Graze forages with anthelmintic (bio-active) properties

Grazing on bioactive forages (or nutraceuticals) such as legumes including birdsfoot trefoil () and sainfoin and the non-legume chicory, have been shown to reduce the negative effects of parasitism in sheep. Worldwide more than 100 plants have been identified with anthelmintic activity. Not all the active compounds have been identified, but plant enzymes such as cysteine proteinases and secondary metabolites such as alkaloids, glycosides and tannins have been shown to exhibit dose-dependent anti-parasitic properties.

The tannin-rich plants have attracted most attention for their effect on internal nematodes in ruminants. Condensed tannins are naturally occurring polyphenolic compounds and their role includes protecting the plant from predation, growth regulation and pesticidal activity. Their direct anti-parasitic activity is related to a reduction in nematode egg hatching, larval development and mobility of larval stages. They are also thought to have an indirect effect mediated through an increase in host resistance by reducing microbial breakdown of protein in the rumen. Research suggests that the level of condensed tannin required in feed / grazed forage is 20-40g/kg.

It should not be overlooked, that in addition to the anthelmintic properties of these forages, they also have the potential to increase energy and protein supply for sheep. For example, drought resistance is also an important property of chicory, and this can contribute significantly to nutritional requirements in the latter part of the season. Importantly this also coincides with the time we normally see the highest pasture larval challenges to lambs. Chicory, which has a low dry matter, is normally grown in conjunction with grass, clover and/or plantain. The combination of low worm challenge and high nutritional value is proving to have significant potential is sheep production systems.

Some current research is also looking at properties of Heather (calluna), with the possibility that the anthelmintic properties of an extract could be used ‘in-feed.’