EQUIPMENT

New Machinery Provides Options for Alternative Feedstuffs

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The growing season for 2012 has wrapped up leaving Michigan with the lowest hay and forage inventories for winter feeding in recent memory. Most livestock producers that rely on a good forage crop to sustain their beef cow/calf herds, dairy heifer or dry cow programs are hoping next year will be better. In retrospect, new methods are the result of challenges and opportunities.

Faced with the lack of normal supplies, producers are looking for alternative feeds to supplement their livestock during the winter feeding season. Baling and feeding corn stalks has been an accepted practice for beef cow/calf operations and can provide an excellent roughage source for winter feed. Some of the uses include feeding a portion to dairy cows, dry cows and heifers, beef cows, and beef in a grower or finisher diet.

In Rochester, IN, Jim Straeter developed the Cornrower, a system to chop corn stalks and place them in a windrow as the corn is combined. Straeter is a dealer for New Holland and developed the Cornrower to provide a more efficient system for harvesting corn stover. He presented a paper highlighting the Cornrower at the 2011 International Meeting of the American Society of Agricultural and Biological Engineers.



Roller knife on the combine head that shears off the stalk allowing for raking and baling

The Cornrower is an attachment to the New Holland 99C corn head. It accumulates chopped corn stover behind the stalk rolls and then delivers the material in a loose windrow below the feeder housing. Chopped stover is delivered to a conveyor positioned immediately behind the corn head. All aspects of the design were done with safety in mind to prevent additional moving parts on

the head to limit access and injuries. As with any equipment, safety concerns should override any potential loss of time when a plug occurs. With this in mind a tool was developed to keep operators from having to get under the head.

The Cornrower has been shown to reduce soil in the bales and provides a denser bale compared to

baled corn stalks. Use of the Cornrower requires one less pass through the field to gather the stover. Decreasing soil in a large bale helps prevent spoilage from molds and reduces the tendency to pick up rocks with the rake. Bales formed following the Cornrower were compared to bales formed following standard raking and the ash content

was reduced from 11.2% to 7.0%. Bale density increased by 15% which makes for more efficient loading and transporting compared

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to other baled corn stalks. Although one less pass was needed to gather the stover for baling there was an increase in fuel use during combining that offset some of the savings.

In addition to the work done by Straeter with the Cornrower, several studies have been done experimentally in beef feedlot diets high in modified or wet distillers grain and the addition of a calcium hydroxide lime to corn stover. Research results from Iowa State University and the University of Nebraska on chemical additives to low quality forages indicate that a portion of the corn fed in a finishing diet can be replaced with treated corn stover and distillers grains. When adding an abrasive chemical to corn stalks be sure to use personal protective equipment (i.e., gloves, eye protection).