

The background of the magazine cover is a close-up photograph of two bright yellow lemons hanging from a branch with green leaves. The lemons are in sharp focus, while the leaves and background are slightly blurred. The text is overlaid on this image.

Ag Leader®

Insights

Summer 2014 - Precision Farming Magazine

**Unconventional
Wisdom**

**Mapping on
the Go**

**The Architect of
Precision
Agriculture**

**Ag Leader
Around the
World**

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THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME



It's that time of year. Sprayers are getting tuned up and ready to head out to the fields (if they aren't already). The time, equipment, seed and soil preparation work invested earlier this spring is now beginning to pay off with a (hopefully) healthy crop at its most critical growth stage. It's amazing how much of your crop's yield potential is tied up

into this very short time period when so many factors – weather, insects and weeds – can have such a big impact on your yield and profitability in the fall.

Even more amazing is how much more complex this stage has gotten over just the past few years. For example, think back four or five years ago. Talk about weeds with glyphosate resistance was just a rumble in a few pockets of the country. Today, it's a reality in most of the high-production corn and soybean regions. That means we've all had to re-educate ourselves on herbicides and tank mix formulations that have seemed old-school.

It also means technology plays a more important role in helping

you monitor the health of your growing crops and deciding where and how much to apply. For example, crop scouting will require better accuracy in the field with the ability to note specific weed issues in certain areas of the field without damaging crops by over or under applying inputs. Even accurate record keeping becomes more important for both reporting and analysis.

Ag Leader has always been about developing technologies to help farmers maximize the return on their investment – not just your investment in our products, but also your investment in equipment, inputs and time. My challenge to you is, while you're in your fields this summer, ask

yourself: do you have the tools to help you determine what your crops need and apply precisely where it's needed to get the most out of your fields? If the answer is no or you are unsure, we'd like the chance to help you. More than likely, spending just a little time visiting our website or talking to an Ag Leader dealer will be an investment well worth your time.

Best Regards,

Al Myers
Al Myers

"Ag Leader has always been about developing technologies to help farmers maximize the return on their investment – not just your investment in our products, but also your investment in equipment, inputs and time."

UNCONVENTIONAL WISDOM

A man with a beard and arms crossed stands in front of a green John Deere tractor. The tractor has a yellow stripe and the words "JOHN DEERE" on its side. The man is wearing a light blue t-shirt and jeans. The background is slightly blurred, showing what appears to be a farm or dealership setting.

With the help of an Ag Leader dealer, several Michigan farmers are using OptRx to reap benefits in other crops, including sugarbeets and cucumbers.



"With sugarbeets, we need to put all the nitrogen on at planting time. Yet, you don't want to put on more than the plants need during the growing season," Houghtaling said.

Like most producers who own an Ag Leader OptRx system, Mike Houghtaling finds the crop sensors invaluable for measuring crop vigor in his corn crop and determining where sidedressed nitrogen will be most effective. However, as a farmer and Ag Leader dealer, Houghtaling wasn't content to see his investment used just a few months a year.

While Houghtaling continues to farm around 2,500 acres of corn, sugarbeets, edible beans and cucumbers with his father and uncle, he also owns and operates P & C (Precise and Concise) Ag Solutions, a technology consulting company, based in Saginaw, Michigan. With the help of his wife, Erin, and six employees, Houghtaling sells the full line of Ag Leader products and offers a range of services, including mapping, hardware service, RTK subscriptions, application prescriptions and equipment rental. Hence, Houghtaling has not only used his new OptRx applications on his own farm, but shared them with dozens of his customers. As a result, he has found OptRx to be just as beneficial in other crops, including cucumbers and sugarbeets. It's not in the way one might think, though.

"This is our fifth season to use the OptRx sensors in sugarbeets," he said. "However, unlike the use of them in corn, we're not using

them to determine the amount of nitrogen needed during the growing season, but rather to measure the amount of nitrogen the plants have used during the season prior to harvest. With sugarbeets, we need to put all the nitrogen on at planting time. Yet, you don't want to put on more than the plants need during the growing season."

to remove the beet leaves and tops down to ground level so the harvester can simply dig and lift the beets out of the ground.

"What we're doing is looking for the right amount of color at harvest and trying to correlate that to nitrogen levels and requirements," he related. "If the tops are a deep green color

With sugarbeets, having too much or too little nitrogen affects more than just plant growth. An excessive amount of nitrogen actually has a negative affect on beet quality as it results in more leaf growth. If growers don't put on enough nitrogen, they lose yield. If they put on too much, they lose quality. It's a double-edged sword, so getting the correct



OptRx sensors mounted on the beet topper are used to measure the color of the beet tops to detect nitrogen levels.

As Houghtaling explained, the OptRx sensors are mounted on the beet topper, where they're used to measure the color of the beet tops as the crop is being defoliated prior to harvest. For those unfamiliar with sugarbeet harvest, a defoliator or topper, is used

at harvest, it means we had more nitrogen than we needed in those areas. And if they're approaching a yellow color at harvest, it means we didn't have enough nitrogen. What we want to see is a pale green color at harvest."

amount on a site-specific basis can increase returns substantially. Doing it right versus doing it wrong can mean as much as \$100 per acre swing in revenue.

