Hello, Ashtabula and Trumbull Counties!

We had an excellent turnout last Thursday night for our Pasture Walk at Miller Livestock Company in Kinsman! I was amazed at how much knowledge Aaron Miller and Rory Lewandowski have about cattle and pasture production. We had a lot of great questions from the 50+ people in attendance about all aspects of grazing and pasture maintenance. The Miller’s have a great operation going and it won’t be too long before they get their newly purchased pasture renovated. Thank you to Miller Livestock Co. for hosting the event, Lake to River Co-Op for sponsoring, and Rory for traveling out to teach us all something new!
Northeast Ohio Agriculture

Robot Tractor Draws Crowds on Debut at Iowa Farm Show

As Detroit car makers and Silicon Valley tech giants vie to bring driverless cars to U.S. roads, one of the world’s largest tractor makers is looking to do the same down on the farm. Case IH, the agricultural-machinery unit of CNH Industrial NV, this week unveiled a sleek, aggressive-looking red-and-black machine at the annual Farm Progress Show in Boone, Iowa.

This tractor -- CNH calls it the Autonomous Concept Vehicle -- has one obvious difference compared with more conventional models: there’s no cab for a driver. Instead, it comes equipped with cameras, radar and GPS, allowing a farmer to remotely monitor planting and harvesting via an app on a tablet computer, the company’s Brand President Andreas Klauser said in an interview Wednesday as crowds gathered around the machine to snap photographs.

Agricultural-machinery companies like Case, Deere & Co. and AGCO Corp. are keen to add the latest technology amid growing interest in the use of big data analysis, drones and satellite imaging. But this brave new world isn’t without its challenges. The U.S. Justice Department said Wednesday it’s suing Deere to stop the company buying a business that it argues would eliminate competition in high-speed planting, a young and developing segment of farming.

While offering efficiencies, technological advances promise to reduce a farmer’s traditional reliance on gut instinct. Some have expressed anxiety about corporations holding onto data gathered from their fields. London-based CNH would face headwinds in getting row-crop farmers to adopt its new technology, but it could gain a foothold in horticulture, Ann Duignan, an analyst at JPMorgan Chase & Co. in New York, wrote in an Aug. 30 report.

Dealing with the legal implications of self-driving tractors is one reason why it could take three years before they’re commercially available, Klauser said. An example he gave is how a farmer would go about moving the tractor from one field to another that may be across a road, since no one is physically driving it.

He declined to disclose how much it has cost to build the tractor on display in Iowa, or how much such a machine might sell for, if it ever moves beyond the concept stage. Case will analyze farmer feedback on its prototype. The 419-horsepower machine has a maximum speed of 31 miles per hour (50kph), according to Case. That’s much bigger in scale and power than other autonomous concepts, said Sara Olson, a Boston-based analyst at Lux Research who studies farm technology. “You’re not doing it just to be a novelty,” Klauser said. “You’re doing it to increase the efficiency for your customers.”

Driverless Tractors Officially No Longer Futuristic
By Ben Potter

What a few years ago might have sounded like a technology lifted from a sci-fi movie is about to become a standard sight on U.S. farms, if Autonomous Solutions, Inc., has its way. The company debuted two concept autonomous tractors in August with CNH Industrial – one for a Case IH Magnum and another for New Holland T8.

According to ASI, these tractors will allow for driverless seeding, planting and tillage. The tractors include obstacle detection capabilities as a safety feature. Mel Torrie, ASI founder and CEO, says he hopes the technology will lead to “near-term disruption” in the agriculture industry.
“CNH Industrial’s selection of ASI as a long term, strategic robotic development provider validates the capability and flexibility of our robotics platform in reducing the risk and costs for equipment manufacturers to bring advanced capabilities to their respective industries,” he says.

ASI envisions these tractors to be operated either manned or unmanned – or in some cases, having autonomous tractors work in tandem with other manned manned machinery. The technology would also allow for varying implements to complete multiple tasks, such as tilling and planting, in a single process.

According to Carlo Lambro, brand president of New Holland Agriculture, users will be able to control autonomous equipment via their desktop computer or portable tablet. They'll be able to see a path-plotting screen that shows the tractor’s progress, as well as a live camera feed with two front and two rear real-time views. Users will be able to monitor and modify a number of vehicle parameters, including engine speed, implement settings, seeding rate, coulter downforce and more.

