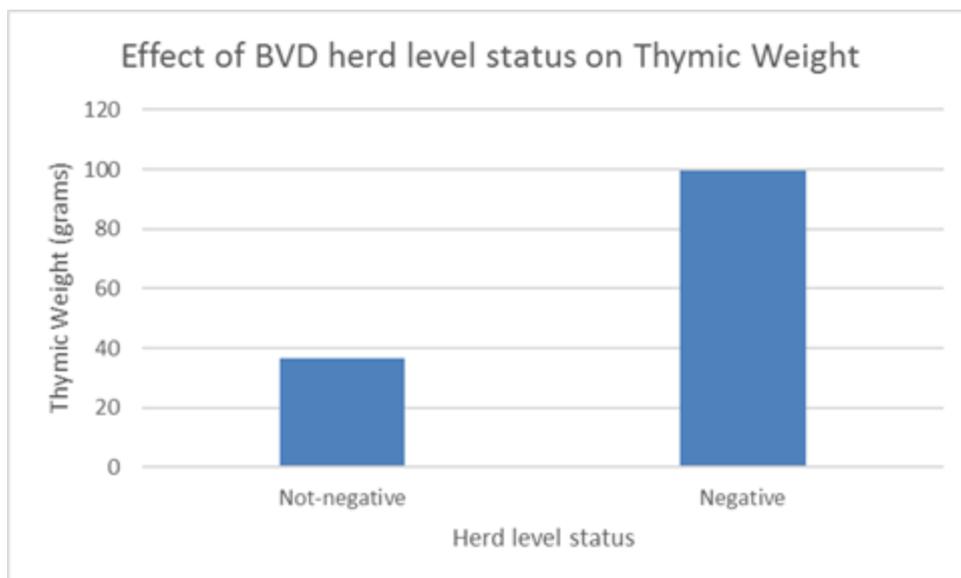


What is the thymus and why does it matter?

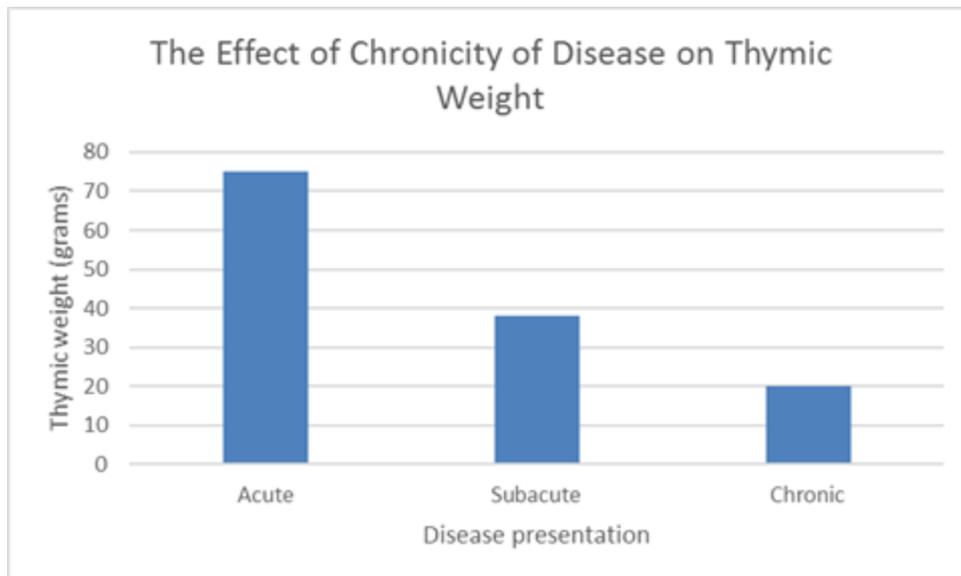
The vet lab at Dumfries have been carrying out a pilot project weighing the thymuses of calves. The thymus is an immune organ which is particularly important as it is involved in the maturation of the rest of the immune system. It increases in size until puberty, when it begins to atrophy. However, other factors such as nutrition and disease can cause a reduction in thymic weight and structure. If there is a significant decrease in thymic weight and function, it is thought that this will have an impact on the ability of the animal to respond to new stimuli later in life.

It has already been demonstrated experimentally that transient BVD infection can reduce the weight of the thymus and the proportion of functional thymic tissue. We set out to see if BVD and other diseases had an impact on thymic weight in the field. For BVD, no PI calves were recorded, but calves from not-negative herds were compared to calves from negative herds. The results are shown below:



In addition, there was a significant decrease in bodyweight between calves from negative and not-negative herds, with mean bodyweights of 50kg and 36kg respectively, despite no significant difference in age. 46% of calves examined were from a BVD not-negative herd, which is interesting, given that 83-90% of herds are negative in the areas from which calves were received.

Chronic disease also had an impact on thymic weight, and the results of this are shown below:



Chronic disease also had a marked impact on growth rates. There was no difference in the mean bodyweight of the acute and chronic groups, despite a mean age of 13 days for acute and 38 days for the chronic group.

While only thirty calves were recruited for this pilot study, the hope is to roll it out further. An interesting hypothesis is that if an early life insult can hamper future immunity (and potentially response to vaccinations) then this is crucial knowledge for disease control beyond this period and should focus efforts on disease control in the pre-weaned and recently weaned calf.

If you wish to discuss this further, please get in touch with us OnTheHoof@sac.co.uk