Breeding to control Johne's disease

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Now that the breeding is underway, how can breeding be used to improve control of Johne's disease in dairy herds?

Currently there is research being undertaken looking at the heritability of resistance to Johne's disease There is some promise of identifying heritable genes that contribute to resistance, but the work is complex and unlikely to guide genetic selection for some time yet.

We already know that selection of cows for high milk production raises the likelihood of a range of animal health conditions such as mastitis, metabolic diseases, lameness and infertility. This also applies for Johne's disease- high milk production traits (milk yield, fat content, protein content) are associated with greater risk of Johne's disease. It is not clear whether there is any direct genetic linkage between production and disease risk, or whether the extra metabolic stresses of higher production render an animal more prone to health conditions.

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So, selecting cows for higher productivity unfortunately can increase the risk of diseases including Johne's disease. Therefore, when selecting potential sires be guided by the EBI and take into consideration the health traits component of the EBI.

In this context, the Irish Johne's Control Programme is an important contributor to managing animal health for Johne's disease and more generally.

Firstly, herd testing will identify test-positive cows. Ideally these should be removed from the herd as soon as practical, but if retained for the current lactation they should be bred to beef. The Irish Johne's Control Programme supports annual herd testing with financial supports to help determine whether or not there is infection in the herd, and identify animals at highest risk of being infected.

In addition, the IJCP provides guidance on how to best protect the next generation of replacement animals, particularly as calves when they are most susceptible to infection, which will ultimately control the spread of infection within the herd. If a test-positive cow is retained, it should be kept out of any pen used to calve test-negative cows, so that lower-risk calves which will be retained are not exposed to the test-positive cow's dung at birth.

Separation of the test-positive cow from other calves, and other calf hygiene measures are promoted by the IJCP through the annual veterinary risk assessment and management plan (VRAMP), which is fully funded. Attention to calf hygiene will protect your calves from acquiring infections, not just Johne's disease but others that cause diseases including scouring, pneumonia and arthritis, in calves or persist in adults. In this regard, the IJCP helps to address the increased risk of general diseases associated with breeding for high productivity.

Lastly, you may be able to prioritise your dairy replacement heifers, especially if you are in the fortunate position of having surplus replacements. Calves that were progeny from infected cows, from cows that are test-positive without confirmed infection, were fed colostrum or milk from an infected or test-positive cow, or were born into a calving pen that was occupied by an infected or test-positive cow are at higher risk of being infected. For as many as possible of these heifers, avoid bringing them into your breeding herd, or choose to use only beef sires on them.

Why not join the IJCP now, avail of the financial assistance for your VRAMP and testing, and use the test results to inform your breeding and other management decisions?

Contact your veterinary practitioner, or Animal health Ireland (www.animalhealthireland.ie or 071 967 1928).

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