"What we want is for the plant to start running out of food so



Houghtaling uses the data collected with OptRx sensors to build crop vigor maps and uses them to scout for harvest timing.

it draws the sugar down into the root," Houghtaling said. "In effect, you increase the sugar content in the beets without wasting fertilizer."

Houghtaling explained that by measuring sugarbeet foliage color at harvest and using Ag Leader's SMS Advanced software to map the results, he and his customers benefit in a couple of ways. First, they can identify those areas where the following crop may not need as much nitrogen, due to a carryover of nitrogen from the sugarbeet crop. Secondly, they can build a nitrogen recommendation for the next time that field is planted to sugarbeets.

"On my farm, sugarbeets are part of a four-year rotation that generally goes from beets to cucumbers, to edible beans and corn before going back to sugarbeets," Houghtaling said. "So we're just now at the point

we can see how it all works together. We've actually seen a pretty good correlation from beets to corn," he continued. "Areas that were nitrogen deficient in beets were also nitrogen deficient in corn. Areas that had excessive amount of nutrients in beets had the same pattern in corn. So we've seen stability from year to year in these zones and

been able to make appropriate adjustments already."

Even more unusual, though, is the way Houghtaling is using the OptRx system in cucumbers. In this case, he explained, it has nothing to do with nitrogen or even fertilizer. Instead, it is used as a scouting tool to analyze plant health, fungicide efficacy and crop maturity.

"When using them in cucumbers, we have the OptRx units mounted to the crop sprayer and every time we spray, we're collecting data," he said. "Since we spray for something about every five days, we're obviously collecting a lot of data."

The goal, Houghtaling explained, is to determine



A close-up of cucumbers on the Houghtaling farm.

the ideal time for cucumber harvest. Because cucumbers are machine harvested, timing in relationship to cucumber size is critical.

"Cucumber fields are planted on a schedule, which determines a harvest schedule," he explained. "It is not uncommon for us to have 25 different planting dates, which leads to 25 different harvest dates. Choosing the exact moment for harvest can be difficult, but doing it correctly is critical."

"We get paid by the size, and different sizes bring different amounts of money," he added. "We receive roughly \$8 per bushel for cucumbers that measure from 1 1/2 inches to 2 inches diameter ... smaller or larger than that we get paid only \$1.50. Unfortunately, in a matter of a day or less, if not a few hours, they can go from too small to too large. The window is really small."

"Anyone who grows cucumbers knows that there are areas in every field where fruit will grow faster than it does in others," he continued. "So we all got in the habit of harvesting the lower parts of the field and river bottoms first before moving to other areas – physically checking the fields several times a day."

you have hundreds, or even thousands of acres to look after, the time needed to do a good job scouting isn't often available because everyone is busy with the time-consuming activities of harvest. Leveraging this technology and being able to map it can pay huge dividends. We did some studies last year, and figured a net benefit of \$250 per acre by

the units are often rented for the season. However, because sugarbeet harvest involves using the sensors in October, during what would typically be the off-season for OptRx use, he often applies a different philosophy.

"For beet harvest, I'll pull them off the sprayers and, quite often, just loan them to a producer with the idea that once he sees how much OptRx can benefit his operation, he will be more inclined to buy one," he said.

"Of course, you can't beat the benefits of using OptRx in corn when sidedressing nitrogen," he concluded. "But it's even better when we can spread the use of our OptRx sensors over several months and additional crops." ■

"We did some studies last year, and figured a net benefit of \$250 per acre," Houghtaling said.

"What we've found with OptRx is we can build these crop vigor maps and use them to scout for harvest timing and use SMS to actually draw a harvest map that we can look at and say, 'We need to harvest this area first and come back to this area the next day.' When

using the OptRx to measure vegetative index — which combines color and density — to calculate harvest dates."

Houghtaling noted that because several OptRx sensors are needed on each sprayer,



A close-up of a sugarbeets field.

A Bright Future for Ag

Teenagers today are pretty sophisticated when it comes to technology. Having been raised in the digital age, they have an almost innate sense for how gizmos and gadgets of all kinds work. Even those they have never seen or used before. Indeed, give a teenager a new smart phone, tablet or crop sensing system and they just get it.

Wait, crop sensing system?

To be sure, the majority of high school students likely wouldn't know the first thing about crop sensors. But a group of vocational ag students from Nebraska learned all about OptRx crop sensors from Ag Leader. To the point they could even sell it!

Each year, the University of Nebraska sponsors a State FFA Agricultural Sales Career Development Event, challenging teams of students to research a product, build a sales strategy and hone their sales skills.

The event, which is judged at district, state and national levels, includes a written exam and individual sales scores. Team scores are comprised of the team activity and the combined individual scores, with each team developing a strategy to sell the product in a face-to-face sales meeting.

This year students learned about OptRx crop sensors from Ag Leader. Their sales strategy was to include:

- Formulating information-gathering questions to help clarify the customers' needs and wants. [Is uniform nitrogen rate application eating into your profits? What if you could apply nitrogen only as the plants needed it?]
- Determining which features and benefits best address the customers' needs and wants. [OptRx crop sensors scan and determine the health of the crop for on-the-go variable rate nitrogen application, optimizing inputs.]
- Anticipating and overcoming potential customer objections. [Many growers do not even realize how much profit they are losing with their uniform nitrogen rate program.]
- Introducing potentially related/complementary products and their suggested selling strategies. [Ag Leader Integra display with DirectCommand from Ag Leader uses the real-time data from OptRx to apply nitrogen efficiently and accurately.]

