

October 2016

Soybean *Guide*

MORE FULL PODS PER ACRE

OUR SPECIAL ISSUE ON
GETTING MORE FROM
YOUR SOY ACRES IN 2017

STRATEGIES

- GROW YOUR SOYS LIKE CORN
- WIN WITH EARLY PLANTING...
- DRY WEATHER WEED CONTROL
- NEW VARIETIES FOR SPRING



**PHILIP SHAW
LOOKS TO
SELL INTO
JITTERY
MARKETS**

**THIS NOVA
SCOTIA
FARM PUTS
WHOLE SOY
PACKAGE
TOGETHER**



PRIDE SEEDS

FOCUSED ON PERFORMANCE

Farming can be tough. Count on PRIDE Seeds from start to finish. Trusted yield, service and advice; a proven formula for serious farmers across Canada.



PRIDSEED.COM

1.800.265.5280



All orders and sales are subject to the PRIDE Seeds Terms and Conditions of Sale, which include but are not limited to the Limitation of Warranty & Remedy and Agronomic Zone and Planting Year. All Terms and Conditions of Sale are subject to change from time to time without prior notice. For the most up to date Terms and Conditions of Sale, see the PRIDE Seeds website at www.prideseed.com. PRIDE® & Design, and P® & Design are registered trademarks of AgReliant Genetics Inc.

ALWAYS FOLLOW GRAIN MARKETING AND ALL OTHER STEWARDSHIP PRACTICES AND PESTICIDE LABEL DIRECTIONS. Details of these requirements can be found in the Trait Stewardship Responsibilities Notice to Farmers printed in this publication. RIB Complete®, Roundup Ready 2 Technology and Design®, Roundup Ready®, Roundup® and VT Double PRO® are registered trademarks of Monsanto Technology LLC, Monsanto Canada Inc. licensee. Herculex® is a registered trademark of Dow AgroSciences LLC. Used under license.

Building on 255 years

On this Nova Scotia farm, the ninth generation takes a decidedly modern approach to soybeans

By Ralph Pearce,
CG Production Editor

Two and half centuries is a long time for a family to be farming. But brothers Craig and Brian Newcombe are leveraging the latest cropping techniques and business smarts to build the farm for the 10th generation of Newcombes.

Part of the ninth generation of Cornwallis Farms near Port Williams, N.S., the Newcombes manage a large and diverse operation including 1,700 acres, 65 dairy cows, 120,000 broilers and 20,000 layers, a grain handling facility and a feed mill.

The Newcombes began farming in the Annapolis Valley in 1761, making it one of the oldest farms in Canada. (Although Brian says a few older farms are still operating in Quebec.)

Brian looks after the cropping and dairy divisions while Craig oversees the poultry operation as well as the feed mill. They also employ six full-time staff along with some summer students.

With dairy and poultry, self-sufficiency is important to the sustainability of their farm, so they try to grow and process much of their own feed. It's also

why Brian uses two separate rotations. One is a straight grain rotation, with corn-corn-soybeans-winter wheat, and the other is the same rotation with an alfalfa-grass blend for five years, after which it comes out into the straight grain rotation.

"We try to grow as much as we can," says Brian Newcombe, adding that includes all of the forages. "We also have our own soybean extruder on-farm, so that cuts down on the amount of protein we have to bring in. We used to have to buy a lot of soy meal and now, with this extruder, that replaces a large portion of that, although we still have to bring in some canola meal and some other proteins."

They grow brown mid-rib (BMR) corn hybrids for silage, as well as conventional corn as feed for the chickens. They mix their own grain rations for both the dairy and poultry operations.

The farm itself is located on what is known as the "floor" of the Annapolis

Continued on page 4





(l to r) Craig, Brian and one of the next generation of Newcombes, Craig's son David

Valley, flanked by the North Mountain and South Mountain, with the river flats east of Port Williams running into Minas Basin. The mix of topography provides a unique microclimate which allows for a diversity of agriculture in a fairly small area. Row crops, fruits and vegetables grow well in the Valley, and it's a very important agricultural district in the Maritimes.

At the Newcombe farm, they work with variable soils, from heavy marsh clays that are protected by a series of dykes, to clay-loams and everything in between. As if the soil types aren't challenging enough, the ground tends to be rolling hills (except for the marsh clays) meaning erosion can be a problem.

To help mitigate any erosion, the Newcombes began no tilling in 1993, when Brian returned from college. Today, most of their wheat and soybeans are under no till and they strip till their corn.

"And that's all good, but there's a step further that we can take it, and what we've started to do now is to bring in cover crops to the rotations, to try to build that soil diversity and organic matter, and create some of our own nitrogen," Newcombe says.

In the past couple of growing seasons,

"We've started to bring in cover crops, to build that soil diversity and organic matter."

— Brian Newcombe, Cornwallis Farms

the Newcombes used eight- to 10-way mixes of cover crops. In 2016, Brian started seeding corn into standing green cover crops (then killing off the cover crop), a move that's being tried by more growers across Eastern Canada. He's also made a connection with some of those growers, including Dean Glennie from the Niagara region.

"It's challenging to manage that, but if it works the way you want it to work, it's really quite exciting," says Newcombe, who was awarded Canada's Outstanding Young Farmer in 2003. "If you want to change your soil structure and improve it, that's the fastest way to do that. Eventually, once you have that system built up, you can really start to cut back on your inputs, getting away with fewer sprays and chemical fertilizers, and once you get that soil biology working for you, you can do some amazing things."

To help continue with learning and networking, Newcombe also attends the

National No-Till Conference in the U.S., every year. He says it's a great place to connect with other progressive farmers and listen to top-notch speakers on the subject. The other thing that's important when trying to reduce tillage and improve soil health is not to allow yourself to be swayed or influenced by those who say, "it can't be done that way."

"You know it can work, it's just a matter of finding a way to make it work on your operation with your own climate," says Newcombe. "We're a little more challenged in Canada than they are in the U.S. Midwest where they have a longer growing season and they can get cover crops in usually, but here we have to be a little more creative to get covers in before winter hits."

When it comes to no-till farming, the Newcombes were one of the first in the area to try the practice. There weren't

Continued on page 6



GROWING

Customer Service



ADRIANA PUSCASU, agr.
Expert Advisor since 2007

NORMAND DUPUIS
Ferme Normand & Robert Dupuis ass.
Montréal, Québec

Our team of Expert Advisors are in the fields, throughout the season, helping you get the most out of your crops.

Call our experts for great advice!

Eastern Ontario
Andrew Hodges
819 208-0787

Élise Vincent
613 894-5338

Eastern Townships and Montréal
Hicham Fram, agr.
514 771-3831

Montréal
Adriana Puscasu, agr.
514 770-2627

Laurentians
Valentin Baciu, agr.
514 208-6639

Central Québec
Guillaume Vincent
819 818-7853

1 888 427-7692
www.sgceresco.com



Ceresco
Growing soybean culture



many other farmers they could consult at that time, so they had to learn as they went along, finding the technologies available and adapting them to their situation.

“Once we were into no till, then we got into cover cropping and planting grain, and that’s all innovative,” says Newcombe. “There is information out there, but there isn’t a lot of local input to figure out how it works. You just have to figure out how to make it work on your own operation.”

They have invested heavily in upgrading the technology used on their farm, including RTK guidance, yield monitors, variable-rate seeding capabilities, Green-Seeker technology and variable-rate fertilizer. Newcombe says they’ve also added swath control on their planters and their sprayers, along with a hydraulic down-force sensor on their new corn planter. Additionally, they’re using yield monitor data to map the various zones in their fields and manage accordingly.

Asked how things have changed in the years since he won the Young Farmers award in 2003, Newcombe says the technology has certainly changed. He’s doing things now that he wouldn’t have dreamed possible 13 years ago. The outlook on farming has changed considerably, as well.

“You know it can work, it’s a matter of finding a way to make it work on your operation with your own climate.”

**— Brian Newcombe,
Cornwallis Farms**



“Margins are getting tighter so you have to start looking at where you put your investment dollars, the equipment you want to invest in and what kind of inputs you want or cut back on,” says Newcombe. “Or you can grow your own inputs, whether it’s cover crops or green manures and get organic matter to help supplement the costs. You have to watch those dollars you’re investing and make sure you invest them wisely.”

In the Maritimes he has seen more farmers in the region adapting to more corn and soybeans in their rotations, and many are constructing their own grain-handling facilities and feed mills.

Farmers in the Maritimes are more likely to feed what they grow to their own livestock or poultry. There isn’t a lot of processing available in the region.

Newcombe acknowledges there’s a rich diversity across much of the three provinces, particularly in the Annapolis Valley, where they can grow most of the same crops as southern Ontario.

“There are other areas of Nova Scotia that just don’t have the microclimate and heat that we do in the Valley,” he says. “You don’t realize how diverse our cropping is, depending on what area of the Maritimes you’re talking about. But our soils and climate here are as good as anything in Quebec or Ontario.” **SG**



This Moment is Golden

We are soybean experts.

PROSeeds
SEVITA INTERNATIONAL

proseeds.ca



You've known PROSeeds as leaders in Identity Preserved (IP) soybeans. We now offer a full line-up of traited soybean seed, meaning greater flexibility in weed control. This line-up includes Genuity® Roundup Ready 2 Yield® and Roundup Ready 2 Xtend™ herbicide tolerant traits.

Roundup Ready 2 Xtend™ varieties are tolerant to dicamba and glyphosate, giving you consistent, flexible weed control. That means greater value and more choice for our growers.

Talk to PROSeeds about our complete soybean line-up and let us help you create golden moments on your farm.

Always follow grain marketing and all other stewardship practices and pesticide label directions. Details of these requirements can be found in the Trait Stewardship Responsibilities Notice to Farmers printed in this publication. Genuity®, Roundup Ready 2 Xtend™, Roundup Ready 2 Yield®, Roundup Ready® and Roundup® are trademarks of Monsanto Technology LLC, Monsanto Canada Inc. licensee.

