

WINTER 2015

Ag Leader®

# Insights

PRECISION FARMING MAGAZINE

A photograph of two men in a field of soybeans. The man on the left is wearing a blue short-sleeved shirt and jeans, kneeling and touching the plants. The man on the right is wearing a light blue short-sleeved shirt, khaki pants, and a light blue baseball cap with the Ag Leader logo, also kneeling and looking at the plants. The background shows a vast field of green soybeans under a sky with soft, golden light from a low sun, suggesting dawn or dusk.

**YOUR GUIDE TO  
PLANTING SUCCESS**

**WALKING  
THE LINE**

**KEEPING YOUR  
DATA YOURS**



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# IS IT TIME TO TIGHTEN YOUR BELT? OR INNOVATE?



It's easy to get comfortable when things are going well. It's not until circumstances change around us and we become less comfortable that we often consider changing how we do things. That's exactly the case in farming right now.

For the past few years, crop prices have been high. Yield has been good. And it hasn't been too hard to make a comfortable living in farming by just doing the same thing you've always done.

Things have obviously changed. That may mean you need to tighten your belt to ensure you earn a profit. Maybe

you put off buying a new piece of field equipment. Maybe you try to get by with a little less fertilizer. Maybe you consider a different, less expensive brand of seed. Maybe you pass up the opportunity to buy that neighboring field that is for sale.

Or, maybe you look for ways you can make your operation more efficient. Maybe you invest in an auto-steer system that helps you eliminate overlapping your planting and application work. Maybe you add Hydraulic Down Force to your planters to ensure you're maximizing your yield. Maybe you equip your planter and sprayer with auto shutoffs so you don't waste money on input costs. Or maybe you even consider crop sensors like OptRx, so you optimize fertilizer application and yield potential.

It's called innovation.

When things change in farming, it's usually those who adapt by using innovation who win. Now think about your own operation. What could you be doing to make your operation run more efficiently? How can you squeeze just

a few more bushels of yield out of your same field? How can you make little changes in your planting or application practices to better control input costs? How can you begin collecting and analyzing data that will help you gain insights about your operation?

At the risk of talking up Ag Leader's products, I'd suggest the best thing you can do is visit with an expert who can show you technologies that can improve your operation. And, I'd contend that there is not a better option than an Ag Leader dealer.

It's a new year with a new opportunity to improve your operation. It costs you nothing to visit and learn about new innovations that could improve your bottom line. But the return on your investment in time will pay off for years to come.

Happy New Year!

*Al Myers*

Al Myers



# OLD EQUIPMENT IS REBORN WITH AG LEADER



Dryland farming can be challenging even in good years. So when commodity prices make a turn to the south, as they have this year, you've got to make smart decisions to turn a profit. Just ask Eldon Hawes who, along with his wife, Karen, and son, Nathan, manage about 11,000 acres of wheat and pastureland in northeastern Colorado.

Hawes, who has been farming in the area for about 40 years, started turning to precision farming technologies to help improve the efficiency of his operation just a few years ago. Instead of buying brand new field equipment, he found that upgrading the technology on his existing equipment was a smarter investment.

"We started with precision farming seven years ago when we added a guidance system to our AgChem sprayer," Hawes said. "Then we retrofitted another guidance system to an older 4-wheel-drive John Deere tractor and planter. Recently, when my son bought some land and got started, we added a newer two-year-old grain drill. For us, it doesn't make sense to go out and buy all new equipment. It's just smarter to add precision to our existing equipment."

Hawes' most recent investment was an Ag Leader Integra display, an OnTrac3 assisted steering system and GPS antenna from Ag Leader that he can easily add and remove from his tractor, depending on what he is doing.

*"For us, it doesn't make sense to go out and buy all new equipment. It's just smarter to add precision to our existing equipment."*

— Eldon Hawes, Colorado



"We chose it because it was one of the systems that would work on our John Deere tractor and help run our air seeder," Hawes said. "We have equipment from Deere, New Holland, AgChem and others. We wanted something that was simple to use and flexible enough to work with different brands of equipment - especially equipment that might be a few years old. In the winter, we also use the John Deere tractor for snow removal as well. It's easy to take on and off the steering system depending on what we need to do."

Flexibility is a common theme for farmers looking to add technology to their operations, according to T.C. Christensen, Precision Farming Specialist at Wickham Tractor in Fort Morgan.

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*"We wanted something that was simple to use and flexible enough to work with different brands of equipment - especially equipment that might be a few years old."*

*— Eldon Hawes, Colorado*

"Farmers don't want to be tied down to one brand," Christensen said. "They want hook up to a drill they've had for two years and a tractor they've owned for 15 years. Most farmers around here are starting to adopt guidance and steering, but we're having a lot of conversations about variable rate technologies for spraying and planting. It's just a matter of time, and when you can offer them technologies that will work on different brands of equipment, that's important."

Hawes agrees.

"When markets get tight, you look for ways to operate more efficiently," Christensen said. "You watch capital expenditures and look to get the most bang for your buck. With the assisted steering system, you can see the rows are straight, where before, there were overlaps and skips. We don't have overapplication like we used to. The big benefit is in things like fuel savings and chemical costs. I can't tell you how much we've saved in either, but I know it's a lot."

According to Christensen, despite the tougher market conditions, farmers aren't throwing in the towel. Instead, he's seeing more and more looking at precision technologies as the investment with the strongest returns.

