

Utilizing Corn Stover as Feed

By John McGregor, MFGA Extension Support

With low feed supplies this year there has been more interest in utilizing corn stover to supplement feed supplies by harvesting or grazing the corn residue.

While there are many ways to handle corn stover, the solution for each farm is going to be different. There are some benefits to grazing and/or removing corn stover but there are also costs associated that need to be taken into account.

Grazing

Grazing corn stover is probably the best way to utilize cornstalks and the most cost effective harvest method. Grazing can also be an excellent way to manage corn residue. Cattle will digest the corn stover and break it down, while leaving almost all of the nutrients in the field and increasing its availability to the following crop. However, fence, water, location and rental agreements are all hurdles. Grazing may also only be available for 30-60 days.



Depending on the cattle being grazed and the quality of the stover, supplementing with hay or a protein source may or may not be necessary. If there is a lot of grain in the field, either on the ground or small cobs that the combine did not pick up, it may be necessary to restrict grazing to prevent grain overload. The animals can either be restricted to a certain time in the field, or they can be strip grazed. Strip grazing the field will keep the energy content of the diet more uniform over time. Once the animals have eaten most of the leaves and cobs in the field, it will likely be time to start supplementing with hay and/or protein.

Cattle graze selectively, eating the more digestible and higher protein portions first. Cattle first eat the remaining corn grain, then husks, then leaves, and finally the stalk. Therefore, a good mineral is probably the only supplementation needed for the first month unless the herd includes fall-calving cows or stocker calves. For them, a supplement will be necessary to meet nutrient demands of lactation and growth, respectively.

Baling

The best method to utilize corn stalks is to harvest them with four legged harvesting machines (cows) but mechanically harvesting corn stover may be the only option in some cases. Baling will generate a more stable feed resource and offers the best alternative for harvest and transport to feeding areas. Baling corn stover will add costs in the form of fuel, labor, equipment costs, and fertilizer replacement costs. Even with these costs, it can still be an economical feed.

Various baling methods remove different amounts of residue. Chopping the stalks, raking and baling will remove 80 per cent of the residue, while baling the windrow behind the combine will only remove 50 per cent.

The valuable components of corn stover in terms of feed are the leaf and husk because they are the most digestible (have the most energy value to the animal) but they only comprise about 40% of the residue produced. UNL research has shown that the husk is 60 per cent digestible, the leaf 46 per cent and the cob and stalk 35 per cent. Thus, a bale of corn stover with more leaf and husk and less stalk and cob would have greater energy content.

Stover generally runs 4-5 per cent CP and cow requirements range from 8-10.5 per cent CP, so protein supplementation will be required when feeding higher stover diets. Samples from the Southeast region of Manitoba showed a variable nutrient content with protein levels ranging from 5-8.4 per cent CP and 49-57 per cent TDN.

Target the top 2/3 of the plant for harvest. This includes the cob, husk, leaves, and upper stalk. The lower 30-50 per cent of the stalk has much lower feed value and should remain in the field if possible. Stover bales that contain a high percentage of stalks will be higher in waste and less palatable.

The hollow stems can lead to difficulties in drying the plant down to levels necessary to avoid spoilage. Bales that are higher in moisture are also prone to waste and severe palatability problems. Grinding bales to reduce particle size is a common strategy to mitigate these issues, however forcing cattle to eat bales that are contaminated with mold is strongly discouraged. Contaminants, such as dirt, can also be high and reduce the feed value of stover. Feeding bales as quickly as possible that have a higher than recommended level of moisture is recommended.

The small amount of money spent on a forage test can be valuable when feeding any forage. It is a valuable investment for feeding stover. Not only can you find out the nutrient value, you can also test for nitrate levels. Generally the highest concentration of nitrate is contained in the lower stalk of the corn plant. This shouldn't be a problem unless you are harvesting the entire plant and forcing the cattle to clean it up.

Corn stover has in the past been a good source of feed for beef cattle and using extra care and management can help reduce costs and stretch feed supplies. With the demand for additional sources of forage this year, producers looking to utilize corn stover as a feed source should be lining up fields to graze or bale now before the corn harvest begins.