



Injecting anhydrous ammonia into low-quality feedstuffs, such as chaff and straw, can boost the nutritional value.

How To Turn Straw, Chaff Into High-Quality Feed

You can boost the nutritional value of low-quality feedstuffs by injecting them with a little anhydrous ammonia instead of buying high-priced hay. At an on-farm workshop last fall, Manitoba researchers reminded a group of farmers that adding anhydrous to straw, chaff and other crop materials was a common practice 20 to 30 years ago.

"Ammoniation is a good option in a year when there is a shortage of forage or when it's expensive, like it was this past winter," says Shawn Cabak, Manitoba Agriculture and Resource Board. "Past studies have shown you can double the protein, increase digestibility by 10 to 30 percent, and improve intake by 15 to 20 percent. Producers who have tried it say the cattle like the taste."

After taking samples for before and after comparison, Cabak and Tim Clarke, a fellow forage and livestock specialist, injected ammonia into 5 types of low-quality roughages. Bales included wheat straw, wild hay, canola chaff, wheat chaff and mature alfalfa grass hay. The forages were stacked in a 6-bale pyramid of 65 bales.

They added ammonia at 3.1 percent of dry matter sealed under 5 mil plastic at a cost of 1.6 cents per pound of dry matter. With high-quality hay at 8 to 10 cents per pound and straw at 2 1/2 cents per pound, Cabak suggests the ammoniated forage is

a good deal.

"It is a really good option when there is a shortage of hay," says Cabak.

Application costs are reasonable as well. Cabak and Clarke used drill stem pipe with a threaded end to inject the ammonia. They used the tank meter to judge the quantity injected.

"We covered the bales with plastic and sealed the plastic at the ground with dirt to prevent leakage," says Cabak. "We put the pipe in the middle of the stack and injected the ammonia. The plastic billowed out, and a little that escaped could be smelled."

Cabak stresses that safety precautions associated with ammonia need to be followed. He suggests doing injection up wind of people. "The safety factor is our biggest concern," says Cabak. "Once the ammonia is shut off, the plastic drops, the pipe can be pulled out and the plastic sealed. When the bales are uncovered weeks later, uncover up wind for safety as there will be some release of ammonia."

He adds that corn stover bales are especially well suited to injection. "If you double corn stover protein and energy, it would be close to meeting a lactating cow's needs."

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Photos by Custer Creative from Hays, Kansas

Double D Family Mat Shop sells a variety of products made from recycled tires, including tractor tire feed bunks and mineral tubs.

Rural Business Based On Old Tires

Tire recycling is at the core of the Double D Family Mat Shop in Park, Kan., a business we've featured several times in FARM SHOW (such as cow mats from woven tires, Vol. 36, No. 6). Tractor tire feed bunks, one of the 25-year-old company's oldest products, continue to be popular with cow/calf operators.

"They are cheaper than other feed bunks, and it's hard to hurt them," says Dale Goetz, owner of Double D Mats. Producers place the 6 to 8-ft. dia. tires on the ground and fill them with feed.

The business offers two styles. Steel-belted tires (non-flipped) with the sidewalls removed, which sell for \$35. Flipped tires are about \$50, depending on size. Double D has equipment to flip bias (nylon) tires to turn the inside of the tire to the outside.

"That makes them about 20 percent deeper so they hold more feed," Goetz says.

Customers pick up the tire feed bunks at the business, or large orders can be delivered by semi.

Besides the tire feeder, a couple of years ago, Double D started making mineral tubs out of recycled truck tires with a rubber base and flexible rubber cover. Cows quickly figure out how to lift the top rubber flap that protects minerals from precipitation. The feeder sells for \$150.

"We keep trying to do new things," Goetz says.

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Chad Blaser and Wayne Olson began experimenting with how fine to grind field pea chips for cat litter. They found that odor control was effective, and cats didn't need to have the litter changed as often.

Photos by Rolf Hagberg and originally appeared in AURI's Ag Innovation News

Cat Litter Made From Field Peas

Pea Pawd sounds like the perfect name for a new natural kitty litter made from field pea chips. It is made by two Minnesota farmers/entrepreneurs and catching on regionally.

Initially Chad Blaser was frustrated when his cats used his sheep's feedbunks filled with field pea chips for a bathroom. But, he had an epiphany when he saw how well the chips clumped. He contacted his friend, Wayne Olson, and in 2019 the two began collaborating on how they could add value to a byproduct.

They purchased a roller mill and began experimenting with how fine to grind the peas for the perfect litter texture. They tested it on their own cats, then supplied the Crookston, Minn., Humane Society of Polk County, with a few bags to test.

Society volunteers told them that odor control was so effective that even cats with gastrointestinal problems didn't need to have the litter changed as often. Blaser and Olson say that the soft litter makes it easier for cats to cover up their waste.

They worked with Minnesota's Agricultural Utilization Research Institute and were encouraged by the lab's appraisal that they had a good product.

"They said for clumping, it was the best

they ever had, and the odor control was good," Blaser says.

It's also healthier for cats as clay-based litters have silica dust that has been linked to respiratory problems and is a human carcinogen.

"We're purchasing the field pea chips from a processing plant. It's an underutilized product so this is a good fit," Olson says.

The partners set up a small processing plant in Fosston, Minn. The pea chips are run through a roller mill and an aspirator to remove the fine dust before it is bagged in 14-lb. bags that retail for about \$15/bag. Currently the partners deliver to area businesses (listed on the Pea Pawd website), and work with Ace Hardware in Fosston to ship it for them.

"We're getting calls from areas we don't service, so we are looking for distributors," Olson says. "With the simplicity of our process, we can expand quickly. Our goal is to be nationwide."

Contact: FARM SHOW Followup, Pea Pawd, Chad Blaser and Wayne Olson, Fosston, Minn. (ph 218 280-1995 or 218 230-4303; shipping from Ace Hardware, 218 435-1977; www.peapawd.com; peapawdlitter@gmail.com).



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"Our people walk customers through the buying and selling process, answering their questions, offering them advice, and not pressuring them in any way," says company founder Eric Normand. "We always aim

to be patient, considerate and helpful with no surprises and no hidden costs or extra charges."

That no-nonsense approach has built his business from a one-man operation to a company with more than 20 employees serving thousands of customers annually.

Contact: FARM SHOW Followup, UsedVending.com, P.O. Box 321, Carriere, Miss. 39426 (ph 601 749-8424; www.usedvending.com).