The world's biggest Ag Show

By Sam Sawley, SawleyCo

AT A GLANCE…

Agritechnica is the world's biggest Ag show and is held every two years in Hannover, Germany. It is the showcase of the biggest and best in the global agricultural engineering industry and a forum for the future of plant production. And it just keeps getting bigger – in November, 2017, the show attracted:

- 2802 exhibitors exhibitors from 52 countries in 23 halls.
- 458,000 visitors from 130 countries.
- 110,000 international visitors.

It is a daunting task just to get around the whole show, but Sam Sawley from SawleyCo, the agricultural equipment hire specialists, attended the 2017 show and sent back these notes.

The trade show venue in Hannover is massive – and the stands are too.

MASSIVE is not big enough to describe the size of Agritechnica. I had four days there and even then I couldn't get to see anywhere near all of it.

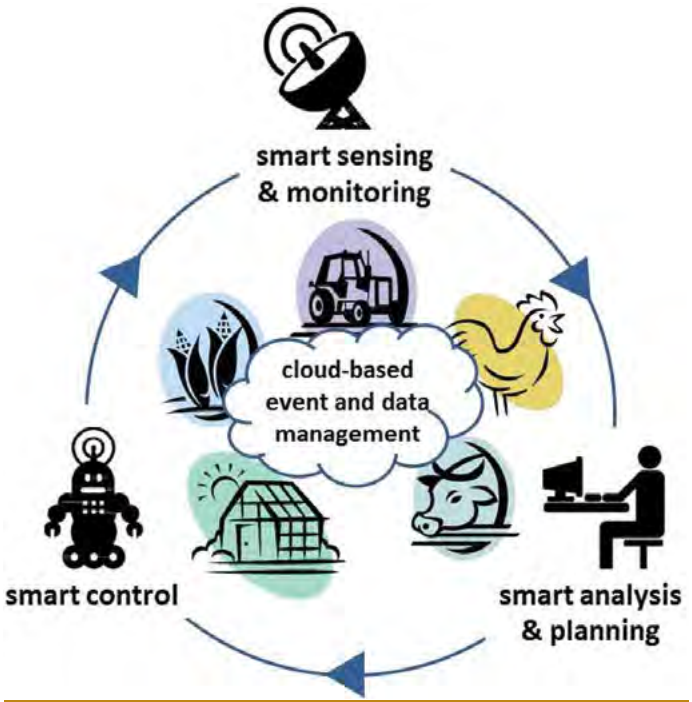
But I did get a look at what's happening in the world in our specific areas of interest, and there's a lot going on in the Northern Hemisphere that will impact us in Australia in 2018 and 2019.

I'm going to cover the main points I think you'll find important:

- Data and automation;
- Top technology and apps;
- Micro robots;
- Weed control without glysophate;
- Reducing compaction with tracks; and,
- Planting technology improvements.

Data and automation

At the Agritechnica show I saw options to automate just about everything you can think of! Data and automation are now growing hand-in-hand and are about to help us all save money and time.



Data gathering and automation (from Wolfert).

But as we have the ability to also gather data from just about anything on the farm, this stuff is overwhelming for most of us.

How to deal with the data overwhelm?

I liked the diagram above showing the concept of how the data fits together with the automation.

When you stroll around Agritechnica it's obvious there's awesome potential in using automation to help optimise farming activities.

But from talking to people using the data and automation the secret is clear.

First, you have to work out which areas you want to focus on! Otherwise the complexity and cost of trying to work out how to automate everything at once will remove the benefit you can get from it.

Once you've done that, you're on the right track.

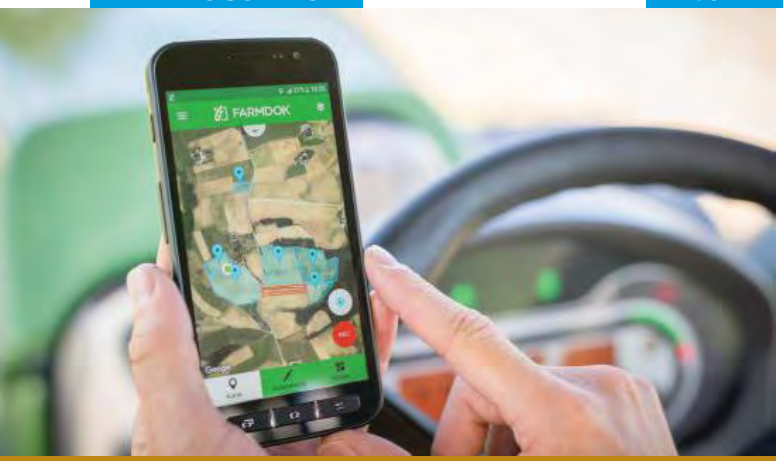
True 'plug and play' is now farm-ready so you no longer need to be an IT guru to get automation working for you on your farm.