"Farmers are a little pessimistic," Christensen said. "Guys aren't excited about three dollar corn or lower wheat prices. I expect that there will probably be less new field equipment sold. But farmers haven't shed their checkbooks yet when it comes to precision farming. They see it as a way to upgrade their equipment without spending the big bucks to buy all new."

"Eldon is a good example. He came in here with an older Deere tractor that wasn't ISO compatible and a newer drill that he wanted to control," Christensen said. "We set him up with an Ag Leader Integra display and ran it through the drill's virtual terminal so everything could talk together. Now he has a system that works - and is expandable if he wants to take the next step and get into auto shutoffs or variable rate somewhere down the road."

As for Hawes' next move?

"We'll probably be looking at auto control for our sprayer next," Hawes said. "We can see the advantages of boom section controls with auto shutoffs. If we can add that to a sprayer we already own, we're just squeezing more value out of a piece of equipment." ■





# YOUR GUIDE TO PLANTING SUCCESS

Planting season only happens once a year. So it makes sense to look at all of the variables that go into making planting season successful before you hit the field. And with new seed traits, advancements in planting equipment and of course, precision farming technologies, there are a lot of things to consider that can make the difference between a break-even year and a phenomenal one.



## CHOOSING THE RIGHT SEED

Choosing the right hybrid or variety used to be fairly simple. Not anymore. With soil testing, yield mapping, planter shutoffs and now the introduction of technologies like multi-hybrid planting, it's a whole new ballgame. It's about matching the right seed type to different areas within your field based on changes in soil type, moisture, fertility and other factors to maximize profitability across the entire field. Reviewing historical information stored in your SMS precision farming software can provide you with great insights on the types of hybrids you should be planting in different areas of your fields.



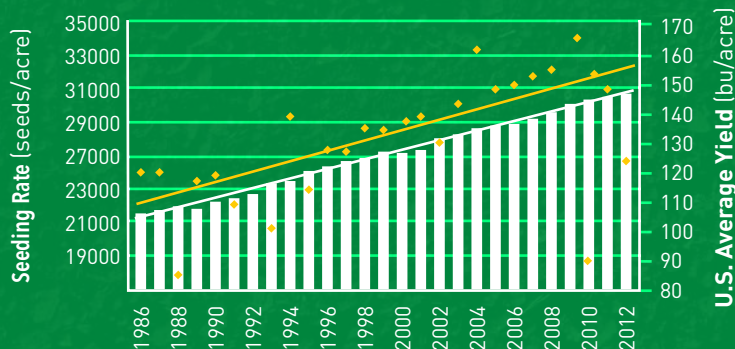
## PLANTING AT THE RIGHT RATE

Today, the average corn grower plants at a rate of over 30,000 seeds per acre (up from 23,000 in 1985). At the same time, average yield has increased from 105 to 160 bushels per acre. Optimum planting rates can vary significantly based on the hybrid selected and field/soil conditions.

Variable rate planting technologies like SeedCommand from Ag Leader allow farmers to match higher seed populations with more fertile soil zones across the field to maximize yield.

### AVERAGE CORN SEEDING RATES

■ Seeding Rate (U.S. and Canada) ♦ U.S. Yield



## PLANTING AT THE RIGHT TIME

Research shows that planting at the optimal planting dates can affect profitability significantly. For example, studies show that planting corn by early April in the central corn belt yields a profit level almost 10 to 15 percent higher than if you get your seed planted at the end of the month. Of course, a lot of factors play into planting timing. Soil temperatures below 50 degrees will reduce corn stands.

Excessive soil moisture can obviously make it impossible to pull heavy planting equipment through the field.





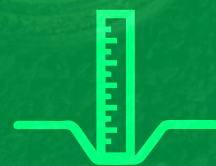
## THE RIGHT NITROGEN MANAGEMENT

If you're growing corn, nitrogen availability is one of the biggest factors in yield potential. It's also one of the biggest input costs. Maintaining the right level of nitrogen in the soil is a balancing act that can be affected as far back as last planting season, when crop rotation decisions were made. In fact, research shows that the average continuous corn rotation yield is 135 bu/acre, while corn in rotation with soybeans yielded 35 percent higher. Independent research has also shown that there is a significant advantage to using crop sensing equipment like Ag Leader's OptRx system combined with split nitrogen application – as much as \$20 - \$30 per acre.



## THE RIGHT ROW SPACING

Many studies on row spacing have shown a moderate yield increase from planting narrow rows (22-inch corn for example), though in some cases yield actually decreased in narrow row planted fields. Experimenting with narrow row spacing can provide good insights as to how your fields handle higher populations. Using an Ag Leader Integra or Versa display during both planting and harvest can help you determine if you can achieve better margins from narrow row planting. Following harvest, review your yield maps to determine what row spacing yielded best on your operation so you can optimize row spacing for the following year.



## THE RIGHT SEED DEPTH

Planting at the right seed depth consistently across your planter can be challenging, especially with larger planters where weight distribution across the tool bar can vary greatly from the middle of the planter to the outside rows. Rough field conditions, soil types and moisture levels can all impact seed depth. Yet planting within the proper seed depth zone can affect yield significantly. According to research from Iowa State University, the ideal seed depth zone for corn is 1.5 to 2 inches. Inconsistent seed depth of as little as ½ inch due to soil conditions or planting speeds can cause the seeds planted at the wrong depth to fall two to three growth stages behind nearby plants, reducing yield potential.