"The students not only had to learn everything they could about the product, but they had to focus on the financial gain a producer could realize by using the OptRx system," said Doug Babbitt, the ag teacher at Perkins County High School. "I think they all learned a great deal in the process. Whether they go into agricultural sales or not, they acquired skills that will be of benefit in any career."

Ag Leader territory representative for Nebraska, Mark Anderson, supplied the ag students with information about OptRx crop sensors while assisting them with developing their sales strategies.

Anderson said he was impressed by how well the students were able to grasp the features and benefits of OptRx crop sensors. "They're learning about a product that is on the cutting edge of technology and agriculture... a quickly emerging technology that even some of the most tech-savvy farmers haven't started to use yet. That's pretty exciting," Anderson said. ■



Sandy Creek High School students from Fairfield, Nebraska, won the statewide Agricultural Education Career Development competition this year, beating out 40 other schools. Picture from left to right are Erica Harms (1st place individually), Emmet Caldwell (6th place individually), Ryan Pavelka (10th place individually) and Natasha Anderson (2nd place individually). Their team will represent Nebraska in the National FFA Convention in Louisville, Kentucky, in October.

Leading in the Right Direction

Ag Leader's Smallest Display is Packed with Features

It's no secret that entry into precision agriculture can be overwhelming. Cost considerations, application prescriptions, scouting, mapping, data capture and storage, hydraulic down force, RTK, remote sensing – the list goes on. The amount of information and options is seemingly endless, presenting one of the best – and sometimes most intimidating – aspects of precision ag.

With all the combinations of options available, Ag Leader recognizes that sometimes less is more. That's where Compass enters the picture. The latest addition to the Ag Leader display lineup, Compass is the entry-level product designed for budget conscious growers looking for an affordable approach to guidance.



Small in Stature, Big in Value

The compact, seven-inch touchscreen Compass display is built to the same, rugged standards as the larger Ag Leader Integra and Versa models, meaning users can expect the same level of durability throughout the display product line.



Simply Effective

Out of the box, Compass is the very definition of user friendly. An unobtrusive, simple interface allows for quick setup and task creation. Events keep track of field work and maps, backing them up and categorizing them by date and time, meaning fewer button presses and less hassle in the cab.

Going in the Right Direction

The easy set-up manual guidance functionality comes standard out of the box with Compass. And, when combined with OnTrac2+ assisted steering, ParaDyme or GeoSteer auto steer systems, Compass shines as a high-end guidance display with multiple guidance patterns and multiple field views.



Lighting the Way

With a built-in lightbar featuring green and blue LED lighting, Compass can effectively extend your time in the field. Specifically designed to handle guidance functions, the Compass housing also helps to reduce glare during the day through a molded upper lip, effectively shielding the lightbar and touchscreen from direct sunlight, helping to increase visibility under all conditions.

Virtually Unstoppable

Eliminate the clutter effect in your cab by utilizing Compass as a multi-function controller with Virtual Terminal capability. Providing the same crisp 480x480 resolution as the Versa display, the Compass Virtual Terminal gives you the power to control ISOBUS-compliant planters, sprayers, spreaders and seeders.

Do More With Less – Have it Your Way

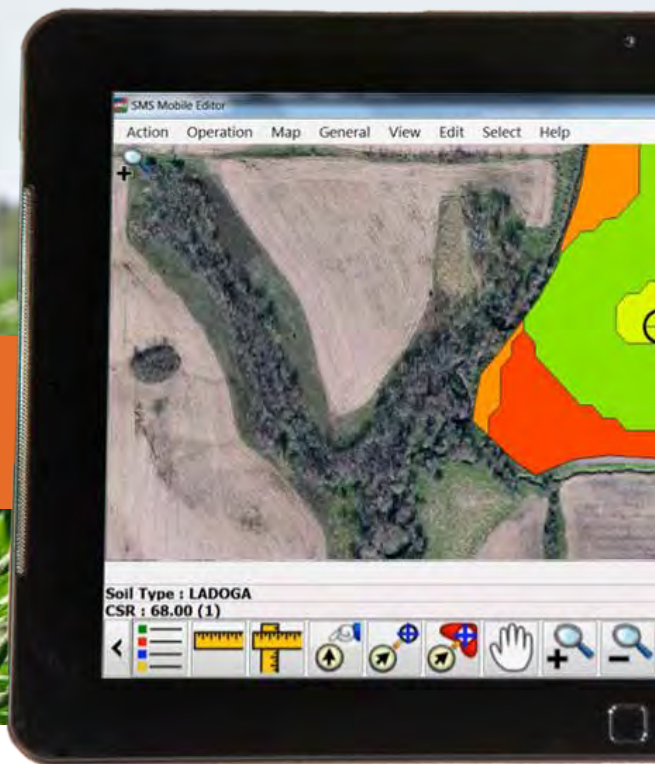
Need more functionality? No problem. Through a permission-based system, Compass is easily transformed into a more advanced version of itself. Map and record boundaries, sub-boundaries, in-field obstacles, waterways and tile lines. View maps in real time and add panning and zooming to maps. Make Compass as simple or as complex as you like.

