

Hay Primer

By Lark L Burnham, PhD
Ruminant nutrition

Hay is dried vegetation that is compacted into small square or big round bales.

The growing season is once again upon us, and so is the perennial search for good quality hay. Drought and less-than-perfect growing conditions make this chore increasingly difficult. The following article will outline some hay basics, describe ideal forage, and offer some suggestions for capturing this elusive prize.

Hay basics

Hay is dried vegetation that is compacted into small square or big round bales. Dry matter should be 90% or higher or it will be vulnerable to mold. Mold not only makes hay unpalatable to alpacas, it can also produce aflatoxins that may sicken or kill them. Hay that may have originally been dried correctly can still be contaminated with mold if allowed to be rained on during the harvest or storage phases. Such hay will be discolored, have a sour smell and weigh more than expected. Improperly dried hay may also spontaneously combust while in storage.

Palatability vs. volume

Hay palatability is maximized if the plant is harvested before it starts to bloom. However, plants that are fully mature yield greater volume (more bales/acre). Nutrients such as protein, vitamins, and digestible fiber, decrease once the reproductive phase (blooming) begins. **Nutritional value is directly linked to palatability and amount of uneaten forage (waste).**

Tender plant tissue that is also high in water content

is gradually replaced with indigestible fiber (i.e., lignin) that is low in both water and nutrient content. Mature hay also has a greater stem to leaf ratio. Alpacas, which are selective feeders, pick off the leaves and leave the stems unless young and tender. Good quality hay is often harvested at the early bloom stage that is a good compromise between palatability and volume.

Note: the term 'cutting' is often used to describe hay quality. However, cutting number does not relate the stage of plant growth, and more importantly, nutrient content. First cutting alfalfa is an exception, since it is routinely more stemmy than later cuttings. 'Cutting' is not a standard measure of hay quality across plant species.

Good v. bad hay

Good quality hay should be green, leafy, and have a pleasant odor.

Sometimes the only hay alpaca producers can find locally is poor quality, and may include any or all of the following:

- Mature, moldy, or stemmy forage
- Weeds
- Mud, dirt, or rocks
- Trash

Options

If a producer pays \$10/bale for poor quality hay and alpacas waste 50% (or more), than theoretically, that producer can afford to pay more for good quality hay.

Either too little rain or too much is detrimental to hay production.

Acquiring said hay may seem like a fantasy, but consider these potential sources:

- **Sale barns** - lots of hay are sometimes auctioned off, or sellers advertise hay for sale
- **The Internet** - search for your hay of choice in your state, many hay operations advertise and may be willing to ship semi-loads to your area. Small producers can buy cooperatively. Search your state's department of agriculture site.
- **Feed mills** - small producers may post hay for sale.
- **Extension agent** (both at the county level and at Land Grant universities) - Extension agents work with producers and may know of good quality hay for sale in your area.
- **Free Ag magazine/newspaper** - many rural areas circulate a free periodical where farmers advertise all sorts of products.

Improving palatability of poor quality hay

There are ways to improve intake if all a producer can find is poor quality hay:

- Mix with alfalfa hay
- Mix with bagged haylage or fodder

Some areas in the U. S. get too little rain and some get too much, either is detrimental to hay production. Alpaca producers may have to look further a field, and employ non-traditional methods of hay acquisition to meet their animals' needs. Good quality hay may sound too expensive until the amount of waste is taken into account. Cheap hay is not a bargain when three-quarters of it ends up on the compost pile or is used as bedding.

About the author:

Lark Burnham received a B.S. in Animal Science (1979), from Kansas State University and a M.S. in non-ruminant nutrition (1995) from Kansas State University, Manhattan, and a Ph.D. Doctorate in ruminant nutrition (2004) from Texas Tech University, Lubbock. Her special interests are comparative nutrition, the role of the micro flora in all mammals, fiber digestion, and probiotics. Lark currently works for Natur's Way, Inc., Horton, KS, which produces MSE probiotics.

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