Tree leaves as supplementary feed for ruminant livestock?

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Background findings

- Woodland Trust funded work
  - With ORC, Reading, Bangor, GWCT

- Leaf contents
  - (inc petiole, no twig)

- High Co ~10x RQ
- Also high Zn
What about the basic nutrients?

Plotted against requirements for:

A 20kg lamb growing at 250g/d

A 40kg lamb growing at 150g/d
What can I do with the High Cobalt?

Context of need!
Season effects

- DEFRA SIP funded - Predominantly PRG fields across 2 grazing seasons
- 2015b (red) much drier spring than 2016 (blue)
Using as a supplemental feed

Did it actually work?
What we did

• 24 x ~26 kg aberfield x weaned lambs
• Split to 6 groups (balanced by weight and sex)
• Initially 6 individual pens, later pen and field
• Previously wormed and supplemented with Se/I

3 treatment each to 2 groups:
  • Willow 300g/d fresh leaf (=~100g DM, ~10-15% of DMI)
  • Drench with 2.8mg Co (sulphate) = 14 x daily RQ
  • Control = nothing

• Bloods and weighed at day 0 (pretreat) and day 14
  • Vitamin b12 concentrations
Confirmation of Cobalt concentrations

![Graph showing Cobalt Concentration (mg/kg DM) for Grass and Willow. The graph illustrates that Willow has a higher Cobalt concentration than Grass. The Lamb Requirement is indicated by a dashed line at 0.2 mg/kg DM.](image-url)
That’s a lot of leaf!!

Willow leaves for 1 pen of 4 sheep = 1.2 kg
Did they eat it?

Time Plot Showing Percentage of Willow Eaten by Willow Groups (%) Over Trial
Did it work as a supplement?
What now?
The remaining question(s)
The questions

• Picking leaves to feed is very labour intensive
  • How much willow is needed?
  • Use of branches
  • How often do we need to offer willow to get the effect?
• Systems of planting/utilisation in situ browsing
• Working with energy biomass production?

• Potential anthelmintic properties
  • Tannins, enhanced cobalt status
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Any Questions?
Think now
Ask later in discussion