



The benefits of micronized and extruded feeds for horses

Do you know the difference between micronized and extruded horse feed? There's an important reason why HYGAIN® and MITAVITE® micronize and extrude selected grains. It all has to do with improving digestibility for the horse and achieving a better nutritional outcome.

Discover why there is a need to process feed and the health benefits of processing grain for your horse.

Why unprocessed grains can be problematic for the horse

Before we get right into the different processes, it is important that we keep in mind that the horse first evolved as wandering herbivores. They are at home, from a digestive point of view, when they're consuming pasture or hay. As such, the feeding of grain presents certain challenges. We now ask our horses to undertake high levels of exercise and reduce their access to pasture, which often means that feeding grain is essential to achieving desired performance goals. Herein lies our conundrum. -The horse's digestive system was never designed for processing grain!



(Image above: No grain here! Horses grazing naturally.)

The nutrition and feed community have conducted a range of studies on the suitability of certain grains for horses and the potential negative impact on feeding the same. One of the key discoveries was that when starch from cereal grains (such as oats, corn, barley, wheat etc) is not fully digested in the small intestine, it overflows and impacts on sensitive

microflora in the large intestine. This starch overflow results in increased acidity, which in turn can destroy a large percentage of the positive bacteria in the hindgut environment. The negative flow-on effects can include caecal acidosis, colic, diarrhoea, laminitis and ultimately reduced performance.

The bottom line, is that although we may at times need to feed cereal grains, it is essential that we minimize the overflow of starch from those grains into the large intestine. In other words, we need to maximise small intestine digestibility.

Increasing grain digestibility with technology

Two technologies in particular: extrusion and micronizing, have had an enormous impact and now provide the horse owner with a viable and healthier alternative to traditional cracked or rolled methods.

Both extrusion and micronizing have raised the bar by achieving within the grain a phenomenon known as gelatinization.

In simple terms, gelatinization breaks down the complex carbohydrate bonds of the grain starch in such a manner that allows for significantly improved small intestine digestibility.

Whilst extrusion and micronizing both achieve gelatinization, they do so in very different ways.

Extrusion in horse feed mills

Extrusion utilizes a combination of heat, steam and constantly increasing pressure. This process effectively explodes the molecular structure of the grain. The end product then emerges from the extrusion die in a cube-like form before being cooled and bagged.

An added benefit of an extruded feed is that you can add water to the end product to create a mash, which of course is ideal for horses with poor dentition such as senior horses.



(Image above: Extruded HYGAIN® TRU CARE®)

Micronized horse feed

In the case of micronizing, the grain is transported in its whole form along a conveyor beneath heat plates that produce specific infrared microwaves that interact with and stimulate the activity of water molecules within the grain. The resulting friction results in the breakdown of the complex carbohydrate bonds. From there, the grain is lightly flaked and again cooled, ready to be bagged or for use in premixed formulas.

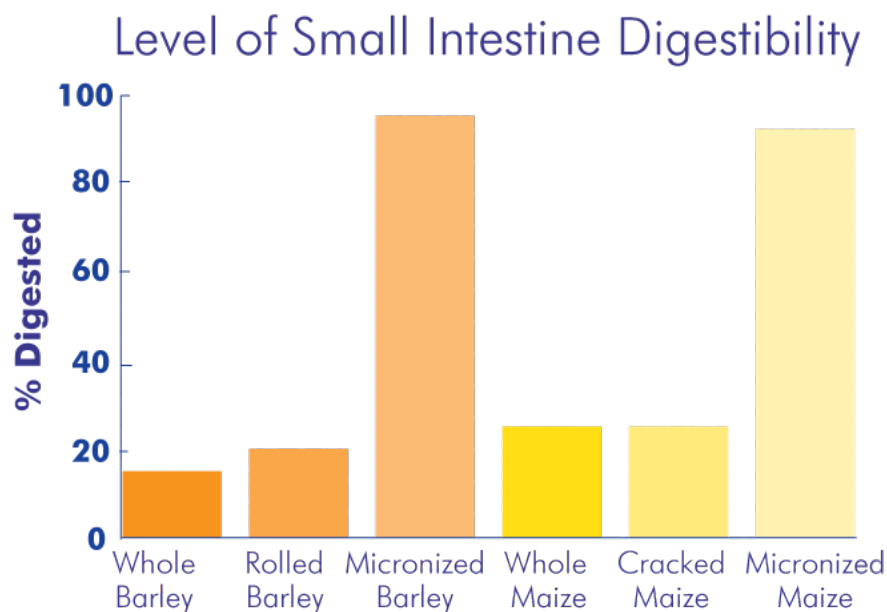


(Image above: Micronized ingredients in HYGAIN® EQUINE SENIOR®)

The process of micronization reduces feeding rates, as the grain has a higher digestibility and therefore can be more cost effective.

So just what have these new feed technologies achieved in terms of digestibility in the small intestine?

This table indicates the improvement in small intestine digestibility has been pronounced. It has effectively removed the fear of large intestine fermentation for starch-based grains.



These feed technologies have offered horse owners and trainers the benefit of feeding energy via a grain that is specifically processed with the equine in mind. When selecting a feed, make sure the grains are either extruded or micronized. Take comfort knowing that grains in all HYGAIN® and MITAVITE® feed products have undergone either micronization, extrusion or pelleting to promote safe digestibility for your horse.

Pelleted feed for horses

Pelletized feed has been around for decades and is still employed today. High heat and grinding are applied to produce a feed with reduced hindgut fermentation. However not all ingredients are suited to being pelletized. Additionally, some formulations rely on extrusion to achieve greater gelatinization of starches, which is why HYGAIN® and MITAVITE® employs pelleting, extrusion and micronization at their mills. The most suitable processing technique is used to achieve the desired nutritional result.



(Image above: Pelleted ingredients in HYGAIN® BALANCED®)

Need help with your horse's diet?

If you're unsure which processing technique is the best match for your horse, then our team can help. Our Nutrition Advisors at HYGAIN® and MITAVITE® offer free diet analysis and recommendations. Visit hygain.com.au or reach out to nutrition@hygain.com.au