Reducing Liver Fluke infection – how genetics can be part of the solution

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Research undertaken at Teagasc Moorepark by Dr. Alan Twomey, in conjunction with Animal Health Ireland and ICBF, has revealed that certain family lines of cattle are more prone to liver fluke infection than others. In the same way that genetics influences milk production and weight gain, animal health is also under genetic control. Carcass inspections of livers at slaughter captured through Animal Health Ireland's Beef HealthCheck programme and delivered in conjunction with a number of beef processors, has revealed that 70% of the progeny for some bulls had liver fluke infection, while other bulls produced progeny, which originated from the same herds, where <10% of their progeny were identified with liver fluke infection (Figure 1).
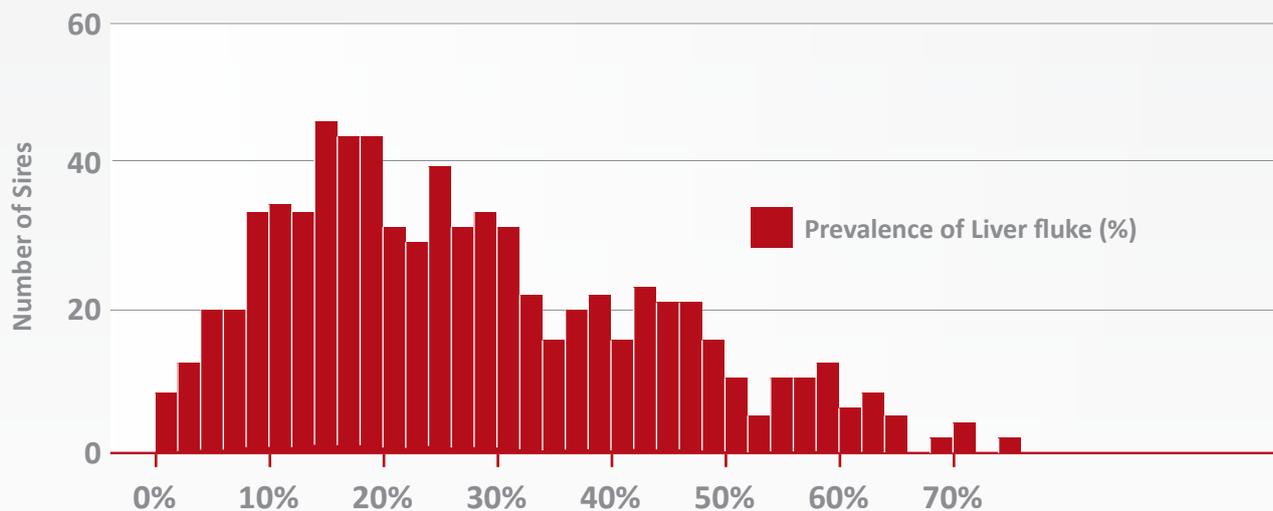

Figure 1. Distribution of the mean prevalence of liver fluke disease in the progeny of bulls that produced at least 50 progeny in 10 herds.

PARASITE CONTROL PROGRAMME

Animal Health Ireland, 2-5 The Archways, Carrick-on-Shannon, Co. Leitrim, N41 WN27

Reducing Liver Fluke Infection – How genetics and breeding can be part of the solution

Following years of research, ICBF has made breeding values for resistance to liver fluke freely available for AI bulls and genotyped animals. Farmers can use the breeding values to identify how likely bulls are to produce offspring that will be susceptible to liver fluke infection. Cattle with more favorable (i.e., lower) breeding values for liver fluke are less likely to be diagnosed with liver fluke disease, thus reducing the production losses due to liver fluke and in time reducing the need for anthelmintics.

Breeding values for resistance to liver fluke are expressed as the predicted prevalence of liver fluke infection in that animal's offspring; therefore lower values are desirable. For example, a bull with a breeding value of 25% for resistance to liver fluke is predicted to produce offspring where, on average, 25% of his offspring will be diagnosed with liver fluke infection at slaughter.

To achieve the most profitable herd that is more resistant to liver fluke, select cattle for breeding that have the highest overall index (e.g., Replacement or Terminal Index) and the lowest predicted prevalence of liver fluke. For convenience, ICBF has colour-coded bulls based on their liver fluke breeding value using a traffic-light system where green = best, orange = average, and red = worst. For further information contact the ICBF HerdPlus team on 023 882 0452 or visit www.icbf.com.

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Three Easy Steps to Find Predicted Transmitting Ability (PTAs)

① Go to the Animal Search on **www.icbf.com**.

② Enter the animal's tag or AI code in the search box; press search.

③ Choose the 'TB and Liver Fluke Tab'; the animal's genetic merit for liver fluke resistance will be presented as well as information on progeny (where available).