

Tillage: A necessary evil?

by Kory Glover
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KEMPTVILLE – A LOT OF ADVANTAGES AND DISADVANTAGES CAN COME FROM THE USE OF TILLAGE, NO MATTER WHICH SYSTEM AN OPERATION IS USING.

Plow tillage can help poorly drained soils and produce well-tilled seedbeds but can also cause soil erosion, moisture loss and has the highest fuel and labour costs. Strip-till warms quickly, injects nutrients into row areas and is well-suited for poorly drained soils but the strips can dry too much, crust or erode without residue and there's the cost of the pre-plant operation.

No matter what system is used, there will always be a downside equal to the upside. That was the basis of Peter Johnson's presentation Tues., Feb. 12 at the Kemptville Municipal Centre's annual Eastern Ontario Crop Conference; is tillage a necessary evil?

"I do think that tillage is something that we need to work away from if we can," he said. "I really want this to be a discussion instead of a presentation because, to me, tillage is an art, there's not a lot of science behind tillage."

However, why do we use tillage?

Johnson listed several different reasons why a farmer would use tillage including seed contact to soil, management of residue, managing soil temperature and moisture, incorporating nutrients, and compaction.

There are six different systems used for tillage that include plowing, chiselling, disk, ridge plant, strip-till and no-till. Johnson, in the past, has leaned more towards the no-till so much that he earned the nickname, Peter No-Till.

Advantages to the no-till system include excellent erosion control, soil moisture conservation, minimum fuel and labor costs and it builds soil structure and health. The disadvantages could be manageable increased dependence on herbicides and soil warming can be slow on poorly drained soils.

"I started as a soil conservation advisor and the reason that the ministry hired me was because they needed somebody who could build a no-till corn planter that would plant corn into the 401," he said. "And, by God, we did it, and that thing was heavy and it would plant corn anywhere."

Johnson continued, "The slick back towards more tillage, particularly in Curran County, is horrible. There's more black dirt in Curran County now, than there has been since 2000, maybe even 1990. Tillage, to me, is really a double-edged sword."

Brent Vanden Bosch of Chesterville's Vanden Bosch Farms was used as an example of his system, and described using the disk method on the soil the year before and then cultivated in the spring. Johnson then proposed the question of whether or not the audience could think of a higher yield potential than Vanden Bosch's method.

"So, for me, my first question would be why did we do what we did there and is there any potential problems there that you can't see," he said. "It definitely looks gorgeous, but sometimes it can look gorgeous like that and if you happen to cultivate it on the wet side, even though it looks great on the surface, it might not be as good in terms of what the actual seed is experiencing. We saw this in Kent County three years ago where the guys worked it, it was too wet, worked it again, found it on the surface, planted it, they said it was gorgeous and they lost 50 bushels per acre. The question I come up with is, why?"

Johnson then proposed the question of why Vanden Bosch used this method of tillage and he simply replied that it was what he had been doing in the past and it was what he was taught to use.

"No matter what system I talk about, whether it's Vanden Bosch's system, strip-till or even no-till, the standard is always the mole-board plow, he said. "That tells you that burying that residue, getting the soil black, that works. It really does work."

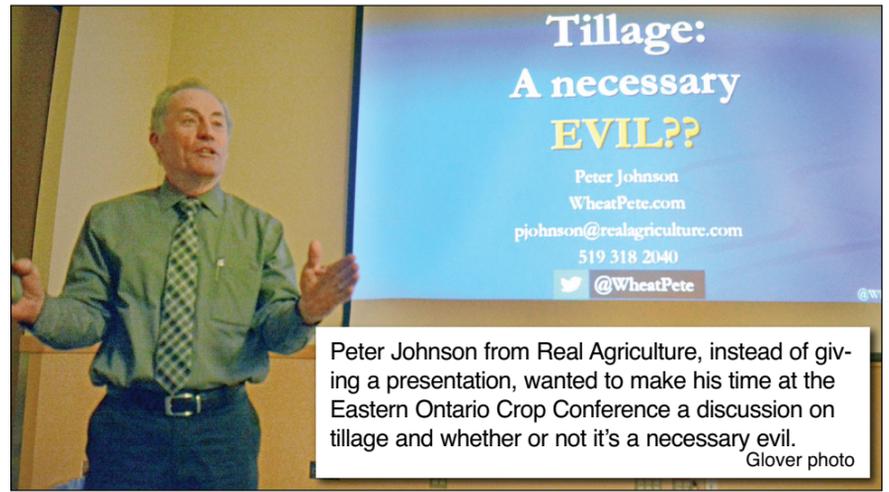
Johnson continued, "The problem is when you go into that full tillage, you really have to step back and think about it because soil loss is a big factor. You'll affect productivity and get less yield. One of the biggest problems that come from tillage is erosion."

Johnson provided an example that a total of 6.8 inches of top soil was lost in Iowa over the past 150 years due to erosion.

"If Eastern Ontario lost 6.8 inches of top soil, we would probably be left with bedrock, subsoil or whatever you want to call it," he said. "Where I farm, if I

lose seven inches of top soil, I'm into my horizon; we have five or six inches of top soil that costs yields."

If there is anything Johnson wanted people to take from his presentation is to use tillages effectively and cautiously. The use of tillage can be a double-edged sword and if it's misused, a lot of bushels and crops could suffer as a result.



Peter Johnson from Real Agriculture, instead of giving a presentation, wanted to make his time at the Eastern Ontario Crop Conference a discussion on tillage and whether or not it's a necessary evil. Glover photo



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