Ensuring Livestock Health During Forage Shortfalls

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This impact of this summer’s drought and subsequent forage shortfalls may last well into the coming winter and spring. The purpose of this article is to alert livestock producers about the potential health and nutrition concerns that may face their animals in the months ahead.

Good quality forage is essential for livestock health. Forage can take the form of pasture, hay, cubes or pellets. With increased processing comes increased costs, so pasture is less expensive than hay and much less expensive than cubed or pelleted products. Due to the drought, non-irrigated pastures have been unproductive for months. If we do receive significant fall and winter moisture and pastures respond, pastures should continue to be left ungrazed so they have a chance to recover from the drought. If stressed pastures are grazed too soon, irreversible, long-term damage can be done.

Without adequate pasture as an option in the coming months, most livestock producers will rely heavily on hay. Regional agriculture newspapers, feed supply stores, co-ops and bulletin boards still advertise plenty of hay at reasonable prices. Wise livestock owners will sit down now and pencil out their animals’ forage requirements until pasture comes into production. Refer to the pasture article in this issue or contact your Extension agent for help with these calculations. Basically, you should plan to feed 2 to 3% of each animal’s body weight in dry matter per day; remember that hay contains about 10% water so if you wanted to feed 100 pounds of dry matter, you would have to feed 111 pounds of hay.

What does good hay look like? Rely on your eyes, nose and hands to help you decide:

♦ Good hay is usually very green. Green hay has plenty of Vitamin A and the protein is usually of good quality and availability. Brown or bleached-out hay will be deficient in Vitamin A and the protein may have become denatured and unavailable to the animal.

♦ Good hay smells fresh and grassy. It does not smell moldy, musty, damp or dusty. Be sure to open several bales of the hay you may purchase to make sure the centers of the bales are not moldy.

♦ Good hay is tender to touch. It is not so full of coarse stems that it would hurt to touch or eat it. Coarse hay is usually less palatable and less accepted by livestock. Look for plenty of protein-rich leaves and relatively few stems. The leaves should not have shattered and fallen off.
Good hay does not contain debris such as weeds, manure, foreign materials, etc.

Good hay is not overly mature, meaning that grass hays should not be fully headed-out; optimally, good grass hay contains about 10% heads. Alfalfa hay should be harvested about 10-30% bloom, so seeing alfalfa hay that is full of blooms means that it has past its optimal nutritional content phase.

The type and quality of hay you choose should depend on the type of livestock you have and their function. Proportionally, an idle, mature horse will have requirements well below those of a young, pregnant, lactating goat; on a percent-of-body-weight basis, a three-month old Boer kid will have requirements exceeding those of a mature bull at rest. There is no need to buy high-protein alfalfa hay for most horses—horse’s protein requirements can usually be met by good quality grass hay that contains 11-12% protein. Your Extension agent has resources that list the nutritional requirements of most livestock species as well as the nutritional content of most feeds. It is best to have a nutritional analysis of feed and forage conducted by a commercial laboratory to quantify the actual amounts of nutrients contained in a specific lot of feed.

Straw is an inexpensive and available forage option in cases of hay or pasture shortfalls. Because it is low in protein and energy, these nutrients will need to be supplemented; nevertheless, straw is an excellent way to meet livestocks’ forage (fiber) requirements. It should not be fed to high-producing animals, though—it is best for dry cows, post-weaning cows in good body condition, idle horses, whethers and other low-production classes of animals. For ruminants, straw can be ammoniated to increase its nitrogen content, but a natural protein source should also be fed to maximize consumption and digestibility of straw. Make sure seed grass straw comes from an endophyte-free source.

Poor quality feed can cause significant weight loss, decreased production and even death in livestock due to energy deficiency. We are fortunate to have a huge local supply of livestock barley, wheat, oats and corn. Check with your local grain growers’ cooperative to discuss availability, prices, nutritional analysis and delivery. These grains can be substituted for up to 60% of the ration’s dry matter, but wheat should not comprise more than 50% of a ration’s grain component. Work with your Extension agent or nutritionist to balance diets using these alternative feeds.

We are also fortunate to have access to cull fruits and vegetables in this area and many make excellent livestock feeds. Local livestock producers feed waste potatoes, carrots, onions, beets, apples, peas, lentils, corn and so on to animals. Some of these feeds are not without concerns, however—animals can choke on apples or potatoes and can get acidosis and founder from eating too much fruit. All these feeds must be added to livestock rations gradually and animals monitored for signs of problems. A feed analysis should be run so that you know the nutritional content of each batch and all feeds should be closely examined for problems such as mold.
When assessing livestock health and performance during periods of forage shortfalls, pay close attention to body condition scores (BCSs) and young stock performance. For example, if you have a small herd of beef cattle, assess BCSs at the start of your new feeding plan. Decide what is the lowest body condition score you are willing to tolerate, bearing in mind that a BCS of at least 4 is correlated with optimal reproductive performance in cattle and it is slow and costly to increase BCSs once they have dropped too low. Assess herd BCSs weekly so that a wreck doesn’t have time to develop. Generally speaking, if young stock is still gaining adequately, your revised nutritional program is acceptable. Contact your local Extension agent to learn how to body condition score animals.

Stockpiling feed or forage for the coming year will ensure that you have sufficient feed for your animals, but not everyone has the space to store huge quantities of feed for long periods of time, nor the cash to have tied up in pre-paid feed. Also, the longer feed is stored, the more waste and decline in feed quality there is. Stored feed can become moldy and become infested with or damaged by pests. Be sure to store feed in a well-ventilated area that is protected from wind, weather, pests and vermin and check it often for damage.

The dangers of high-nitrate feeds were discussed in a previous article. Remember to have drought-grown forages and feeds checked for nitrate content. Crops grown under drought conditions also tend to have lower levels of phosphorus, protein, energy and Vitamin A. Energy and/or protein-deficient animals -- especially youngstock-- will not gain well nor be able to withstand diseases or stress well. Vitamin A deficiency can cause poor reproductive performance, excessive lacrimation, increased susceptibility to diseases and more mastitis. Lack of adequate phosphorous can cause animals to eat odd things such as wood, bones, etc.

Resources to help you feed animals during and after drought include:

- Alternative Management Strategies to Meet Forage Shortfalls, OSU publication EM8527 and workbook.
- Feeding Beef Cattle During Periods of Feed Shortages, OSU publication EC934
- Livestock and Range: Feeding Management When Pasture is Scarce, Texas A&M University
- Management of Improved Pastures: Pasture Management During a Drought, Texas A&M University
- Supplementing Cattle on Drought Affected Pastures & Ranges, WSU Pub.#EM4857
• Drought Strategies for Beef Producers: Part II – Supplementing Cattle on Drought-affected Pastures and Ranges, Montana State University

• Utilization of Barley in Diets, WSU publication EB1740

• Peas in Swine Rations, WSU publication EB1738

• Feeding Alternatives for Horses, WSU publication EB1416

Future articles to appear in this newsletter will focus on calculating an animal’s year-long forage requirement and formulating a ration to meet an animal’s nutritional requirements.