Grow soybeans like corn

Increasing your management intensity with extra attention to weeds, pests, uniformity and canopy closure

By Ralph Pearce, CG Production Editor

Proponents of big yields often make the same observation. Whether it's in corn with American record holders Francis Childs or Herman Warsaw, or it's in soybeans, with Dr. Gary Ablett at Ridgetown Campus once pegging our potential soybean yield at 250 bu./ac., the talk always turns to "attention to detail."

Yet what confounds Eric Richter is that so many growers pay more attention to their corn crops than they do their soybeans. It's also why changing the management mindset on soybeans has become a focal point in his recent work with growers.

Richter is a sales agronomist with Syngenta, and *Country Guide* has written previously about his approach. For this *Soybean Guide*, we talked to him to explore five more parameters that continue to confound many growers.

Overall, Richter contends there is a lack of intensity when it comes to growing soybeans. Not necessarily intensity in terms of higher levels of inputs, but in terms of the intensity of management skill applied to soybean production, including scouting and awareness of what's happening in the crop.

Indeed, Richter is convinced soybeans are actually the more challenging crop to grow. Yet he also feels many growers are skeptical that anything they do will reliably boost their yields.

"Growers might ask why they're pouring good money after bad, and that's unfortunate," says Richter, who's brought much of what he learned working in forages into the soybean sector. "The 'good money after bad' scenario becomes a self-fulfilling prophecy."

Where some insist that corn yields have outpaced soybeans, Richter states that research data from tests under a high-management system where genetic potential is assessed indicates soybean yields are increasing at roughly the same percentage rate as corn.

Yet those same practices aren't always employed at the farm level. Theoretical yield for corn is 500+ bu./ac., with an on-farm provincial average of 170 bu./ac., meaning the crop actually achieves more than 30 per cent of its theoretical yield.

In soybeans, if the theoretical maximum is 250+ bu./ac., actual yields of 45 to 48 bushels are less than 20 per cent.

HIGH, MEDIUM AND LOW

Something else that isn't well understood is how to shift management to a high-, medium- and low-zone approach. Even though a precision agriculture system can help a grower manage a field in increments of feet or inches, Richter maintains it's easier to keep things simple. That means recognizing that each field will have areas that are high-producing potential, medium potential and low, mainly due to soil factors such as organic matter levels, water-holding capacity, cation exchange capacity (CEC), and other parameters that will determine inherent productivity potential.

Within that overview Richter addresses four key components of improving soybean yields through intensive management: weed management, canopy closure, disease management and uniformity of stand. Each can have different subheadings and influences, but make no mistake: each has taken on greater importance in this "just enough" era in managing soybeans.

Have soybeans become the crop that's regarded as being able to take care of itself? It's capable of fixing its own nitrogen and has a reputation for yield consistency (hardiness). (For example, how soybeans can suffer a 40 per cent loss of a stand and still reach a 90 per cent of yield index.)

But Richter says, "that this belief is part of the problem.

"I say it over and over again: the ability of a soybean plant to tolerate stress and still deliver a harvestable crop is amazing,"

he says. "With soybeans at 45 bu./ac., it pays the bills but there's not much left over. Is that where we want our growers to be, or growing the best crop possible? Well, 45 isn't anywhere close to that."

In order to push production levels, growers need to shift their focus from bushels per acre to impact on yield as a percentage. Richter cites a five per cent response, and positions it within that high-, medium/middle- and low-zone approach, where highs are 75 to 80 bu./ac., mid-yield zones are 55 to 60 and the lows are about 40 bu./ac.

This means a five per cent increase is 4.0 bu./ac. in the high zone, 3.0 bu./ac. in the middle and 2.0 bu./ac. in the low management zone. From the low to high zone is a 100 per cent difference, and in Richter's book, that yield increase is extra money in a grower's pocket.

WEED MANAGEMENT — THE EASY TARGET?

When Dr. Clarence Swanton introduced the concept of the critical weed-free period in corn in the early 2000s, the effect was incredible. Seed companies lauded the research and growers slowly began to follow Swanton's lead, at least where spring planting and weed management strategies were concerned. When Swanton updated his work in 2014, it provided further insight into the way weeds can affect corn, even while the seed is still below surface.

At the same time, there's been less of a focus on the critical weed-free period in soybeans, even though the soybean plant's shorter stature is liable to be affected to a greater extent during the vegetative period. It can be argued that if a corn seedling is affected by an emerged weed seedling of the same height, it's likely a similar situation for a soybean seedling.

To Richter, the manner in which weeds interact with corn or soybeans during the grain-fill period is radically different. In most cases, he says, advisers recommend



Canopy closure leads to better weed management, uniformity of stand and ultimately better yield.

“The biggest challenge for those growers is to close canopy and build a large enough plant factory.”

— Eric Richter, Syngenta

and growers try to control weeds in corn during that critical weed-free period, so the corn plant experiences its massive growth spurt and it will often canopy over any late-season weeds so they won't significantly affect yield.

“I would say that's not true with soybeans,” adds Richter. “If we have those weeds that break through the canopy and tower above our soybean crop during the bean-fill period, they're impacting yield in a very negative way.”

In fact, Richter and his colleagues with Syngenta have been recommending to many growers that to manage weeds in their corn crops, they should consider a two-pass system, where they're doing an application as a pre-plant incorporated (PPI) followed by an in-crop post application. In soybeans, more growers who are using herbicide-tolerant varieties are also using a herbicide with residual activity with their burn-down. He believes that to be a positive step in terms of managing more of the weed species in the field.

In this way, weed management relates closely to canopy closure, an event during the growing season which Richter insists must occur early in order to maximize yield and full genetic potential of the soybean crop. In 2016, many growers made a switch in row width — from 15 inch to 30 inch. The move was expected to help reduce the severity of white mould, which

has become an issue for more farmers in southern Ontario in the past two or three years, and is now a perennial headache in eastern Ontario. What growers didn't count on was the early-season drought across much of the province. In many cases, that shift to 30-inch rows cost them, not only in yield, but in terms of weed management, where failure to close the canopy led to weed escapes and the potential for those added flushes to set seed and contribute to the soil weed-seed bank for subsequent years. Although it's impossible to predict drought, the decision to widen rows will likely have an impact on weed management well into 2017.

This is also where canopy closure is often underestimated: it encompasses at least three different parameters — and likely more — in its breakdown. Row width (and the favoured “W” pattern across a field), plant type (thin or bushy), and seeding rate are all closely related to canopy closure and its impact on yield. Richter cites 15-inch rows as the most popular choice across much of Eastern Canada. A small percentage of provincial area is planted on heavier clay and lower organic matter sands, necessitating 7.5-inch widths. The balance of the soybean acreage — spread across the province, including eastern Ontario — employs 30-inch row widths. In many cases, this

row-width strategy is twofold: first to maximize planting equipment efficiency and also perhaps as a means of mitigating the effects of white mould.

“For years we have said as an industry that as long as you have ‘X’ thousand plants per acre, you won't have to do a replant, and that number's been approximately 100,000,” says Richter, adding that he's been part of that chorus. “What I've learned recently is that statement has misled many growers. On those heavy clays and low-organic sands — where they are typically planting with 7.5s and 15s, if they're counting and getting an average of 100,000 plants and not replanting, they take a huge yield hit because the crop will not close canopy quickly enough, if at all. The biggest challenge for those growers is to close canopy and build a large enough plant factory.”

A unique way to assess canopy development is the “W” canopy. At 7.5 inches, it's unlikely a grower can see that “W” at field level. The crop tends to be too thick and there isn't that trough-like character to the profile, which often leads to lodging, particularly if the crop is seeded too heavily.

In 15-inch rows, as well as 18s, 20s and 30s, the “W” should be apparent, and Richter states that's a good thing to see. For the majority of soybean growers, medium-row width — 15s to 20s — will optimize yield. It will close canopy and with the right population, will maximize yield. With 30s, he says, it takes a very special situation with healthy soils in a high production zone to make that row width work.

“We often say that soybean is the first crop to truly show that you have a major soil health problem,” says Richter. “Your yield flatlines and you just can't seem to move yields forward, even if you put more fertilizer on. These are key indicators that growers are suffering with poor soil health.”

Another factor within canopy closure is plant type. Here the concern is the different plant types for soybeans, from slender or thin-line plants to full-bush, wide-row beans. There are also height classes but it's usually more of the branching characteristics that are cited in canopy closure.

“If we're trying to control white mould with 30-inch rows and keeping population to about 150,000, and yet plant without knowing that we're planting a variety that's

Continued on page 10

more to the slender side, the odds are we won't canopy," says Richter. "And yes the odds are we probably won't have much white mould, and your yield will be okay. But the slender plant type in a 30-inch row won't maximize yields."

Finally, on canopy closure, the adage "seeding rate trumps row width" is another important factor, particularly for growers planting in narrow to medium row widths. In comparing 7.5s to 30s, seeding rate may not entirely trump row width, but within 7.5, 15, 18 and 20 inch, the impact that population can have — from the W-shaped canopy, optimizing the leaf area and finding "the sweet spot" — seeding rate is really the one that does it.

There is a part of the discussion that surrounds planting date, and in most cases, that does have an impact, where the earlier it's planted, generally, the more orderly emergence can take place, then canopy closure and moving in a positive direction towards the reproductive stages. If you plant early with 30-inch rows and use a slender plant type, it likely won't matter, because canopy closure is going to be a big challenge with that plant type.

"Look at what we've learned from the double-cropping practice, where canopy closure at R1 is not possible in medium to wide row configurations," says Richter. "Even 15s won't see a canopy closure at R1, so in a double-cropping year, 7.5s must be the row width."

BETTER PEST CONTROL

In spite of all that's known about pests and diseases, it is shocking to contemplate the impact of soybean cyst nematode (SCN). In fall 2015, Syngenta started a Clariva PN promotional travelling road show to get growers to bring soil samples, do a quick test to determine the presence of SCN, and if it was present, to send that sample on to A&L Canada Laboratories for confirmation of SCN races.

