

Even the earthworms favor no-till farming

BY DICK ANGLESTEIN
LANCASTER — In Knox County, Ohio, even the earthworms are in favor of no-till farming.

Now, this may be stretching the no-till endorsements expressed Tuesday at Lancaster County's Conservation Tillage Conference a bit, but a significant relationship was drawn between no-till and earthworms by the visiting featured speaker from Knox County, Ohio.

Raymond J. Adamski, district conservationist in Knox County, in a 10-year intensive experience with no-till in his county, has fine-tuned his studies to the point that he has found that no-till ground contains about nine times more earthworms in it than the conventionally-tilled soil.

And the worth of this earthworm information goes well beyond being another bit of agricultural trivia. For the higher earthworm

population in the no-till ground may be directly related to a better pH balance throughout the soil profile, which also translates into better crop rooting and moisture utilization for improved stands of anything from alfalfa to corn.

"I think the increased earthworms and their holes has improved the pH right down through the soil profile," Adamski said.

"The lime gets into the wormholes and gets deeper to improve the pH. This means better crop rooting and better utilization of water at greater depths."

On his own farm, Adamski started out with a pH of 4.9. In his no-till ground, the pH has been built up to about 7 at or near the surface and is still about 6.5 at a depth well below what would be the plowing layer in conventionally-tilled ground. In fact in a comparison of soil profiles, the pH level in nearby conventionally-tilled

ground below plowing depth has shown levels of about 5.5.

"The plowing layer appears to shear off the wormholes and prevents the lime from going deeper and improving the pH," he said.

Adamski listed some other general findings and recommendations concerning no-till in Knox County, where some 62 percent of corn, 25 percent of soybeans and 80 percent of pastures are planted in this system designed to reduce erosion:

—To combat Fall panicum make certain the pH is 6 or above so that the triazines can work.

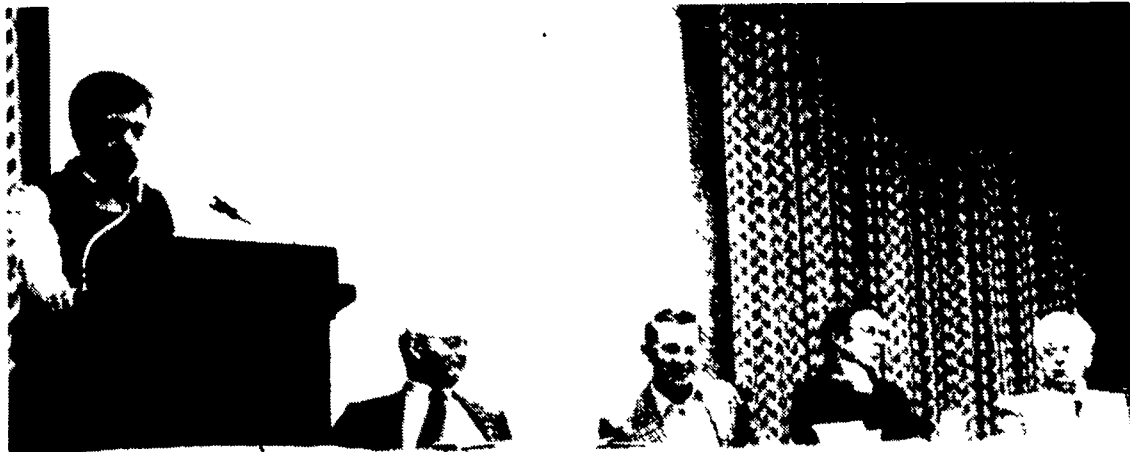
—Split applications of nitrogen have worked best and have helped to increase yields of corn by 20 or 30 bushels per acre.

Under no circumstances, use urea to apply nitrogen.

—High phosphorus applications work well in the row.



With Conservation Tillage Conference featured speaker Ray Adamski, right, of Knox County, Ohio, are Bob Gregory, left, district administrator; and Amos Funk, of the Lancaster County Conservation District.



