



Browse and tree fodder

Nutritional benefits for livestock

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- Minerals in tree leaves



Trees offer multiple benefits to livestock including shade and shelter. They provide feed and medicine and can be browsed or cut and preserved as tree fodder.

Agroforestry Networks across Europe foster exchange of knowledge and innovation between researchers and practitioners. In the AFINET project, factsheets were developed including 'Browse, preserved tree fodder and nutrition'. All livestock browse trees and benefit from the presence of condensed tannins (CTs). Up to 5% CTs of dry matter (DM) intake increases protein availability and can reduce parasite burdens by 50% in sheep. Salicylic acid, high in willow, is a pain killer, but also reduces swelling and has antibacterial properties.

A trial at Elm Farm in 2016, looked at the effects of air drying and storage on nutritional content. Harvested in June and fed to cattle in March, palatability remained high. Digestible organic matter of leaves was 85.7% for ash, 73.5% for goat willow and 77.7% for English elm, comparing favourably to fresh or preserved grass. Mineral analysis showed higher levels in stored leaves compared to fresh (June) samples. For example, fresh goat willow leaves contained 10.2 (g/kg DM) calcium and 4.2 (g/kg DM) phosphorus compared to 14.5 and 5.5 (g/kg DM) respectively when stored.



Cow browsing on ash

A further trial in 2018 investigated the mineral, energy and protein content of leaves harvested in June and September from goat willow, alder and oak trees in Berkshire, Leicestershire and Wales. Metabolisable energy (ME) and crude protein (CP) differed between species and season. ME was highest in alder, followed by oak and then goat willow. CP was highest in June and again highest in alder, followed by willow and oak. (Note, alder is unpalatable and even deer typically pass by). Mineral tests showed that goat willow had highest levels of cobalt offering a good source to growing lambs when pasture content is low.

FURTHER READING

1. Agroforestry.net (2020) Handbook: agroforestry.net
2. Whistance *et al.* (2019) tinyurl.com/53ed2f8s
3. Whistance (2018) tinyurl.com/2rnrnyud
4. Kendall *et al.* (2019) tinyurl.com/4x6kjkaz