

COBALT & B12

Cobalt (Co) is an essential trace mineral for sheep/goats. It is converted by rumen microbes into vitamin B12 (cobalamin), which is needed for many bodily functions. A cobalt deficiency is the same as a vitamin B12 deficiency and is the result of insufficient dietary cobalt, caused mostly by low soil cobalt. While most US soils, and thus forages, have plenty of cobalt in them, there are cobalt deficient areas which put some sheep/goats at risk for a cobalt/B12 deficiency.

Deficiency signs

- Poor growth
- Poor appetite
- Poor body condition
- Weakness, lethargy
- Weakened immunity
- Poor quality wool
- Open fleeces
- Runny eyes
- Scaly ears
- Pale mucous membranes (anemia)
- Reproductive issues
- Poor mothering
- Neurological signs
- Liver impairment



Diagnosis

- Consult a vet
- Clinical signs (esp. areas with known cobalt-deficient soils)
- Rule out other causes
- Blood plasma B12 levels less than 200 pg/ml
- Methylmalonic Acid (MMA) levels in blood and urine
- Tissue (liver) analysis
- Pasture analysis

Differential diagnoses

- Poor nutrition
- Overstocking
- Other trace mineral deficiencies (e.g., Cu, Se, I).
- Parasitic infections
- Other illnesses

Treatment

- Vitamin B12 injection
- Cobalt drench
- Cobalt bolus

Prevention (esp. if at risk)

- Minerals with cobalt
- Add cobalt to feed
- Apply cobalt to pastures
- Cobalt drenches
- Cobalt boluses
- Supplemental B12
- Assess cobalt levels in soils



As a trace mineral, only minute amounts of cobalt are needed to produce vitamin B12 in the rumen. The dietary requirement for cobalt is between 0.08 and 0.10 mg/kg (ppm) dry weight per day for sheep and goats. There are no proven benefits to giving additional cobalt to animals that are not deficient.