



## REDUCING CATTLE SHRINK

C. Richardson

Shrink results from the stress cattle experience during processing, transporting and marketing, costing both the buyer and the seller. Reducing the stress placed on the cattle during this time will help reduce losses to the value of marketed cattle caused by shrinkage.

Cattle in all age, weight and finish ranges may experience the two kinds of shrink — fill shrink and tissue shrink. Fill shrink, also known as excretory shrink, is the loss of digestive system contents, manure and urine. This type of shrink can be caused by the stress of change or the withholding of feed and water. Cattle normally lose 2% of their body weight at night, but if feed and water are withheld overnight, this increases to 6% loss in weight. This weight loss is quickly recovered in a day or two once cattle are back on feed and water. Tissue shrink is the loss of fluid from body tissues. This occurs when cattle go long periods without feed and water and are then subjected to other types of stress. Stress can be caused by events such as long distance trucking or rough handling. Tissue shrink occurs when cattle experience over 6% weight loss. Cattle experiencing tissue shrink may take from 10–36 days to recover their selling weight. Excessive shrink can affect finished cattle by increasing the number of dark cutters on a load or decreasing dressing percentage. It also has a detrimental effect on marbling and tenderness.

### CAUSES AND PREVENTION

#### Handling

Just the act of weighing cattle causes some shrinkage. Calves can lose 3% of their weight during sorting and loading. Every 30 min spent moving cattle around in handling facilities will reduce their weight by 0.5%. Use quiet handling methods for moving and processing cattle to lessen this effect. Well-designed handling facilities will allow animals to be processed quickly while experiencing minimal stress. Do not yell or whistle at cattle. Avoid the use of electric prods, canes, whips and dogs. If not all animals are to be sold, then sort cattle 1–2 weeks before weighing and sale. Design facilities to allow cattle to move directly onto trailers without any delays after being weighed.

#### Transporting

Compared to cattle standing in a pen without feed and water, transported cattle will shrink 2% more over the same time period. For the first 3–4 hours during travel, cattle lose 1% of their weight per hour. Over the next 8–10 hours, they lose 0.25% per hour. Cattle lose an additional 0.61% of their weight for every 160 km (100 mi) they are shipped. On long hauls, feeder cattle shrink 25% more than finished cattle.

#### Example

A 272-kg (600-lb) calf is penned, sorted, weighed and transported for 8 hr over 640 km.

Factor	% shrink	lb (kg) of shrink
30 min of preliminary sorting	0.5	3 (1.4)
Weighing and loading	3.0	18 (8.2)
First 4 hr trucking	4.0	24 (11)
Second 4 hr trucking	1.0	6 (2.7)
Distance travelled = 640 km	2.5	14.6 (6.6)
<b>Total Shrink</b>	<b>11</b>	<b>66 (30)</b>

The 272-kg (600-lb) calf weighs only 242 kg (534 lb) at sale time.

Over-loading and under-loading cattle on a vehicle can increase the amount of shrink. Over-loading or crowding causes stress, while under-loading causes excessive movement of the unstable cattle. Both situations can lead to injuries. Place bedding or sand in the vehicle to improve footing and reduce shrink.

Plan ahead for the marketing of cattle. Shrink can be increased by bad storms, hot weather and long delays during the trip or while waiting for unloading. Shrinkage *doubles* when groups of cattle are stressed by being mixed during marketing.

## Weaning

Weaning is one of the most stressful times in a calf's life. Weaning calves the day before the sale and shipping them to the sales barn to stand overnight creates the most shrink in calves. Additional stressors such as sorting, loading, transporting and commingling with other groups of calves, along with the calf's decreased motivation to eat or drink, will cause additional shrink. Pre-conditioned calves will shrink less and provide a higher sale weight.

## RECOVERY TIME

Time for cattle to regain the lost weight varies depending on which type of shrink the animals have experienced. Full shrink-recovery time may be a day or two after going back on feed and water. Cattle with tissue shrink combined with ongoing stresses such as a new feed ration, commingling or sickness could take weeks to recover their sale weight. Cattle that shrink over 9% may experience increased sickness such as bovine respiratory disease and a higher mortality rate.

There is a variation in weight loss and the rate of weight recovery within a group of cattle. Cattle from sales barns generally shrink more than cattle from direct farm sales but recover their sale weights in the same length of time.

Researchers studying how shrink in finished cattle degrades meat quality have developed nutritional supplements to reduce muscle loss and retain quality grades in cattle. These products are fed during the marketing process. These supplements are used in conjunction with low-stress handling methods to reduce shrink.

## SUMMARY

Shrink is a direct measure of the stress placed on cattle. It is important to identify and reduce the stressful factors associated with the marketing of the cattle you are buying or selling. You can reduce shrink by managing the level of stress throughout the marketing of the cattle to maximize their well-being and value.

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