Adding a system like Ag Leader's Hydraulic Down Force System allows you to maintain a consistent depth across the entire planter. And because the system responds instantly (compared to slower-responding air-bag systems) it is ideal for newer high-speed planters that are entering the market.

### NITROGEN MANAGEMENT STUDY

N Program	Hybrid	Total N <sup>1</sup> lbs/acre	Yield bu/acre	Income <sup>2</sup> \$/acre	PFP <sup>3</sup> bu/lb N
Preplant	A	233	209	1136	.91
	B	233	212	1153	.93
Sensor Based Split App	A	155	207	1166	1.54
	B	156	209	1179	1.48

<sup>1</sup> Total N = Pre-plant or early vegetative sideress N + sensor N

<sup>2</sup> Income = (Yield x \$6/bu) — (Total N x \$0.50/lb N)

<sup>3</sup> PFP = Yield / Total N



# THE NEED FOR FEED

**D**ean James has 400,000 beaks to feed — so he can't afford to make management decisions without first carefully weighing all the data available to him. But that's okay. In his opinion, good data produces good decisions.

James is farm manager of Cotner Farms, a fourth generation family owned and operated egg layer, grain production and feed mill farm located in Susquehanna Valley of central Pennsylvania. The farm's roots date back to the early 1900s. In 2012, it was recognized in the Century and Bicentennial Farm Program for farming the same land for 100 years.

In 1972, Cotner Farms

shifted from dairy farming to full-scale commercial egg production. Today, they continue to specialize in all-natural eggs marketed under the EggFresh™ label. Here they take egg quality seriously. Producing fresher, higher quality eggs means going above and beyond in all facets of production — from the living space for hens to how the eggs are washed, packaged and transported.

Animal diet and nutrition are essential in egg production. So from the day of hatch, all of the hens at Cotner Farms are fed premium all-natural vegetarian feeds. A quarter of that feed is grown and processed on the farm. James uses a Kinze 3660 model planter and an Ag

Leader Integra display to plant 1250 acres of corn, soybeans and hulless barley that is processed into grain on site. The rest is purchased locally.

"We like to do everything locally as we can," said James, who's been with Cotner Farms for 31 years. "We know what we're getting and it makes things easy for [neighboring farmers] to market their grain. You only have a few miles to go instead of 15 or 20 (miles)."

Cotner Farms advocates responsible farming and uses soil conservation methods like no-till farming, contour planting, crop rotations, cropland terraces and cover crops. Intensive nutrient management has also helped improve

growing conditions and limit nutrient run off. Precision farming has aided James and his team in these endeavors.

"We've gone from strip-cropping our fields to lumping a lot of them together in 20, 30 or 40 acre fields, which are all broken out into three management zones: high, medium and low yield," James said. "This all came about because of yield maps, which we started using in 1998. You know yourself from riding in the combines where the better parts of the field are. You know the lower yields are due to thin soils that don't hold water. But the yield map puts it right in front of you. It stares back at you and it's saying, 'Do something with me!'"







*"We've used it two years and have developed enough trust in it to know it does work."*

— Dean James,  
Pennsylvania

James emphasized the importance of collecting adequate data and reviewing it thoroughly before acting on it.

"We compiled about three years of data before we started doing anything with the yield maps," he said. "You can't rush out the first year and start making decisions on data because every year is different. Once you have a good amount of data, then it's time to sit down and observe it carefully. Look through things to make good, sound decisions."

The last six years James has used Ag Leader's SMS Software to review yield maps and other field data.

"Working with SMS has been good for us," he said. "The software is easy to use, but again, it takes a lot of time to sit down and really analyze the data and determine what types of things need to be done. We feel we've picked the low-hanging fruit already, and now it's time to dig deeper."

In other words, exploring new opportunities. In January 2013, James attended the National No-Tillage Conference, where he first learned about OptRx crop sensors. James was curious as to whether the OptRx system would be compatible with the John Deere 4730 sprayer he used for variable rate nitrogen.

"We talked to the Ag Leader folks and they said putting OptRx on the Deere sprayer wouldn't be a problem," James said. "After the conference I read up on it some more and by June decided to put it on our sprayer. Ag Leader support walked us through it and got it running. And now we're really satisfied with it. OptRx looks at what the plants need so it's a little more precise."

Cotner Farms was able to fund the purchase of the OptRx crop sensors through the nutrient management program offered through the Conservation Stewardship Program.

With the system purchased and integrated with his John Deere sprayer, it was time to start spraying.

James admits that at first he was skeptical of some of the application rates OptRx was providing. After all, he'd been farming the land nearly three decades and was confident he knew best what levels of nitrogen were needed in the different management zones. He has since changed his tune.