Since reaching fields in November of 2013, the Compass display has shown growers that it is possible to pack a feature-rich display into a rugged, affordable package that can do much more than its small stature might suggest. ■

Mapping on the Go



Growers and crop consultants are reaping the benefits of SMS Mobile.



Smack in the middle of central Illinois, you'll find some of the most fertile ground in the world. Approximately 6,000 acres of that ground belongs to Jeff Hodel of Roanoke, Illinois, who, along with his brother Jason and long-time employee Matt Leman, grow corn and soybeans.

Actually, to simply say they grow corn and soybeans is an understatement. It doesn't account for the site-specific, data-driven, technology-savvy approach they take in maximizing profitability across every acre. In fact, Hodel has been using some form of precision farming software since 1996, long before most,



Jeff Hodel stands by his Ag Leader equipped machinery.

and has been using Ag Leader SMS software since 2000.

"We use the software to compare yields with different applications and different

practices to find out what makes money and what doesn't," Hodel said.

One recent tool that Hodel has added to his team's precision

farming arsenal is SMS Mobile. The wireless handheld software allows him to collect information from the field that might not otherwise be easy to collect or locate, then sync that data with his SMS desktop software, providing valuable details needed to make critical management decisions.

SMS Mobile was made for field and crop scouting. SMS Mobile allows a farmer to document a variety of site-specific information, including pest and weed pressure, planting depth, unplanted rows, nutrient needs, drainage issues, field irregularities and more. In his operation, Hodel uses SMS Mobile for tiling and mapping lower producing areas of the field.



"We use the software to compare yields with different applications and different practices to find out what makes money and what doesn't," Hodel said.



"Armed with information we've gathered with the use of SMS Mobile, we can troubleshoot low-performing areas," he said. "If you know how to manipulate soils, you can usually fix the issue."

Similarly, Jason Hartweg uses SMS software on his family farm, Hartweg Farms, located in Hancock County in western Illinois. Along with his father, mother and uncle, he farms 2,000 acres of corn and soybeans and raises cattle.

"As a farm operation, I use SMS Advanced for creating and loading points and plots for soil sampling," he said. "I also use it for creating planting prescriptions,



Jason Hartweg analyzes SMS Advanced sample result maps on his laptop.

fertilizer prescriptions, hybrid tracking and evaluation, data management, general mapping, etc."

Hartweg also employs the use of SMS in his crop consulting

group, JET Precision Ag Consulting, which conducts soil sampling, boundary mapping, prescription planting and more. They use SMS Mobile for all of their soil sampling activities.

"Accurate soil sampling is something we are proud to offer, and SMS Mobile allows us to do that," he said. "Sampling is an investment that is key to future success. The soil type and fertility is the basis for everything in your crop plan from hybrid to management practices," he said.

"Using SMS Mobile, we load existing data when we are sampling on a consistent grid or pattern that was used in the past, or we create new grids—either in the field or before, if sufficient data is available," he said.

After the results are in, Hartweg and his partners create the sample result maps using SMS Advanced.



"In an ever-changing ag industry, technology constantly changes the direction and possibilities of how farmers and consultants can work and manage their data," Hartweg said.



Precision hardware utilized in crop scouting.

"Using the software, we can create generalized prescriptions or custom ones based on sampling data, removal and client and university recommendations," he said. "We have also used SMS Mobile for simple boundary mapping, mapping recently installed tile lines and to map acreage for dividing fields for changes to future cropping plans."

With variable rate planting technologies and recently introduced multi-hybrid planters on the horizon, the ability to identify low and high-production soils and areas across the field will become even more critical in the near future. But for Hartweg, who has used SMS desktop software for ten years and SMS Mobile for more than two years, software that is easy to use is critical.

"When comparing different software suites and evaluating both software and hardware systems, it was a very simple decision to see that SMS Mobile was the best fit for what

Hodel agrees with the simplicity of moving data to and from SMS software and precision hardware. "This year, we mapped 1,500 acres. Then we made prescription lime

what's next? Both Hodel and Hartweg point to the cloud and Ag Leader's new cloud-based data management system, AgFiniti.

"I imagine we will start to use AgFiniti in the fall for harvest," Hodel said.

Hartweg, wearing both his farmer and consultant hat, agrees that the ability to share real-time data from the field or office between farmer, consultant and other advisors is the next big step.

"In an ever-changing ag industry, technology constantly changes the direction and possibilities of how farmers and consultants can work and manage their data," he said. "Having data always available and stored in the cloud without having to worry about privacy and data ownership is key." ■

