

The Real Value of Corn Stover

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It's not uncommon for producers to harvest their corn stover for livestock purposes or potentially, for biomass energy production. Some prices that have been mentioned are as high as \$20 a ton, which would amount to \$60 an acre for a three ton harvest. These prices may sound good, but a further evaluation of the true value of the stover should be looked at.

One of the primary considerations is the nutrient content of the stover and what it is worth to future crops. The value of the stover is determined by the amount of residue produced, the nutrient concentration of the residue, and the current commercial nutrient replacement cost. Approximately 1 ton of crop residue (at 10% moisture) is produced with 40 bushels of corn or grain sorghum (56 lb/bu at 15.5%), 30 bushels of soybean, and 20 bushels of wheat. The concentration of nutrients in crop residue will vary with the season, management practices, time of harvest, and location. In addition, crop residue components differ in nutrient concentration, with most elements concentrated more in leaves and husks than in stalks.

The typical nutrient content for corn or sorghum is about 17 lbs of nitrogen, 4 lbs of P₂O₅, 50 lbs of K₂O, and 3 lbs of sulfur per ton of dry harvested residue. Using current fertilizer prices, these nutrients are worth approximately \$36/ton of residue. If the fertility level of your soil is at a high enough level that you do not need to replace the nutrients in the residue, then removing the residue may work. Eventually you could reach a point where these nutrients will have to be replaced and at a cost that is anyone's guess.

Removal of the crop residues may also affect water use efficiency, which would be particularly important in a drier year. In the first year of a study in Kentucky evaluating the effects of stover removal, John Grove (associate professor for soil nutrient management) found that fields with a normal amount of residue yielded nine bushels an acre more than fields with no crop residue. He determined that the yield difference was due to improved water use efficiency under the droughty conditions that occurred.

Another consideration is that residue removal could result in soil compaction from baling and removal of the residue, reduced soil organic matter and soil biological activity, and an increase potential for water and wind erosion on unprotected soils. These concerns will vary with weather and cropping patterns.

The main point to remember is that corn residue is not free. There is some value and cost associated with it and with today's input prices, all factors need to be considered.