

## Alfalfa or Grass Hay for Horses?

Utahns have a love affair with horses and that passion is only growing. Estimates of horse populations are difficult to make because they are not in concentrated locations like other livestock species. The latest Utah survey, conducted in 1992, estimated 180,000 horses. The majority of those horses were owned by folks in urban counties who used their horses for recreation and pleasure. A 1975 survey estimated 133,000 Utah horses. By comparison, there are 85,000 dairy cows in the state.

On average, a horse will eat approximately two percent of its body weight daily. Therefore, an 1100 pound horse will consume 22 pounds of hay daily, or roughly four tons of hay annually. If concentrates or pasture is also fed, that tonnage can be reduced. A common question that horse owners ask is; "Shall I feed alfalfa hay or grass hay?" That question does not have a simple answer since horses are used for a variety of purposes and are at different stages of life. There are also a variety of opinions among trainers, nutritionists, veterinarians and owners regarding horse nutrition. Additionally, a multitude of myths that are often spread by those who have little training in basic animal nutrition

The horse's digestive system is vastly different from other large domestic animals. Horses have smaller digestive tracts than most ruminants and cannot handle as much bulk at one time. Horses eat to meet their energy needs, but they also eat to meet a level of gut fill. If energy needs are met with energy dense feeds of insufficient bulk, the horse will continue to seek feed to fill their digestive tract. While horses are natural forage eaters, they do not have the large rumen for forage to flow into and be digested by microbes. Feed consumed by horses goes immediately to the stomach, which has limited capacity. This is why horses are more susceptible to molds that can be digested in the rumens of cows or sheep.

The main points of contention among horse people regarding the feeding of alfalfa or grass hay to horses are summarized below by Dr Anne Rodiek, Professor, Department of Animal Science and Agricultural Education, California State University, Fresno.

1. Alfalfa hay contains too much energy.
  - a. It is too rich for horses in maintenance, causing excessive weight gain. If fed in small enough amounts to prevent weight gain, horses will always feel hungry, with insufficient gut fill, and will look for other things to eat including fences and barns, hair off other horses, dirt or manure.
  - b. Excess energy in the diets of growing horses can cause developmental orthopedic disease.
2. Alfalfa hay contains too much protein.
  - a. Excess protein in the diets of race or endurance horses will slow performance times.
  - b. Deamination of amino acids for use for energy will increase heat increment which can increase heat stress during athletic performance.
  - c. Excess protein results in increased ammonia excretion in urine.
    - i. Greater urine output can cause dehydration during endurance work in hot conditions.
    - ii. Higher ammonia concentration in urine will result in bad smelling stalls and

lung airway irritation.

- d. Excess protein, like excess energy has been implicated as a cause of developmental orthopedic disease in growing horses.
3. Alfalfa hay contains too much calcium and/or magnesium.
    - a. The high calcium level causes a high calcium:phosphorus ratio which may contribute to developmental orthopedic disease.
    - b. High magnesium levels increase the chances of the formation of intestinal stones.
1. Grass hays are variable in nutrient content, physical form and palatability.
  2. Some grass hays can accumulate high levels of nitrates or contain endophyte.
  3. Grass hays are usually harder to handle and feed because bales are often loose and flakes fall apart when feeding.
  4. Grass hays are lower in energy, protein, lysine, calcium and some other nutrients which can cause nutrient deficiencies, particularly for lactating mares and growing horses.

Regardless of the form of forage horse owners choose to feed (alfalfa hay, grass hay, or a combination of the two) it is important to make sure it is of high quality and free of dust or mold. Taking a representative hay sample for analysis at a feed lab is always a good idea. It is also beneficial to develop a relationship of trust with a reliable hay grower to secure a dependable annual supply of hay with consistent quality. Working closely with a reliable nutritionist and veterinarian is also important.