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CMPM Research Shows Benefits to Reduced Tillage Practices

LANSING, MICH. – In an effort to continue arming Michigan’s corn farmers with information on how they can grow corn in a more efficient and environmentally-friendly manner, the Corn Marketing Program of Michigan (CMPM) recently funded a tillage study. The study compared conventional tillage to strip-tillage and no-till practices and the results showed that farmers who practice environmentally-friendly tillage practices can also save money; welcome news for Michigan’s nearly 12,000 corn farmers.

Four farms were selected for the study. Soil samples were taken from each site as needed, as well as the collection of stand counts, field observations and yield results. The data from three of the four farms was used for the final results.

The first location in Burlington, Mich., compared conventional tillage to strip-tillage on two fields. Both fields saw better field stand in the conventional tilled corn, as opposed to the strip-tilled corn. A 24-row planter was used with a 16-row strip-till bar. When run on the row, the populations were similar to conventional tilled corn, 29,000-30,000 seeds. When the planter was off the strip, populations dropped considerably, down to 23,000 seeds. The conventional corn averaged 178 and 179 bushels per acre, with populations of 28,000 and 31,500 per acre; while the strip-till averaged 183 and 184.6 bushels per acre, with populations of 26,000 and 28,500 per acre.

The second location was in Allen, Mich. and compared strip-till to no-till on three fields. The strip-till corn averaged 162.4, 155.3 and 155.2 bushels per acre with populations of 26,300, 27,800 and 26,600 respectively. The no-till corn averaged 150.6, 151.6 and 147.5 bushels per acre with seed populations of 26,300, 22,800 and 27,500 respectively. These lower yields can partially be attributed to weeds and other problems. “There were several areas within the no-till corn that had wet holes and severe dandelions,” said Bill Moyer, a crop consultant with LFB Solutions, Inc., who helped with the study.

The third location in Homer, Mich., also compared strip-till to no-till. On sandy soil, the strip-till averaged 162.1 bushels per acre with a population of 32,600 per acre; while the no-till averaged 167.3 bushels per acre with a population of 32,250 per acre. On heavier soil, the strip-till averaged 192.7 bushels per acre with a population of 31,000; while the no-till averaged 187.5 bushels per acre, with a population of 31,600 per acre.

The fourth location selected for the study was in Union City, Mich. and ran into adverse planting conditions for the strip-till corn. “The strips were in heavy clay soils, which received an excessive amount of rain prior to planting, leading to severe crusting,” explained Moyer. “As a result, the seed trench was unable to be closed when planting on the strips. The conventional tillage done just before planting gave a better stand as the cooperater was planting into loose dirt.” As a result of the poor planting conditions, yield data from this location was omitted from the final results.

“Based on the results we received, it appears that strip-tillage provides a small yield advantage over conventional tillage or no-tillage,” concluded Moyer. “However, strip-till only has an economic advantage when compared with conventional-till, garnering \$33 more an acre. Strip-till methods resulted in a decrease of \$6.55 per acre when compared to no-till corn.”

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“While strip-till does result in additional income for some farmers who switch from conventional tillage, it also comes with some associated negatives. The shank used on the strip-till equipment brought many rocks out from under the surface,” said Moyer. “It would be worth investigating strip-till rigs that do not use the shank, and as a result do not disturb as many rocks.”

Clark Gerstacker, CMPM president and corn farmer from Midland, was pleased to see the results from the study. “Michigan corn farmers are constantly trying to improve their practices, not only for efficiency, but also to reduce their impact on the land,” said Gerstacker, who also serves on the National Corn Growers Association Corn Board. “This study will show farmers that not only is there an environmental benefit to reduced tillage methods, but there can also be a cost savings for them. We are grateful to have research like this that helps corn farmers have an economic advantage while continuing to be great stewards of the land.”

Headquartered in Lansing, the CMPM is a legislatively-established statewide program that utilizes one-cent per bushel of Michigan corn sold. Investments are made in the areas of research, education, market development, and new uses in an effort to enhance the economic position of Michigan corn farmers. The CMPM works cooperatively with the Michigan Corn Growers Association (MCGA), a grassroots-membership association representing the state’s corn grower’s political interests since the 1970’s. Michigan’s corn industry adds more than one billion dollars to the state’s economy annually and in 2009, Michigan’s corn farmers harvested a record setting crop of more than 309 million bushels. For more information, visit the website of the MCGA and the CMPM at www.micorn.org.

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