Farmer panel at Conservation Tillage Conference in Lancaster includes, from the left, C. Martin Greenleaf Jr., R1 Oxford, at podium; Amos Funk, moderator; Robert Berkheimer, R2 Mechanicsburg, Cumberland County; Hugh Lesley, R2 Oxford; and David E. Buckwalter, Lititz.

—High populations are favored — around 28,000 plants per acre.

—Earlier planting appears best about the last week in April or the first week in May as long as conditions are not too cold or too wet.

—Crop rotation is still important and if the land is rotated out of corn just one year yields can be boosted 15 or 20 bushels.

Adamski traced his experience with introducing and promoting no-till in Knox County. He started with just six farmers some 10 years ago and worked very closely with them, paying attention to the smallest of details and making any corrections that were necessary as they went along.

"Today, the conventional-tillage farmers in Knox County are in the minority," he said.

"And, all of the top farmers are no-till farmers."

He credits the holding of a no-till yield contest in the county as the means to really get the practice

going and the way to encourage farmers to put their better ground into no-till.

Adamski stressed that trying no-till can't be on a one-time, one-field basis, but must include thorough follow-through to be successful.

"Always be prepared to go back and see what is right and what is wrong and make the necessary changes and adjustments," he said.

"And get out there early to make your evaluations just when the corn is starting to come up."

The day-long Conservation Tillage Conference, sponsored by the Lancaster County Conservation District and Extension Service, also featured a four-farmer panel of long-time no-tillers. The panel included:

David E. Buckwalter, of Lititz — He follows a no-till manure management program in which relatively high rates of steer manure are applied after wheat is harvested from fields into which clover has been sown as a cover. Clover is harvested in September and then burned back with Paraquat the next spring for no-till corn planting.

He plows down clover sometimes that many would like to bale but the cover provides the basis for the manure management.

C. Martin Greenleaf Jr., R1 Oxford — His no-tilling of corn, soybeans, barley, wheat, alfalfa and mixed hay has prompted some significant savings in recent years.

With no-till, his equipment has been cut back from seven tractors, three above 100 H.P., to just three, all below 100 H.P. By reducing his "recreational plowing" he has saved \$3,000 in fuel and some \$19,000 in labor costs by replacing two full-time hired men with parttime seasonal help. His chemical use has risen 10 to 20 percent and fertilizer utilization is up slightly.

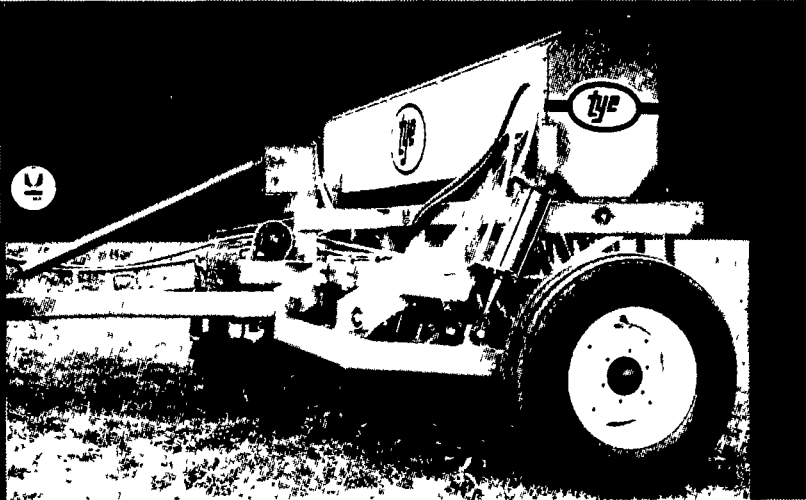
Hugh Lesley, R2 Oxford — He utilizes a crop rotation of no-till corn, barley and soybeans. Even in the drought last year some of his corn yielded 125 bushels an acre.

Robert Berkheimer, R2 Mechanicsburg, Cumberland County — "The more cover you have, the better it is. We didn't have much rain last year, but where there was cover we had corn."

Manure from some 350 Holsteins — milkers, replacements and beef bulls — goes on no-till corn. Strawy manure goes on fields with less crop residue and liquid manure goes on heavy crop residues. He avoids soil compaction and no corn is planted before May 15.

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