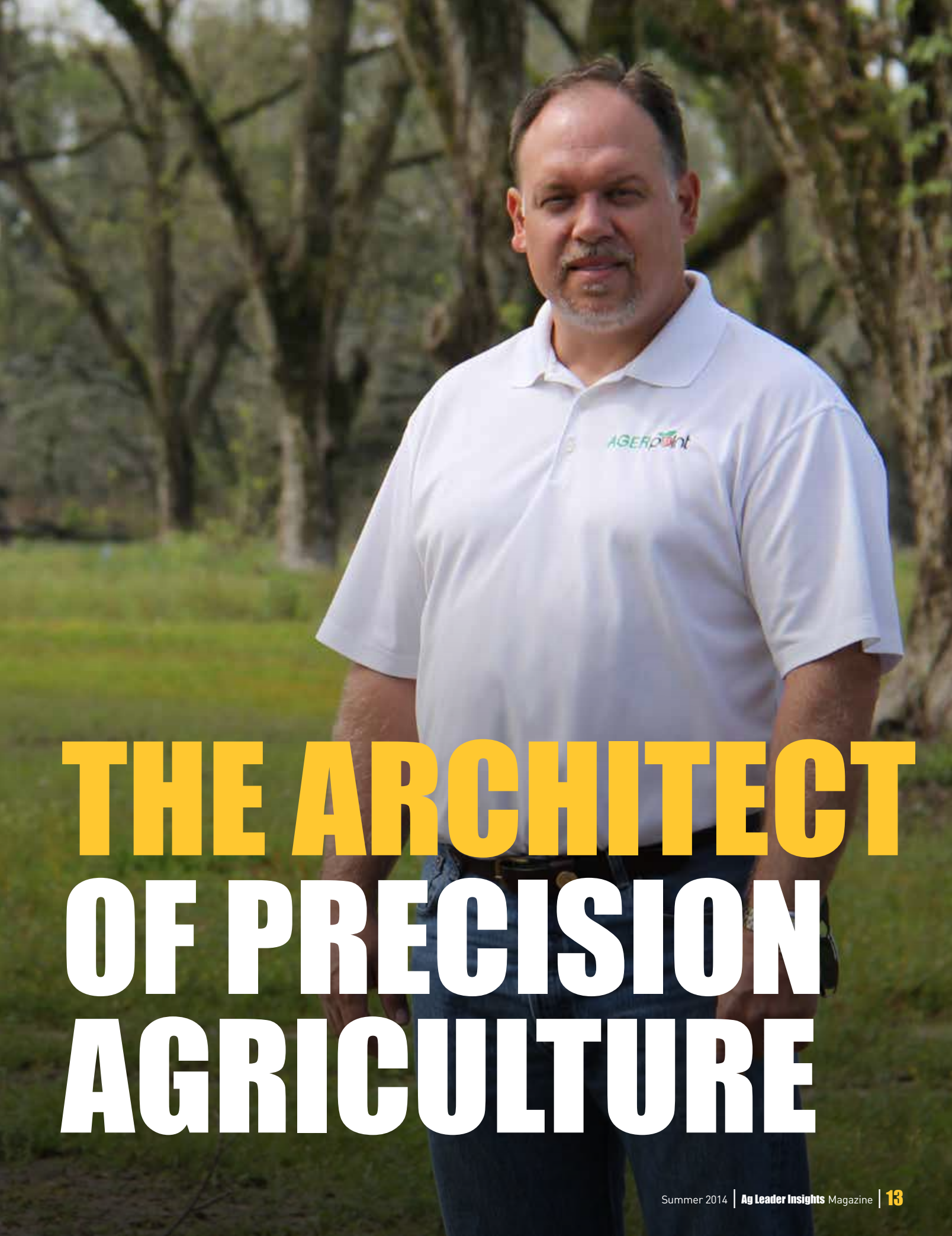


SMS Mobile exports data directly into SMS desktop software.

we wanted to do and how we needed to do it," he said. "Not only is it easy to import files from farmers, but it's also a simple process to export data into SMS desktop software. It's very user-friendly."

maps with our SMS Advanced software and imported it into our Ag Leader Integra display," he said.

Having become comfortable using SMS Mobile technologies,



THE ARCHITECT OF PRECISION AGRICULTURE



"A block of citrus is 70 acres, with approximately 110 trees per acre. The typical large citrus grower in Florida has at least 500 acres," McPeek said.

A bountiful orange harvest as a result of AGERpoint's crop inventory solution.

Architecture seminars don't typically inspire momentous discussions about the future of precision agriculture. But for Thomas McPeek, a former assistant professor, a conversation with a fellow architect would ultimately compel him to leave the world of architecture and academia to embark on a new career in precision agriculture.

McPeek wasn't your quintessential architect: the artsy, intellectual type found in contemporary workspaces, draped over a drawing table drafting blueprints of radical skyscrapers and modernist museums deep into the night. His interests were primarily concentrated on the digital side of architecture, such as 3D modeling and design.

In 2000, McPeek began experimenting with a

commercial LiDAR system, using the high-resolution laser to extract physical dimensions and attributes of buildings, similar to how an MRI or X-ray depicts the internal infrastructure of the human body.

A presentation he delivered to a group of fellow architects highlighted how this technology could be used to unearth the hidden structural skeletons of historic buildings, making it an invaluable tool for renovation projects.

Following the presentation, another architect approached McPeek and posed a puzzling hypothetical: could this same laser system be used to extract metrics from a tree? While he was a bit bemused by the question, McPeek conceded that it could indeed. What about a hundred trees, his inquirer pressed on? Sure,

McPeek said, still uncertain why anyone would do such a thing. What about a hundred thousand trees, she asked? "Ok, I'll bite," McPeek said. "What do you want to do?"

The woman explained that her husband, a citrus grower, wanted to know everything about every tree on his orchard, such as location, height, trunk diameter and canopy size and density. Such data would enable him to estimate yields, identify disease and make better informed management decisions. Unfortunately, she explained, no such technology was readily available to citrus growers.

"Row crop farmers have been using precision ag for 15 years or so, but not permanent crop growers because this technology has never been available," said McPeek.

