Overweight and insulin resistance in horses

Guillaume Counotte and Kees Kalis

Overweight and insulin resistance (diabetes) are very topical issues in the world of horses. Both phenomena are part of Equine Metabolic Syndrome (EMS). Together with Pavo – one of the largest suppliers of equine feedstuffs in the Netherlands – GD carried out research into this burgeoning problem.

Too little exercise, too much feed

In their natural environment, horses are constantly on the go in their search for food. These days, however, horses are often confined to stables or small paddocks where they have access to plenty of concentrated feed and good-quality grazing. Just as with humans, this combination of abundant feed and little exercise often leads to overweight. Overweight often goes hand in hand with insulin resistance ("diabetes") and can cause many problems: the animals can struggle with fertility and muscular problems and run a greater risk of equine laminitis.

Research by GD and Pavo

Together with feed producer Pavo, GD carried out a study into insulin resistance. This investigation was prompted by an increase in problems with equine laminitis, a painful inflammation in the hoof. The risk of developing laminitis is to a large degree determined by whether or not the animal suffers from insulin resistance.

We tested the diagnostics for demonstrating insulin resistance in practice, and then developed a pack for field-testing insulin levels in the blood of horses. This pack was used for the study into equine insulin resistance.

The study assessed 134 overweight ponies and horses, and demonstrated that the condition of these animals was not always related to the incidence of insulin resistance. Frisians, Fjords and Haflingers that scored roughly the same in terms of their condition had much less insulin resistance than Icelandics, Shetlanders and Welshes. It is important to carry out further research into these breed-specific factors. However, it is much more crucial to investigate whether it is possible to demonstrably reduce insulin resistance using training and rationing. The literature suggests that such a regime requires at least an hour's exercise every day and no more than one hour's grazing (in the morning).