"We were a little reluctant to cut back the nitrogen rates in the higher yielding parts of the field, the higher management zones. But through reading and understanding better what's going on with the biological activity in the soil, we decided to let OptRx do its thing," James said. "By turning it over to the OptRx, we feel it's taken the decision making out of our hands. We've used it two years and have developed enough trust in it to know it does work. Now it's time to turn it over and not watch. We need to be optimistic with the algorithm and allow it to do its thing." ■



# KEEPING YOUR DATA YOURS



*"Knowing my data is safe and secure, and that I'm the only one to access it gives me peace of mind. It's the reason I decided to go with the AgFiniti system, and have been very happy with my decision." — Steve Rau, Iowa*

There are many good-spirited debates between farmers that range from tractor color to brand of seed. A new hot topic has emerged by the name of precision ag data, and the debate has already started heating up. Does the grower own the data they generate? Does the platform host own the data? There are advocates on both sides of the issue, and some that stand right in the middle. But not Ag Leader.

Ag Leader has made an early stand in the data ownership debate. The grower owns his or her data, period. There is no gray area, and there is no fine print. It's written out in the user agreement. Growers' data is as

independently owned as the company itself.

Iowa farmer, Steve Rau, understands the value of data privacy: "Knowing my data is safe and secure, and that I'm the only one to access it gives me peace of mind. It's the reason I decided to go with the AgFiniti system, and have been very happy with my decision."

Rau uses AgFiniti to transfer his data from his Ag Leader Integra display to his SMS Software.

AgFiniti offers a number of powerful file sharing tools that simplify data



management. Now AgFiniti is becoming even more powerful with the addition of AgFiniti Map View which provides easy access to all of your precision ag (or site-specific) data from the convenience of your favorite web-enabled device such as a phone or tablet. Working in conjunction with the

SMS Software, Map View offers the flexibility of displaying precision data from the majority of today's precision farming systems. Map View can display important data, such as row-by-row planting details, fertilizer maps, yield maps and more from any year. Viewing your maps and sharing

your data has never been easier, but you remain in control of who can access your files. No one can access your files without your permission.

"I've used Ag Leader equipment for the past 16 years, and I've always been pleased with the products and service," Rau said. "AgFiniti follows suit with its ease of use and seamless transfer of files."

Sharing your view on paint color and brand of seed is all in good fun. Sharing your data with someone you do not trust is not. Secure your data with AgFiniti. ■



# UNIQUE GPS PROJECT IN DUTCH REGION SUPPORTED BY SMS

A unique and high-quality GPS project has been initiated in a low-lying Dutch region, with support from Ag Leader SMS Software. Read here how a group of arable farmers on Hoeksche Waard Island have established ideal connections between sustainability, efficiency and commercial opportunities.

On a global scale, they are relatively small parcels of approximately ten hectares in the vast Hoeksche Waard area, a picturesque island very close to the dynamic international port of Rotterdam. But the yields of these parcels are substantial — that is the power of highly successful Dutch agriculture.

Now, how do you use those 20,000 hectares of farmland to its full potential? This is the pivotal question for GAOS (Geo Arable Optimization System). Thanks in part to Ag Leader, this route is still a forerunner in precision agriculture.

The driving force, however, is the H-Wodka study group: Hoeksche Waard op de kaart (Hoeksche Waard on the map). They are making efforts to get greater yields out of arable land, with due respect to the National Landscape (refer to page 12). Secretary Aad Klompe, who is also a local arable farmer, is proud of the results that he and his associates have achieved.

"As early as the 1990s we realized that GPS, and then RTK, were the appropriate tools to work our fields with enhanced efficiency," Klompe said. "It is perfectly logical that this concept has such great momentum in a country as densely populated as the Netherlands. After all, we are dealing here with comparatively small farms of an average of 100 hectares, comprising parcels of something like 10 hectares. The land is just as fertile as it is scarce and expensive; therefore, each and every square meter needs to be optimally utilized."

## AGRICULTURE IN THE NETHERLANDS

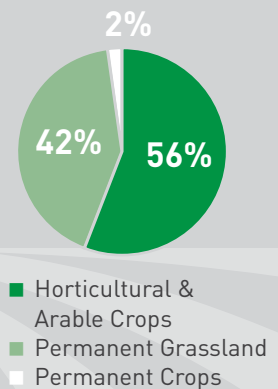


Employs **660,000** people



More than half of the total **4.15 million** hectares of land is used as **farmland**

**1 ha = 2.47 acres**



In 2010, **half** of more than **10,000 hectares** of greenhouses were used for **growing vegetables**

