

# Grinding towards success

Hank Lohmeyer Published on Wednesday, 27 February 2013 14:08 Hits: 416

Kirt and Keith Mautz are brothers and graduates of Olathe High School who have harnessed the American free enterprise spirit to build their Olathe feedlot operation into a busy hub of local resource use and innovation.

The brothers, who are in partnership in the Banner Road operation with their mom, Penney, have branched out from the feedlot into composting, custom grinding and feed mixing, and another experimental enterprise – biochar.

Almost everything in the Mautz operation revolves around feeding the 800 head of cattle currently in the feedlot, and using the by-product.



Brothers Kirt and Keith Mautz have harnessed a free enterprise spirit with local resources to create a growing operation on Banner Road. They are shown in the yard with some of the 75 tons of ground aspen bark they process, use and sell weekly.

That includes their biochar experiment.

Biochar is a form of charcoal made from the vast local supply of ground-up wood chips from beetle kill pine. The finished biochar product would look familiar to anyone who regularly cleans out a wood burner.

Biochar's physical structure, with millions of microscopic internal channels and cavities, helps make it useful as a soil amendment. It provides desired soil health benefits by retaining water and nutrients in the soil. And, Kirt says, it provides habitat for beneficial microorganisms that promote soil health.

"Biochar would work like any type of carbon filter to hold nutrients, requiring use of less water and fertilizer," Kirt said.

Making biochar involves burning off volatile chemicals in the pine chips which leaves a featherweight chip of charcoal-like biochar. The process, called "gasification," runs at 200,000 btu continuously and produces waste heat that Kirt says is capable of helping heat his 5,000-sq.-ft. shop and his house. The gasification process is self-sustaining and needs an added fuel boost only to get the process started.

Kirt came across some research that's been done on biochar, got interested, and then bought a gasifier unit from a fellow in Illinois who built it in his own shop.

The same physical structure that makes biochar beneficial as a soil amendment also



Photos by Hank Lohmeyer A conveyor piles up mountains of ground aspen bark used and marketed as quality cattle feed by brothers Kirt and Keith Mautz of Olathe.



A fistful of ground aspen bark feed supplement looks like everyday garden mulch.

benefits their cattle, which get a 1 percent portion of it in their feed ration. Feeding biochar confers health benefits to the animals, Kirt says.

It's not known exactly how biochar's health benefits work. One theory is that beneficial bacteria that aid the ruminant process live in the biochar's microscopic pores, increasing feed nutrient use. The result is like adding protein supplement, Kirt says. He cites a study showing increased weight gain of up to 25 percent feeding 1 percent biochar, compared with a control.

Biochar, Kirt explains, is also said to have beneficial results in hog and poultry ration. The biochar itself confers no nutrient value.

When the material eventually passes out of the animal, it is composted along with the manure, adding additional benefit to the final compost product.



Kirt processes beetle kill wood chips to make biochar in a device called a "gasifier."



A by-product of beetle kill pine – biochar – that can help keep animals and soil healthy.

The Mautz operation makes another innovative product that has made Kirt and Keith believers. It, too, is derived from a plentiful by-product of the local timber industry – aspen bark.

When feed prices started heading for the stratosphere, Kirt said he hit on the idea of trying ground-up aspen bark in the cattle feed. After all, elk eat lots of it.



A tub grinder at work processing aspen bark feed, part of the 75 tons per week being fed in the valley by three operators now.

The ground aspen bark enterprise has grown. In addition to the Mautz feedlot, there are two other operators in the valley, with all of them using 75 tons of the product every week and feeding as many as 5,000 head here, Kirt said.

They use 30 percent of the ground aspen bark in their feed ration. The brothers sell the ground aspen bark for \$100 a ton, Kirt said, a price that any operator can compare for himself with current local prices of grass hay.

Kirt says that the aspen bark ration "cuts sickness in the cattle by 90 percent." He said that aspen bark's "relative feed value tested out better than grass hay. The relative feed value (has measured) up to 130." He backs up that statement with a laboratory analysis of his aspen bark showing a relative feed value of 128.

A research paper from South Dakota State University on measuring relative feed value gives "full bloom alfalfa a relative feed value of 100" on the scale.

The Mautz brothers also produce and sell compost as part of their operation. The compost they market, though not itself certified organic, is "certified for use in producing organic food products."

The Mautz brothers operate an armada of heavy equipment in their operation including tub grinders, a massive compost sifter, conveyors, loaders and more, including the biochar gasifier.

They call their operation 3XM Grinding and Composting. They say, "We began grinding as a way to process feed for our cattle. Over the past 15 years we have improved our fleet of grinders to include tub grinders that can process up to 1,000 yards, or 300 tons of material per hour. We are the premier custom grinding operation in our area.

"We have the raw materials to create the blend of soil amendment that is just right for your needs. We have a variety of ingredients available that ensures we can make the best product for your specific needs. We can also get a compost analysis of any blend we make. We process our compost in late fall, and then allow it to cook throughout the winter. The high temperature the compost reaches (160 degrees Fahrenheit) ensures that all weeds and pathogens are killed. We specialize in doing custom regrind."

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