

Raw Milk Used As Fertilizer



Raw milk applied to Bob Bernt's pastures increased the forage yield by 30 percent.

When Bob Bernt couldn't sell his milk, he put it to work fertilizing fields and gardens. After 15 years, it's his only fertilizer, even though he has since built other markets for the milk from his 40-head Jersey herd.

"I had switched from one buyer for my organic milk to another," says Bernt. "The new one had some issues, but the previous buyer wanted to make an example of me, so he refused to take us back. We had milk and nowhere for it to go."

A University of Nebraska Extension agent told Bernt about some research done with milk as fertilizer. He suggested putting the milk on Bernt's organic crops. Until that point, Bernt had relied on fish emulsion as his organic fertilizer.

"I put a lot of milk on because I had a lot, and I saw a substantial increase in yield," says Bernt. "I started running test plot strips using milk and fish emulsions by themselves and

mixed. Every time I used milk it equaled or surpassed other organic fertilizers in yield."

The milk, mixed with sodium bicarbonate at the rate of 1 lb. per 100 gal., is applied in-furrow at planting at a 3-gal. per acre rate. The sodium bicarbonate enhances fertility and keeps the milk from spoiling.

He uses a squeeze pump on his planter, noting that a vertical pump will cause milk foaming and plugging. He then makes 2 more applications at the same rate in-season using a highboy sprayer or through center pivots on fields that have them.

He not only uses raw milk on row crops, but also on his grain crops, on his 15-acre garden and on his 6,000 sq. ft. of greenhouse crops. He even uses it on the pastures where he grazes his beef, dairy, hogs and chickens.

"I put it on native grasses at the same rate as on field crops, and I saw a 30 percent increase in forage yield in 20 days," says Bernt.

He admits that conventional growers around him may out yield him, but he doubts they make more money. "They may average 200 bushels versus my 150, but their inputs will be \$300 to \$400 per acre, and mine is \$40 to \$50," he says.

Bernt points out that his crops are getting the perfect plant food. His Jersey herd produces 5 1/2 to 6 percent protein milk, which is converted to plant soluble nitrogen. Plants also get calcium and sugars, all of which also feed soil microbes for healthier soils.

"We had a dry spell this summer, and while other fields were curling and dying, we didn't even have to turn on our pivots," says Bernt.

Bernt has used pasteurized milk as well as raw, but estimates its value to plants at only 30 percent that of raw milk. "You get the

immediate nitrogen effect and the calcium, but I don't think you get the microbial impact," he says.

In addition to the milk he uses on his fields, Bernt also sells 5,000 to 10,000 gal. of raw milk to other farmers for fertilizer. The rest of the year, he markets his raw milk to consumers through direct sales off the farm, as well as through cheese, butter and ice cream made in the on-farm processing plant. Byproducts from the processing plant also find a home on the farm. Bernt gives them to grazing pigs, eventually adding more dairy-based fertility to the fields.

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Bernt mixes the raw milk with sodium bicarbonate, and applies it to everything from garden crops to row crops.

Haylage "Push-Off" Blade Designed For Bunker Silos



Top of push-off blade is hinged and hydraulically moves forward off a stationary frame to eject haylage from forks.

This 11-ft. wide, 4 1/2-ft. high "push-off blade" is designed to move alfalfa haylage and ryeilage into bunker silos, and then push the material off a line of long steel forks at the bottom.

The push-off blade was built by machinist Amos Hoover of Manheim, Penn., for a local dairyman who owns a Case MX 4-WD tractor equipped with rear dual wheels. It consists of 2 separate parts - a 3-ft. high, 1/4-in. thick blade with an expanded metal section at the top; and a stationary frame behind it that quick-taches to the tractor's front-mount 3-pt. hitch. A line of 4-ft. long bale spears, spaced 11 in. apart, bolt onto the bottom of the push-off blade.

The top of the push-off blade is hinged, and

by extending a pair of hydraulic cylinders the operator can move the blade forward off the stationary frame to eject the haylage from the forks.

"Ryelage and alfalfa haylage is somewhat gummy and tends to slide around or underneath a straight blade. The combination of the forks and the push-off blade keeps that from happening," says Hoover. "The forks poke grab the material, and the blade pushes it off them. The operator can see through the expanded metal as he works."

It took Hoover 2 weeks to build the push blade, at a cost of \$4,000 to \$5,000.

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V-8 Riding Mower Still Going Strong

Back in 1990 Don Robinett, Randall, Kansas, built a riding mower powered by an all-aluminum Buick V-8 gas engine (Vol. 18, No. 3). He's now 88 years old but still uses the machine regularly, and recently had it professionally repainted "Ford tractor blue".

The mower is equipped with 2 hydraulic pumps. One pump powers 3 hydraulic motors mounted on the mower's 6-ft. deck, and the other powers the machine's 18-in. front drive wheels.

"I built the entire machine by myself and have used it every year to keep 5 acres mowed. It has a lot of hours on it but still works as good as new," says Robinett. "Last summer 2 of the motors on the deck started leaking oil. They weren't real expensive so I replaced all 3 of them at the same time, which is the only major repair it has required. The deck is fitted with linkage similar to what can be found on back of a moldboard plow, so it can be tilted high enough to mow weeds up

to 6 ft. tall."

According to Robinett, the aluminum Buick engine was made only for 3 years, from 1961 to 1963. "The shop foreman for our local Buick dealer was a friend of mine. When I told him I needed an engine for a riding mower that I wanted to build, he knew about a Buick Special car owned by a local woman who had recently died. I bought the car with about 70,000 miles on it."

Robinett used 3/16-in. sheet metal to fashion the deck and sides of the mower, and lighter metal to make a flip-up engine hood. "I use a pair of levers in front of the seat to control the drive wheels. By running one wheel forward and one backward at the same time I can turn on a dime. The mower goes 8 mph on the road," he notes.

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Don Robinett built this riding mower 30 years ago, and now at 88 years old he still uses the machine regularly. It's powered by an all-aluminum Buick V-8 gas engine. The air intake for the radiator was made from an old Massey Harris combine sieve.