### The Dutch agri-food industry:

Accounts for



of the Netherlands' **total export value**

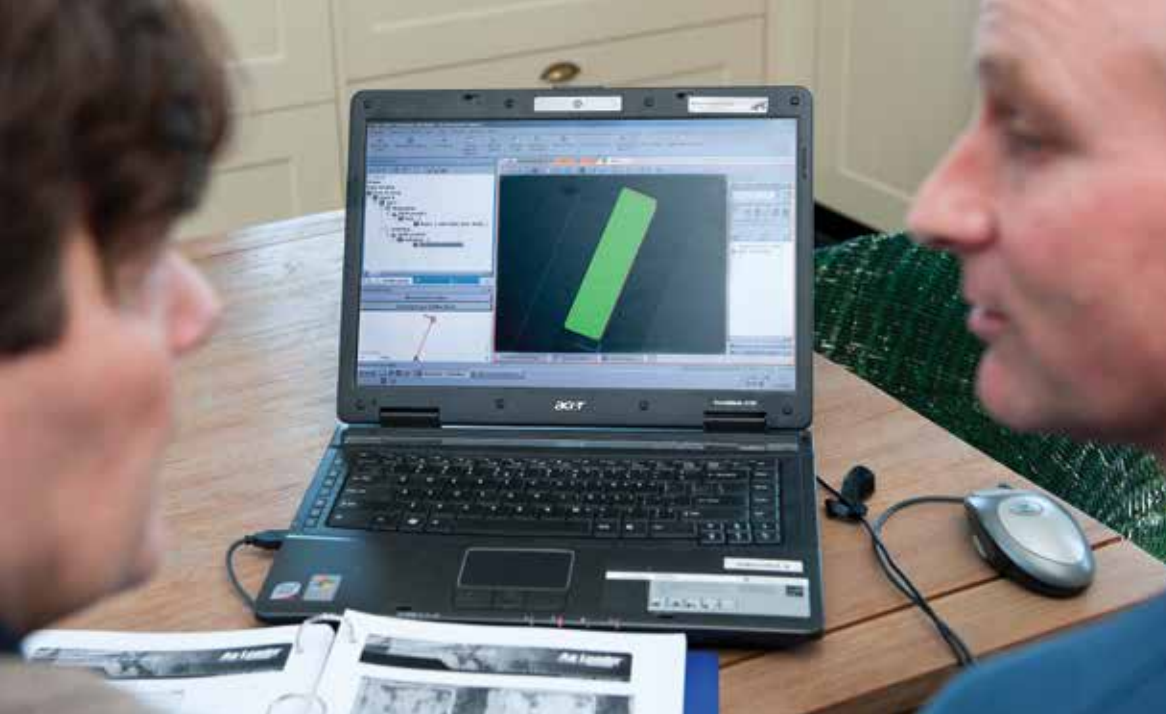
Has the



second highest **private R&D investment rate** in Europe

Source: <http://www.iamexpat.nl/read-and-discuss/expat-page/news/dutch-agricultural-sector-worlds-second-largest>





## H-Wodka go for a sustainable region

H-Wodka stands for 'Hoeksche Waard on the map.' Hoeksche Waard Island is situated just south of the industrial region around Rotterdam. Although there are many bridges and tunnels connecting the island to the mainland, the contrast between the two landscapes could not be greater. Vast arable fields with some sparse agricultural businesses line the island's total of 27,500 hectares, of which 20,000 hectares are used for agriculture.

Since 2005, this island has enjoyed National Landscape status, due especially to its agricultural landscape. In 1995, a number of initiators founded the H-Wodka foundation, with two purposes in mind. First and foremost was the management and preservation of soil-bound agriculture as the mainstay of this countryside. The second objective was to enhance the vitality of soil-bound agriculture by deploying trail-blazing innovation. This latter aspect is realized especially through technical innovations in the domain of GPS and GIS technology. GAOS [Geo Akker Optimalisatie Software - Geo Arable Optimisation Software] supported by Ag Leader SMS is an example of such innovation.

Project promoter, Peter Lerink, joined the group on the strength of his technical know-how, his expertise in farming mechanization, as well as his previous commercial contacts.

"It is characteristic of the initiators that they did not 'hide their light under a bushel' but rather took the opportunities in favor of both their business and the landscape," Lerink said. "It is precisely that kind of practice-oriented enthusiasm that provides a solid basis."

## Ag Leader SMS thinks agriculture

H-Wodka was more than happy to comply with the call from the European Common Agricultural Policy for greener parcel borders, thus ensuring better biodiversity. And this aim should best be combined with increased yields from more compact fields.

After purchasing a GPS-RTK system including software, it so happened that the H-Wodka members wanted more than the system could actually deliver.

Klompe explains, "We were looking for accurate maps of our parcels plus software so that we could get the best layout of our plots on our PC.

*"You can make optimum use of your parcel borders without brand dependency."*

— Aad Klompe

What we really wanted was ready-made maps of our fields which we could lay out exactly as we saw fit. Standard GPS control systems do not allow that facility. We wanted to be able to deal with our fallow zones and parcel borders as intelligently as possible in order to eliminate half working passes, or extra passes as much as possible."

It was then that Ag Leader emerged, and with explicit focus on agriculture, came into the picture as a solution-oriented system. The new GAOS software program was developed, supported by organizations such as Wageningen University and public-private environmental organizations.

This was a tailor-made concept but subject to the requirement that it could be

coupled to the most up-to-date GPS software and hardware.

So, a secondary objective was to ensure that operators could use any brand of automatic control to follow exactly the same lines of the routing map. It turned out that the Ag Leader SMS Software provided the best match with that aim. This system is capable of importing and exporting almost all formats, and moreover it communicates excellently with other software.

A few years ago, Ag Leader was the only entity that corresponded with the brands that H-Wodka wanted to operate. Using SMS, the initiators could convert the parcel data plus associated AB lines from multiple GPS providers to their John Deere tractors, a unique situation in the Netherlands.

## Optimal set-up of GAOS

For H-Wodka, it begins with the availability of a lightweight quad, fitted with GPS-RTK software. In keeping with a strictly applied protocol (starting with correct basic data), this vehicle has already measured close to 400 parcels. Thus, the gross limits of the parcels in question have been defined. The net demarcation is then reduced to the field itself minus the green or fallow parcel borders that are not allowed to be cultivated. Upon return, the arable farmer can upload the measured data, just as with other GPS systems.

