

Back to the Days of Cultivator Tillage Agriculture? Farming Smarter Plot Hop Talks Deep Banding

By Tim Kalinowski

The day of the cultivator may be coming again after 40 years of no-till agriculture in southern Alberta. At least that is what some are saying, says Dr. Tom Jensen, North American director of the International Plant Nutrition Institute, but he is not so sure.

One thing he is sure about, as he explained at the June 7 Farming Smarter Plot Hop near Lethbridge, the calculus surrounding no-till agriculture is in flux; especially with regard to stratification. Whether modification to existing seeding and fertilizing practices will be all that is required or a complete paradigm shift, Jensen says no one working on the question has a definitive answer yet.

“Where we put the nutrients, and where they are in the seed bed of the plant, we need to get some answers,” he says.

Ken Coles, general manager of Farming Smarter, agrees.

“Nutrient stratification does exist, but does it matter? That’s the next question, right?”

One possible solution to the conundrum might be a compromise between no till and light till. Thus deep banding of nutrients might hold the answer to the problem of stratification, if it is a problem, Coles says.

“The truth of the matter is we don’t know if this is a good practice or not,” he admits. “And that’s the whole point of the research study.”

Deep banding uses a strip till machine to place bands of nutrients about 10 centimetres, or four inches, below the surface to help crops access nutrients at greater depths of the soil.

Jensen says the research he has read seems to suggest there are some benefits to deep banding in nutrient deficient soils, especially when it comes to nearly immobile elements like phosphorous.

“There is a lot of research evidence, especially for tap root crops like canola, the root goes down, and if you can put the phosphorous below that row it is actually very efficient,” says Jensen. “A lot of our nutrients tend to be less mobile in the soil, and so if you can place them where the roots are going to grow then you have a better chance of using them.”

And there may be operational benefits for farmers too, says Coles; especially if they can deep band in the fall and reduce the need for a lot of fertilizer placement with the seed in spring.

“We are now pumping out so much fertilizer, we are fertilizing first and seeding second,” states Coles. “I think there is an opportunity to go back to simplifying our units (for spring seeding).”

Coles suggests farmers wishing to give deep banding a try can do it with a rigid stealth shank cultivator without the need for an expensive strip tiller.

“A deep banding operation is possible without having to get one of those great big, massive strip till machines,” confirms Coles.

“And you have the proper packing, maybe pull a roller after it just to smooth things out. We could probably then get by without doing too much damage as far as the tillage is concerned ... It definitely fluffs it up but it’s not really like a full out cultivation or disc.”

Jensen hopes field research projects like Farming Smarter’s three-year deep banding study might be able to help come up with some answers to the questions of nutrient stratification, and best farm practices to deal with the issue.

“Some people say maybe we shouldn’t worry about it,” he says. “Or maybe we should have a tillage rotation; so once every four or five years you actually cultivate the soil a bit and do some mixing. There is some research looking at that.”