PRODUCTION

TWIN ROW TAKING OFF

Great Plains Manufacturing is promoting its Twin Row planter to an expanding number of canola and corn growers in Western Canada.. | **Page 62**

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Ron Sylte sprays 3,100 gallons of glyphosate burn-off blend on 600 acres in less than five hours with his 150 foot boom Sprayflex truck sprayer. | JAY MERCIL PHOTO

EQUIPMENT | SPRAYING

Gigantic boom sprayer needs to be bigger

Fifteen more feet required | Grower says a 165-foot boom would better fit the dimensions of his quarter-section fields

BY RON LYSENG
WINNIPEG BUREAU

FARGO, N.D. — Ron Sylte is ready to up-size his year-old 150 foot self-propelled Sprayflex to a more convenient 165 foot sprayer.

The combination of a 3,100 US gallon tank and 150 foot boom width allows Sylte to spray 600 acres in four to five hours non-stop.

He seeds 10,000 acres, but many of the fields are managed as quarter sections. And that's where the 150 foot boom width becomes a mathematical nuisance.

"When I'm covering 150 feet per swath in-crop, I always finish at the wrong end of a quarter section field," says Sylte.

"150 feet doesn't divide very well into a field that's a square half mile by a half mile."

Although Sylte concedes that his sprayer is already the biggest in the world, he stills wants to up-size to 165 feet so the math works properly on quarter section fields.

"If I can get the guys at Sprayflex to build me a sprayer with a 165 foot boom, then we'll be all set for efficient spraying," he said.

"My brother and I run the whole farm. We don't have any hired help, so we look for efficiency in everything we do."

High wages in the oil fields of western North Dakota are only a stone's throw from their farm, making it next to impossible for them to attract anyone capable of operating equipment.

As a result, Ron and his brother analyze every decision to make sure every change increases their efficiency.

The big Sprayflex is a good example. They took delivery of the new machine last spring and put 25,000 acres on it before fall spraying wrapped up three months ago.

Their north farm is 24 kilometres from the home yard, while their south farm is 10 km away. They could feed a sprayer with their 6,000 gallon tanker semi if they had a reliable hired hand, but they have no choice but to put up with the inconvenience of driving the Sprayflex back to the yard for fills.

Sylte said it's not so bad because he can drive the sprayer on the road at a comfortable 45 m.p.h. High-wheel sprayers, on the other hand, can put the operator into a white knuckle situation, even at speeds below 35 m.p.h.

Efficiency would be better if he used the big tanker as a tender, but that's not an option.

Instead, he uses the tanker to haul spray-quality water back to his yard. He buys water from a local irrigation well or from the city of Williston, N.D. Back at the yard, he mixes chemical into the Sprayflex tank as he fills.

The Sprayflex sprayer with a 3,100 gallon tank and 150-foot boom transports in a tight package, respecting the fact that most producers who will use a machine of this size have land spread over large areas. | SPRAYFLEX PHOTO

> ***When I'm covering 150 feet per swath in-crop, I always finish at the wrong end of a quarter section field. 150 feet doesn't divide very well into a field that's a square half mile by a half mile.***
>
> **RON SYLTE**
> NORTH DAKOTA FARMER

Their quest for efficiency also includes operator comfort and operating costs.

"I can spray my first 600 acres of the day in four or five hours. I can do that twice a day and feel pretty good. We can do it three times a day, but then that's a pretty big day," he said.

"The main factor here is that I have to stay a few steps ahead of the seed drill. Another factor is cost of diesel fuel. In a normal trip to the field and back, spraying 600 plus acres, I burn less than 40 gallons of diesel. You'll never do that with any brand high wheel sprayer."

Sylte thinks the hydrostatic drive used on most sprayers consumes too much fuel and allows the machines to get stuck more often than mechanical drive sprayers.

As well, getting stuck with hydrostatic drive burns out hydraulic drive motors.

Sylte's special order 3,100 gallon truck sprayer with 150 foot aluminum boom isn't his first Sprayflex.

"I've had truck sprayers for 20 years now. In 40 years of spraying, this new Sprayflex is the best ride I've ever had," he said.

"I bought my first Marflex (now Sprayflex) truck sprayer about 15 years ago. Because of the weight factor, these truck sprayers give me greater tank capacity than a high wheel sprayer."

Sylte said his previous Sprayflex was a 2,000 gallon unit with a 120 foot boom and single rear axle. It was the biggest sprayer Sprayflex had built.

With 25,000 acres under his belt, he said the new 150 foot machine handled well.

"We saw very little boom bounce, which was a surprise for such a wide boom," he said.

"We installed a Raven boom height control. It told us that the boom remained relatively level throughout all our spraying. We're in no-till and some minimum-till. We have a JD 1835 with hoe type openers on nine-inch spacing, so our fields can be pretty rough sometimes, but that didn't seem to bother the 150 foot boom. Our screen didn't show any significant bounce, even at our normal spray speed of 15 to 16 m.p.h. and higher."