The difference, however, is that GAOS provides far better facilities for the optimal layout of the field. The system takes all edges, corners and contours of the parcel explicitly into account while also respecting field borders, fallow zones and headlands. Subsequently, the basic field is drawn as effectively as possible in the shape of straight, parallel working passes. An AB line is



attributed to the headland as well. As an option, the operator can select a preferred direction, as well as the type and width of the border.

In addition to the ideal routing map, GAOS provides the facility to create task charts, either manually or on the basis of field charts. Thus, it is possible to apply variations of nitrogen fertilization on one and the same parcel. This dedicated prescription map enables a machine to apply the correct dose at the planned location.

### Home planning for all users

Arable farmer, Leen Ampt, is one of a group of approximately 20 H-Wodka farmers who operate an online account with the GAOS system.

"I use the system for all my operations such as sowing, spreading and fertilizing," said Ampt, who grows mostly potatoes, sugar beet, wheat, onions and chicory.

His tractors, potato planter and combine harvester are all fitted as standard with RTK-GPS. Currently, these machines only follow the lines that he himself has laid out within GAOS.

By now, Ampt has become a true specialist in optimal field layout, working from his home computer. After all, this is the essence of the GAOS concept which, moreover, is coupled to

Ag Leader's SMS Software. Using a USB stick, the operator can display the downloaded map on his tractor screen. AB lines and the new driving matrix are finalized in the system for the benefit of the routing maps. The SMS Software makes it possible to translate the information to various other GPS systems. The point is that this ability has not yet been standardized in ISOBUS.

Ampt knows that the maps not only benefit the arable farmers themselves but other users as well.

"I have already given my routing maps to my contractor on several occasions," Ampt said. "He then follows exactly the routing mapped out by me. Obviously, this saves him fuel and other resources but my field also stands to gain from it. I am sure that he follows my tracks so that structural deterioration of the soil is eliminated."

### Five to seven percent cost savings

Klompe, nodding his consent, implies that thanks to innovative software such as Ag Leader SMS, farmers increasingly are becoming the true managers of their fields.

"Also, think of the clear and accurate geographical information that you need to justify the use of your land to

the authorities," Klompe said. "So, the system offers various benefits. You can see that some of the farmers are exceptionally enthusiastic and have taken a course at Ag Leader. Thus, some of us are helping other farmers who still have to get used to the system. And then there is the option of intensified measuring of soil types to achieve even more varied sowing and fertilizing. We are working on that, but farmers will gradually get the hang of it."

"Ag Leader is very good at developing products for daily farming practices — the ability to operate variable dosing is a good example of a cost-saving option," Klompe said. "First and foremost, we can demonstrate that you achieve a great deal of profit because you optimize the use of your land much better than before. A cost saving of five to seven percent on the total costs per hectare is very possible. And, you know that you are operating in a sustainable way."

### Getting more out of precision agriculture, together

A recent new development is the establishment of a library by

Ampt, who installs GAOS routing maps of associated arable farmers' various parcels on an online platform.

Thanks to Ag Leader SMS, these files can be used uniformly by various control systems. Each user has the correct data available and he can apply it as appropriate. Lerink is definitely satisfied with the value of Ag Leader SMS within the approach of the H-Wodka group.

"Thanks to them, we have made great progress in precision farming," Lerink said. "However, we are now finding out that SMS offers many more application possibilities. So, there is great potential and much ground yet to be covered. In addition to our routing maps, in the future we will also be able to link task charts to logging speed data, for example. And then you can apply resources even more efficiently."

Ampt said, "I think that both users globally and Ag Leader themselves can get even more out of precision farming, thanks to these innovations and partnerships." ■

Lerink (right) and Ampt sitting at their computer using SMS Software.





# WALKING THE LINE



*Cabbage seed*

Jon Sykes used to do a lot of walking. As a specialty crops farmer growing 25 varieties of Asian and American vegetables, he deals with a lot of tiny seeds. Seeds that are so small, in fact, that traditional seed tube sensors were unable to pick them up.

So instead of relying on a display to track singulation and spacing, Sykes and his crew had to monitor the planting manually, hopping out of the tractor every 50 feet or so to check for skips. When you plant this way year round on 700 acres of Floridian farmland – where ditches and waterways abound – a day's work can feel like a week's worth.





Jon Sykes,  
Specialty Crops Farmer

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*“We were doing transplants before and knew we were getting 100 percent stands. Plants were in the ground right and the spacing was right and everything was right as you wanted it.”*

*— Jon Sykes, Florida*

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“When you’re planting cabbage anywhere between 6 and 12 inches, one skip at 12 inches means 24 inches,” said Sykes. “Ten years ago this wasn’t a big deal. But now your fertilizer has doubled in price, your chemicals have doubled in price, and your fuel costs and tractor payments have gone up. So you have to have 100 percent stand to make money. You have to reach 800 bucks an acre if you want to make even a little bit of money.”

Prior to direct seed planting, Sykes and a crew of eight or nine guys were originally transplanting vegetable plants that were shipped in from a nursery. Transplanting is incredibly expensive and labor intensive, and leaves many variables outside of the farmer’s control. For instance, inclement weather can disrupt planting schedules and lead to plants sitting in a trailer for days on end.

