



Cattle Producer's Handbook

Quality Assurance Section

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Reduction of Handling Stress Improves Productivity and Welfare

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Reducing stress during handling will provide advantages of increased productivity and maintenance of quality. Recent work has indicated that cattle that become agitated and excited in the squeeze chute have significantly lower weight gains and tougher meat, which results in more borderline dark cutters. Agitation and excitement in the squeeze chute are influenced by both genetic factors and the animal's previous handling experiences. The author has observed that cattle that have previous experience with quiet handling will be calmer and easier to handle in the future.

Reports from commercial feedlots indicate that quiet handling methods help improve productivity. Deaths due to respiratory sickness were greatly reduced in a Texas feedlot when quiet handling procedures were implemented. At another feedlot, toe abscesses were reduced by half when quieter handling methods were used. One cause of toe abscesses is scuffing of the toes when agitated cattle are waiting in line in the chute.

Short-term stressors that occur during handling and transport have been shown to interfere with the biological mechanisms of both reproduction and immune function. Electric prods, restraint, and other handling stressors will lower female reproductive function. In both pigs and cattle, transport or restraint stress lowers immune function.

In cattle, the stress imposed by transit has a greater detrimental effect on the animal's physiology than the stress of feed and water deprivation for the same length of time. Transport stress can also lower rumen function compared to controls subjected to feed withdrawal.

The Role of Fear

Many detrimental effects of handling stressors on animal performance and health are likely due to fear. The relevance of fear in the analysis of behavior during handling is clear. Fear is a universal emotion that motivates animals to avoid predators. All vertebrates can be fear conditioned.

Fear is a very strong stressor. Fear caused by exposure to novelty can elevate levels of cortisol higher than many husbandry procedures. For example, in extensively raised beef cattle not accustomed to handling in a squeeze chute, the psychological stress of restraint raised cortisol levels almost as high as branding.

The amount of stress caused by a handling procedure such as restraint in a squeeze chute is determined by how the animal perceives it. Handling stresses that are nonpainful are mostly determined by the amount of fear. An extensively raised animal that has had little contact with people is more likely to have more fear stress when it is restrained than an animal that is reared in close contact with people and trained to handling procedures. Calves that are raised with close human contact have lower cortisol levels during restraint than animals that receive less contact with humans.

Training and Habituating Livestock to Handling

Practical experience on ranches and feedlots shows that making cattle accustomed to both people on foot and on horseback will produce calmer and easier to handle cattle at the slaughter plant. An animal's previ-

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