New Technology in Agriculture, 2017

TUESDAY, 19 DECEMBER 2017 BY GILBERT VANDENHEUVEL

Agricultural Technology New In 2017

As 2017 is coming to an end, it's a fitting time to look back at some of the new innovations that Dwyer Manufacturing has done and then a number of new innovations from the world wide Agricultural Industry.

Dwyer Manufacturing's new designs/products for 2017

Organic/Humane Farrowing Pen With the increasing interest in organic pork production, Dwyer Mfg has put together an organic / humane farrowing pen. The pen will allow the sow and piglets ample room to move around and nest in the supplied straw or shavings. To  insure the safety of the farm staff, containment sides can be swung around to keep the sow from injuring workers during periods of piglet management.

Slat Gap Cover Converting a sow or finishing barn to an organic system means that the solid area needs to increase from a conventional system. Pouring another layer of concrete over fully slatted floors can be time consuming and problematic depending on the barn design. Another option is using a Slat Gap Cover. The plastic Slat Gap Cover pieces are are pushed into the openings of the slat. While being easy to cut to length and quick to push into place, Slat Gap Covers are extremely difficult to remove and stand up to everyday conditions in a pig barn very well.

International Agricultural Innovation

By no means is this a complete list of world wide Ag innovation, just a number of items that have caught my eye.

Enjoy.

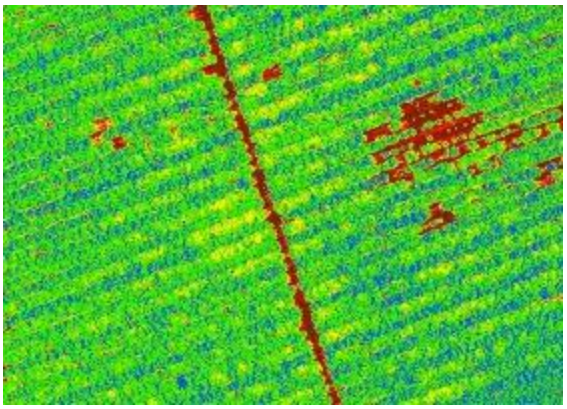
Drone Crop Scouting

Drone technology has advanced quickly in the last 12 months. Many of the units now almost fly themselves. Gone are the days of crashing into trees and buildings since the modern drones have sensors (directional and altitude) that make them

much easier to operate.

With the better hardware comes increased value in what they can do. Basic areal photography and video can be very useful. A drone will allow you to scout general condition of your crop or record on video of how much of your field was hit by frost and then use that video recording to report to your crop insurance agent to make the decision of replanting or not much more timely.

Thermal imagery can tell you where weeds patches are or where a drainage tile is broken.



More information from a Canadian company click HERE

If nothing else, you can use this information to convince your wife why you really need to get a drone because it will make you money.

Driver-less Tractors and Field-Bots

With big acreage fields, the autonomous tractor could be a piece of equipment your children will consider. With so many hours just sitting in your conventional or GPS guided tractor, why bother sitting there at all? With the proper setup and open fields, this type of equipment can do a precise job while you do something more meaningful.

See CaseIH video on this technology HERE.

For smaller more precise farming, a field bot could be the solution. Robot precision farming not only promises to increase yields by optimizing growth and harvesting processes, but can also lead to a reduction in fertilizer and herbicide usage and improve soil quality through more targeted interventions.

To see some in action click HERE or HERE

"We are starting to see more and more robots on the farm, doing farm tasks and eventually, we are going to get to the stage where you see semi-automated or even fully automated farms happening."

Salah Sukkarieh, director of research and innovation, Australian Centre for Field Robotics (ACFR)

Polystyrene Concrete Blocks

While maybe not the newest technology on the list, it seems to be gaining steam as new construction techniques are being developed to use concrete that has recycled plastics in it.

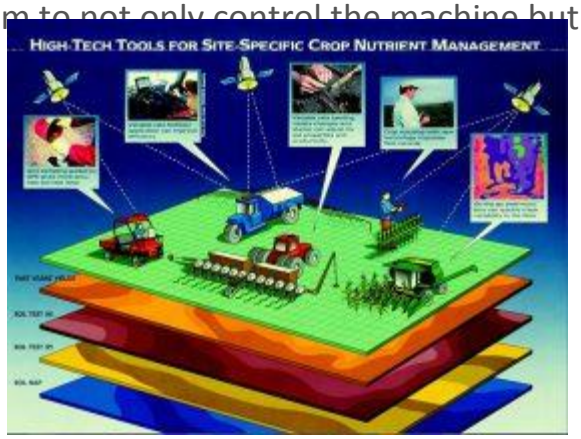
Not only does it reduce landfill, the concrete is given some insulating properties while keeping its strength and reducing weight. Maybe these will be used in pig barns some day.

For more information click HERE

Farm Data Management

Having more data shouldn't be anyone's goal, but turning that data into information that will allow you to farm smarter and more profitable is a worthy task.

