

WHY NOT JUST BOIL, GRIND AND PELLET?

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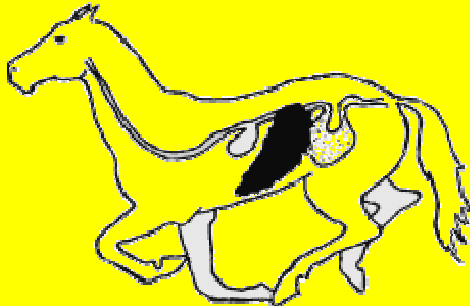
Traditional methods of grain processing (grinding, boiling, cracking, crushing, rolling and pelleting) slightly increase digestion, but they also destroy natural vitamins and reduce shelf life. Pelleting, reduces the availability of calcium and magnesium and can increase the risk of gastric ulcers and choke. Recent advances in manufacturing technology have produced a process which advances and supercedes traditional methods. This process is **steam extrusion**.

What is steam extrusion? Extrusion is a cooking process utilising pressure-cooking and oven roasting -- at carefully controlled temperatures, pressures and times. It achieves in 20 to 30 seconds what would take 40 times as long at atmospheric pressure. Feed ingredients are milled, steamed, pressure-cooked and oven-roasted for a short time. Complex structures such as starches, proteins and oils are untangled -- allowing digestive enzymes to work up to 100 times faster. Weed seeds, bacteria and fungal elements are inactivated.

***Heat, moisture and pressure are at the heart of steam extrusion.
This is of paramount importance.***

Does the heat damage nutrients? Heat-stable vitamins and minerals are used in Mitavite feeds and extra nutrients are spray-coated on after processing. Vitamins and minerals are more stable than in supplements or raw grains. In steam extruded feeds they are widely dispersed throughout the feed so they are more diluted. The 'steam extruded nut' protects nutrients from interactions and oxidation. Moisture content is only 8% -- reducing mould and rancidity (grains are 11 to 13.5% moisture). Stable natural mineral proteينات prevent interactions between artificial sources of iron and vitamin E. Expansion or dry-extrusion can cause significant damage due to higher cooking temperatures.

Why do we need to 'process' horse feed? Oats and other plants growing in manure indicate horses cannot fully digest unprocessed feeds. For centuries horsemen have boiled barley, ground corn and crushed oats. They did this to improve digestion and reduce the risk of colic, diarrhoea and founder.

<p>RAW GRAIN</p> 	<p><i>Feed must be digested by digestive enzymes in the small intestine. There are no digestive juices in the large intestine - only fermentations.</i></p> <p>Only 21% of the barley, 29% of the corn and 55% of oats given in the feed is digested in the small intestine.</p> <p>Up to 70% of the grain in the feed is fermented in the caecum (hindgut) and produces GAS, HEAT, AMMONIA & ACID. Lactic acid sucks bicarb, electrolytes and water into the large intestine- increasing the weight handicap carried on the inside.</p>
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Steam extruded , dry, expanded or pelleted?

Steam extrusion: Moisture from hot water and steam play the most important role in any cooking. It allows uniform gelatinisation and complete cooking. Steam extrusion is the processing method of choice to produce low starch feeds for pleasure horses, as well as high-oil -energy dense feeds for performance -- reducing the risks associated with grain overload and acidosis.

Steam extrusion shifts digestion back to the small intestine - where nature intended it to be.

STEAM EXTRUDED FEEDS

