Implementing advanced nutritional management in the Welsh sheep industry – an update

Many farmers do not have a firm handle on the nutritional or disease status of their breeding ewes and this means it can be challenging to farm them as efficiently as possible. Sometimes, an over or under supply of various trace elements are blamed for poor performance, however this assumption may not always be based on sound evidence. In this European Innovation Partnership (EIP) Wales project, twelve farms from across North Wales have been trying to utilise an intelligent and progressive approach to nutritional planning in breeding ewes, investigating the individual flock needs for trace elements whilst trying to balance this against other likely causes of poor performance.

Following testing carried out pre-tupping in 2018 supplementation was carried out in some flocks. The specific requirements varied from farm to farm, some required copper, some selenium, some cobalt and some zinc. For 10/12 flocks some change was made to their trace element supplementation, either in the composition of the supplement, the timing of the supplement or the way it was supplied. In many cases farmers could make a change in order to utilise supplementation more efficiently and in some cases reduce the number of supplements or doses given, thus saving time and money. For example, one farm was able to stop using a pre-tupping drench given alongside a bolus at scanning and utilise the same bolus but administer it pre-tupping. This saved an additional job and saved money. Several farms moved a bolus administration from close to lambing to pre-tupping to gain an additional benefit of the supplementation during conception and early pregnancy whilst still benefitting from supplementation around lambing time. Another farm was not giving any trace elements but the flock was shown to need both selenium and cobalt.

Blood samples were then taken close to lambing to determine the energy and protein status of the ewes and the trace element status. This helped monitor the interventions made. Some further minor adjustments were made on the basis of this, particularly with regard to concentrate feeding and copper supplementation. For example, the result showed that some sheep were being underfed and at risk of pregnancy toxaemia so feed adjustments could be made to prevent this; this would also likely have improved the milk quantity and quality produced as well. Two flocks showed alarmingly low copper concentrations despite the plan and interventions made, demonstrating the importance of monitoring as all sheep utilise the supplements differently. Changes were made to the plans going forward to account for this.

During the project, facilitated by the increased scrutiny of the flocks, several farmers became aware of infectious diseases including toxoplasmosis and campylobacteriosis causing increases in the proportion of barren ewes and also abortions. Steps were taken to address these problems further improving the health and production of the ewes.

Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig: Ewrop yn Buddsoddi mewn Ardaloedd Gwledig
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Further blood, liver tissue and faecal samples were used to investigate the trace element status of the flocks again post-weaning/pre-tupping in 2019, this helped to investigate the longer-term changes as a result of the interventions made and fine tune the advice given. At this point, body condition scores were again recorded and this time on many farms sheep were at target condition, although some still needed to gain condition (Figure 2). Given the time available pre-tupping there was enough time for the sheep to gain the required condition, provided sufficient forage was made available.

The presence of parasites were also investigated throughout the project. It was surprising that many of the flocks sampled post weaning in 2019 had adult fluke present. This could well have occurred as a result of the mild winter leading to the survival of the infective stages of fluke on the pasture, resulting in re-infection post-treatment during the winter period. This highlighted the need to ensure effective monitoring and parasite control programmes were in place for all farms, particularly those at risk of fluke infection.

Many of the farmers in this project were not routinely body condition scoring sheep. This measure can help with grazing plans and anticipate problems before they occur. Indeed in 2018 many sheep were well below target body condition scores pre-tupping (Figure 1), which impacted greatly on the scanning percentages seen. This was likely due to the very dry summer and many flocks could have benefited from supplementary feeding with conserved forage to ensure body condition had been maintained, although this had not been possible in some cases. In 2019, body condition scores had improved and many farms were in a position to make positive changes to grazing and parasite control such that body condition could be managed more optimally and efficiently.

The trace element sampling approach and techniques used in this project have shown specific benefits to the farms involved, particularly enabling farmers to make informed and nuanced choices with regard to trace element supplementation. However, a key take home message to all farmers has been to monitor body condition scores regularly and adjust grazing and any supplementary feeding in time to ensure sheep are at an optimum body condition for each stage of the production cycle. Another key message has been to ensure that trace element supplementation is carried out based on evidence of need rather than historic routine, with appropriate monitoring to ensure it remains effective and efficient.

This large amount of data collected is now being collated and analysed to look for themes common across flocks and to refine an investigative approach for other flocks. Several discussion meetings have also taken place to discuss the experiences of individual farmers and to reflect on the process.