Intrigued by the opportunities of this untapped market, McPeek and his team mounted a high-resolution laser to a tripod and set out to survey their first orchard. Citrus rows are comprised of mammoth hedges that stand nearly 10 meters tall and stretch 400 meters long. A block of citrus is 70 acres, with approximately 110 trees per acre. The typical large citrus grower in Florida has at least 500 acres. That's a lot of citrus rows and a ton of trees.

By the end of their first day, they had surveyed only one full citrus row. But as the tandem toted their tripod along, they recognized the magnitude of the opportunity and discussed how to develop a comprehensive solution.

"As we moved down the row, we got a good idea of how the

system would work,” McPeck said. “It was proof of concept. We had a pretty good idea of the data we were chasing and how to collect it.”

AGERpoint, Inc. came to life that day. Over the course of the next two years, McPeck and his team developed a number of tools and products that allowed them to offer mapping services to permanent crop growers of oranges, grapefruit, blueberries, apples and pecans.

“If it grows on a tree or a bush, it falls within our realm, because the method of data extraction is similar for all of those,” McPeck said.

The transition from architect to precision ag innovator was smoother than some might assume.

“The principles I learned as an architect are not any different.

It’s the management of very large chunks of information to get to an end goal. We’re doing the same thing here, except now the end goal is to get a very good crop,” McPeck said.

To cover more ground each day, AGERpoint eventually scrapped the tripod and mounted a LiDAR remote sensing system on a vehicle.

“The equipment we use has similarities to a Google car,” McPeck points out.

This vehicle covers between 150 and 300 acres a day, collecting massive amounts of data (McPeck estimates they will collect a petabyte of data each year).

As the car rolls along, traveling at speeds up to 10 mph, the high-resolution lasers scan the trees and create three-dimensional point clouds comprised of billions of points.

Software later converts these points into three-dimensional portrayals of individual trees, which are so accurate that specific stems and leaves can be closely examined on AGERpoint’s proprietary system.

McPeck said he wanted to develop a system that allowed users to search and access data quickly and on any device.

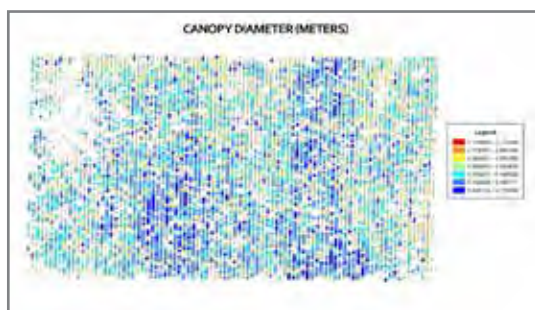
“Our customers can walk up to any tree and pull it up on their phone,” he said. The system also had to be user-friendly. “All of our user interfaces have to pass the grandmother test. Can our grandmothers sit down with these systems and figure out how to use them? Only then is it ready for our customers.”

AGERpoint’s ability to extract massive amounts of data made it the premier (or perhaps only) crop inventory solutions

provider in the permanent crops industry. Growers soon inquired as to how this data could be utilized to make more profitable management decision. McPeck asked one grower what the single most expensive cost was for his operation, to which the grower responded quickly and emphatically, “Spraying. And by a pretty large margin.”

McPeck stored the idea away for another day and moved forward with research and development on other products and equipment. Then, about a month later, a pecan grower contacted him and asked whether AGERpoint’s system could be integrated with spraying technology. It was evident that the spraying avenue needed to be explored.

Air blast spraying is the preferred method for large fruit and nut trees. Sprayers typically range from 18 to 32 feet long

