



#### General Terms:

**Horned:** The presence of horns attached to the skull, determined by genetics. Both males and females can grow horns, so horn growth is not determined by gender.

**Polled:** The inability to grow horns, determined by genetics.

**Dehorned:** A genetically horned animal that has had its horns removed. A dehorned Dexter is **not** polled.

**Scurs:** Horn-like tissue attached to the skin (not the skull). Scurring is a unique genetic condition that is not related to horned/polled genetics. A scur is also not the result of an incomplete dehorning. Since scurs grow in the same area as horns, they can only grow if horns are not present. Therefore, only cleanly dehorned Dexters or genetically polled Dexters can grow scurs. There is evidence to suggest, however, that a homozygous polled Dexter will not grow scurs even if it inherits the scur alleles. There is also evidence to suggest that scurs, if left to grow, can become semi-attached to the skull.

#### Genetic Terms:

**Phenotype:** The characteristics of an animal that can be seen and/or measured.

**Gene:** A segment of DNA on the chromosome that codes for a specific trait and determines how that trait will develop.

**Allele:** A version of a gene. Alleles occur in pairs, one being inherited from the dam and one from the sire.

**Dominant Allele:** A dominant allele will always express itself and will suppress the expression of a recessive allele.

**Recessive Allele:** A recessive allele can only be expressed if a dominant allele is not present.

**Heterozygous:** The two alleles in a gene pair are not alike.

**Homozygous:** The two alleles in a gene pair are alike.

#### Horned/Polled Alleles:

1. Horned allele **H**. This allele is recessive.
2. Polled allele **Pf**. Typically found in Holstein-Friesian and Jersey breeds. This allele is dominant.
3. Polled allele **Pc**. Typically found in Angus, Blonde d'Aquitaine, Dexter, Limousin, Charolais, Hereford, and other European breeds. This allele is dominant.

Since Dexters typically have the **Pc** polled allele, this document will use **Pc** to indicate the polled allele and **H** to indicate the horned allele.

### Probabilities of Horned or Polled Offspring

Parent #1		Parent #2		Probability of Possible Offspring		
Phenotype	Genotype	Phenotype	Genotype	Horned H/H	Polled	
					Heterozygous H/Pc	Homozygous Pc/Pc
Horned	H/H	Horned	H/H	100%	0%	0%
Horned	H/H	Heterozygous Polled	H/Pc	50%	50%	0%
Horned	H/H	Homozygous Polled	Pc/Pc	0%	100%	0%
Heterozygous Polled	H/Pc	Heterozygous Polled	H/Pc	25%	50%	25%
Heterozygous Polled	H/Pc	Homozygous Polled	Pc/Pc	0%	50%	50%
Homozygous Polled	Pc/Pc	Homozygous Polled	Pc/Pc	0%	0%	100%

<https://www.vgl.ucdavis.edu/services/Polled.php>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3380827/>

<http://homepage.usask.ca/~schmutz/polled.html>

[https://projects.ncsu.edu/cals/an\\_sci/extension/animal/news/aug96/aug96-3.html](https://projects.ncsu.edu/cals/an_sci/extension/animal/news/aug96/aug96-3.html)

<https://articles.extension.org/pages/73401/the-genetics-of-horned-polled-and-scurred-cattle>

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