Northern Hemisphere farmers, in particular, are hiring in machines pre-installed with automation systems (and they are guaranteed to work!)

Since the farmer doesn't have to be an IT guru to get the benefits, this has led to a surge in trials of data collection and automation on farms.

Here's my four step recipe for automation success on your farm

After speaking with the farmers and tech specialists, here is the key!



Farmdok helps automate data collection in the field.


Kuhn's section control system – very cool.

If you are considering putting data and automation into play on your farm, the way forward is as follows:

- Pick the two largest variables you think will impact on your profitability.
- Choose the most common automation solution for these variables supplied by someone who has a track record of delivering this solution (that you can trust).
- Have a play with the tech first without outlaying a heap of time and cost (eg. get in a contractor or do a trial or pilot for a bit).
- Only when you have proved it should you take the leap to scale up and spend.

This method ensures you take the risk out and is the way most farmers I spoke with are automating to make more profit.

Hot apps and technology

As you can imagine, the tech is everywhere you look. Here were my favourites:

Farmdok

A great app to help automate data collection in the field. Its features include Task Prediction, which helps plan the jobs that need to be completed, and Work Cognition, which lets you track a machine's activity.

Automated section control from Kuhn

Kuhn's automated section control for tillage to ensure you don't 'over-till' soil on headlands and so on.

Automated harvester setup

This is one of those examples where you don't need to be an IT professor anymore.

The system monitors crop input variables and adjusts the machine settings. This takes the guesswork out of optimising a combine's performance.

So the tech side is strong at Agritechnica – but the big tech movement is in robotics.

The robots are coming!

This was really interesting for me to see because, as you probably know, our business is all about the future of advanced farming technology.

And, having seen the progress in this area, I reckon we are less than 10 years away from significant robotic machines that can run without humans sitting on them.

What will be fascinating is that this may see advanced machines getting smaller as 'swarms' of them can be put into a field to work together to do things like planting, weed elimination, fertilising, and so on.

Who knows? Soon, SawleyCo may be dry hiring swarms of robots all over Australia.

Robots from MARS?

One interesting example of the genre was the AGCO Fendt 'Mars' seeder (MARS stands for Mobile Agricultural Robot Swarms).

They can be smaller because you don't have an expensive human operating them meaning you don't need to have each machine doing more and more acres per hour to spread their cost, plus they can go 24/7 without rest.

Also, the individual costs of each machine can be stripped back meaning you can have lots of them.

There are a lot of upsides to having smaller gear: Less compaction, more precision and better-targeted timing of inputs for each part of your farm.

The MARS system is a swarm of small single row planting units that work from a base station where they keep returning to recharge and refill with seed – it was a fascinating concept.

But above all, these robots are coming FAST. It won't be long before we are all using them!

Tiny MARS units planting single row at a time. Mars stands for "Mobile Agricultural Robot Swarms."

This laser weed zapper crawls around the paddock searching out weeds and zapping them.

Herbicides and the war on weeds

Glysophate (and other herbicides) are under pressure but interesting alternatives for weed control are emerging. The pressure on glysophate is more immediate in Europe than here in Australia, but we still can't ignore it.

Many countries in Europe are committed to phasing out glysophate within the next five years which has enormous ramifications.

Whilst this isn't going to happen anytime soon in Australia, it's very interesting to see what's coming onto the market to deal with this looming issue:

- **Vision systems on spray rigs continue to get more accurate and reliable –** this is obviously the immediate answer and one that is growing everywhere (including Australia). Good vision systems can reduce herbicide use by over 90 per cent. I know some people are having mixed experiences with these systems, but they will only get better.
- **Lasers to zap weeds –** this was pretty cool and I have attached a picture of a trial machine in operation. Basically, you put it in the paddock and it goes off hunting weeds and zapping them. I really think this concept has potential especially when you can use a 'swarm' of them (see robot section) to get across a paddock 24/7.
- **Mechanical weed control tools –** this was interesting and I need to look into this more. There was a simple "weed deheader" unit from Finland that fitted onto the front of a

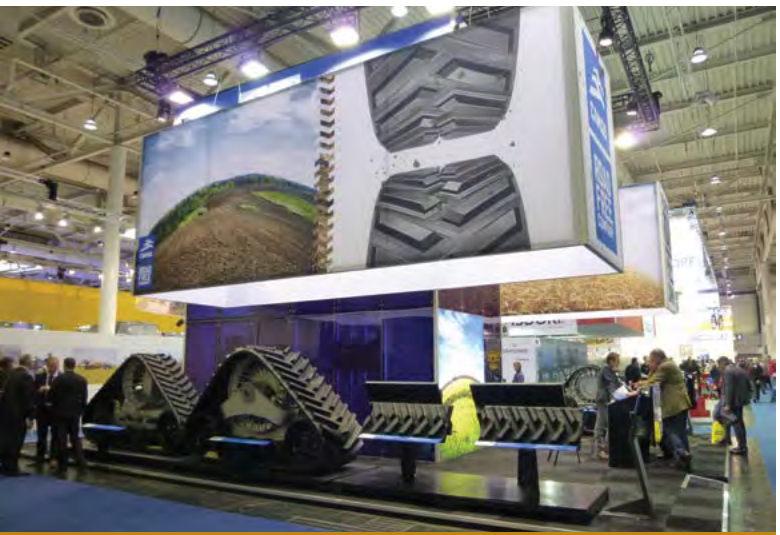
The W-Cutter mechanical weed de-header.

medium sized tractor that grabbed my attention. There are also a number of companies working on selective "weed removal" technology which I'm keeping an eye on.