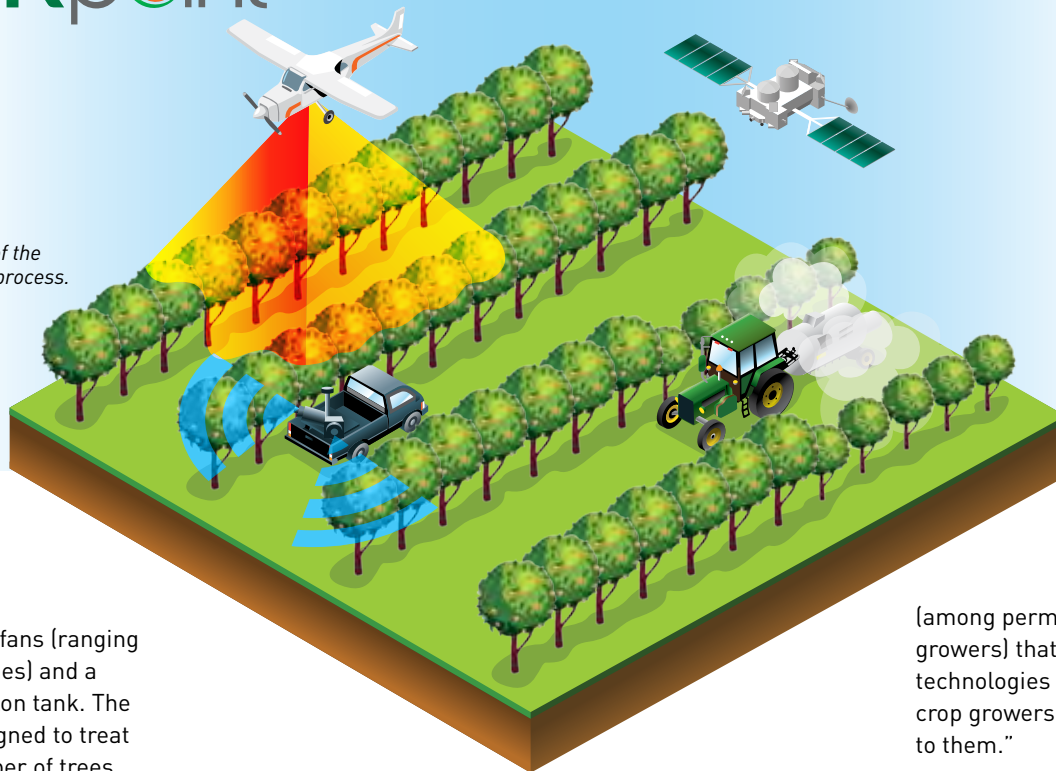


Data collection screens AGERpoint utilizes.



Oranges being harvested from citrus trees.

An illustration of the AGERpoint survey process.



and feature large fans (ranging from 28 to 32 inches) and a 500- or 1,000-gallon tank. The sprayers are designed to treat a maximum number of trees quickly, traveling at about 2.5 mph as the fans shoot liquid 60 to 70 feet in the air while distributing approximately 100 gallons per acre. What the sprayers offer in economy, they lack in accuracy and precision. All trees, no matter their size or degree of health, are sprayed the same. Hence the interest in pairing a sprayer with precision technology that can optimize inputs.

"The challenge was getting an air blast sprayer to perform like a boom sprayer. For this, we essentially needed to re-engineer the sprayer," McPeck said.

McPeck met with engineers from Durand-Wayland, a LaGrange, Georgia-based manufacturer of big diesel-powered, twin-fan sprayers for large fruit and nut trees. Durand-Wayland agreed to license the AGERpoint technology and now builds precision ag sprayer kits for all brands of air blast sprayers.

Here's how it works. First, AGERpoint surveys the orchard and extracts data from all of the trees. Shape files pulled into an Ag Leader Integra display act as boundaries to switch the sprayer on and off as it progresses through the orchard. Only one sprayer boom is activated for smaller trees, two booms for medium trees, and all three booms for larger trees.

"We have shown a 28 percent savings in spray, which amounts to \$600,000 a year for this operation," McPeck said.

"We apply the same principles used in row crop planting, except instead of rows, we're targeting a whole bunch of circles," McPeck said.

McPeck said his company chose the Ag Leader Integra display because they wanted American-made products from

a company known for precision ag innovation.

"We needed somebody who was willing to partner with us in something that was a completely new venture," he said. "That means stepping outside of your comfort zone a bit and engaging a market that is completely unknown."

According to McPeck, the lack of precision farming

tools available to permanent crop growers is surprising, particularly since crop values and input prices (per acre) are considerably higher than in row crops.

"It's a completely different animal," he said. "But there has been some consternation

(among permanent crop growers) that the same technologies available to row crop growers are not available to them."

This will soon change, according to McPeck.

"Now that the technology is becoming available, it has pretty broad appeal. Not everyone wants to be the first one out there. Early adopters are the ones you have to identify and work with for implementation of new technology. Once it's proven broadly, the degree of acceptance is going to be very high. There's certainly a large degree of interest. That's in part because of the type of numbers we're talking about."

What numbers are those? The initial runs AGERpoint performed for a large pecan orchard in Albany, Georgia, have shown a 28 percent savings in spray, which amounts to \$600,000 a year for this operation.

"So it's a pretty substantial number," McPeck said. "We initially aimed for 10 percent savings. I don't think any of us expected this." ■



The Ag Leader booth at Agrishow.

AG LEADER AROUND THE WORLD: SOUTH AMERICA

It's hard to imagine a farm show that has more people and more equipment than the annual Farm Progress Show in the Midwest or World Ag Expo on the West Coast ... unless you've been to AgriShow in Brazil. One of the largest outdoor shows in the world, Agrishow stretches 440 thousand square meters and boasts an impressive 150,000 visitors from 67 countries, walking through exhibits of over 790 companies. Ag Leader was there in early May.

The Ag Leader booth was one of hundreds showing off farm equipment, but only one of a few displaying precision farming tools. Tradeshows in Brazil, similar to those in the U.S., feature the latest farming technologies and provide the opportunity to see field demonstrations on everything from tractors to coffee and

sugarcane harvesters. Different from U.S. shows, however, is that equipment is sold and financing is granted on-site. In fact, 30 percent of

sugarcane, a commodity that can be used for both sugar and ethanol production. The climate allows for year-round production of sugarcane, a crop

Uniquely, harvest of the sugarcane crop runs eight months of the year while the mill remains open. Sugar mills process the sugarcane into ethanol, sugar or both, depending on the mill, and the export agreements each mill typically holds is 60 percent sugar and 40 percent ethanol.



One of the largest outdoor shows in the world, Agrishow stretches 440 thousand square meters

sales for the year are made at the show during the week.

Agrishow is located in Ribeirão Preto, in the state of São Paulo. This region is known for growing large amounts of

that is only planted once every 5-8 years. When the crop needs replaced, it is substituted by one year of either soybeans or peanuts, and then is planted back to sugarcane the following year.