Sylte said a Sprayflex with twin screw differentials at 150 or 165 foot booms and a 3,100 gallon tank has to be the ultimate sprayer for big-acre producers who grow small grain cereals.

"It has potential for one man to spray 1,800 acres in a long day and stay ahead of the seeding rig."

He said all that weight and extended leverage at the boom tips haven't been a problem in wet conditions.

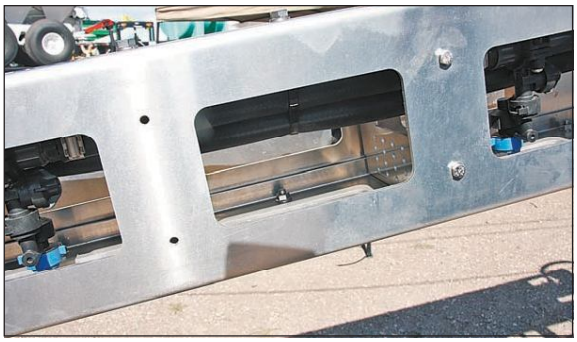
"When we started this project, I talked to the guys at Sprayflex about adding a drive system to the front, but that's a deep expenditure of $20,000 or more no matter how you do it," he said.

"We have full lock on both rear differentials. I only engaged it once this year (2012) when I was pulling out of a ditch. It picked the front tires right off the ground. So I would say we get plenty traction and torque transfer from those four rear tires. Right now, I don't think we need front assist."

For more information, contact Sylte at 701-570-4851 or visit www.sprayflexsprayers.com.

EQUIPMENT | SPRAYING

Big boom covers ground quickly



Rather than use a welded box like some other big booms, the Sprayflex bolts together. Sections are the same along the entire width of the boom, making repairs easy without cutting and welding. | RON LYSENG PHOTOS

Jay Mercil says the design of the original Sprayflex aluminum boom allows him to extend the basic 100 foot boom up to 150 feet and wider.

BY RON LYSENG
WINNIPEG BUREAU

FARGO, N.D. — Jay Mercil had to tighten up his thinking cap two years ago when Ron Sylte ordered a 3,100 gallon sprayer with a 150 foot boom.

Mercil, who co-owns Sprayflex in Detroit Lakes, Minnesota, said his family has built truck style sprayers since the late 1990s, and Sylte has been buying their truck sprayers since the first one rolled out of the shop.

"But we had never tackled anything this big," he said.

"Our biggest sprayer up until then had been the 120 foot model with a 2,000 gallon tank and single rear axle. It's a regular item in our product line."

Sylte had just bought one of the Sprayflex 120 foot, single-axle truck sprayers with a 2,000 gallon tank.

"But 120 feet wasn't big enough. Ron wanted to cover more acres per day and get out of each field as fast as possible so he can get on to the next one," said Mercil.

Custom building the one-off giant sprayer in time for spring spraying was a challenge, he added.

Mercil said there are critical factors to consider when building a 150 foot boom and a 3,100 gallon tank. The water alone weighs 26,000 pounds.

"You have to look at the leverage factors associated with such a big boom: how will it react to things like bounce and turning? You don't just build things bigger," he said.

"We didn't go to school for engineering. We've been building sprayers long enough that now we can just figure these things out for ourselves. Our whole background is building bigger and better sprayers. That's just what we do."

The company was known as Marflex when it was started by Mercil's father, but Mercil and his brother changed the name to Sprayflex when they took it over in 2010.

International trucks have been the basis of their sprayers since day one. Mercil feels International has the strongest chassis, with frame wall thickness of 7/16 inch.

They started Sylte's project with a new International powered by the standard 330 horsepower Maxforce diesel. Mercil figured the truck would be shy on power with that engine, so they increased it to 390 h.p.

They installed a heavier transmission because of the extra power and payload, stretched the frame by 12 feet and installed twin screw differentials. The first differential stays in the normal location and the second differential is 10 feet back.

The 150 foot boom uses the same unique box design employed on the smaller Sprayflex aluminum booms. The formed boxes bolt together to form a light weight, rigid arm.

Sylte took delivery in mid-April, just in time for spring spraying. The sprayer worked well throughout the 2012 season, racking up 25,000 acres.

However, he had trouble matching the unit's 150 foot spray swath to his quarter section fields in a manner that didn't result in wasted partial half-mile passes as he finished the fields. So the next step for the Sprayflex team will be to build the 165 foot sprayer that Sylte wants for this coming spring.

Mercil said many producers don't understand that a truck sprayer can carry a bigger payload and handle bigger booms because the machine is lighter than a high wheel sprayer.

This weight factor translates into less compaction in susceptible soils.

The twin screw configuration further aids in distributing the load over a larger area.

The twin screw setup is outfitted with lockers and combined with the mechanical driveline it helps keep the machine from burying itself in the mud.

Mercil said the price tag for a new sprayer like the one they custom built for Sylte would sell for about $325,000.