“We were doing transplants before and knew we were getting 100 percent stands. Plants were in the ground right and the spacing was right and everything was right as you wanted it,” Sykes said. “But it’s \$500 an acre to do transplants. That’s also eight, nine people – or \$1,000 a day in labor – you’re paying seven days a week. Direct seed costs us about \$40 an acre. And now we can go out and plant all that in two days with one person.”



Still, Sykes knew there had to be a better way to go about direct seed planting. So he reached out to his local equipment dealer and inquired as to whether any seed tubes on the market could track cabbage seeds. A bit of research led them to a DICKEY-john seed sensor used primarily for planting sugarbeets. There was no guarantee the seed tubes would work for planting cabbage – but it was worth a shot.

“We brought it down here and were just dry running it at our shop because the fields were wet, and it just wasn’t working,” Sykes said. “They told us we needed to get in the field and that it takes 500 seeds before the sensors adjust to the seed. So that’s what we did.”

Sykes installed the seed tubes on his Monosem NG Plus 4-row planter and connected it to an Ag Leader Integra display set up in the cab of

one of his tractors, and headed out to the field.

“We went out and it was picking up the seed alright, but it wasn’t great,” Sykes said. “So we did some adjustments on the Ag Leader Integra display and kept playing around with it. It took us about a week to adjust the system. And now, 100 percent perfect.”

Sykes owns all the land he farms, but actually manages it for two separate operations. He owns and operates Sykes Farms, which grows mostly corn and sweet corn. He is also farm manager of DNA Grower, Inc., an oriental produce company that rents land from him to grow cabbage, napa and other specialty vegetables. The Ag Leader Integra display has made overseeing the two farming operations much easier for Sykes.





"Before I started using the Ag Leader Integra display I had to write everything down. At the end of the day I'd write down how many acres we planted and what varieties. That takes time, too," Sykes said. "Then when you're busy and you miss a week, you're screwed. You don't know what you've done. But now everything is in the system and at the end of the week I print it off."

"Next year when I go to plant, I know exactly how much seed to order," Sykes continued. "I know exactly what to have in each field. How many acres a week I planted, so I can stay on schedule. It's all right there. I don't have to write anything down or worry about my book getting lost."

Sykes said his farming operation is much different than what you may find in the Midwest. Not only does he grow a great variety of crops, but all the fields are broken up by rampant slopes, ditches and waterways. So whereas a Midwest farmer may only need three tractors, he leases 25 tractors and typically uses five or six of them a day. Moving forward, he plans to purchase two new Ag Leader systems each year until his entire fleet is running on the same system. This includes using Ag Leader Integra displays for spraying and fertilizer application.

"We're spraying different amounts with different labels," Sykes said. "We spray at least four days out of every seven days. And we're changing things all the time. So if my guy doesn't write it down, then at the end of the week when I do my spray records, I don't know what we've done and what we're supposed to add. The Ag Leader Integra display can record everything we're doing and it makes my life easier."

"At the end of the week I'm not spending a whole day doing paper work," he continued. "I'm not wasting a whole day writing down that we sprayed this or that. I can spend the whole day with my family. I'm saving money on my personal time and I'm saving time on my labor."

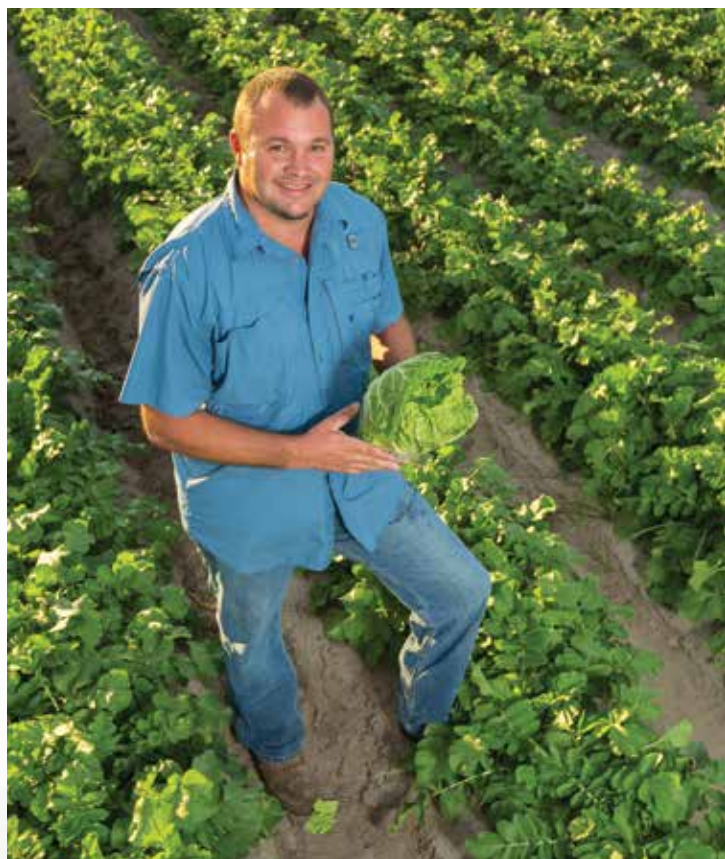
Efficient planting. Control over population and singulation. Better data and records. More time spent with his family. And better profitability. Sykes is fond of his new planting set-up controlled by his Ag Leader Integra display for many reasons. Still, it really comes down to that one thing:

"Now my guys aren't walking out behind a tractor all day, getting tired," he said. "And I don't have to worry about him slipping and falling or getting hurt. It's a lot better." ■

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*"I'm not wasting a whole day writing down that we sprayed this or that. I can spend the whole day with my family. I'm saving money on my personal time and I'm saving time on my labor."*

— Jon Sykes, Florida



# NEW IN GUIDANCE AND STEERING: GNSS TECHNOLOGY

In November, Ag Leader announced a new line of GNSS receivers – GPS 6000, GPS 6500, RTK Relay and GPS 6500 Basestation – as well as the latest automated steering controller, SteerCommand.