Lambro also points out that driverless tractors could enable 24-hour farming during time-critical parts of the season, including planting hand harvest, in part because it can reduce human error by following “predetermined and optimized plans.” “The NHDrive concept autonomous tractor offers us the opportunity to open up completely new horizons for future farming,” he says. “An autonomous tractor that is able to work day and night helps solve the problem of a lack of specialized labor during the most intense seasons, makes 100% use of the periods of favorable weather for various farming activities, and maximizes the rational use of resources.”

Officials at Case IH say they hope recent farmer demos of their concept autonomous tractor will provide informative first farmer reactions of the technology. "We just want to know how much interest producers have in these autonomous features, and what else they would like to see from us," says Leo Bose, Advanced Farming Systems (AFS) marketing manager. “It’s not a product launch, by any means. But it could certainly lead to one, or several, down the road.”

In congruence with its concept autonomous tractor announcement, Case IH says it has changed its company tagline to “Rethink Productivity.” “[The tagline] embodies both our approach to equipment innovation and our customers’ approach to their operations,” says Tom Dean, marketing director for Case IH North America. “In today’s ag economy, producers know they must focus on achieving the highest level of efficiency if they want to grow and succeed. That’s why we are intensifying our focus on the combination of advanced technologies and agronomic design.” ASI has also been working with equipment manufacturers in other sectors, including companies such as Ford, Toyota and Boeing.

**Why Justice Wants to Block the Deere/Precision Planting Deal**
By Alison Rice, AgWeb.com Markets and News Editor

The news that the Department of Justice has sued John Deere to block its $190 million purchase of Precision Planting caught the ag world by surprise on Wednesday, given the lack of action on other major ag mergers, like ChemChina’s purchase of Syngenta and consolidation in the livestock world.

Their reason: The deal could lower competition and raise costs for farmers.
“Overall, farmers have benefitted from the innovative product offerings, aggressive discounts and promotions, and lower prices that have resulted from the intense head-to-head competition between Deere and Precision Planting to sell high-speed precision planting systems,” Justice said in a legal filing released yesterday.

That document, a complaint filed in U.S. District Court for the Northern District of Illinois, Eastern Division, provides important insights into the antitrust division’s thinking about the Deere/Precision Planting deal, which was announced in November.

Here are Justice’s top concerns, according to the complaint.

For the entire document: https://www.justice.gov/opa/file/889071/download

1. The combination of Deere and Precision Planting would constitute a monopoly, given that the two firms’ market positions add up to 86% of all high-speed precision planting sales in the U.S., according to Justice.
2. Precision Planting, which offers less retrofit options for existing planters, has been a significant competitor in the marketplace for Deere. “A farmer who might otherwise spend over $150,000 to purchase a new ExactEmerge planter from Deere could achieve the same results at one-fifth the coast by upgrading a conventional planter with Precision Planting’s retrofit components,” the complaint says.
3. Justice sees an independent Precision Planting as an important force for lower prices in the high-speed planter market and thinks that Deere does too. “In evaluating the benefits of acquiring Precision Planting, Deere estimated that eliminating competition from Precision Planting would allow it to avoid cutting its ExactEmerge prices by 5% to 15%,” according to Justice. The agency also says that “Deere calculates that the ‘strategic value’ of the acquisition—that it would retain by not having to compete with Precision Planting—ranges between $70 million and $210 million.”
4. There are high barriers to entry for the high-speed precision planting market. Both Deere and Precision Planting invested years in developing their high-speed seed delivery cartridges, and “strong patent protections, in part, ensure that Deere and Precision Planting are the only two firms offering these seed delivery cartridges,” the complaint says.
5. The combination of Deere and Precision Planting would create an unfair competitive situation for other machinery companies like Case and AGCO, which have been developing a factory-install business with Precision Planting. “If the acquisition were consummated, Deere would likely set the price, technology, and go-to-market timing of high-speed precision planting systems supplied to competitors to not undercut its planter sales,” the complaint says. “This strategy would likely harm Deere’s rivals, entrench Deere as the dominant provider of high-speed planting systems, and limit competitive choices available to farmers.”