There are two primary sources of resistance in the fight against SCN: PI 88788 and PI 548402 (the "Peking" gene). PI 88788 is the primary source of resistance in roughly 95 per cent of soybean varieties in North America. The Peking source accounts for most of the remaining five per cent with a third source — PI 437654 (Hartwick or CystX as they're known) unavailable in any commercial varieties currently in use.

That near-total reliance on a single source of resistance is creating potential increased susceptibility when the same variety is planted back to back to back in



Dry conditions created many challenges for growers in 2016, particularly with weed management.

the same field, or in tighter rotations with just corn and soybeans.

"As a result, with poor genetic rotation and overall tight cropping rotations, we're encouraging the cyst to adapt and select for the races that are not currently controlled with the genetics in use," says Richter, also pointing out that it's difficult to shift resistance sources. "The challenge that we have is that SCN resistance sources have a strong correlation between gene sources and yield. When SCN-resistant varieties were first introduced in the 1990s, those varieties had a yield lag."

There are still fields in Ontario that have no detectable levels of SCN and the onus is on those growers to keep things that way. At the same time, there are now fields across much of western Ontario with high rates, some of which have only been detected in the past two years. Yet these fields have shown signs of having been host to the pest for up to 10 years.

That's the issue with SCN: many farmers deny they have it, in spite of symptoms and the available tools to deal with the pest, including different varieties and new seed treatments. And that's why Richter believes his company's SCN road show is such a positive move — it takes the identification process right up to the farmer's front door.

UNIFORMITY OF STAND

Last on the list is uniformity of stand, which is closely linked to the "picket-fence" stand, a common term in corn production. In soybeans, it's still important and is a favourite topic of Richter's.

In cornfields, agronomists, advisers and dealers have used the picket-fence image to highlight the uniformity-of-stand concept. In particular, there are three important aspects: diameter (of the stalk), the spacing between stalks, and ear placement and size.

The diameter provides an indication of emergence, intra-row spacing is an indication of uniform seed spacing and the ear placement and size provide some idea of uniformity of plant growth. It's best if the ears are all located along the same plane within the row. The best cornfields have a uniform appearance.

In soybeans, there hasn't been that same emphasis on uniformity of emergence or spacing. Again, if a grower is happy with 45 bu./ac. yield, picket-fence stand (or its counterpart in soybeans) likely won't matter. The industry standard response has been, "As long as you have at least 100,000 or it's roughly uniform, don't worry about it."

Yet Richter is focused on picket fencing in soybeans. While it's true soybeans have a tremendous compensatory power, he says, if soybeans aren't emerging at the same time, you get into that "runt of the litter" syndrome, and that leads to lost yield.

What's truly surprising is that other industries have adopted the uniformity-of-stand principle as an important factor in performance and production. Richter points out that the horticulture sector and forest industry have acknowledged the value of uniform emergence and stands. Syngenta has documented this effect using what's known as micro counts measuring in one-foot increments. For example, in spite of an average of 150,000 plants per acre, final population in some growers' soybean fields, it's been determined that in some places within those fields, the populations can vary from 220,000 in some parts to less than 150,000 in others.

"Where do we see this? With growers who use drills or planters with bean cups, or those with the wrong plate," says Richter. "These are where the uniformity of stand and the uniformity of spacing can be compromised in soybeans." **SG**



Dow AgroSciences

Dow Seeds™

OUR PROMISE:

Leading-edge soybean varieties
for your conditions.

YOUR PERFORMANCE: A crop you can be proud of.

The awe-inspiring performance of Dow Seeds soybeans is the result of innovative technology backed by unmatched service. Our expert Seed Partners can help you pick the varieties and precise traits for your conditions. We call it Customer-First Technology. It's why Dow Seeds soybeans may be the best there are. See the results of head-to-head challenges at dowseeds.ca.

Talk to your Dow Seeds Seed Partner today.

dowseeds.ca

@DowSeedsCA

Solutions for the Growing World

™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.
1016-51004-6 CGE



Get them in early

If done right, planting soybeans early can boost yields

By Helen Lammers-Helps

When farmers first began growing soybeans north of the border, the general recommendation was to wait until the May long weekend to plant. The advice was always to plant soybeans in your best field on the best day, and even then to cross your fingers.

Since then research has consistently shown a yield benefit for earlier planting.

But that still leaves the question: What is the magic date for optimum yield? What factors come into play? And what are the risks?

We asked four agronomists to weigh in on optimum planting dates and management strategies for soybeans.

Horst Bohner, soybean specialist for the Ontario Agriculture Ministry, says it's very clear from his trial work that early planting is a good management strategy. Most recently, a multi-site trial with locations across Ontario carried out in conjunction with Monsanto from 2010 to 2012, showed a yield gain of 4.1 bushels per acre when longer-maturity soybean

varieties were planted in an early planting window compared to adapted soybean varieties planted in a normal window. In the study, the normal planting window was May 6 to May 20 and the early planting window was April 15 to May 5.

Ken Currah, a London, Ont.-based agronomist with Pride Seeds says research at Michigan State University has also pointed to an early planting advantage. Over a five-year period there, entries in a soybean high-yield competition showed a yield loss of 0.4 bushels per acre per day for planting after May 7. On average the winning entry was planted on May 4, some 13 days before the lowest-yielding entry in the competition.

This makes sense when considering the physiology of soybeans. The goal is to get as much vegetative growth as possible by the summer solstice, explains Currah. The more nodes, the more flowers and pods will be available to fill, and hence the more yield potential, he explains.

Bohner agrees. "Ideally you want to get to the fifth or sixth trifoliolate before flowering."

While many larger-acreage farmers are now planting corn and soybeans simultaneously, Adam Pfeffer, a Monsanto technology development representative based in southwestern Ontario who worked with Bohner on the soybean planting date trial, isn't sure farmers have got the message about switching to a longer-season bean variety.

As a result, farmers are missing out on potential yield, says Pfeffer. If you aren't coupling a longer-season variety with the earlier planting, the soybeans will mature too early and you'll miss out on some yield, he explains.

Currah says some farmers are conservative with maturity dates because they are concerned that soybeans won't be ready on time in the fall, especially if they are following the beans with winter wheat. However, Ontario research shows that increasing the days to maturity by three days only delayed harvest by one day.



According to a three-year trial across multiple locations by OMAFRA's Horst Bohner, early planting can boost yield by as much as 4.1 bu./ac.

Unlike corn, soybeans are photosensitive, says Currah. “This means the beans sense day length and they shut themselves down,” he says. By comparison, corn is linear and needs a predetermined number of heat units to mature.

The early planting strategy only applies if the ground is fit and if it’s a reasonable planting window. While it’s impossible to nail down an exact date, Bohner says as a general rule, in southwestern Ontario, the early window would be the last week of April and first week of May.

“I don’t suggest planting on the fifth or 10th of April,” Bohner says.

And while time constraints are an issue as growers try to cover more acres, it’s critical to wait until the soil is ready. This can be a particular problem for no-till growers when planting soybeans following corn. With corn yields climbing 20 to 30 per cent in recent years, there is also more corn residue and as a result soils tend to be wetter in the spring, especially clay soils, says Pfeffer. “There’s a lot of frustration with cornstalks. Many farmers are still trying to figure out a residue management system,” he says.

This delay has prompted some farmers to till following a corn crop. The yield boost from planting early can offset the extra cost of tillage, says Paul Sullivan, an agronomist in eastern Ontario who sees a similar advantage for early planting in his part of the province. “Farmers see a 10-bushel difference between planting May 1 and June 1,” he says.

Sullivan agrees that soil conditions are important for successful early planting of soybeans, but he adds that often conditions are actually better earlier in the season. “If the soil dries out, it’s hard to get the seed in the ground or, if it rains, the soil often doesn’t dry out well again,” he says.

Currah says planting before the soil is fit is more trouble than it’s worth. This is especially true with a short crop rotation where soybeans are grown more often and disease pressure is higher.

Part of being fit is having a minimum soil temperature of 55 F, Bohner cautions.

“Soybeans don’t do much until the soil is at least 60 F,” agrees Currah. The crop is also very prone to cold shock, especially if there is a cold rain in the first few days after planting.

Soybeans take up 60 per cent of their



Ideally, flowering should occur at the fifth to sixth trifoliolate.

weight in water, which is double the rate of corn, he explains. “The temperature of that first water that the seed imbibes is really critical,” he says.

Bohner says he witnessed this effect in 2016 when soybeans, which were planted before a cold rain in mid-May that was followed by a cold spell, needed to be replanted.

Early planting of soybeans is not without risk, especially the risk of frost damage. However, the window for frost damage is not the same as for corn, says Currah. Soybeans tend to be more frost-damage prone in the early days after emerging from the soil but less susceptible as the second and third trifoliolate appear, whereas corn is more frost tolerant early on before the growing point emerges.

For success with early-planted soybeans, following good management practices is critical. Seed treatments are a must, says Bohner. His research showed the average yield gain from using a seed treatment was 1.2 bushels per acre across all planting dates and sites.

Planting depth is another important consideration. When planting early into moister, colder soils, Bohner recommends using a shallower planting depth. When planting later in the season into warmer, drier soils, he recommends using a deeper planting depth.

Farmers can see a boost in yield at no extra charge, if they plant soybeans early and follow recommended management techniques. However, this practice does come with risks and farmers should be prepared to potentially have to replant. **SG**

A large pile of gold coins is the central focus, filling the foreground and middle ground. The coins are stacked and scattered, with some catching the light. In the background, a white door is open, revealing a bright blue sky and a building outside. A shovel is stuck into the pile of coins on the right side. The overall scene is set in a barn with corrugated metal walls.

HARVEST A

• **GOLD MINE** •

OF EPIC PROPORTIONS.