Combining industry-leading precision farming displays with superior GNSS technology, Ag Leader offers an end-to-end solution for guidance and steering.

“At Ag Leader, we endeavor to put out the best and most complete solution for our customers,” said Bill Cran, Ag Leader Product Specialist. “With our new GNSS products, we have an extremely flexible and powerful lineup capable of fulfilling any role within an operation.”

*“With our new GNSS products, we have an extremely flexible and powerful lineup capable of fulfilling any role within an operation.”*

– Bill Cran, Ag Leader

## GPS 6000

GPS 6000 is an entry-level option for growers seeking a cost-effective receiver. The GPS 6000 is a single frequency product designed for general mapping and AutoSwath functions.

## GPS 6500

As a fully scalable, rugged Smart Antenna, the new GPS 6500 utilizes GLIDE, SBAS, TerraStar and RTK, and is designed to meet the need of extended RTK baselines in excess of 20 miles (32km) when utilizing the Relay CDMA or Relay GSM via an NTRIP solution.

## GPS 6500 with RTK Relay & GPS 6500 Basestation

GPS 6500 with RTK Relay provides RTK correction through one of four Relay offerings: Relay 900, Relay 400, Relay CDMA or Relay GSM. GPS 6500 with Relay 900 or Relay 400 also offers basestation functionality, ideal for steering and other operations where sub-inch accuracy is needed.

## SteerCommand with GPS 6500

For growers seeking an integrated steering system, Ag Leader’s SteerCommand offers best-in-class integrated steering performance when paired with GPS 6500 for repeatable precision steering via RTK correction. The new SteerCommand controller features compact and flexible installation, as well as nine-axis terrain compensation for superior accuracy.

“SteerCommand was designed to function exclusively with our GPS 6500 receiver for a fully modular system providing unmatched performance in a variety of environments and operations,” Cran said.



## What is GNSS?

GNSS is a term used worldwide and stands for “Global Navigation Satellite System” and refers to the collection of satellite positioning systems that are now operating or planned globally. The advantage to having access to multiple satellites is redundancy and availability. Though satellite systems don’t often fail, if one fails, GNSS receivers can pick up signals from other systems. Or, if line of sight is obstructed, having access to multiple satellites is also a benefit. Common GNSS Systems are GPS (United States), GLONASS (Russia), Galileo (EU), and Compass (China).

## What about GPS?

“GPS” or “Global Positioning System” was the first GNSS system in the United States and originally used for military applications. Today it is a commonly used term in agriculture for describing a positioning system that allows us to map fields and auto-steer equipment.



# THE INNOVATION UPDATE

## LATEST:

### NEW RELEASE!



## SMS BASIC/ADVANCED V15.0 AND SMS MOBILE V9.0

Ag Leader is proud to announce the release of SMS Basic and Advanced v15.0 and SMS Mobile v9.0. Here are a few items that are included in this update:

- Enhanced support for Ag Leader displays; as well as displays from ALMACO and CNH.
- Enhanced support for importing TIFF image files.
- Enhanced visualization of display logged, swath-based data to show more accurate/true coverage.
- Improved performance when gridding and kriging data.
- Added the ability to make a copy of a mix based product.

### NEW RELEASE!

## NEW DIRECTCOMMAND GRANULAR FUNCTIONALITY: CONTAINER SEQUENCING!

The version 6.0 firmware brings a new feature called Container Sequencing. This will enable the DirectCommand granular 3 channel and 5 channel configurations to operate with the same application product in each bin and will sequence application product from the next bin for seamless operation.



Operators can set their preference as to what action will trigger the next bin, the Multiple Product unlock is required.

- From a low container sensor.
- The low container countdown from the display.
- The empty container warning from the display.
- Manually select when to transition to the next container. (Operators can also specify the order of bin sequencing.)

To download firmware 6.0, go to [www.agleader.com](http://www.agleader.com) > Support Knowledge > Downloads



### NEW RELEASE!

## VIEW YOUR MAPS FROM ANYWHERE WITH AGFINITI MAP VIEW.

AgFiniti Map View allows you to access your data using any web-enabled device anywhere and anytime! Working in conjunction with the SMS desktop software, AgFiniti Map View offers the flexibility of displaying precision data from the majority of today's precision farming systems!

- Displays most mappable data available in SMS desktop software.
- Compatible across many web browsers (sizing limitations on some small devices such as phones).
- Simple design makes seeing what you want easy.
- See values from all your field operations or reference data based on GPS or manual location on your map.
- Simple query tool provides results for all mapped/available data.
- Multi-item mapping allows you to layer data.
- Adjustable legends for map data so you can view data the way you want.

## 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!



SETTLING FOR A PRECISION FARMING PARTNER THAT WANTS CONTROL OF YOUR DATA

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