In a joint statement released Wednesday, Deere and The Climate Corp. disagreed with Justice’s findings. “Competition in precision agriculture is strong and growing in all of these channels as companies around the world continue developing new technologies. The acquisition will enable broader access to these advancements by ensuring farmers the choice to either buy new machinery or retrofit older planting equipment with the latest new innovations,” the statement said. “When the transaction is finalized, Deere will preserve Precision Planting’s independence in order to ensure innovation and speed-to-market and will invest in additional innovation efforts at Precision Planting to benefit customers.”
Economic Depreciation Change: Evidence from Periods of Net Farm Income Change
By: Barry Ward, Leader Production Business Management
Ohio State University Extension

Deterioration in profit margins for major Midwestern field crops over the last three years has created a changing environment with respect to farm machinery and equipment investment. The strong returns for Midwestern field crops from 2006 to 2013 together with favorable tax incentives (bonus depreciation and Section 179 expensing) led to strong demand for new and used farm machinery and equipment over this period. The subsequent period (2013 to present) of lower crop prices and profit margins has led to relatively weaker demand for farm machinery and equipment over this period. This weaker demand has led to softer markets for used equipment and trade-ins. These lower prices for farm machinery and equipment trade-ins has created a higher rate of implied economic depreciation for this machinery and equipment compared to the previous high profit period.

An analysis of farm machinery and equipment sales data from the online used farm equipment sales platform, Machinery Pete, allows us to examine the change in resale prices of used farm equipment over the period of profit margin change from 2000 through 2015.

Findings:
- The average depreciation for 8 tractor models over the 2002-2015 period averaged $24.26 per tractor hour.
- The average depreciation for 8 tractor models over the 2002-2006 period averaged $31.68 per tractor hour.
- The average depreciation for 8 tractor models over the 2007-2013 period averaged $19.46 per tractor hour.
- The average depreciation for 8 tractor models over the 2014-2015 period averaged $22.50 per tractor hour.
- Evidence of fluctuations in economic depreciation between periods of high and low profitability seems to be supported by the data.

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Conclusions:
- Calculating depreciation per machine hour for power equipment may be more accurate than traditional methods of calculating depreciation.
- Fluctuations in general farm profitability and machinery and equipment demand should be considered when utilizing hourly depreciation measures.
- Follow equipment resale markets to discern changes in economic depreciation.
- Change in resale price per unit and price per-hour-of-use of select makes/models over this time series implies a change in economic depreciation between periods of high profit margins and periods of low to negative profit margins.
- The tractors examined in this study were found to have a lower resale value per unit and per-hour-of-use and therefore higher implied economic depreciation in the period of lower profit margins from 2014 through 2015 compared to the period of higher profit margins from 2007 through 2013.

**New USDA App Protects Cattle from Heat Stress**
By Jan Suszkiw

USDA’s Agricultural Research Service (ARS) has launched a new smartphone application ("app") that forecasts conditions triggering heat stress in cattle. The app is available at both Google Play and the App Store.

Compatible with Android and Apple mobile phone, the app issues forecasts one to seven days in advance of extreme heat conditions, along with recommended actions that can protect animals before and during a heat-stress event. In some cattle, distress and discomfort from prolonged exposure to extreme heat cause diminished appetite, reduced growth or weight gain, greater susceptibility to disease and, in some cases, even death. Cattle housed in confined feedlot pens are especially vulnerable to heat-stress events, notes Tami Brown-Brandl, an ARS agricultural engineer at the Roman L. Hruska U.S. Meat Animal Research Center (USMARC) in Clay Center, Nebraska.

In addition to high temperatures, weather-related factors like humidity, wind speed, and solar radiation can contribute to heat stress, adds Brown-Brandl. Until the early 1990s, the National Weather Service (NWS) issued livestock safety warnings that helped feedlot producers preempt losses or diminished productivity resulting from heat-stress events. Starting in the mid-2000s, USMARC researchers filled the void with a Web page at: [https://www.ars.usda.gov/plains-area/clay-center-ne/us-meat-animal-research-center/docs/heat-stress/cattle-heat-stress-forecast/](https://www.ars.usda.gov/plains-area/clay-center-ne/us-meat-animal-research-center/docs/heat-stress/cattle-heat-stress-forecast/), which is still available today, offering similar forecasts.