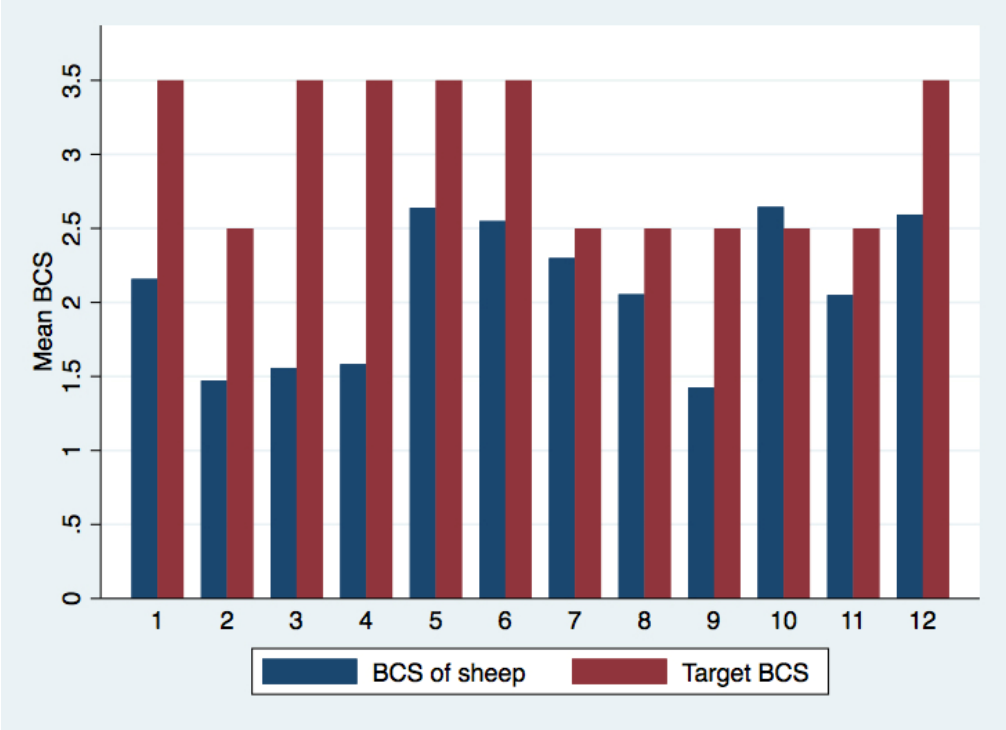

Figure 1: Mean body condition score for ewes presented pre-tupping in Autumn 2018, against the target score for each farm.

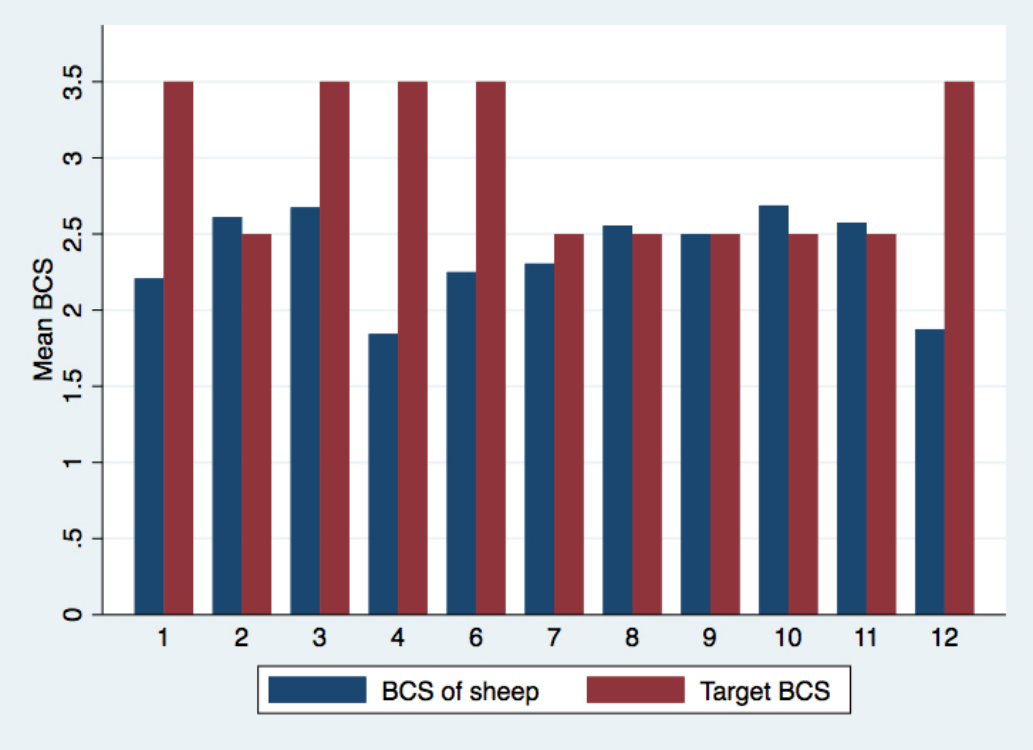

Figure 2: Mean body condition score for ewes presented post-weaning and pre-tupping in Summer 2019, against the target score for each farm.