Modern tractors, planting, fertilizing and harvesting equipment all have technology built into them to not only control the machine but also to collect multiple streams of data.



Numerous companies are emerging that have developed software that takes that data and transforms it into useful information in the form of crops maps & charts to help you make a plan to maximize next year's cropping plan.

Topcon is one such company. Get information on them HERE Granular is another company that pulls your whole farm operation's information together. Information video HERE

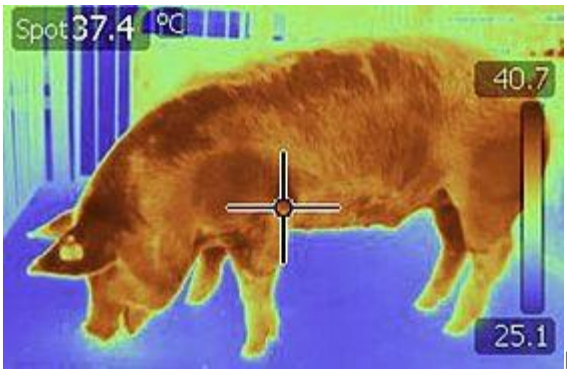
On any farm, the investment in equipment to prepare the land, to plant, to tend to the crop and to harvest the crop can be huge. With so much money tied up into equipment, you want it to run at it's peak each and every day without major breakdowns. Equipment manufactu

rers have been adding sensors onto engines to keep track of hours of use to schedule regular maintenance. With remote access to the tractors logistics, a mechanic from miles away can access and diagnose the problem to get it running quickly.

For information on the John Deere system click HERE

Scanning Animals in a Variety of Ways

1. In the pig barn, the highest mortality rate is in the farrowing crate with many of those deaths being caused by crushing by the sow. Tending to the well being of the sow is a good start to reducing the mortality number caused by the sow. Brown-Brandl and a team of scientists from China, Iowa Select Farms and Iowa State University developed a system to automatically process and analyse 3-

D images of sows. A camera 

mounted over birthing crates captures images to determine a sow's behaviour and posture: if she's eating, drinking, standing, sitting, or lying down. The system, which accurately classifies behaviour, could potentially help prevent sows from crushing their piglets. See the whole article HERE

2. Regular ultrasound checks for gilt back fat and muscle scores is a common job but with a skittish animal, it can be a dangerous job too. A safer method is being used at a Hycor facility in France developed by Biotronics. Basically, it's a unit that the gilts walk into and are lifted up to immobilize them to allow

the technician to safely and accurately scan for muscle and back fat measurements. To read an article on the machine and concept click HERE. To see the machine itself click for video HERE.

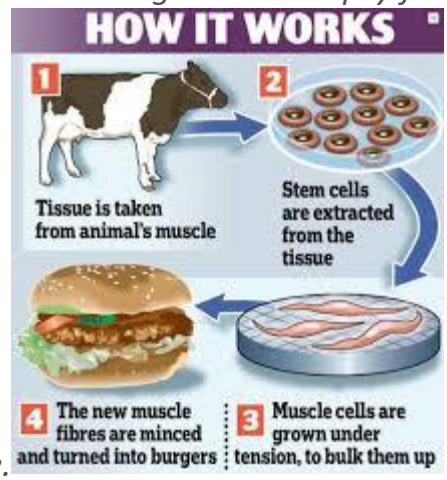
Growing Meat in a Lab

With conflicting tasks such as feeding the world's population ever increasing desire for meat and the need to treat our environment better, one solution is growing meat in a laboratory.

Here is the "how to" part taken from an article in ABC Science News. See complete article HERE

The science of growing meat

The process starts with taking a small biopsy from a cow to harvest stem cells from muscle tissue.



"Our bodies have stem cells just sitting there waiting to repair tissue," Professor Post says.

“If our muscle gets injured, these stem cells start to proliferate and form muscle tissue … instead of scar tissue. We are basically using that mechanism to create muscle tissue outside of the body.”

The extracted stem cells are then encouraged to proliferate in a nutrient rich, blood-infused broth.

Placed in a collagen gel, muscle cells have a unique ability to self organise into muscle fibre — contracting, maturing, strengthening and thickening over a few weeks.

Combine 10,000 of these muscle fibers, massage them with some salt, add breadcrumbs, spices — and dinner’s served — you have a

hamburger.

Add fat tissue, and you have something that tastes even more like the meat you’d carve off a cow to serve with chips and salad.

In the four years since their prototype was made public, Professor Post’s team has been hard at work.

“We have transformed the culture system into something that can be scaled [up for industry], we have improved the protein quality, and perhaps most importantly, we have created fat tissue. Fat helps make meat tasty, and taste matters in this quest. A lot.”

I know I’d try it, would you?

From all of us to you and your family, we wish you a Merry Christmas and a Happy New Year.