Recent increases in smartphone usage prompted ARS to design and launch a mobile-app that allows producers to access forecasts while they're in the field. The resulting "Heat Stress" app, which was beta-tested last year, is based on several years of field research conducted by Brown-Brandl, fellow ag engineer Roger Eigenberg and others at USMARC—including Randy Bradley. Bradley, an information technology specialist, is responsible for a color-coded heat-index map of the entire continental United States.

In addition to feedlot producers, animal caretakers and extension personnel, the Heat Stress app may also prove useful to professors, students and others with an interest in livestock welfare. The app has been added to the Federal Mobile Apps Registry. A list of ARS Mobile Apps can be found on the ARS Web page under “Quick Links.” ARS is USDA’s principal intramural scientific research agency.

**Cowpeas are the answer. What’s the question?**
By Martha Pings
Source: [https://www.crops.org/science-newsy/cowpeas-are-answer-whats-question](https://www.crops.org/science-newsy/cowpeas-are-answer-whats-question)

Available cropland, and the growing season, is limited. Strained soils are in need of rejuvenation. Water can be scarce. Yet the world’s nutritional needs continue to grow, along with its population.
Enter the cowpea. A modest but versatile crop, cowpeas may provide an answer to demands on grower resources—and international appetites.

“With so many useful traits including 60-day maturity, cowpeas are becoming an increasingly important legume,” researcher B.B. Singh asserts. “They complement other crops and ensure higher food production and family nutrition, without competing for land and other resources.”

Although contributing to agricultural science since the 1960s, Singh began focusing on cowpeas, also known as black-eyed peas, in 1979. Then, as now, popular crops of corn, wheat, and rice provided calorie-dense food. Their nutrition profiles, however, are limited. Cowpeas, with up to 30% protein and a strong following in diets across the globe, were ripe for development.

Just as important, cowpeas can fill the short growing time between other crops. Singh has developed over 100 varieties that fit into a tight 60 days, seed-to-harvest. Other crops can need twice as much growing time. This allows farmers to rotate cowpeas between other crops to maximize land, labor, and other resource use.

Niche performance is only one reason global production of cowpeas has increased 70% over a decade. The rising popularity is also testament to an ability to grow in challenging, heat- and drought-ridden conditions. Cowpeas grow anywhere with two months of temperatures between 59-104°F. Cowpeas are also shade tolerant, making them a good choice for growth alongside taller crops.

Further, they maximize the soil’s work while increasing soil health. It seems counterintuitive for a field to work harder and be healthier. However, cowpeas pull valued nitrogen out of the air for use in the root zone. Because part of this nitrogen, vital for all crop growth, remains in the soil, farmers can use less fertilizer for the next crop and come out with higher yields. Cowpeas’ roots also access phosphorus that may be limited in the soil. And, their quick growth and rapid ground cover prevent soil erosion.

Squeezing in this extra crop also benefits farming families. Farmers can sell the results of a cowpea planting twice: First the cowpea itself, and then the residue left in the field. This residue is a high-protein food source for livestock, meaning better weight gain and higher milk yields.

Singh defines the benefits of pulses in very tangible and personal ways. “In Nigeria, the extra income broke the poverty cycle for many farmers in two years, increased their purchasing power, and supported the schooling and health care of their children. Farmers are able to make efficient use of their land, machinery, and other resources during the period no other...
crop can be grown."

Cowpeas also show promise in reducing world hunger and malnutrition. As an affordable source of protein, cowpeas go a long way to provide a major part of the recommended 50-70 grams of protein per person per day. "In Northern India alone, with 10 million hectares in wheat-rice rotations, cowpeas as a niche crop could produce between 10 and 15 million tons of cowpeas. That would double the availability of cowpeas to all people in India to 60 grams per day."

Singh praises cowpeas' nutritional package for all. Loaded with protein, fiber, iron, zinc, calcium, and antioxidants, cowpeas are a valued addition to any diet. In addition, their food contribution goes beyond use of the dried seeds. The leaves are similar to spinach. The immature green pods are also edible.

