



8. Supporting Circular Economy: How Does it Affect the Breeding Goals?

Title presentation

Squaring the Bovine Circle; An Irish Perspective

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Abstract

In more recent times, the influence of agriculture on the environment has come under intense scrutiny. Animal breeding which up to now has been used to enhance phenotypic performance in economically important traits will now need to be harnessed to simultaneously reduce the environmental footprint of said improved phenotypic performance. Environmental issues such as the emission of greenhouse gases, water quality, biodiversity come to mind. Intrinsically linked to this is the need for production systems which minimise the environmental footprint and the identification and selection of the most suitable genotype for that production system. The majority of dairy and beef farmers in Ireland favour a seasonal calving system where the cows are calved to coincide with the grass growing season to take advantage of lower milk production costs (dairy herds) and rearing costs (suckler beef herds) associated with grazed grass versus indoor forage and imported concentrates. Hence while there has traditionally been a heavy emphasis placed on fertility in the overall dairy and beef breeding objectives, the advent of more stringent regulations around the use of antibiotics and less labour time available per cow with expanding herd size in dairy herds places a new focus on the need to breed healthier, more robust cows which need less medical intervention. By-products of production systems are also being scrutinised in the context of animal welfare standards and economic and environmental sustainability (i.e., circularity). Examples of these by-products include the male offspring of dairy cows. Traditionally these animals tended to be reared on the farm of birth for a significant portion of the animal's life and often represented a significant income stream for a dairy herd. Nowadays with dairy herd expansion, in most cases on finite land resources, and labour pressures at peak calving times, these calves are now mainly sold en masse at less than 2 months of age, creating over supply and depressed prices but also involve significant transport times to new owners. This paper covers the implemented and impending changes to the dairy and beef breeding goals in Ireland that have evolved from the desire to meet circular economy principles. The paper will cover the dairy, suckler beef and beef-on-dairy breeding objectives and discuss the implications of overlaying environmental footprint measures and the changing dynamics between these distinct but intrinsically linked systems in the context of a national circular economy for bovine agriculture.