

## Cobalt in Feed and Supplements

It is crucial for trainers to read the label of all products given to horses.

- It is worth remembering that a good-quality diet meets the horse's need for cobalt. The selection of supplements with low cobalt concentrations represents the safest strategy.
- Cobalt-containing substances such as sweet feed, Red Cell™ and vitamin B injections, when given according to manufacturer's instructions, have not been shown to increase cobalt concentrations above the threshold.
- There is risk that cobalt-containing products, particularly injectable formulations, can cause high cobalt concentrations. As there is no need to supplement with cobalt, avoiding these products may be prudent.
- Manufacturers may change product formulations; therefore, it is important to read labels at the time of purchase.
- Many products have not been evaluated to determine if they affect cobalt concentration in the horse. It is very important to read labels and discuss potential issues with your veterinarian.



### Other Information

Additional information can be found at:  
[rmtcnet.com](http://rmtcnet.com)

Published articles on cobalt in the horse:

Knych, H., et al., Pharmacokinetics and selected pharmacodynamics of cobalt following a single intravenous administration to horses, *Drug Testing and Analysis*, 2014 September 21, doi: 10.1002/dta.1737 [epub ahead of print].

Ho, E.N.M., et al., Controlling the misuse of cobalt in horses, *Drug Testing and Analysis*, 2014 August 17, doi: 10.1002/dta.1719 [epub ahead of print]



# COBALT

What trainers should know  
to comply  
with cobalt regulations and  
to ensure  
horse health and welfare



## Cobalt Facts

### **Cobalt and Horses**

- Cobalt is a trace mineral present in horse feed and vitamin/mineral supplements:
  - Vitamin B-12 (part of a normal vitamin jug or as a stand-alone injectable) contains cobalt
  - Injectable products such as Hemo-15™ and Vita-15™ contain cobalt
  - Oral vitamin and mineral supplements such as Red Cell™ and Farrier's Formula™ contain cobalt
- A horse's cobalt requirement is met by a normal diet – cobalt supplementation is unnecessary
- There has been no documented case of cobalt deficiency in the horse
- There is no equine disease for which cobalt is the indicated treatment

### **Cobalt and Horse Health**

- Excessive cobalt administration can cause:
  - colic symptoms
  - muscle twitching
  - excessive sweating
  - general discomfort

The long-term health effects of excessive cobalt administration in horses are not known. In humans, chronic exposure to excessive cobalt has resulted in thyroid disease, heart muscle disorders and death.

## Cobalt Research

### **Cobalt and Performance**

Cobalt has been used in human medicine to increase red blood cell production. This effect has not been documented in the horse:

- A single 100 mg administration of cobalt chloride demonstrated no effect on red blood cell production in the horse
- Repeated administrations of 1.5 g of cobalt over a one month period demonstrated no effect on red blood cell production in the horse

### **Cobalt Threshold**

- 1,203 horses (Standardbred, Quarter Horse and Thoroughbred race horses) were sampled to develop the threshold
- Average cobalt value from these horses was 3.8 nanograms per mL of plasma/serum
- Excessive cobalt administrations will result in concentrations in excess of 25 nanograms for weeks and possibly months

## Cobalt Regulation

The RMTTC has recommended a tiered penalty structure:

- For horses testing above 25 nanograms of cobalt per mL of serum/plasma, but below 50 nanograms of cobalt per mL of serum/plasma:
  - First offense – trainer will receive a fine or a warning
  - Horse will remain on the Veterinarian's List until it tests below 25 nanograms/mL (this testing is performed at owner/trainer's expense)
- For horses testing above 50 nanograms of cobalt per mL of serum/plasma:
  - Class B penalty (RCI Model Rule for a first offense)
    - fine (\$500-\$1,000)
    - suspension (15-60 days)
    - loss of purse
  - Horse will remain on the Veterinarian's List until it tests below 25 nanograms/mL (This testing is at owner/trainer's expense)

**Strengthening the Integrity of Racing**