#neverstopgrowing



A golden opportunity could be yours—
win up to \$25,000 in Pioneer® brand seed!

That's right. Seed for a Season is here with more prizes,
more ways to enter, and the best odds yet.

Purchase any Pioneer® brand corn or soybean product to
automatically be entered into the draw—plus, earn double
entries with DuPont™ Lumivia™ corn seed treatment.

Visit seedforaseason.ca or contact your sales rep for more details.

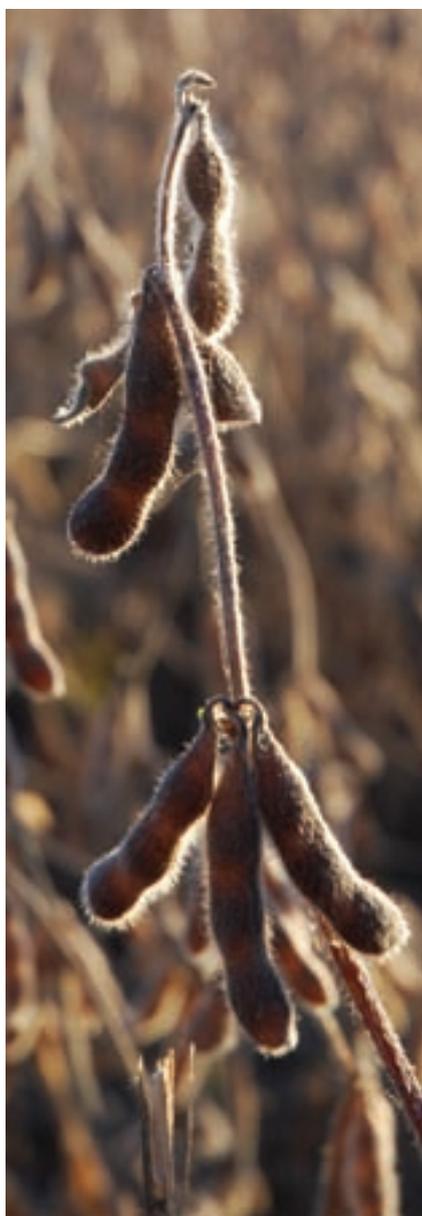
Limit: Maximum 500 entries per person regardless of method of entry. Odds depend on number of entries received. Prizes include account credit redeemable for purchase of any Pioneer® brand products for use on plantable acreage of a designated farm and based on farm size at the time of notification of winning. Twenty prizes (12 in ON and 8 in QC): each up to \$25,000 account credit redeemable by June 1, 2017. Account credit not transferable between farms; account credits end if farm operations on designated farm ceases. Details & Rules: www.seedforaseason.ca

Pioneer® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents.

Disease packages join newer herbicide-resistance technologies at the top of the value list

By Ralph Pearce,
CG Production Editor

What's new in soybean varieties for 2017?



Last year, the big news in soybean varieties could be summed up in one technological term: Xtend, which became part of the fall lineup for many of the seed companies. Canada's Outdoor Farm Show was abuzz with talk about Xtend, with demonstration plots aplenty, and all sorts of signage promoting the new system's platform, Roundup Ready 2 Xtend.

If there was one slight drawback, it was that many of the varieties that were promoted came with an asterisk denoting pending registration.

This fall is different. Xtend is obviously still a force in the industry, but many of the companies are focused this year on disease and pest packages, including soybean cyst nematode (SCN) and white mould, both of which are garnering increasing attention in parts of eastern Ontario.

Management of soybeans is getting more attention, and today's varieties must compete on technology, disease resistance, agronomics and plant characteristics.

In all, 10 companies are participating in our list of new technologies and new varieties for the 2017 growing season, featuring more than 75 new arrivals (some are varieties with very limited release in 2016). And you know the drill. Don't take our word for it. It's important to discuss your seed and cropping decisions with your dealer, agronomist or seed company representative.

BAYER CROPSCIENCE

LibertyLink — Using the LibertyLink soybean system helps manage glyphosate-resistant weeds. By rotating to the LibertyLink soybean system, the company says you get high-performing genetics coupled with powerful, non-selective weed control on glyphosate-resistant and tough-to-manage weeds, along with effective resistance management, since Liberty is the only herbicide with a Group 10 mode of action.

Balance GT — The Balance GT Soybean Performance System was developed through collaboration between MS Technologies and Bayer CropScience. Created using high-yielding, elite soybean genetics, Balance GT promises exceptional performance coupled with outstanding weed control.

Balance GT soybeans are tolerant to both glyphosate and isoxaflutole, the active ingredient in new Balance Bean herbicide. These two chemistries will ensure protection against a variety of weeds, with exceptional performance against both broadleaf weeds and grasses, including difficult-to-manage weeds such as eastern black nightshade, waterhemp and ragweed. Glyphosate can be used to combat weeds on contact while Balance Bean herbicide, with its unique reactivation feature, will continue to provide control from application through canopy closure.

Balance GT soybeans will be the first step in a foundational system that will grow to include a triple-stacked herbicide-tolerant soybean, providing tolerance to glyphosate, Balance Bean and Liberty (glufosinate).



COUNTRY FARM SEEDS

CFO7LL is a LibertyLink variety for the 2600 CHU region and the maturity group (MG) of 0.5. The LibertyLink technology provides a novel mode of weed control, plus excellent early-season emergence and vigour, with very good lodging and standability, a good disease package.

CF2707Xt is a Roundup Ready 2 Xtend soybean variety suited to 2700 CHU regions. This is new technology from Country Farm Seeds and a great fit for all soil types, with excellent standability and outstanding phytophthora resistance.

CF3172Xt is another Roundup Ready 2 Xtend soybean variety, this one for the 3175 CHU areas and with a maturity group rating of 2.4. Again, this provides growers with the convenience of the Roundup Ready and Xtend system along with good early-season vigour, good phytophthora field tolerance and a tall, robust and bushy plant style.

CF3207Xt is the third of four new Roundup Ready 2 Xtend varieties. It's suited to the 3200 CHU zone with a maturity group rating of 2.5, plus excellent emergence and standability, great disease resistance including phytophthora and brown stem rot. It grows to a medium plant height with a slender profile for narrow rows.

CF3256Xt is a Roundup Ready 2 Xtend variety with an MG rating of 2.7. It is suited to the 3250 CHU area and offers a great disease package, including SCN protection, plus good early-season vigour. It also provides high yields on clay-type soils.

DEKALB

22-61RY is suited to all soil types and row widths and it has excellent emergence and very good standability. This variety has a very good phytophthora root rot tolerance and aggressive growth, making it a great fit for tougher growing conditions.

DKB005-52 is a medium-height variety with excellent standability, white mould tolerance and phytophthora root rot tolerance. It is well suited to all soil types and row widths and is resistant to SCN.

DKB008-81 offers a strong agronomic package and excellent standability. Well suited to all row widths and soil types, this variety has excellent white mould tolerance and very good phytophthora root rot field tolerance.

DKB01-11 is a medium-height variety with excellent emergence and standability. This variety grows well in all soil types and row widths and even likes high-fertility situations. It is resistant to SCN and has very good tolerance to white mould and very good field tolerance to phytophthora root rot.

DKB04-41 has very good emergence and excellent standability. Not only is it well suited to all soil types and row widths, but it also has a strong disease package with excellent white mould tolerance and phytophthora root rot field tolerance.

DKB06-61 offers farmers SCN resistance, very good field tolerance to phytophthora root rot and very good tolerance to white mould. It is better suited to heavier soil types and no-till systems, and has excellent emergence and very good standability.

DKB09-91 is a tall variety that grows well in wider rows and lower populations. It has excellent emergence and very good standability, plus a very strong disease package with resistance to SCN and excellent field tolerance to phytophthora root rot.

DKB10-01 is a variety with a very strong disease package. Namely, it is resistant to SCN, has the Rps 3a resistance gene and a strong field tolerance to phytophthora root rot and very good white mould tolerance. This variety has very good emergence, seedling vigour and standability. And it works well with no till and tougher growing conditions.

DKB14-41 comes with a very strong trait package, including SCN, brown stem rot, and sudden death syndrome (SDS) resistance. This variety has excellent white mould tolerance and very good phytophthora root rot field tolerance. It has excellent emergence and very good standability and is well suited to all soil types and agronomic systems.

DKB20-01 offers farmers SCN resistance, excellent field tolerance to phytophthora root rot and SDS and very good white mould tolerance. This variety is suited to all soil types and row widths.

DKB21-11 is a medium-height, branchy variety with very good emergence, seedling vigour and standability. This variety is well suited to all soil types and row widths and is resistant to SCN, with a good package for SDS and phytophthora root rot.

DKB22-21 is a variety that is resistant to SCN and has very good field tolerance to phytophthora root rot. It is also moderately resistant to SDS and has excellent white mould tolerance and can be grown in all soil types and row widths, having excellent emergence and standability.

DKB24-41 works well on heavier soils and in no-till systems. This variety has very good emergence and standability with a strong disease package, being moderately resistant to SDS, resistant to SCN and very strong against phytophthora root rot.

DKB26-61 is a tall variety with excellent no-till adaptability. It's suited to all soil types and row widths and has excellent emergence. This variety has an excellent disease package, with the Peking resistance source for SCN and very good white mould and phytophthora root rot field tolerance.

Continued on page 18

DKB28-81 excels in all soil types, tillage systems and crop rotations. Its very strong defensive trait package includes SCN, SDS and brown stem rot resistance. This variety also has excellent white mould tolerance and very good phytophthora root rot tolerance.

DKB32-21 is a full-season variety that yields very well in no-till situations. This is a tall variety, well suited to all row widths and soil types, with a good disease package and resistance to SCN.

DOW SEEDS

DS0067Z1 is a new 2450 CHU variety with Roundup Ready 2 Yield technology. Strong emergence and good resistance to phytophthora root rot combine to provide good stand establishment, with medium-short plant height, medium canopy and a black hilum. Trials show excellent yields for an early variety.

