

Developing feeding systems for raising male dairy calves for the Australian red meat industry.

Dr Megan Sullivan

The Australian dairy herd currently produces approximately 1 million calves per year, with half of these calves raised as replacement heifers. Within these numbers, approximately 400,000 male calves potentially exit the farm at around 5 days of age. There are many issues surrounding this procedure including animal welfare, moral, ethical and societal considerations. The early exit of male calves from dairy production systems forms negative opinions with consumers and society in general with many questioning why these animals are not integrated into the red meat supply chain.

There are potential options for male dairy calves within the red meat supply chain including high quality finished animals for various domestic and international beef markets and opportunities for producers to background animals specifically for the feedlot industry. This practice has been successfully adopted in many countries with dairy breed animals comprising up to 20% of the US feedlot herd with the majority of carcasses grading highly. Feeding and management methods that are easily adopted and applicable to Australia that will enable these calves to reach marketable live weights is an area that requires investigation.

The Gatton Research Dairy (University of Queensland (UQ)) in collaboration with Queensland Department of Agriculture and Fisheries research scientist, Dr Megan Sullivan, are examining the effectiveness and profitability of raising bull calves from weaning to a marketable animal through an on-farm demonstration. The Gatton Research Dairy (GRD) aims to market all male calves born within the system at 450 kg live weight to a local beef processor. This process has been working well using a grain self-feeder and hay, however profitability has been variable and they are keen to explore options that can reduce costs and improve the viability of rearing bull calves within their system. All male calves are currently castrated at approximately 200 kg live weight or 6 months of age, with castration time being an area that will be explored and the effect on growth rate, time to finishing and carcass quality characteristics.

The management team at GRD have chosen to manipulate the feeding of the bull calves by utilising the current total mixed rations (TMR) fed on farm. This will simplify the process and minimise any increases in workload arising from feeding bull calves, consequently making it more appealing for Australian dairy farmers to adopt. The current rations fed include, the high production cow ration (19.7 % CP; 10.36 ME MJ/kg DM; 41.3 % NDF), the low production cow ration (15.3 % CP; 10.04 ME MJ/kg DM; 31.8 % NDF) and the calf grower ration (19.5 % CP; 10.92 ME MJ/kg DM; 23.9 % NDF). In order to investigate the efficacy of these diets, the male calves are group housed in pens with free access to one of the three diets, shade and water and castrated at one of three time points; day 0, day 60, day 120 of the demonstration. The calves are closely monitored and have data collected at regular and consistent intervals including, live weight, frame measurements, such as hip and wither height and heart girth and body condition score to monitor growth, maturity rate and development. Daily dry matter intake on a pen basis is recorded to assess performance parameters including, average daily gain, feed:gain and feed conversion efficiency. Upon reaching a marketable live weight and condition, all animals will have a carcass assessment conducted at the processor to assess the

feeding and management practices engaged in terms of meat quality and the achievement of market specifications.

Further to this on farm demonstration, Dr Sullivan will be conducting a desktop study that is co-funded by Meat and Livestock Australia and Dairy Australia, investigating high quality forage based systems that can be implemented for raising male dairy calves for domestic and export markets under Australian conditions. These forage systems may be used as a backgrounding ration prior to feedlot entry or to raise the calves from weaning to a finished animal for a range of markets. The desktop study will incorporate a sensitivity analysis incorporating market price, growth rate and input cost variability and the impact of these factors on cost of production and gross margins. In the development of the desktop study, a literature review will be conducted that will research current information on the growth rates, recommended nutritional requirements and current practices in relation to the feeding of male dairy calves. Outcomes from the study may form recommendations for cost effective and profitable methods for raising dairy calves for the beef market and form the basis for future research projects in both the beef and dairy industries.