Singh presented his work with cowpeas at the 2015 Annual Meeting of the Crop Science Society. The proceedings can be accessed here. Singh's book, Cowpea: The Food Legume of the 21st Century, supports cowpeas' place in global agriculture and in every diet. It is available online.

Dried beans such as cowpeas are part of a food group known as pulses. The United Nations Food and Agriculture Organization declared 2016 the International Year of Pulses (IYP). In celebration, the Crop Science Society of America (CSSA) created a web page for the public about pulses, www.crops.org/iyp. Special tabs for the public include K-12 Education, Beans in the News, Grown Your Own, and Delicious Ideas.

**When, Why, and How to Sell Timber**

Presented by the ODNR Division of Forestry, Service Forestry Program

ODNR Service Foresters John Kehn and Aaron Kash, covering Ashtabula, Cuyahoga, Geauga, Lake, Portage, Summit, and Trumbull Counties will be conducting a “Timber Harvesting” class on November 15th, 2016 at the OSU Extension Geauga County office, Patterson Center on the Burton fairgrounds, 14269 Claridon Troy Rd. Space is limited to the first 65 participants who register. Consulting foresters and experienced landowners will also be present help lead this classroom discussion on all aspects of sustainable timber harvesting.

The class will commence the Patterson Center basement at 6:00 PM and conclude at 9:00 PM on Tuesday, November 15th, 2016. Coffee will be provided. There is no cost to participate. To register for this class please call 440-564-5883 from 8:00AM to 4:30PM Monday through Friday.

**Chainsaw Safety Class in Trumbull County on September 10**

OSU Extension Trumbull County will be offering a chainsaw safety class on Saturday, September 10th from 9:00 a.m. to 12:00 noon at the Trumbull County Ag and Family Education Center in Cortland, OH. This class is designed to help you handle and operate your chainsaw safely when you are clearing out a fence row, cleaning up after a storm, or any other time that you may use your chainsaw. The class will begin inside with an overview of protective equipment designed to minimize injury before moving to basic saw maintenance. We will cover saw basics, how to perform a safety check, and how to keep your chain sharp. We will wrap up the morning with demonstrations outside to show proper tree felling and bucking techniques.

Pre-registration is requested by September 7th, 2016. Cost for the class is $30/person and includes handouts,
Northeast Ohio Agriculture

light refreshments, and additional materials. To register please complete the registration form and return to OSU Extension Trumbull County, 520 West Main St., Suite #1, Cortland, OH 44410. Please call 330-638-6783 or email Lee Beers (beers.66@osu.edu) for more information.

Lee’s Monthly News Column – Don’t be Complacent
Published on September 1, 2016 in the Warren Tribune

Never be complacent. Those are words that I say to myself whenever I am about to do something routine that is still risky. I always have a fear about not noticing a small detail that has the potential to cause harm, or to drastically alter a life. We have moments like this every day that go unnoticed until something happens. This past week a friend of mine passed away while getting his cows into the barn. This was a normal part of Brian’s routine because he grew up on a dairy farm and worked with livestock every day of his life. We will never know what really happened, but it is suspected that a bull had a part in his death. It has been many years since I have worked with him, but I know he was always aware of the dangers of working on a farm. He corrected my unsafe habits on many occasions and always showed me a better way to complete my chores, operate machinery, milk cows, and more. He had many talents and was a great teacher.

I get to travel around the county quite a bit as part of my job, and, of course, I hear quite a few stories in these travels. Recently I have been promoting our upcoming Chainsaw Safety Course on September 10th, and discussion of chainsaw safety has led to many such stories. Usually the story centers around a self-proclaimed “expert” who hacks their way through a tree, has a close call with a falling tree, is on the receiving end of cuts and scrapes, or, in some cases, is involved with a very serious accident. At the end of the story there is always the inevitable lesson learned—“I won’t do that again” or “now I know better”. I have a few of those stories too, but by learning from the guidance of knowledgeable people like my friend, Brian, I have been able to look at situations from different angles that allowed me to tackle each problem with a fresh perspective.