DS032R1 is another of Dow Seeds' nine varieties with Roundup Ready 2 Yield technology. Its hallmark is an early soybean (2625 CHU) with very good emergence and excellent lodging tolerance and good phytophthora tolerance via the Rps1k source.

DS038A1 is a Roundup Ready 2 Yield soybean variety, also suitable for the 2625 CHU area. This variety offers an excellent disease tolerance package, including SCN resistance and very good Rps1c source phytophthora resistance.

DS064Y1 is suited to the 2700 CHU region, and is another of the Roundup Ready 2 Yield soybeans. It also provides resistance to SCN and other diseases, with consistent yields across all environments. Of the Roundup Ready 2 Yield varieties from Dow, this brown hilum variety has the highest rating against brown stem rot — an 8.5.

DS124U1 is Dow's Roundup Ready 2 Yield variety suited for the 2850 CHU region. This is an extremely attractive line with good disease tolerance and Rps1c resistance to phytophthora. It is also adaptable to all soil types.

DS177P1 is a Roundup Ready 2 Yield variety best suited to the 2975 CHU region, with tolerance to SCN plus Rps1k source tolerance to phytophthora. Also on its list of attributes are excellent emergence and lodging tolerance, with an overall strong agronomic package.

DS215Y1 is for the 3050 CHU area and with Roundup Ready 2 Yield technology. It also has Rps1c resistance to phytophthora and a 7.5 rating on

white mould, plus strong resistance to SCN. It's an attractive short plant with good lodging resistance and excellent yields in high-yielding environments.

DS244N1 is a Roundup Ready 2 Yield soybean variety bred for the 3175 CHU region. It features good emergence and standability, as well as a good disease package, including resistance to SCN. It is an excellent performer on lighter, well-drained soils.

DS268V1 is a Roundup Ready 2 Yield variety that scores an 8 rating on white mould, performs well against SCN, and carries the Rps1k source for phytophthora. Among its features are dominant yield performance and an 8.0 on brown stem rot.

DUPONT PIONEER

P005T13R (R) is a very early variety rated at 2400 CHU, with very good field emergence and harvest standability. It contains multi-race phytophthora resistance via the Rps1c gene, and grows to a shorter plant with a moderate canopy.

P08T96R (R) is a new glyphosate tolerant, 2725 CHU variety that combines top-end yield performance with strong agronomics, along with medium white mould tolerance and multi-race phytophthora resistance via the Rps1c gene. Highly suitable for no-till seeding. The company says this is a variety to watch.

P09T29X (RR2X) is a new early Genuity Roundup Ready 2 Xtend variety rated at 2750 heat units with very good field emergence and above-average harvest standability. It contains multi-race phytophthora resistance via the Rps1c gene plus built-in SCN resistance.

P10T41X (RR2X) is a new early Genuity Roundup Ready 2 Xtend variety rated at 2750 heat units, with built-in SCN resistance and multi-race phytophthora resistance via the Rps1c gene. It has very good field emergence and above-average harvest standability.

P10T48R (R) is a high-performing variety with solid agronomics rated at 2775 heat units. It is glyphosate tolerant with very good field emergence and above-average harvest standability. Also, it offers multi-race phytophthora resistance via the Rps1c gene in a shorter plant height with a moderate canopy width.

P19T39R2 (RR2Y) is a new 3000 CHU variety with the Genuity Roundup Ready 2 Yield trait and built-in SCN resistance (P188788). Average white mould tolerance. This is a taller variety with a wide

canopy and would be an excellent companion variety to Pioneer brand P19T01R.

P22T24X (RR2X) is a new early Genuity Roundup Ready 2 Xtend variety rated at 3075 heat units. It has built-in SCN plus multi-race phytophthora resistance via the Rps1k gene. With very good field emergence and harvest standability, this is a good option to help growers manage glyphosate-resistant weeds.

P24T84X (RR2X) is another new early Genuity Roundup Ready 2 Xtend variety rated at 3125 CHU. Bringing very good field emergence and harvest standability, it contains multi-race phytophthora resistance via the Rps1c gene plus built-in SCN resistance.

P28T62R (R) is a full-season glyphosate-tolerant variety rated at 3225 CHU, with sound agronomics. It also has an excellent disease resistance package including built-in SCN resistance (Peking source) and multi-race phytophthora resistance (Rps1k and 3a). Also noteworthy is its exceptional field emergence, making it suitable for early planting.

P28T71X (RR2X) is a new Genuity Roundup Ready 2 Xtend variety with very good field emergence and above-average harvest standability. It contains multi-race phytophthora resistance via the Rps1c gene along with built-in SCN resistance.

P31T52X (RR2X) is a full-season Genuity Roundup Ready 2 Xtend variety with multi-race phytophthora resistance via the Rps1c gene and built-in SCN resistance. Very good field emergence and above-average harvest standability.

P33T19X (RR2X) is a full-season Genuity Roundup Ready 2 Xtend variety rated at 3350 CHU. It contains multi-race phytophthora resistance via the Rps1k gene along with built-in SCN resistance. The variety also offers very good field emergence and exceptional harvest standability.

ELITE SEEDS

2017 is a year of introductions for Elite. Three early varieties are introduced in the wake of Akras R2. They are Lono R2, Podaga R2 and Hydra R2. Lono R2 will bring top yield potential for the very early zones, while Podaga R2 has yield stability and finally Hydra R2 will impress with its record-setting yield potential. Kultana R2 brings strong root health to the maturity Group 1 zone. Four new Xtend varieties also make their debut and are certain to impress with their superior weed-control system and top yield potential.

MAIZEX SEEDS

RX Kodiak, rated for 2700 CHU/0.6 RM, are Roundup Ready 2 Xtend soybean seedlings that have impressive vigour with excellent early-season disease tolerance. Plants are medium plant height and they branch well, making them suitable for narrow and wide rows. RX Kodiak has resistance to SCN and average tolerance to white mould. These soybeans have proven to perform well in reduced tillage scenarios.

RR2 Atlas, a Genuity Roundup Ready 2 Yield variety, suited for 2750 CHU/0.7 RM, comes with industry-leading disease tolerance and aggressive seedling vigour combined with phytophthora field tolerance. They establish early and close the canopy well. Plants have medium height and a semi-branched canopy ideal for all row widths. They are also resistant to SCN and have very good tolerance to white mould.

RX Pinnacle, rated for 2975CHU/1.6RM, is a Roundup Ready 2 Xtend variety with defensive traits ideal for stress. This variety also offers very good field phytophthora tolerance, leading to seedling vigour and above-average stands under tough conditions. Plants are medium to tall with a semi-branched canopy ideal for narrow and wide row widths. RX Pinnacle has resistance to SCN and above-average tolerance to white mould. Position on heavier soil types for optimum performance.

RX Velocity is suited for 3150 CHU/2.3 RM. These Roundup Ready 2 Xtend soybeans give broadly adapted performance, in a medium to tall plant height with a branched canopy that is ideal for all row widths. Plants have resistance to SCN and very good field tolerance to phytophthora. At harvest, plants have excellent standability for ease of harvest. Can be positioned on all soil types.

RX Stamina is a Roundup Ready 2 Xtend variety, rated for 3150 CHU/2.4 RM, with very good disease tolerance for heavier soil types. Seedlings have aggressive growth habit to quickly close rows. RX Stamina has resistance to SCN, SDS and excellent field tolerance to phytophthora. Plants are medium height with semi-branched stature. This variety should be planted in heavier soil types for optimum performance.

RX Aspire, rated for 3200 CHU/2.7 RM, is another Roundup Ready 2 Xtend soybean. It gives dependable performance with defensive traits and medium to tall plant height with branched architecture. Plants have very good tolerance to phytophthora and resistance to SCN. Plants have excellent standability and late-season appearance. It should also be planted on heavier soil types for optimum performance.

RX Ballistic Roundup Ready 2 Xtend soybeans, rated for 3225 CHU/2.8 RM, offer robust performance under tough conditions. Seedlings have exceptional vigour with an aggressive growth habit which closes rows quickly. Plants are slender and tall. They also have very good tolerance to SDS and resistance to SCN. This variety does well in narrow rows on heavier soil types.

PRIDE SEEDS

PS 00095 R2* for the late 000 maturity group with the Roundup Ready 2 Yield trait presents an opportunity for very short-season growing areas. Best performance on narrow row widths with above-average IDC rating. Excellent late-season standability for ease of harvest. Ideally suited for 2150 to 2300 CHUs. Excellent white mould resistance and good field tolerance to phytophthora root rot. *Pending registration.

0077 XRN is a new Roundup Ready 2 Xtend soybean variety adapted for Eastern Canada, ideally suited for 2250 to 2500 CHU, with value-added SCN and phytophthora Rps1k root rot protection. Besides tolerance to dicamba and glyphosate herbicides, this variety has excellent agronomic and defensive traits to help maximize productivity. Exceptional emergence and early vigour should also be noted.

PS 0333 XRN is a Roundup Ready 2 Xtend soybean variety ideally suited to the 2500 to 2700 CHU areas. It also has SCN and Rps1c/1k phytophthora root rot



Continued on page 20

protection, has tolerance to dicamba and glyphosate herbicides and can adapt to all row widths. Excellent performance on clay soils and in no till have been shown with this new variety.

PS 0555 XRN is a Roundup Ready 2 Xtend soybean ideally suited to the mid 0 maturity market and 2550 to 2800 CHU areas. With value-added SCN and Rps1c phytophthora root rot protection and tolerance to dicamba and glyphosate herbicides, it has top clustering and unique orange/tawny pubescence.

PS 0610 NLL is an introductory LibertyLink variety ideally suited for 2600 to 2800 CHUs. It offers impressive yield expression for mid MG 0 maturity plus very good white mould resistance. Strong early vigour with bushy fill-the-row plants also have SCN and Rps1k phytophthora root rot protection. It offers a non-selective alternative to glyphosate-tolerant systems.

