



Cattle Producer's Handbook

Genetics Section

826

Congenital Defects in Cattle

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Many undesirable traits show up in beef cattle. These range from poor performance and structural unsoundness to semilethal and lethal diseases. Causes of undesirable traits are varying amounts of genetic influence, environmental conditions, and interaction between the animal's genetic makeup and the environment in which they must live.

Congenital defects are present in all breeds of cattle. In most herds they are rather uncommon, however, occasionally the frequency within a herd will be of considerable economic importance. Congenital defects are abnormalities of structure or function present at birth and may account for a high percentage of the calf losses from just before to just after calving. The frequency of congenital defects ranges from less than 1 percent to over 3 percent within herds. Cattle producers should be conscious of the potential of defects and investigate all suspects.

Causes

The cause of many congenital defects is unknown. Some are inherited. The most common inheritance pattern is as a simple recessive trait. The defective calf receives a recessive gene from its sire and one from its dam. A few congenital defects are known to be caused by genes with incomplete dominance and a few are caused by two or more sets of genes.

Genetically caused congenital defects usually run in families. The parents of a genetically defective calf will generally have at least one ancestor in common. When more than one genetically caused defective calf is born in a herd in the same calving season, their dams are usually related (i.e., half sisters) and are sired by the

same bull. A change in the breeding program is required to correct this situation.

Many congenital defects are caused by environmental factors. These include the level of nutrition, excess or shortages of certain nutrients, toxic plants or other toxic substances, infectious diseases, and extremes in temperature during pregnancy. Most environmentally caused congenital defects will occur in a short time during a calving season from cows that were managed as a group. After proper diagnosis, a change in management is necessary to correct these conditions.

Diagnosing the Cause

To determine the cause of defects, the cattle producer must have good records and know why every calf dies. Purebred breeders generally have very satisfactory breeding records that include sire and dam of each calf and breeding date. Management records should include which cows were in groups during each time period. Most breeders have a list of which cows are in each pasture. A date in and out of the pasture usually will help identify problems. Feed analysis reports, toxic plants present, and herd health and vaccination programs are of value also.

Of great value in controlling diseases as well as congenital defects is to know the cause of death of each calf. The cause of some deaths will be obvious. Others will be much more difficult to determine. If a producer does not know the cause of death, ask the local veterinarian or state diagnostic laboratory for help. Your breed association (see 845), A.I. organization, and Cooperative Extension System beef specialist can help you contact diagnosis personnel.

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