

Genetic Variance Encyclopedia Article

Genetic Variance

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Genetic Variance

Genetic variance is the observable diversity of a trait in a population which can be attributed to genetic heterogeneity. Genes can often exist in several different forms or alleles. Some of these alleles produce the same effect as others, but at certain times there are alleles present in a population which have an observable effect on the phenotype of the organism.

Genetic variance is a measure of the level of dissimilarity between alleles within a given population. Some characteristics show no genetic variance. These are ones that are usually highly conserved due to their importance. One example of such a characteristic would be the hemoglobin molecule responsible for the transport of oxygen around the body in humans. Any alteration in the genotype, and hence the phenotype, of this molecule would be fatal. Other characteristics can show a wide genetic variance, such as eye and hair color. These characteristics are less important, hence a greater variability is seen within the population.

Genetic variance is a measure within a population. Consequently, the genetic variance present within a species may be greater than encountered in any breeding population. This would be due to barriers halting the intermixing of genes between all the populations making up a specific species.