PS 1222 XRN is a new Roundup Ready 2 Xtend soybean variety for early MG I with high yield performance and strong defensive package for the 2650 to 3000 CHU areas. It offers protection to SCN, has the strong Rps3a phytophthora root rot gene and provides tolerance to dicamba and glyphosate herbicides.

PS 1304 NR2 is an impressive Roundup Ready 2 Yield trait introduction as an early MG I with high yield performance and strong defensive package for the 2700 to 3000 CHU areas. It has protection to SCN and has strong field resistance for phytophthora root rot. This variety shows strong emergence and early-seedling vigour with bushy fill-the-row plant type. It performs well in no till and heavy-residue soils.

PS 1666 XRN is an impressive Roundup Ready 2 Xtend soybean variety ideally suited for the mid maturity group I for the 2800 to 3000 CHU zone. With SCN and white mould resistance all in one package, it also has Rps1c phytophthora root rot gene. This variety has good emergence and early-seedling vigour as well as tolerance to dicamba and glyphosate herbicides.

PS 1710 NLL* is an introductory LibertyLink variety ideally suited for 2800 to 3000 CHU. It has impressive yield expression for early MG I maturity, plus excellent standability and very good white mould resistance. Strong early vigour with bushy fill-the-row plant type. It's a non-selective alternative to glyphosate-tolerant systems. *Pending registration.

PS 2020 XRN is a new Roundup



Ready 2 Xtend Soybean variety for early MG II that combines high yield potential with good agronomic characteristics in the 2900 to 3100 CHU areas. With protection to SCN and phytophthora root rot, very strong emergence and early-seedling vigour, this is a new dicamba and glyphosate-tolerant variety.

PS 2444 XRN is a high-yielding Roundup Ready 2 Xtend Soybean variety, ideally suited to mid MG II for the 2950 to 3200 CHU zone. It offers protection to SCN and phytophthora root rot, SDS resistance and provides tolerance to dicamba and glyphosate herbicides. Avoid fields with history of severe white mould pressure with this one.

PS 2555 XRN, a Roundup Ready 2 Xtend variety, is ideally suited as a mid MG II with solid agronomic traits for the 3050 to 3300 CHU areas. It protects against SCN and phytophthora root rot and provides tolerance to dicamba and glyphosate herbicides, along with strong emergence and early-seedling vigour.

PS 2666 XRN is an impressive high-yielding Roundup Ready 2 Xtend soybean variety for mid MG II with solid agronomic traits for the 3100 to 3300 CHU areas. With built-in protection against SCN and phytophthora root rot and providing tolerance to dicamba and glyphosate herbicides, these plants are taller and excel on clay soils and feature outstanding emergence and early-season vigour.

PS 2777 XRN, with tolerance to dicamba and glyphosate, is a Roundup Ready 2 Xtend soybean variety for later MG II with solid agronomic traits for the 3100 to 3300 CHU areas. It also has exceptional standability and protection from SCN and phytophthora root rot.

SECAN

SeCan is launching six new Roundup Ready 2 Xtend soybean varieties, adding to its complete lineup of Genuity Roundup Ready 2 Yield and conventional soybean genetics. Named after cars, Excursion R2X, Expedition R2X, Expo R2X, Flex R2X, Explorer R2X and Express R2X are now available, SeCan says, "to drive growers' weed control and yields forward in 2017."

Ranging in maturity from 2650 to 3175 CHU, these varieties combine dicamba tolerance with the yield potential, agronomic characteristics, and glyphosate tolerance that growers have come to expect from Roundup Ready varieties. The Roundup Ready 2 Xtend trait delivers an additional mode of action to manage early-season and glyphosate-resistant weeds.

SYNGENTA

S10-S1, rated for 2800 CHU, is a medium-height plant variety that brings top-end yield potential to a variety of environments within the 1.0 maturity zone. It boasts a solid agronomic package to help guard against in-season stress. S10-S1 has uniquely stacked Rps1k and Rps3a genes that deliver excellent protection against phytophthora, and also provide strong protection against SCN, iron deficiency chlorosis (IDC) and white mould.

S14-A6 is a medium-short 2850 CHU variety and fits well between the 1.0 and 2.0 maturity zones, offering exceptional yield potential with broad adaptability in a variety of soil types. This variety emerges very strong at the start of the season and has excellent field appearance. S14-A6 also features a solid, built-in SCN package and dependable phytophthora root rot tolerance. **SG**



EverGol[®]
Energy

Start your season right. Start with EverGol Energy.

EverGol[®] Energy seed treatment fungicide provides soybeans with protection against the most important seed and soil-borne diseases caused by rhizoctonia, fusarium, pythium, botrytis and phomopsis. It provides quicker emergence, healthier plants and higher yields for your soybeans.

Create the complete package of protection by combining the power of EverGol Energy with Allegiance[®] seed treatment fungicide for early season phytophthora, and Stress Shield[®] seed treatment insecticide for superior insect protection to help your soybeans thrive during critical early development stages.

Learn more at cropscience.bayer.ca/EverGolEnergy



cropscience.bayer.ca or 1 888-283-6847 or contact your Bayer representative.  @Bayer4CropsCA
Always read and follow label directions. Allegiance[®], EverGol[®], SeedGrowth[™] and Stress Shield[®] are trademarks of Bayer Global.
Bayer CropScience Inc. is a member of CropLife Canada.



Bayer SeedGrowth[™]

Dry weather weed control in IP soybeans

Weed control in IP soybeans is always a challenge. This year, it was nearly impossible... but not on all farms

By Amy Petherick

Good weed control in Eastern Canada's identity-preserved soybean fields this year appears to be just as patchy as the spring and summer rains, particularly in southern Ontario and parts of Quebec. Even Roundup Ready beans were slow to canopy in between rescue rains and required more in-season attention than usual.

Then, as crops headed toward harvest, the concern grew even bigger.

"A lot of the chemistries are water activated, so they didn't activate to a large degree, or they activated late," says Neil Batchelor, who covers central and southwestern Ontario for Sevita International. "Your old friends, lamb's quarters, ragweed, and sow thistle, they're all out there."

But most worrisome in IP beans, of course, is Eastern black nightshade. "Nightshade that never got picked up to begin with could be fairly advanced. It likes to hide. It really takes that good, earnest scouting program to identify it and get it taken care of," Batchelor says.

Farther east on the Ontario-Quebec border, where Andrew Hodges farms and works for Ceresco, the abundance of lamb's quarters is troubling. It seems to him that too much Pinnacle was sold this year to make sense of what he's seeing in the field. "It was dry, so the plant shuts down and doesn't absorb as well. Maybe when they sprayed it was too hot?" he muses. "Or is it because of resistance?"

On average, Hodges estimates farmers in this region probably applied 2-1/2 passes of herbicide control. Where producers were chasing grasses, they may have gone over with as many as five passes. "On a year like this, I would say grass is harder to control," he says.

Still farther east, Hodges' colleagues tell him Quebec farmers saw the same issues all the way to Saint-Hyacinthe. In the spring, Eragon seemed to work tremendously, but in the fall, it didn't seem to be holding on against horsetail and

does a very poor job on large grass. "I used Fierce on my own soybeans this year and the only issue I had was ragweed escapes on tilled ground," says Hodges. "On no-tilled ground, I had no escapes." Trying to get a handle on escapes with Reflex, and a whole lot of water, seemed to be the best thing to do on the tilled ground.

The only IP bean growers who also tilled and still got away with minimum field passes this year seem to be farming on Prince Edward Island, where IP production has been on the rise for the last five years. Harry VandenBroek, of Atlantic Soy Corp in Belle River, says cold weather in June and early July held the crop back at first, but the beans do appear to have capitalized on timely rains. Even though triazine-resistant weeds have found their way to the Island, most growers appear to have had good success using a pre-emergent program this year.

However, VandenBroek credits the weed control to more than fortunate weather conditions. Many of the weed control products he recalls farmers relying on when he worked in Ontario, such as Pursuit, aren't options for potato growers because of long-lasting soil residues. So farmers on the Island have become avid about crop rotation, growing their beans after potatoes, which often follow hay crops originally underseeded to cereals.

"When they're following potatoes, they have pretty good grass control," VandenBroek explains. Many growers will then apply a product like Valtera, strictly for pre-emerge broadleaf control. If for some reason they do have to go to a post-emerge, they're most likely to use Basagran + Pinnacle + Assure. "There are some issues here with mustard and goldenrod," he says.

Where perennial weeds are a recurring issue, and the predominant practice is conventional or minimum tillage as it is



Eastern black nightshade is a weed that seems to hide well, and requires diligent scouting.

“It’s critical to just about follow the combine with the sprayer, and maybe put a bit of a cocktail together like Roundup + Banvel + 2,4-D to get perennial weeds under control.”

— Barry Gordon of AgVise

in P.E.I., Barry Gordon of AgVise, an independent crop consulting company based near Hensall, Ont., strongly recommends controlling weeds in the fall. Gordon scouts for farmers who both till and no till a lot of IP beans and he’s seeing a lot of perennial sow thistle this year.

“We aren’t going to do any good spraying Roundup on a frozen sow thistle plant,” Gordon says, “so I think that it’s critical to just about follow the combine with the sprayer, and maybe put a bit of a cocktail together like Roundup + Banvel + 2,4-D to get perennial weeds under control.”

In a no-till scenario, come back in the spring a week before planting with Roundup and even consider including a broadleaf program, Gordon suggests. “Sometimes when you put that on a week before you plant, there is a better opportunity to get moisture to activate it than there is after you plant.”

When it comes to achieving good weed control, Gordon says it’s been his

experience that both no till and any kind of tillage can be a challenge. Getting those perennial weeds out before bringing in a plow can make a big difference, and sometimes he’ll see better control in those fields. “This year my guys who were on conventional tillage and who incorporated their herbicide into soil moisture seemed to have better control,” Gordon observes. “We had some great success with incorporating Boundary and Broadstrike; the only disadvantage is we can’t put Authority in when we incorporate.”

