Northern Australia Reproduction Group – A New Approach to an Age-Old Profit Problem

Don Menzies[A], Chris O'Neill[A], Nicholas Corbet[B], Brian Burns[B], Paul Williams[C], Kym Patison[A] and Dave Swain[A]

[A]CQUniversity, Precision Livestock Management Group, Rockhampton, Qld
[B]The University of Queensland, Centre for Animal Science, Queensland Alliance for Agriculture and Food Innovation, Rockhampton, Qld
[C]Tropical Beef Technology Services, Agricultural Business Research Institute, Rockhampton, Qld

Reproductive performance is a major profit driver in northern Australian beef herds. Predictions based on ABARES data show that by 2015 the northern beef industry's productivity (kg beef relative to herd numbers) will have declined to 1996 levels. Poor management, genetics, nutrition and environmental stressors result in low reproductive performance. The Northern Australia Reproduction Group (NARG), a collaboration of central Queensland research and extension bodies, is focused on genetic improvement, animal behaviour, emerging data collection technologies and extension strategies, to bring a fresh approach to the issue.

Recent research has identified heritable reproductive performance traits in tropically adapted cattle. Reproductive genetic gain relies on R&D pathways to ensure adoption of herd recording programs. The obvious conduit is BREEDPLAN, a genetic evaluation system for beef cattle, which produces Estimated Breeding Values (EBVs) for a range of production traits. Currently there are 25 breeds that have EBVs and 50% of those record weight measurements. However only 25% of males have scrotal circumference EBVs and only 21% of females have joining records submitted to BREEDPLAN. The uptake of EBVs is lower in tropical than temperate breeds.

Collecting reproductive performance parameters by seedstock producers is difficult. Digital technologies are capable of measuring behaviours that are indicative of oestrus activity. Information on oestrus activity can be used for improved fertility selection indices.

The NARG are investigating the use of novel digital technologies to capture parameters such as birth date, maternal parentage, onset of puberty and oestrus resumption. These technologies will provide direction to the northern beef industry to efficiently collect reproduction parameters. The NARG's objectives are to improve data collection activities, increase the understanding of reproductive loss and the role of genetics and behaviour in improving herd reproductive performance and profitability.