

Epistasis

The term epistasis describes a certain relationship between genes, where an allele of one gene hides or masks the visible output, or phenotype, of another gene.

Dexter cattle occur in three distinct colors: black, red, and dun. Two pairs of genes that are located on separate chromosomes control these colors. Cattle chromosome 8 contains the B (dun) locus, and cattle chromosome 18 contains the E (red) locus.

In Dexters, the color red found at chromosome 18 is epistatic to dun found at chromosome 8. Animals that are homozygous for both red and dun ($Ee/Ee\ b/b$, $Ee/e\ b/b$, $e/e\ b/b$) are phenotypically red.

The important aspect of epistasis is that it doesn't just influence the phenotype, it *hides* the output of another gene or genes.

Epistasis is entirely different from dominant and recessive, which are terms that apply to different alleles of the same gene

Sources

John Potter "Basic Concepts of Dexter Color Genetics"

<http://learn.genetics.utah.edu>