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Stress and Nutrition

There are several reasons why cattle suffer from stress. Transport, weaning, handling, and holding stock off feed and water are the major factors causing stress. Stress can affect productivity in a number of ways. Anything new, that the beast is not used to, can cause psychological stress. Other causes of psychological stress are restraint and handling. Common factors include mixing mobs of cattle, noise and disturbance or any new environment. Physical stress on the other hand can be caused by hunger, temperature extremes, injury, thirst and fatigue. Transport and holding cattle can cause both physical and psychological stress. Dehorning and castration are both stressful and so should be performed while cattle are young to allow recovery while still on a high plane of nutrition from their mothers.

Stress affects production in a number of ways. Immunity is reduced in stressed animals making them much more susceptible to disease. There is a direct effect of weight loss due to dehydration and less gut fill. Another effect is loss of appetite and lower feed intake. Animals that are stressed before slaughter show a greater percentage of dark cutters with subsequent downgrades.

Dark cutters are caused by a reduction in glycogen stores in the animals muscle. Normally when a beast is slaughtered glycogen continues to be metabolised to lactic acid. Lactic acid builds up in the muscle making the muscle acidic which gives it a desirable bright red colour. When the beast is stressed and fatigued muscle glycogen stores are depleted and so the meat does not become acidic which allows it to become a darker colour. This meat becomes dry on cooking and is less appealing to the consumer. To reduce the incidence of dark cutting minimise stress in slaughter cattle, feed a diet of at least 10MJ Metabolisable Energy for the last few weeks prior to slaughter and handle cattle quietly.

Store cattle are often subject to stress through mustering, saleyards and transport. To get the best performance out of these cattle measures should be taken to allow them to recover from this stress. Stock should be given access to shade, feed and water as soon as possible after arrival. Electrolytes, in particular potassium, and vitamin A and D help animals recover from dehydration. Quicklick contains high levels of these but should not be made available to stock until after they have had feed and water. Vitamin E has been found to increase the immune response in stressed cattle thus reducing the incidence of disease due to stress. B group vitamins have also been implicated in managing stress with positive gains from 1 trial but not in others.

Many of the same factors such as transport and deprivation of feed and water will also greatly reduce the population of rumen microbes. This reduces the rate and extent of feed digestion and therefore the amount of feed that the beast can consume. As the beast does not eat as much the concentration of nutrients in the diet needs to be higher to allow the beast to receive everything that it requires. Feeding a concentrated supplement, such as a protein meal, upon arrival for up to a week will help the beast and the population of rumen microbes to recover. Take care with grain based supplements as they can cause acidosis.

Handling cattle quietly and providing a high energy diet prior to slaughter can help minimise the negative affects of stress on meatworks cattle. For bought in store cattle allow access to feed, shade and water as soon as possible upon arrival and allow them time to rest and recover.