Having said that, Gordon has seen better weed control in a no-till system than conventional tillage many times before. “Conventional tillage will let the soil dry out, and if you don’t get a rain, it takes more water to activate fluffy ground than when you have solid ground,” he says.

Another critical piece of advice in 2016 was to scout 18 to 24 days after planting, no matter how dry it was in the region. “That’s when we seem to have an

opportunity to get weeds under control, when they are small and actively growing,” Gordon explains. “If I wait until I see a green patch in a field for escapes, I’m too late.”

Gordon says the cost of poor scouting during this time period is often an infestation of lamb’s quarters because, once they grow beyond an inch-and-a-half tall, it’s a real scramble to get any kind of effective cleanup program.

Scout early, scout often (meaning at least once a week), and seriously consider a third-party agronomy service for IP fields, advises Batchelor. “It’s pretty rare that those kinds of services don’t pay for themselves,” he comments. The professional advisers know which pattern weeds to flag early, allowing the opportunity to head off really prolific ones like ragweed and fleabane, for example. Later on, if they find a little volunteer corn coming up, “well, you pay the grandkids 25 cents an ear,” he chuckles.

Batchelor supports many of the same pearls of wisdom put forward by other agronomists, particularly the importance of adhering to crop rotation and chemistry rotation plans, but he also believes IP bean farmers would be wise to make use of multi-species cover crops as well.

“It makes sense to me in terms of the more variable root structures you have in the soil, and as a strong capture of a greater variety of nutrients that can be retained in the top eight inches,” Batchelor explains. “There is a lot more work to be done on it, but I can hardly wait to see what comes of that.” Instead of new chemistry, for him it’s easier to get excited about the potential contributions that cover crops can make to weed suppression. “Look at the ‘new’ chemistries that are coming out. Dicamba? How long has Dicamba been around? 2,4-D?”

Gordon, who started his career in the chemistry business, is equally dismayed by the apparent lack of progress in the IP market. But he’s not surprised either. “It’s almost like a new family of chemistry has to come on to the marketplace,” he says. “But there isn’t significant volume to offer a payback for the manufacturing company to bring it out.”

The fact is trying to control a broadleaf in a broadleaf crop will always be challenging using a chemical product, Gordon says. “We don’t have strong products as there are in say, wheat or corn. We never have, probably never will.” **SG**

A place for community data

“Mining data isn’t a substitute for doing actual research,” warns a seed company scientist

By Ralph Pearce, CG Production Editor

In the past five years, precision agriculture systems have begun providing an exciting opportunity to collect and pool data on factors ranging from yields to soil quality and beyond. Each data set offers greater insight into the characteristics of a field and its variability, or to its potential response to different treatments and management practices.

To get a sense of the power of this technology, just talk to dealers and systems specialists and see how they integrate it in almost every decision.

Yet to paraphrase the old saying, with great potential comes great responsibility. Just because a yield monitor or other GPS-based data-gathering system *can* produce huge stacks of numbers doesn’t mean that the numbers will actually be useful, or that they will open up any “quick-fix” capability.

It takes years of theorizing, researching and correlating data to fine tune management practices or to suggest changes to those practices. Farmers know what it’s like to engage in their own fact-finding process on their farms, tweaking and adjusting various aspects of their field management before making significant changes. Now, most advisers, retailers and company agronomists make the same recommendations, saying the long-term, total systems approach is best.

It’s why replicated data or multi-year results are more valuable than one-year data.

It’s against this backdrop that a trend is taking shape. In spite of advice to the contrary, more farmers are engaging in the use of so-called “community data.” It’s an amalgamation of results which is often inconclusive yet is used to change on-farm practices, in spite of any clear support to do so.

Last March, Dr. Mark Jeschke, agronomy information manager with DuPont

Pioneer in Johnston, Iowa, published an article with a cautionary tone regarding the use of community data (see “Further reading” for website). The piece focuses on the effect of community data versus trial data in decisions on corn-seeding rates only, and lists four shortfalls of community data while citing only one benefit to the practice.

CLARIFICATION

One thing that has to be made clear right from the start is the definition of community data. As Jeschke notes, he is not talking about on-farm trials where there are comparisons set up on a farm and across numerous locations, compiling data from those settings. That type of information gathering is very valuable, and companies perform those all the time.

In this context, “community data” means pulling in normal production data, where there aren’t any comparisons set up ahead of time. It’s where growers or dealers are mining what could be superficial data from the yield monitor, creating breakouts and recommendations based solely on that data in order to identify trends or differences in treatments.

“It was GPS and yield monitoring in the mid-1990s that really opened the door to this, to where you’re able to collect spatial data on fields for the first time, really,” says Jeschke. “What we’re seeing now — and this has been a long time coming — are improvements in that data handling and transfer capabilities that make aggregating data much more seamless than it has been in the past... it’s really starting to open up some possibilities to pull together large data sets in a way that we haven’t been able to before.”

Jeschke doesn’t want to sound like a naysayer when it comes to gathering community data and extracting value. Possibilities are starting to open up in that field,



Among the positives of using community or on-farm data, says Karon Cowan, there’s the opportunity to learn from one’s own farm data that’s appealing.

and there are positive things a grower can do with that information. It can be useful in identifying trends or generating hypotheses or pointing researchers in a new direction. But on its own, the use of community data can be misleading, unless it involves some degree of standardization of conditions in fields, in-season treatments or ground-truthing.

As always, the more and better the information that’s part of the pool of data, the more reliable it may be. Otherwise, it’s not recommended that growers try to draw any concrete conclusions just from mining data without the proper controls and parameters from the outset.

Using it to identify trends can yield some definite value, provided it’s measured against the appropriate context of actual research data or other information to ensure someone isn’t basing a recommendation on incomplete interpretation.

SUPERFICIAL RESULTS

Jeschke mentions a recent visit to a farm show where a farm network business had seeding rate data on display, citing a Pioneer hybrid among others, and he says it points to community data’s limitations.

“You have a large number of acres covering a range of different seeding rates,” he explains. “The fields planted to 30,000 seeds per acre are likely an entirely separate set of fields from those planted at 35,000 seeds per acre. The data sets have been pulled together and you don’t have any head-to-head comparisons of those two seeding rates; you only have one set of fields planted at 30,000 and another set of fields at 35,000. So it’s that fundamental limitation as to what conclusions you

can draw from that data, because you're not actually comparing those two seeding rates from the data you have. Also, you have no information as to whether or not the seeding rates used in any of the fields were actually the optimal rates for those environments."

Another example he cites involved one of his agronomists, who ran a series of research trials with 30 locations, half of which were treated with a fungicide and half were not. What can be determined from the data concerning the value of a foliar fungicide? Not much, says Jeschke, because it involves two separate sets of locations. The fungicide-treated locations were quite a bit higher yielding but they might have just been higher-yielding fields from the outset.

"It gives you something to start with but you can't really draw any conclusions from that," says Jeschke. "If you scale that up from 30 locations to 300, you have a lot more data, but you still haven't overcome that underlying problem where you don't have any head-to-head comparisons in the same environment."

Instead, in the case of Jeschke's agronomist, she had these locations where there was a tremendous difference between treated and non-treated fields, and that provides an opportunity to extrapolate other possible conclusions based on actual conditions. For instance, that particular year, northern leaf blight was a considerable problem, so there was a higher-than-average probability of seeing a yield benefit from foliar fungicides. And actual plant research trials in that area also showed a higher benefit.

"You can use that bit of information, and you can't draw any conclusions from it by itself, but putting it in a context of things that you know, it adds one facet to the overall story," says Jeschke. "But mining data isn't a substitute for doing actual research."

The overall concern is that there is a lot more data available, together with more players in the industry offering data services and trying to make sense of that information. It's an underlying trend that's also coinciding with a decline in university and even industry-based research investment in crop management (one of his motivators in writing the article).

"You have new players coming into the marketplace that are pulling together data — and we're seeing this already — and presenting it in ways where the inferences they're trying to draw from the data you

can't fundamentally draw the way they're trying to do it," says Jeschke.

MORE INFORMATION IS BETTER THAN LESS

As much as she agrees with Jeschke's statements concerning the need for standardization and a better understanding of scientific principles in research, Karon Cowan believes there is an overriding positive spin to community data: learning. As president of AgTech GIS, she's more familiar with the term "on-farm research," adding that it's been part of a trend she's noticed that promotes growers gathering and networking, or companies trying to aggregate data on behalf of participating growers.

"In a lot of cases, I don't know whether 'research' is even the right word but it's a learning opportunity, for certain," says Cowan, adding that "research" sounds better than "shared data" or "aggregated data." "The great thing about growers or groups of growers wanting to collaborate is just that — that they do want to learn and they do want to collaborate, and they do want to learn from each other. I think they're also very curious about 'where do I stack up?' So there are three things: one, we want to collaborate; two, we want to learn, and three, we're curious. Those are all the good things to come out of this — they're positive as are the effects."

Where the problems arise, she says, is when growers gather this information and then use it as a measurement. If you're going to call it research and have it truly be a yardstick, you have to define your yardstick. When data comes in and it's not calibrated or it's unbalanced or not set up according to some rigorous research standards, then it's not a very good yardstick.

Again, those three traits — to collaborate, to learn and to be curious — are all extremely positive things. And Cowan agrees it's hard to allow one thing (a lack of standards or proper calibration) to weaken or discourage another (collaboration or curiosity).

When aggregating data, the first thing is to share the methodology to see if the results can actually be considered together. If they can't, don't do it.

KNOW FROM THE START

Cowan often encourages growers who are considering sharing data to define their goals together, set up the parameters and try to follow — as best they can — established research practices, ensuring all participants are following the same protocols. That includes pre-documenting as much as possible, such as soil types in the areas of the research, a base-level fertility, so there are as many common footprints or at least those differences are known as underlying information before the seed is planted or the ground is treated. Then they should track in-season conditions and treatments as well, such as plant growth stages, fertilizer application timing and amounts, and herbicides, pesticides and fungicides. Again, the more information that's included with the final data, the more useful it becomes.

