

# Area farmer alternates mulch tillage with moldboard plowing

Tom Barthel says he will save time and money by alternating the use of mulch tillage with moldboard plowing when preparing his corn fields for planting. He is also convinced that corn yields with mulch tillage equals that from conventional plowing, both on dryland and irrigated fields.

Barthel should know. He has tried various tillage and no tillage combinations since 1972. In 1976 he went extensively into no tillage, with about 30 per cent of his corn crop on unplowed ground.

Barthel estimates that mulch tillage takes one-half the time of moldboard plowing. Dollar savings are difficult to estimate, but using cost figures from the March 1979 issue of "Farmer" magazine, he could be saving about \$11.00 per acre during the three year tillage rotation he plans to use. The savings prediction was made by comparing three years of plowing with one year each of chiseling, disking and plowing.

These savings are important, but Barthel said the main reason he uses mulch tillage is for erosion control. "When first farming in this area," he said, "I always plowed. Then when the wind blew, the soil erosion was so bad I would go away for the day."

Most of Barthel's corn is grown on Zimmerman soil, a loamy fine sand soil type with slopes from zero to two per cent. According to Bill Harju, District Conservationist with the Soil Conservation Service, Zimmerman soil is easily eroded by wind when not protected. Harju says Barthel's system will keep his annual soil loss low enough to protect his soil resource base.

Barthel says another major advantage of his system is the flexibility it gives him. If his planting is delayed due to weather or some other reason, he can still get his crop planted in pretty good time. This is because both chiseling and disking are faster than plowing. If really pressed for time, he says he can plant without tillage.

Barthel's operation leaves the fields untilled over winter. He feels this prevents winter wind erosion and catches extra snow for additional local moisture during the next growing season. This system will be used on both irrigated and dryland farming fields. He uses a fluted coulter six row no-till planter with 38 inch rows.

Having grown up with moldboard plowing, Barthel says his

broadcast sprayer is used for weedy spots.

A later knifing in of nitrogen some time before the first cultivation helps break stalks between the rows.

Two cultivations are used for later weed control. The first is used when corn is about one foot tall and the second is used as late as the height of the crop will permit.

Barthel modified his cultivator to use three sweeps instead of four between rows. The middle sweep is wide with narrower eight inch sweeps closer to the rows. Speed is used to throw soil into the rows. This is especially important on the second cultivation as none of the sweeps are very close to the rows.

In 1977 Barthel planted corn on adjacent strips of plowed, disked and chiseled ground. Early in the growing season, the different strips were easy to identify because of the residue and the clearly visible rows of young plants in the plowed ground. But by August there

were no visible differences in the growing crop. Harvest time showed no noticeable yield difference, but Barthel said he used a picker and this makes it difficult to closely estimate yields.

Barthel's advice to any prospective mulch tiller is to realize that there will be many adjustments needed to make the system work. He cites, for example, the screen he had to install to keep corn stalks from interfering with the sprayer drive belt. He also had to tie the fertilizer hoses close to the frame to keep stalks from knocking them loose. Another change, already mentioned, was converting his cultivator from four to three shovels between rows.

Overall, Barthel thinks he has most of the bugs out of his system, and says he could farm without any tillage implements. However, he likes the added flexibility provided by the chisel and the disc along with the no-till planter.



Tom Barthel, above, with his no-till corn planter. Barthel has been using this planter with various degrees of tillage for several years to reduce wind erosion and save time. Barthel farms are northeast of Becker.



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Having grown up with moldboard plowing, Barthel says his hardest adjustment was getting used to all the corn stalks and residue visible after planting. However, he feels the advantages outweigh this temporary appearance factor.

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