

Feeding Sprouted Wheat to Cattle

*R. Lawton Stewart, Jr.
Extension Animal Scientist – Beef Cattle*

Receiving adequate rainfall in mid- to late spring can be a mixed blessing. The additional moisture is vital for healthy pastureland and establishing summer crops, but may delay the harvest of small grains and lead to sprouting. Sprouted grains are usually considered unsuitable for milling or distilling; however, they can serve as an excellent source of nutrients for cattle.

Wheat, which is commonly used for human consumption, is usually priced higher than other feedstuffs and is typically not utilized for livestock consumption. Sprouted wheat, however, is discounted heavily at the mill and may be economically feasible to incorporate into beef cattle rations.

Feed Value

Data from Idaho and Washington indicate that nutrient value and animal performance are not affected by consuming sprouted vs. normal wheat (Table 1). The nutrients become more concentrated during the sprouting process, but the test weight (weight per bushel) decreases as a result of the sprouting grain. Research data indicate that up to 24% of the diet (DM basis) can be provided by sprouted wheat before ADG and feed efficiency begin to decline in backgrounding and feedlot cattle (Table 2). Feeding trials from Washington show similar performance when comparing normal wheat, low sprouted wheat (9% sprouted kernels) and high sprouted wheat (58% sprouted kernels). Research from Michigan, however, indicates that including sprouted wheat in more than 20% of a ration may cause palatability issues.

Table 1. Nutrient comparison of normal and sprouted wheat (Idaho).

| Item | Normal | Sprouted |
|---------------------------|--------|----------|
| Bushel wt, lb | 60.4 | 55.9 |
| Crude protein, % | 12.3 | 13.2 |
| Crude fiber, % | 3.2 | 3.6 |
| Fat, % | 0.8 | 0.9 |
| TDN^a, % | 93.4 | 93.8 |

^a Calculated using crude protein and crude fiber values.

Table 2. Effect of feeding sprouted wheat on animal performance (Idaho).

| | Sprouted Wheat in Ration | | | |
|------------------|--------------------------|------|------|------|
| | 0 % | 12% | 24% | 36% |
| ADG, lbs | 2.28 | 2.30 | 2.41 | 2.34 |
| Feed:Gain | 8.94 | 8.56 | 8.46 | 8.89 |

Economics

The most important management decision in feeding sprouted wheat is determining if it is economical to utilize in beef rations. The big question is, “Should I take the discount for sprouted wheat at the mill, or should I use it to replace corn in a ration for my cattle?” Wheat is very similar to corn in energy, but is actually higher in CP. Most likely, wheat will be considered solely as an energy replacement. Table 3 evaluates the price at which wheat will economically replace corn. Note: there is potential for additional replacement of CP supplement, but for simplicity in this comparison, it is only compared here as an energy feed.

Table 3. Evaluation of price at which sprouted wheat can economically replace shelled corn.^a

| Price of corn, \$/bu | Price of wheat, \$/bu |
|----------------------|-----------------------|
| \$2.50 | \$2.44 |
| \$3.00 | \$2.93 |
| \$3.50 | \$3.42 |
| \$4.50 | \$4.40 |
| \$5.00 | \$4.89 |
| \$5.50 | \$5.38 |
| \$6.00 | \$5.87 |
| \$6.50 | \$6.36 |

^a Calculations based on sprouted wheat = 88% TDN and 56 lb/bu; corn = 90% TDN and 56 lb/bu.

Feeding and Management Considerations

Sprouted wheat can be higher in moisture, and therefore has the potential to develop mold and contain toxins. Previous studies have not reported problems with mold; however, if sprouted wheat is stored at moisture levels conducive to spoilage (<86% DM), the grain should be observed for mold and subsequently tested for the presence of mycotoxins. Proper drying will help prevent the formation of molds.

Wheat is a high-energy feed that derives its energy predominantly from starch. The starch from wheat is more rapidly fermentable than corn and can cause potential acidosis and/or founder. Sprouted wheat should be gradually introduced if it will make up more than 10% of the diet. Start by adding 10% of the final desired level and increase in increments of 10% every four to five days, or when constant intake and appetite are observed.

Summary

Sprouted wheat has the potential to be an excellent source of nutrients for cattle. Understanding its feasibility is essential when considering buying or retaining sprouted wheat to incorporate into a ration. For additional information, please contact your local Cooperative Extension office at 1-800-ASK-UGA1.

extension.uga.edu