Ultimately, the fewer exceptions to the rules, the more meaningful that information becomes, both as an opportunity to share, and for taking that information forward and using it to improve management practices and crop performance.

Good data can come from less-stringent conditions, but participants must define what it is they're going after. Only then can they decide whether it was successful, based on what they were trying to accomplish. It may be done according to research standards but it may satisfy their curiosity and what they're hoping to learn. Separate research-grade from curiosity-grade research and it still has value because it's collaborative.

Cowan also believes there's a mindset that causes many people to get stuck — and that includes the variety and hybrid trials currently available. Growers are curious about that data, and companies and dealers are doing a lot of that work. But there are other things they could be collaborating on, including tillage practices or new types of fertilizer.

"They have to document, they have to plan, they have to know what it is they're trying to achieve," says Cowan. "They have to replicate it and they have to be able to know enough other things to know about where those plots are placed to rule out the anomalies in the data." **SG**

FURTHER READING

www.pioneer.com/CMRoot/Pioneer/US/Non_Searchable/agronomy/crop_focus_pdf/community_data_vs_trial_data_corn_seeding_rate.pdf

A year to be watchful

Global soybean supplies are up, but demand is surging too.
Any production hiccups could see new market spikes

By Philip Shaw

Soybeans continue to amaze. While 40 and 50 years ago they were relegated to the deep southwest of Ontario, now they are grown increasingly across Canada. When you drive from Windsor, Ont., toward Quebec City, soybean fields dominate the landscape, while acreage climbs in the Prairie provinces as well.

Simply put, soybeans are challenging the production limits imposed by Canada's climate and topography. The crop's future seems very bright.

The acreage statistics in Canada are particularly striking in Western Canada. For instance, according to Statistics Canada 1.86 million acres of soybeans were grown in Manitoba and Saskatchewan in 2016. This breaks down to 1.625 million acres in Manitoba and 235,000 acres in Saskatchewan.

This means soybean acreage in Manitoba has more than doubled over the last four years, while Statistics Canada just started measuring soybean acres in Saskatchewan in 2013.

Incredible as it would have seemed just a few years ago, we are now looking at the very real likelihood that soybean production in Western Canada is on a path to outstripping production in the east.

However, in 2016 we are still a long way from that.

In Ontario, 2016 soybean production area is set at 2.715 million acres, with Quebec production area set at 803,100 acres. These production acreage figures are actually down from 2014 levels and will likely remain static for the foreseeable future. There is limited acreage to expand in Ontario and Quebec, and usually there is a trade-off with corn acres every year. However, you never know where new technology will take you. Soybean productivity is always an ongoing challenge.

Weather in 2016 has been disappointing in the East, with an extended drought in Ontario. Statistics Canada is predicting a

yield of 41.6 bushels per acre in Ontario, 45.4 bushels per acre in Quebec and 35 bushels per acre in Manitoba. These yield estimates are all down from 2015. However, these estimates are from the July report on principal crops. August and September rains may have improved that picture.

Production is one thing, and marketing the crop is another. A year ago nearby soybean futures were approximately \$8.70 a bushel. However, as of mid-September this year, nearby soybean futures were trading at about \$9.80 a bushel. This is similar to September 2014 when the nearby soybean futures were \$9.85 a bushel.

Admittedly, this is a far cry from the record soybean futures price high of \$17.89 hit in 2012. Those prices have been cut over the last few years as farmers around the world have ramped up soybean production.

As the 2016 harvest continues, there is much for Canadian soybean growers to consider. How will prices move over the next six months? Will geopolitical events around the world affect the soybean market in a positive or a negative way? How will the Canadian dollar continue to impact the pricing of soybeans? How will the South American soybean production economy influence the outlook for Canadian producers this winter?

For Canadian soybean farmers, futures trading at the Chicago Mercantile Exchange forms the foundation for the prices received in Canada. The nearby futures price plus a basis evaluation converted into Canadian dollars gives us our Canadian cash price at various locations throughout Canada. These futures prices are traded at Chicago and are affected largely by the big soybean production areas in the U.S. and in South America.

Currently, the very large crop grown this year in the U.S. has affected soybean futures. According to the USDA in its August report, American farmers are



expected to produce 48.9 bushels per acre of soybeans on 83 million acres in 2016. This is record production (4.060 million bushels, or 149.2 MMT) and it is weighing on soybean futures market prices.

This production number may be changed in successive USDA reports going into the January 2017 final report, but there is little question that we are dealing with a very large American soybean crop.

When considering soybean prices, one should always think about the geographic duality of the soybean market. For instance, South America soybean planting begins in October, with harvest generally taking place March to May. Of course, it is almost the opposite in the northern hemisphere. This means that there two cycles annually when major production areas are at risk, and prices respond accordingly.

For Canadian soybean producers this is always relevant. Keeping an eye on developments in these regions is always very important.

Last year's 2015-16 South American soybean production was less than expected, but still very large. Brazil produced 96.5 MMT of soybeans while Argentina produced another 56.5 MMT. The USDA has projected for the 2016-17 season Brazilian production at 103 MMT with Argentina coming in at 57 MMT. This will add to supply concerns.

Supply has been onerous, but it has been tempered to a large extent by seemingly insatiable demand growth. This is part of the reason why, even with growing production, soybean prices remain higher than last year.

World demand last year was 300.90 MMT of soybeans; this year it is estimated at 317.20 MMT, and next year's demand is projected at 329.28 MMT, according to USDA numbers.

Simply put, demand is growing for soybeans and production has been challenged to keep pace. China remains the world's largest importer of soybeans, at 95.5 MMT this year, compared to 87.20 MMT last year, and a projected 101.20 MMT next year.

This means that despite current soft futures prices, the market remains dynamic; any production blip around the world this winter will likely send prices higher.

The Canadian dollar remains a distinct advantage for Canadian soybean farmers. In many ways it has been the whole story for grain prices in Canada

over the last two years. With the loonie hovering around the 76 to 77 U.S. cents level in early September, basis levels were in the plus \$2.40 range with cash prices at \$12.20 bushel. This is based on a soybean futures value of \$9.80 a bushel.

If the loonie were at par with the U.S. dollar, cash prices in Ontario would be substantially less than the futures prices. As the loonie moves up or down, cash prices to Canadian producers are greatly affected. The soybean basis is a direct conversion of foreign exchange to the end-users.

In Ontario and Quebec, soybeans are exported as well as crushed at domestic plants. In P.E.I., the soybean basis is calculated based on the distance to the processor in Quebec or the cost to ship through Halifax. In Manitoba, soybeans are either exported offshore or sent south to U.S. crushers. There is always a significant non-GMO market in Ontario and Quebec that ebbs and flows each year with appropriate premiums. These soybeans go to end-users in Asia for human consumption.

Of course, farmers want to know whether soybean prices will be \$12, \$13,

or even \$14 in the near future, or whether the market will slide instead, hitting \$11 followed by \$10, \$9 and \$8 in the months to come.

Nobody knows for sure, but the Canadian dollar will remain a key factor for soybean prices this fall. The big U.S. crop being harvested will surely continue to weigh on futures prices.

South American planting starting in October will also be a key driver in soybean price direction. The current soybean futures market is inverted, meaning the market is giving a premium for soybean sold now versus outward months. For those wanting to take advantage of that, selling soybeans now and replacing with an options call strategy may be another avenue.

The challenge for Canadian soybean producers will be to measure all of these market factors. Canadian soybeans in 2016 have had their weather-related production issues. However, even with burdensome supplies worldwide, cash market conditions in Canada are favourable. Daily market intelligence will remain key. **SG**

PRIDE SEEDS

T.R.S.

Total Ration Solutions from PRIDE Seeds features top performing Effective Digestible Fibre and Effective Dual Purpose corn hybrids for more milk or meat per acre.

PRIDESEED.COM 1.800.265.5280

G8 SmartStax[®] RIB COMPLETE G2 VTDoublePRO[®] RIB COMPLETE Roundup Ready LIBERTY LINK

All orders and sales are subject to the PRIDE Seeds Terms and Conditions of Sale, which include but are not limited to the Limitation of Warranty & Remedy and Agronomic Zone and Planting Year. All Terms and Conditions of Sale are subject to change from time to time without prior notice. For the most up to date Terms and Conditions of Sale, see the PRIDE Seeds website at www.prideseed.com. PRIDE[®] & Design, and P[®] & Design are registered trademarks of AgReliant Genetics Inc. ALWAYS FOLLOW GRAIN MARKETING AND ALL OTHER STEWARDSHIP PRACTICES AND PESTICIDE LABEL DIRECTIONS. Details of these requirements can be found in the Trait Stewardship Responsibilities Notice to Farmers printed in this publication. RIB Complete[®], Roundup Ready 2 Technology and Design[®], Roundup Ready[®], Roundup[®], SmartStax[®] and VT Double PRO[®] are registered trademarks of Monsanto Technology LLC, Monsanto Canada Inc. licensee. LibertyLink[®] and the Water Droplet Design are trademarks of Bayer. Used under license. Herculex[®] is a registered trademark of Dow AgroSciences LLC. Used under license.

40 years of genes that fit *your* farm.®



On 60,000 farms and 20 million acres across Canada,
the name SeCan is trusted for exceptional seed value.

Canadian farmers plant SeCan genetics on more acres than any other seed brand. SeCan is not a seed company. As "Canada's Seed Partner", we're a not-for-profit member association that has returned more than 97 million dollars to Canadian plant breeders.

Genes that fit *your* farm® is a registered trademark of SeCan.

This is *your* land. And these are *your* genetics.

Call your SeCan seed retailer for genes that fit *your* farm.

SeCan

Canada's Seed Partner

secan.com



SeCan. Genes that fit *your* farm.®