With that in mind, in addition to our upcoming Chainsaw Safety Class, I will be scheduling events over the next several months focused on farm safety. We can all benefit from a refresher course on basics, and new perspectives may help you review your routine to prevent complacency. If you have any suggestions for safety topics on which you would like to see us develop programs, just call our office and let me know.

That Chainsaw Safety Course will be on September 10th from 9am-12pm here at the Trumbull County Ag and Family Center. This class is geared toward anyone that uses a chainsaw to clean up your yard or property. We’ll start the class off with an overview of basic safety gear, and routine chainsaw maintenance that will allow for ease of cutting and long life of your equipment. After that we will move outside for demonstrations on proper tree felling techniques and general saw safety techniques. Cost for the class is $30 and will include handouts, light snacks, and refreshments. Additional fees apply for online registration. Visit trumbull.osu.edu for more information.

Trumbull County Master Gardeners will be continuing their free Wednesdays in the Garden series on September 14th with Tips for Fall and Winter Gardening. And on September 28th join us to learn all about growing our favorite cooking ingredient- garlic. As always, these events are free, open to everyone, and start at 6pm here at the Trumbull County Ag and Family Center.

For more information or to register for any of these events call the OSU Trumbull County Extension office at 330-638-6783 or visit trumbull.osu.edu. Don’t forget to check out and “Like” OSU Extension Trumbull County’s Facebook page for current programs and up to date information. Have a great week and don’t be complacent!

David’s Weekly News Column- Be Safe on the Roads this Harvest Season
Published on September 7, 2016 in the Jefferson Gazette & September 11, 2016 in the Star Beacon

Hello, Ashtabula County! As we approach the fall season, there will be an increase of farm equipment traveling on the roads. Road safety is especially important as farmers and motorists share the road during
harvest season. This is a good time to refresh both the motoring public and farmers about some safe practices for traveling on public roads.

Vehicle collisions are often the result of the speed difference between slower-moving farm equipment and passenger cars and trucks. Many times the vehicle driver simply doesn't have enough time to react if they do not recognize the farm equipment soon enough. It is critical for both farmers and motorists to do their part. Rural road rage can be negated if everyone takes the responsibility to have extra patience, careful driving habits, and use high-visibility markings and lighting.

For farmers, make sure your equipment has proper lighting and that a slow moving vehicle (SMV) emblem is mounted to the last piece of equipment being hauled. The emblem should be pointed up, placed 2-6 feet above the ground and as near to rear center as possible. Make sure to stay alert at all times to avoid a serious accident. Just as motorists should not text and drive their vehicle. Neither should we in a tractor. In fact, farmers should make it a rule to not use their cell phone or two-way radio while operating equipment on public roads. Always keep a constant lookout for pedestrians, animals, mailboxes, steep ditch embankments, and other roadway obstacles. Make sure to slow down for sharp curves or when going down a hill. It may be wish to use an escort vehicle to follow behind especially during high traffic times in the mornings and late afternoons.

For motorists, please remember that farm machinery has a legal right to use public roads just as other motor vehicles. Farm machinery can unexpectedly turn onto a public road from a field or driveway. Farm machinery travels slower than normal traffic, often at speeds of 25 miles per hour or less. When you first see a tractor or combine on the road, your first instinct should be to slow down. A car traveling at 55 mph can overtake and close a gap of 300 feet with a tractor running 15 mph in just five seconds. This is about the length of a football field which does not give you much time. Watch for farm equipment and slow down immediately to avoid rear end crashes. Farm machinery operators may not be able to see you because the large equipment or a load can block part of their rearward view. Remember, if you can't see the driver, the driver can't see you.

Before passing farm machinery, make to check to be sure the machinery is not turning left. Look for left turn lights or hand signals. If the machinery slows and pulls toward the right side of the road, the operator is likely preparing to make a wide left turn. Likewise, sometimes to make a right turn with wide equipment, the driver must fade to the left. Also be on the look-out for roadside obstacles such as mailboxes, bridges, or road signs that may cause the machinery to move to the center of the road. Be sure there is adequate distance for you to safely pass.

For more information about rural roadway safety, visit the OSU Ag Safety and Health website, http://agsafety.osu.edu. To close, I would like to share a quote from Jeff Cooper who stated, “Safety is something that happens between your ears, not something you hold in your hands.” Have a good and safe day!