

Feeding Sweet Potatoes to Beef Cattle

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Sweet potatoes can serve as a highly palatable and digestible energy source in beef cattle diets. They are often readily available in Mississippi at relatively low cost versus many other feedstuffs for cattle. There are some important considerations that must be managed in order to safely feed them to cattle.

Nutrient Content

Sweet potato roots are high-moisture feedstuffs that serve primarily as an energy source. They contain approximately 80% moisture, 8% crude protein, 6.5% acid detergent fiber, and 25% neutral detergent fiber on a dry matter basis. Much of the total protein is not digestible. Sweet potatoes contain practically no fat or the fat-soluble vitamins important in cattle diets (vitamins A, D, and E). However, culled sweet potato French fries may contain high levels of fat that can lead to digestive upset in cattle if not fed in moderation. Sweet potatoes tend to be low in minerals needed by cattle. In particular, the calcium content of sweet potatoes is variable, but is often relatively low. Cattle diets high in sweet potato content must be supplemented with protein, fiber, minerals, and vitamins.

Feeding Precautions and Recommendations

Nearly half of the protein in sweet potatoes is non-protein nitrogen. Because of this, take care to avoid feeding raw whole soybeans in combination with sweet potatoes, as this can be a deadly combination. Use other non-protein nitrogen feeding precautions, such as avoiding feeding to young, lightweight calves.

Severe dental decay can result from pH problems in sweet potatoes. Long-term feeding of sweet potatoes increases the likelihood of dental problems in cattle. This is of particular concern in situations where cattle remain in a herd over a period of years where sweet potatoes are a routine supplement, such as may be the case with breeding cattle.

Cattle can choke and even suffocate when eating sweet potatoes. Chopping potatoes will help prevent choking in cattle, but they can be fed whole if necessary. Choking risk is minimized if cattle keep their heads down with their throats extended while eating. To accomplish this, feed cattle from low troughs and use a bar or electrified wire placed above the troughs to prevent cattle from raising their heads while eating. Try also to reduce cattle feeding competition to keep cattle from rapidly gulping down sweet potatoes and choking. Allow adequate trough space for the number of head fed.

Avoid using rotten, molded, sprouted, or frozen potatoes as a beef cattle feed. When feeding cull sweet potatoes, use only fresh potatoes. Molded sweet potatoes can

contain mycotoxins that can be fatal to cattle when consumed. Mycotoxins can be present even when there is not visible evidence of mold. Sprouted or sunburned potatoes can contain toxic glycoalkaloids. The concentration of these toxins increases with exposure of the sprouts or peelings to light in warm, moist conditions. Remove long sprouts before feeding. Glycoalkaloid toxicity signs include staring eyes, dilated pupils, trembling, staggering, weakness, and possible convulsions. Never offer frozen potatoes to cattle because of the choking risk.

Sweet potatoes are better used in mature or yearling cattle diets than in calf diets. Because sweet potatoes are high in readily fermentable starch, adjust cattle to the potatoes gradually to minimize the risk of digestive disturbances such as acidosis. Start by feeding two or three pounds of sweet potatoes per head per day and slowly increase feeding amounts over a period of several weeks until the cattle are getting the desired amounts. Sweet potatoes are not a good fiber source for cattle. Make sure that cattle have a free-choice source of roughage available to them at all times when feeding sweet potatoes.

Fresh sweet potatoes can substitute for at about one-half of the grain fed to cattle. Wet potatoes or dried potato meal may be used as cattle feed up to about 20 to 25 percent of the diet on a dry matter basis. Sweet potatoes and their processing wastes can be ensiled for use as a cattle feed. When making ensiling sweet potatoes, include 1 pound of dry grass hay with every 4 pounds of sweet potatoes. Alternately, mix 4 pounds of corn silage with every 1 pound of ensiled sweet potatoes. Producers may notice loose manure and increased urine production in cattle when feeding large quantities of sweet potatoes.

Animal Performance

There is limited information about cattle performance on sweet potato-based diets. Because of the high moisture content of many sweet potato products, rumen fill can limit performance. This may necessitate feeding additional roughage or grain. One feeding trial in Pontotoc, MS comparing cattle fed 4 pounds of corn and 1.75 pounds of cottonseed meal per head per day to cattle consuming 1.5 pounds of corn, 2 pounds of cottonseed meal, and 10 pounds of sweet potatoes showed no differences in animal average daily weight gains over an 84-day period.

Reference

Thibodeau, M. S., M. H. Poore, and G. M. Rogers. 2002. Health and production aspects of feeding sweetpotato to cattle. *Vet. Clin. N. Amer. Food Anim. Pract.* 18(2):267-94.