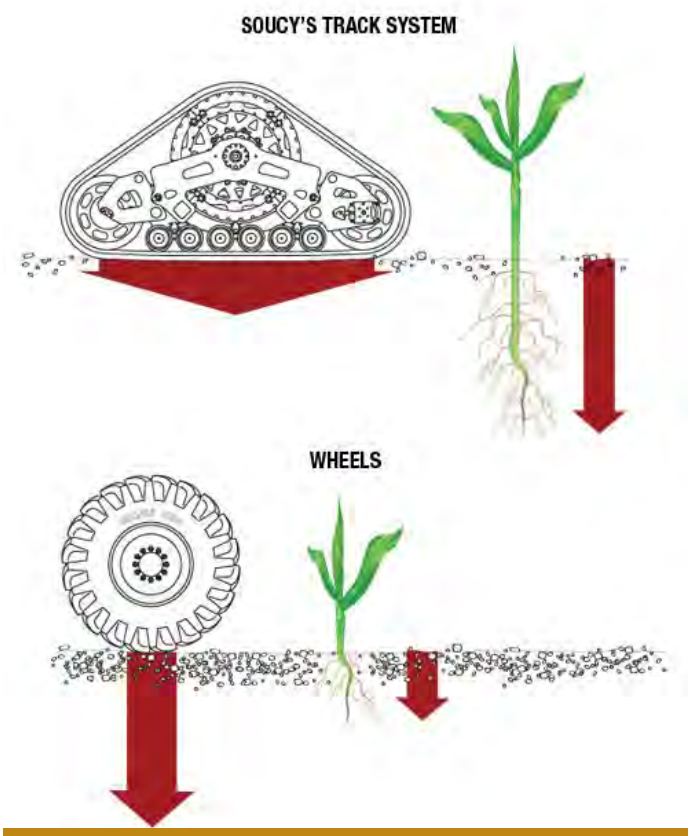
- **Tillage tools that try to really minimise soil disturbance** – tillage is certainly making a comeback as manufacturers recognise there are very different types of tillage needs and are designing the right tools for these needs rather than the good old 'one-size-fits-all' chisel plough which tears up the soil structure when it may not always be an appropriate solution

Tracks to reduce compaction

Tracks are a simple concept that's been around for a long time but seems to continue to be spreading fast. There were many suppliers offering tracks at the show.



One of many specialist track manufacturers at the show.



Track logic – smaller the compaction the bigger the plant.

As equipment continues to get larger and people are more focused on getting the most out of every square metre of their land, tracks are becoming more popular to reduce the issues of compaction.

Just about every new machine now seems to come with track options and there are lots of after-market suppliers who can fit tracks onto just about any existing machine.

Soucy was one of a number of good suppliers that stood out to me. I think we are going to see a lot more tracks in Australia, too.

Planting technology improvements

Seed singulation with small grains

One big thing I liked was the ability to now achieve seed singulation with small grains, particularly when combined with variable rate seeding and section control on planters.

An awesome bit of small seed precision planting by Horsch – these guys have amazing gear.

An example of individual planting head control to automatically turn off seeding in headlands to avoid over-population of plants.

Small seed singulation delivers singulation benefits to large broadacre cereals, pulses, oilseeds and so on.

There is just huge yield potential in combining these things in large broadacre applications:

- Being able to have sections turn off automatically when planting with headlands and overlaps;
- Getting the exact spacing between seeds to optimise tillering and yield outcomes per plant; and,
- Putting lower seeding rates in lower yielding soils so that you again get the optimum yield outcomes per plant.

Apart from ensuring that each individual plant maximises its yield ability (which is huge) there is also a massive benefit in ensuring that all the plants in a paddock tiller at the same time – no more waiting for late tillers.

We do a lot of contract harvesting and we are frequently stopped waiting for the late tillers to ripen whilst the rest of the tillers are already ripe and the seed is starting to degrade in quality in the head. Getting true singulation with variable rate seeding and section control solves this big issue too.

NOTE: Did you notice my not-so-subtle plug for Horsch? I'm biased, but we hire out their magnificent Tiger machines and the results right here in Australia are consistently amazing. Just shoot me an email if you'd like to see a demo or get some more information and case studies from farmers like you. sam.sawley@sawleyco.com.au

The huge site of Agritechnica.