

Dangers of Losing Genetic Diversity in Livestock

Our topics for this week are:

- **Risks of losing genetic diversity in livestock production**
- **Why genetic diversity in livestock is being lost**

White, blue-eyed cats are often congenitally deaf. What if people only wanted white, blue-eyed cats and eliminated all other cats? All cats would be deaf whether people wanted deaf cats, or not.

In the past, people would raise breeds of livestock that they were attracted to because of their quality of milk, behavior, resistance to certain diseases, ease of breeding, and a variety of other qualities. This resulted in many breeds being widely available and the benefits of diversity being underappreciated.

In contrast, corporate livestock companies have bred single strains of animals that have shown the highest production relative to the cost. Other breeds or strains of chickens, hogs, or cattle have been ignored even though they may carry genes that provide better immunity against disease or have other desirable characteristics.

The genetic diversity of our livestock may be vital in food production of the future due to emerging diseases, global warming, the growing shortage of water, and other changes in the climate of the future. As a result, the United Nations agricultural agency has called for stronger global efforts to protect existing livestock gene pools to maintain sustainable livestock food supplies.

Brazil's cattle were bred in South America by the Portuguese 400 years ago. They were bred to be resistant to several parasites, worms, and ticks. They thrive on poor pasture grass and are capable of surviving either floods or droughts better than most cattle breeds. Less versatile breeds became popular with the livestock industry in the 20th century. Only about 500 Pantaneiro cattle remain. Conventional cattle breeds will be at much greater risk of not surviving anticipated climate changes of the future than Pantaneiro cattle.

For 60 years, the University of Minnesota has maintained a herd of unselectively bred Holsteins. A recent study on immunity of those unselectively bred cattle compared to Hoststeins selectively bred just for enhanced milk production revealed superior immunity in the unselectively bred cattle.

Poultry are the most numerous species among livestock. Commercial production of poultry has dominated the industry since the 1940s. Researchers have found that more than half of the genetic diversity native to chickens has been lost in commercial birds. Commercial production hens have also been intentionally bred for breasts too large for their body and unintentionally for a lack of immunity to diseases such as avian influenza.

Since 1990, the pork production industry has dominated the selection of hogs. It has concentrated its efforts on the Large White hog (aka - Yorkshire) because of its rate of growth and maternal behavior. To ensure the future of pork production, “heritage” hog producers are needed to maintain viable genetic diversity for the future.

According to an investigation by the UN Food and Agriculture Organization, among the 1,458 world’s livestock breeds 17% are at risk of extinction and the status of 58% is unknown due the size and structure of their populations.

Focusing only on rate of growth and production costs is good for profit margins but not for sustainability. More attention on genetic diversity is needed to ensure sustainability of the livestock industry.

If you have comments or you're interested in particular animal handling subjects contact us at CBC@BetterAnimalHandling.com

Now let’s recap the key points to remember from today’s episode:

- 1. The corporate model of producing large numbers of one strain of livestock endangers sustainability in the world’s food supply.**
- 2. The emergence of new diseases and new climates will require genetic diversity in our livestock to adapt to those changes.**

More information on animal handling can be found in my recent books, *Animal Handling and Physical Restraint*, *Concise Textbook of Small Animal Handling*, and *Concise Textbook of Large Animal Handling* published by CRC Press and is available on Amazon and from many other fine book supply sources.

Additional information is provided at: www.betteranimalhandling.com . This website has more than 150 past podcasts with notes on handling of dogs, cats, other small mammals, birds, reptiles, horses, cattle, small ruminants, swine, and poultry.

Don’t forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.

