

# Response to cobalt supplementation in lambs

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## 1. Introduction

- The ability of lambs to utilize grass efficiently is dependent on their health, nutritional status, and grass feed value
- Infection by gastrointestinal parasites is one of the main factors affecting lambs performance and welfare
- Trace elements such as selenium and cobalt play an important role within the immune system and are thus likely to influence their ability to tolerate parasite infections
- One of the aims of this study was to assess whether supplementing lambs with cobalt from weaning had an effect on their growth and worm status

## 3. Results

- Levels of vit B12 in lambs were very variable within and between farms (Figure 1)
- This partly reflected the low levels of cobalt in the grass grazed by the lambs (Figure 2)
- Response to supplementation was not consistent across farms, and overall there were no effects on growth and worm status (Table 1) (several worm species were monitored in faecal samples)

**Table 1.** Effects of cobalt supplementation on lamb growth and worm status (farms 3 to 6)

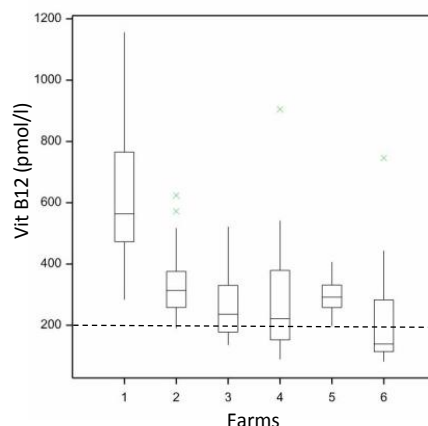
	Treatment			Sign
	Control	Cobalt	sed	
<b>Live weight gain (g/d)</b>				
Weaning to weaning + 1mth	171	164	12.0	NS
Weaning to weaning + 2mth	144	147	9.6	NS
Weaning + 1mth to weaning + 2mth	119	140	16.9	NS
<b>Worm faecal egg count (strongyle epg)</b>				
At weaning + 1mth	343	348	59.9	NS
At weaning + 2mth	352	275	56.2	NS

## 4. Conclusions

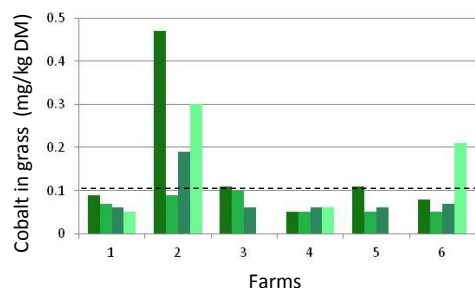
- Cobalt levels in grazed grass were low, with important spatial and seasonal variability
- No consistent effect of cobalt supplementation was found, mostly due to the important variability in the levels of blood vitamin B12 among lambs
- Future research work should investigate supplementation strategies defined at a site/flock specific level, targeted at deficient animals, for improved cost efficiency
- We thank DARD and AgriSearch for funding this work

## 2. Methods

- 40 twin lambs were monitored at each of 6 lowland farms in Northern Ireland (Highlander x, Lleyn x, Texel x, Belclare x) in 2014
- At each farm, all lambs were given selenium injection and half also received 10 mL of cobalt drench orally every four weeks
- Data were analysed using mixed models with farm, treatment, breed, gender as fixed effects and ewe identity as random effect



**Figure 1.** Blood vitamin B12 (pmol/l) in lambs at weaning + 1 month (200pmol/l represents the minimum recommended level)



**Figure 2.** Cobalt levels in grass (mg/kg DM) from four fields in each of the 6 study farms in July 2014 (the dotted line represents the recommended minimum level)