After experiencing many years of success in product sales, Ag Leader opened an office in Curitiba, Brazil in 2012 with a staff of one and big dreams. Now, only two years later, the staff has grown to seven employees. While based in Brazil, the office covers Central and South America with distributors in Paraguay, Uruguay, Argentina, Chile, Ecuador, Columbia and Costa Rica. Much of the credit can be attributed to the rapid adoption of high-tech farming practices across the region.



Jacto Coffee Harvester at the Agrishow.



OptRx Crop Sensors at the Jacto Booth.

Many of the Ag Leader products manufactured and tested in the Midwest have also proven beneficial there due to the high volumes of corn and soybeans produced. The new Compass display and OnTrac 2+ are key in this region and account for many of the guidance and steering systems sold. However, SMS Software has also done extremely well in the region, in addition to other guidance and steering systems, displays and application products.

"In Brazil, there are many customers who have used Ag Leader yield monitors and variable rate equipment for many years. They are most impressed by the quality of the products and simplicity of the user interface," said Marcio Muraro, Ag Leader's Regional Business Manager. Speaking to the quality and durability of Ag Leader's products, Muraro added, "Ag Leader yield monitors purchased over 10 years ago can be found on some farms."

Application control products have recently taken the spotlight due to developments made in technology. South American sprayer manufacturer, Jacto, developed

an algorithm for nitrogen application in sugarcane using OptRx Crop Sensors. OptRx requires a specific algorithm, or process to be followed in calculations, to read the health of individual plants. The sensors then provide an on-the-go prescription to allow the right amount of nitrogen to be applied. OptRx is heavily used in North America and Europe in corn and wheat application.

Denis Yukio Sakuma, project coordinator of fertilization for Jacto, said, "Based on our years of data, we are very confident in the success of OptRx sensors for nitrogen application in sugarcane."

This development opens yet another way for Ag Leader to continue to grow in the South American marketplace, as Brazil is the world's largest producer and exporter of sugar.

"Agriculture is a large influencer of the economy, and the use of precision farming equipment is contributing to the expansion of the industry," Muraro said. "I only foresee this market continuing to grow." ■

Brazil's Main Agricultural Products and Exports:



Sugar: the world's largest producer and exporter. Although a significant percentage is used for ethanol fuel production.



Coffee: the world's largest producer and exporter. It controls about 30 percent of the international market of coffee beans.



Oranges: the world's largest producer and exporter.



Beef and Soybeans: the world's No. 2 provider of beef and soybeans.



Corn and Poultry: No.3 world exporter of corn and poultry with a 4.6 percent increase in poultry production and a 5.2 percent increase in corn production between 1980 and 2010.



Rice: Consistently in the top 10 rice producing countries in the world.



Ethanol: Typically the world's largest exporter of cane-based ethanol.

Information from Ron Sandrey and Nick Vick, 2013

THE INNOVATION UPDATE

LATEST:



AgFiniti Cloud-Based Platform Now Available

Ag Leader's new cloud-based platform, AgFiniti, puts information at growers' fingertips by providing tools to manage, access and share valuable field data for use in making profit-driven management decisions on the farm.

"What also makes AgFiniti different from other solutions on the market is our stance on data privacy. We know growers value their privacy and that's why with AgFiniti, the data is 100 percent theirs," said Luke James, Software Sales Manager.

Ag Leader Integra or Versa display users simply need to purchase an Ag Leader USB Wi-Fi Adapter and a license to access a wireless internet network in the cab through any hotspot of their choice, including: smartphone, tablet, MiFi device or office Wi-Fi network. Talk to your local dealer for more information.

Connect with Ag Leader

Social media is a common way people are communicating today. Not only can Ag Leader fans interact with the company on Facebook, Twitter, LinkedIn and YouTube, but also on Ag Leader's blog – Precision Point. These platforms allow Ag Leader to inform and educate, and also have a conversation with those interested in precision farming technology. Connect with us today!



What's New in 5.2?

Looking to improve your efficiency? Ag Leader Integra firmware 5.2 is now available and will do just that. This update has improvements that any operation will find beneficial.

Key updates in firmware 5.2 include:

- Home screen
- Events tab
- Headlands tab
- Managing guidance patterns

Familiarize yourself with these updates today! To download firmware 5.2, go to www.agleader.com > Support Knowledgebase > Downloads



New Updates; Increased Productivity

SMS Software provides solutions for all seasons and organizes field data to allow you to make profitable decisions. Ag Leader is always working on new tools to allow your operation to run smoothly.

These new updates include SMS Basic and SMS Advanced Version 14.0. SMS Mobile has also updated to Version 8.0.

Key features of these updates include:

- Enhanced support for Ag Leader displays
- Ability to upload files to, and download files from AgFiniti
- New attributes related to Soil Survey data
- Updated Map Projection Engine Tool
- Enhanced Crop Insurance Export Tool
- New labeling options
- New options for data filters in SMS Advanced

Use the 'check for updates' tool in SMS Desktop and Mobile PC to access the updates. Or, download the updates from our website at www.agleader.com > Support Knowledgebase > Downloads.

Ag Leader®

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* Free Ag Leader® Integra or Versa™ display and/or RTK unlock with purchase of GeoSteer® and qualified trade-in of an Ag Leader color display or any non-Ag Leader steering system.

** Financing subject to participating dealers and qualified credit. No penalty for early payoff.

Offers valid through September 12, 2014.