

Muscle out dark cutting

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Muscular cattle are more likely to produce the cherry-red coloured steaks preferred by consumers, according to new Beef CRC research conducted at Murdoch University.

"Dark cutting meat is very dark in colour, dry to the taste, spoils very quickly and has variable tenderness," said Beef CRC researcher Dr Peter McGilchrist, a Lecturer in Production Animal Health and Management at Murdoch University.

Dr McGilchrist's research discovered that increased muscularity in beef cattle is strongly associated with a reduction in dark cutting.

"The relationship between increased muscling and reduced dark cutting is a very important finding for the beef industry," Dr McGilchrist said. "Beef producers can actively select for more muscular cattle knowing it will help to reduce the incidence of dark cutting carcases in their herd, while also increasing dressing percentage, retail beef yield and processing efficiency."

In 2009, dark cutting cost the Australian beef industry around \$35 million.

Dark cutting is caused by insufficient muscle glycogen reserves in the muscle of an animal at the time of slaughter. If the animal has low glycogen levels in its muscle, the pH (acidity) remains high and the meat will be dark.

For a steak to be a bright cherry-red colour, the pH of the meat must drop from a neutral pH of 7 at slaughter down to an ultimate pH of less than 5.7 in the 24 hours after slaughter. This can only occur if the animal has enough glycogen reserves in its muscles.

Dr McGilchrist found more muscular cattle have a higher concentration of glycogen in their muscle at slaughter, which results in a reduced incidence of dark cutting.

"We initially found this in Angus steers that were the progeny of a herd which had been visually selected for greater muscling at the New South Wales Department of Primary Industries," Dr McGilchrist said.

Further analysis of 204,000 MSA carcase records from Western Australia supported the finding.

“The MSA records showed that cattle with a larger eye muscle at the same carcase weight had a lower probability of dark cutting,” Dr McGilchrist said.

“Cattle producers should aim for an eye muscle greater than 70cm² in a 250kg carcase,” Dr McGilchrist said.

Other factors which impact on dark cutting include nutrition throughout the life of the animal. “Heavier cattle with increased fatness also had lower rates of dark cutting and there is a high incidence of dark cutting in very light vealer type cattle.”

Feedlot finishing and larger mob size also appear to reduce dark cutting. “Individuals in larger mobs are thought to be more resilient and use less glycogen during transport and slaughter,” said Dr McGilchrist.

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