantitative data. This data can be subjected to statistical analysis and the branch of science which deals with such analysis is known as quantitative genetics or biometrical genetics.

Eg: Yield, Plant height

Characters	Quantitative characters	Qualitative characters
Deals with	Traits of degree Eg: Plant height, seed weight, yield etc.	Traits of kind Eg: Corolla colour, seed shape, appearance etc
Variation	Continuous	Discontinuous
Effect of individual gene	Small and undetectable	Large and detectable
No. of genes involved	Several (polygenic)	one or few (mono /oligogenic)
Grouping into distinct Classes	Not possible	Possible
Effect of environment	High	Low
Metric measurement	Possible	Not Possible
Statistical analysis	Based on mean, variance, standard deviation etc	Based on ratios and frequencies
Stability	Low	High
Transgressive segregation of F ₂	Yes	No
Dominance effect	No	Yes
Cumulative effect of each gene	Yes	No