

WISCONSIN STATE FARMER

SECTION A

P.O. Box 152

Waupaca, Wisconsin 54981

Vol. 38 No. 44

SEPTEMBER 6, 1996

Single Copy - 50 Cents

\$18.00 PER YEAR

ROTAVATOR® a more popular tool for minimum tillage

GLORIA HAFEMEISTER

DOTYVILLE

If rototilling works in gardens by getting ahead of the weeds and leaving a seed bed that results in quick germination, why wouldn't it work on a larger scale in farm fields? That's the reasoning of several Wisconsin farmers who have adopted the rotovator as their tool of choice - the only tool they use in their minimum tillage method of farming.

The rotovator, according to Fritz Steffes, is the best tool for maintaining life in the soil.

While the argument against tillage most often heard by biological farmers is that over-tillage kills beneficial earthworms, Steffes contends, "The earthworms feel the vibration of the machine even before it gets to them and they have plenty of time to burrow down farther to get out of the way. The most effective way of using this tool is to keep it shallow - three inches or so - and that leaves the earthworm's homes undisturbed and buries the cornstalks or residue just enough to provide feed for the life in the soil."

Gary Zimmer, president of Midwestern Bio-Ag who also operates two demonstration and experimental farms at Lone Rock, uses the rotovator as the main tillage tool on his Otter Creek Organic Farm, a 240-acre farm with 130 acres of cropland. He comments, "One or two passes are made each year, shallowly incorporating crop residues and cleaning out weeds."

For Zimmer, the tool complements the subsoiler, which he believes is important for getting air into the ground and preventing compaction. For others like Ken Blatz, an organic grower from Dotyville, the rotovator is his only tillage tool. "It replaced the moldboard plow, chisel plow, stalk shredder, disc, and field cultivator. I use the rotovator in fall to work in the residue and go over the ground with it once more in spring to prepare the seed bed."

He feels it is important to fix the soil from the top down, not from the bottom up, and get the microbiological activity going in the soil. That's why he believes in shallow tillage and proper timing in order to avoid disturbing the earthworms and other life in the soil.

Clyde Mortar, Illinois, markets the rotovator in Wisconsin and throughout the Midwest. He stressed, "I admire the government's effort to look at soil erosion and address the problem, but I believe no-till is not the only answer."

He bases his argument on the fact that there are still many fields around where

no-till practices have been applied but there is still considerable soil erosion. "A healthy soil environment with something always growing on the ground allows the water to soak in more evenly. Residue on the top and no-till may slow the movement of water, but healthy soil with a lot of living matter will soak up the water, leaving less water to run across it," he insists.

Many farmers are under the impression the rotovator is only good as a spring tillage tool. Steffes, Blatz, the Dukelow brothers at Neosho, and others who use it say they are versatile and can be used in fall, even in high-moisture, heavy soils and heavy crop residues.

Blatz explained, "It works very well in cornstalks and I don't need to shred them any more, which means one less pass over the field. If I turn them under right after combining there is plenty of moisture in the stalks, so they begin to rot and the decomposition is started before the ground freezes to provide feed for the earthworms."

Blatz follows the tillage with a drill, establishing rye as a winter ground cover and green manure crop. "I leave it until it is about 10 inches high in spring, when it reaches its peak in nitrogen content, and then I work it in again with one pass over with the rotovator before seeding the field down." Sometimes, instead of using the drill, he mounts a seed box right on the rotovator and seeds at the same time as tilling.

Since the rotovator is set shallow with the shields up, it chops and incorporates more residue and distributes it more evenly into the soil under a broader range of moisture conditions than other tillage tools. The objective is to till deep enough to loosen all the soil as deep as seedbed depth, tear out all the corn root wads, chop and blend the residue, and leave enough loosened soil to allow even as simple a tool as a field cultivator to prepare a perfect seedbed in one pass prior to planting.

Some users of the tool have found that operating it at a slight angle to the row (5-10 degrees) will distribute the residue evenly throughout the field and leave the ground and residue level.

Blatz, whose farm is a series of narrow conservation strips, needs to follow the rows a little more closely. He acknowledged, "Before I used this I was using a disc to shallow incorporate residue, but the problem with a disc is it threw clumps of ground onto the next strip, and then when I came through with the haybine I'd hit the ground clumps. This does

not throw the ground but leaves it in a smooth row right behind the machine."

Horsepower is not a problem with the rotovator since the forward-rotating blades will actually push the tractor up hills, across contours, and through low ground, peat, muck, wet spots, fresh manure and wet surface conditions. Because it is pushing rather than a tractor pulling, there is no wheel slippage or tire wear. The power-driven, forward-rotating blades will allow primary tillage in snow-covered ground or with up to 2 1/2 inches of frost, depending on the organic matter or how sandy the soil is.

Mortar says most people believe the rotovator began as a garden tool and was then applied on a larger scale to specialty farming. "Actually the opposite is true."

He says A.C. Howard, an Australian farmer, built the first conservation tool ever made back in 1912. His approach to tillage was to design a machine to utilize power more efficiently than the moldboard plow, and to break virgin ground to bring it into production without turning the soil over. His first tool was designed to undercut all unwanted grass, weeds, brush and root structure free from the topsoil and leave the residue and root mass on the surface so the sun and wind would kill the vegetation.

"The worldwide acceptance of this tool was its unique ability to kill unwanted vegetation, not because of its ability to make a superior seedbed," Mortar points out.

It is because of this weed control that the tool has worked well for farmers like Blatz, who apply organic methods and control weeds without the use of chemicals.

Through the years, adjustments and changes were made to the machine to meet particular objectives. The original machine had an L-shaped blade that cut one inch in depth and undercut all vegetation at that depth. Then the C-shaped blade was developed for use in very tough residues such as cornstalks in fall and in moist, sticky or spongy conditions. The "C" blade is the most popular general-use variety today, takes the least power, and works in the biggest variety of conditions.



STIMULATING SOIL LIFE - A rotovator is used to turn soil onto the alfalfa in strips on Ken Blatz's organic farm in Dotyville. The tall alfalfa and manure coating will be turned under shallow in order to stimulate life in the soil.

(Photo by Gloria Hafemeister)



PRACTICING ORGANIC - Ken Blatz explains some of the procedures practiced on his organic dairy and crop farm in Dotyville during a recent Organic Crop Improvement Association tour.

(Photo by Gloria Hafemeister)