

EQUINE METABOLIC SYNDROME

ETIOLOGY

- Insulin resistance is the cornerstone clinical abnormality that underlies the mechanisms responsible for equine metabolic syndrome.
 - It is a leading risk factor for the development of laminitis in horses and ponies.
- Horses and ponies that are characterized with EMS tend to be highly sensitive to the consumption rate of nonstructural carbohydrates (starches, soluble sugars, and fructans).

SYMPTOMS

- Other abnormalities that characterize this syndrome include history of laminitis or predisposition to the disease, presence of abnormal growth rings on the hooves, and generalized obesity or regional adiposity (cresty neck, adipose pockets at tailhead, in prepuce or near the mammary gland, and near the shoulders).
 - These animals are often referred to as “easy keepers.”
 - It should be noted that not all obese animals are insulin resistant, and not all insulin resistant animals are obese.
- EMS-affected horses/ponies may also exhibit elevated inflammatory mediators in circulation and adipose tissue, proclivity for arterial hypertension, infertility in mares, hypertriglyceridemia and hyperleptinemia.

MANAGEMENT RECOMMENDATIONS

- The best way to keep horses from becoming overweight is to control intake combined with an appropriate exercise program.
- Horses on lush pasture should be fitted with a grazing muzzle or placed in a dry lot and fed grass hay.
- Monitor weight gains or losses using a weight scale, weight tape or body condition scoring system—and adjust feeding rate as necessary.

DIETARY RECOMMENDATIONS

- Many obese horses cannot tolerate high levels of starch and sugar in the diet and should be maintained on rations that are low in calories and contain higher levels of digestible fibre.
- Horses in training that are “easy keepers” should be fed lower calorie feeds, but in sufficient amounts to meet dry matter and all other nutrient requirements.
- Grass hay is recommended over legume hay due to the lower calorie content.
- Providing a reduced calorie, good quality balanced diet with appropriate amino acids, vitamins and minerals is essential to supporting appropriate weight loss, while maintaining lean tissue mass.
- Feeding rates should be determined according to the target or ideal body weight and body condition score, as opposed to the current (obese) body condition. All changes should be made gradually.
- Overweight horses that are insulin resistant may benefit from the supplementation of magnesium and chromium in the diet, which may improve sensitivity to insulin.
 - Note: Chromium is not yet approved as an ingredient in horse feeds, but is available in some supplements.
- Always provide good quality grass hay, and free choice access to salt and water.
- It is important to know exactly how much feed is being fed. Therefore, a scale should be used to determine the weight of a given meal or daily ration of hay and concentrate to avoid over or underfeeding.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Maximize the use of fats and digestible fibre as sources of safe energy/calories; control starch and sugar intake while enhancing pre-cecal digestion to help avoid the effects of high blood sugar and starch overload.
- Magnesium, vitamin E, zinc and chromium can be helpful in managing insulin resistance and equine metabolic syndrome.
- Because EMS is a syndrome, follow the recommendations for the two primary diseases: Cushing’s disease and insulin resistance (overweight).

Recommended:

Feed a complete vitamin and mineral supplement with low calorie input:

EQUILIBRIUM EQUILIZER



Alternative:

If an extra source of calories is needed (horse at work):

SUPERFIBRA INTEGRI-T

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a “Minimum” and a “Purina Superior”. The “Minimum” meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The “Purina Superior” is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply “Minimum” is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the “Purina Superior” level is paramount to ensure an optimal level of performance and immunity.