For more information, contact Jay Mercil at 701-360-3544 or visit www.sprayflexsprayers.com.

ENVIRONMENT | APPRECIATION, PROTECTION

Environment should be first and last priority

ORGANIC MATTERS

BRENDA FRICK

Guy McPherson of the University of Arizona says it well when he reminds us where our first allegiance should lie.

"If you really think the environment is less important than the economy, try holding your breath while you count your money."

McPherson is reminding us that we are part of the earth, not the other way around, and she is entitled to our respect.

The importance of earth was brought home to me in a visceral way last year when I was lucky enough to travel to Yellowknife.

The landscape around Yellowknife is incredibly beautiful, in a stark and primal way. The rock formations are largely exposed: life bursts forth from the tiniest pockets of soil and trees hold on with the barest of encouragement.

It reminded me how grateful I am for soil, the deep rich bounty of the Prairies.

In organic agriculture, respect for the environment and for soil is built into the basic principles:

- Protect the environment, minimize soil degradation and erosion.
- Maintain long-term soil fertility.

Of course, these principles are followed up with specific encouragement of soil friendly practices such as green manure and biodiversity.

It is a common misconception that organic farmers are not committed to soil quality because they use tillage. Nothing could be further from the truth. It is simply that organic farmers do not embrace chemistry as an alternative to tillage.

Tillage can be a useful tool for organic producers, but it must be respected and used only as appropriate and in conjunction with other techniques that build soil.

Soil scientists such as Diane Knight of the University of Saskatchewan have found that practices that feed the soil, such as green manure and forage in rotations, mitigate the damage that might otherwise come from tillage.

Soil is obviously the foundation of agriculture, but I am also concerned about how we on the Prairies relate to wind and water. Our attitude to trees is particularly alarming.

I understand that trees get in the way of big equipment, but they are crucial in reducing wind speed and temperature extremes. They provide habitat within and around them. They are oases for wildlife in the vast monoculture deserts we create. They filter and gentle the air moving across the prairie.

This year I have seen a growing tendency to remove the woodlots and hedgerows, which goes hand in hand with the idea that we no longer need a federal shelter belt program.

In the same vein, I regularly ask students in my organic weed management class how they can incorporate natural areas into their farm plan.

In the past, I have heard answers that revolve around the importance of shelter belts, sloughs and native prairie in providing beneficial biodiversity. This year, I heard plans to cultivate this waste land and make it productive. This change in mindset seems tragic to me.

I am also concerned about water.

Year after year of flooding is a bit of a shock in a land conditioned to drought, but I think it is time to shake ourselves and consider our collective role in this.

No, I don't mean fossil fuel contributing to climate weirdness, though that is important, too.

If we look at the native vegetation of the prairie, which is somewhere between the dry of desert and the wet of muskeg, we find an enduring mixture of species adapted to both wet and dry.

In the longterm, cycling between these two states is natural.

What we are missing now is the resilience that comes, on a small scale, from high organic matter in the soil, and on a landscape scale, from marshes and sloughs and ponds. Increased organic matter allows land to cycle water more effectively, absorb it and retain it.

Organic matter is increased by feeding the soil through the use of green manures, forage in rotation and returning crop residues to the soil.

Prairie potholes are the sponges that soak up the excess in the wet cycle and release it gently to be absorbed into the aquifers, dry lands and air for recycling. Cattails and slough grass filter and slow the water's movements.

Like shelter belts, marshes provide landscape diversity and protect us from extremes. Cultivating from road allowance to road allowance all across the rural municipality is not what is best for natural resilience processes.

When I compare the agricultural potential we have on the Prairies to the stark beauty and harsh environment around Yellowknife, I am grateful to the stewards of the land, the soil, the trees and the wetlands.

My wish for the new year is that we all remember how lucky we are, and that we work to respect the bounty that encompasses us.

"Nature is the home team and she always bats last."

I had a hard time finding the original author of this adage, but it is an important reminder. We can treat the earth with respect, out of love and admiration for her beauty and power.

If we don't treat the earth with respect, there will be, and already there are, consequences.

Brenda Frick, Ph.D., P.Ag. is an extension agrologist and researcher in organic agriculture. She welcomes your comments at 306-260-0663 or email organic@usask.ca.

ORGANIC EVENTS

Jan. 31-Feb. 3: Guelph Organic Conference, Guelph, Ont. www.guelphorganicconf.ca

Feb. 4-18: Organic Cuba Tour, theurbanfarmer.ca/cuba-programs/organic-cuba-tours

Feb. 13-16: BioFach, Nuremberg, Germany www.biofach.de/en

Feb. 12-16: OCIA annual general membership meeting, Omaha, Nebraska www.ocia.org/news-and-events/news/ocia-2013-annual-general-membership-meeting

Feb. 27-28: Organic Alberta Conference, Olds Alta.

March 8-11: Natural Products Expo West, Anaheim, California www.expowest.com/ew13/public/Content.aspx?ID_1039277

For events in Alberta, visit organicalberta.org/events