



ASSOCIATION OF
EQUIPMENT MANUFACTURERS

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Infrastructure Needs in Rural America SAVE THE DATE

AEM's Infrastructure Vision 2050 initiative will host a cross-industry panel discussion on Wednesday, February 15, 2017 at National Farm Machinery Show in Louisville, Kentucky to discuss future infrastructure needs in rural America and across the country.

The panel discussion will also highlight submissions from AEM's Agriculture Call for Papers program currently seeking the latest in academic research and ideas for how to move agriculture product from farm to market, as well as equipment from farm to farm. The future of roads, bridges, ports, waterways, and rural broadband will all be on deck for this important discussion.

Visit www.aem.org/IV2050 for further details and updates or e-mail Abigail Lannoye at alannoye@aem.org.



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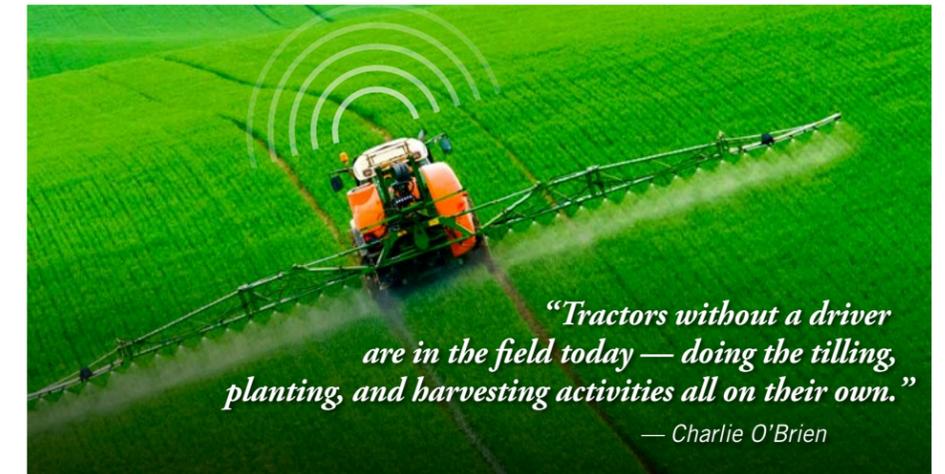
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Questions/comments : asennett@aem.org

Look to Ag Equipment Sector for High-Tech Careers



Move over Google, Amazon, Microsoft, Boeing, and all the other companies and industries that people associate with leading edge technologies. If you are interested in leading edge, consider what is happening in the agricultural equipment space these days. Please feel free to share this article with family, friends, associates and any others who are entering the workforce or looking for an amazing experience and opportunity to work in a cutting edge field.

I'm sure you have heard of autonomous cars. Well that is certainly intriguing and will be here before we know it. Safety is obviously one of the biggest obstacles, and the bugs are being worked out. But have you heard about autonomous tractors? Yes, that is right. Tractors without a driver are in the field today — doing the tilling, planting, and harvesting activities all on their own. Now keep in mind these tractors are not just following defined roads that are well charted and mapped. Autonomous tractors must contend with varying geographic locations and terrains and are not just driving, but are simultaneously performing multiple functions, like applying fertilizer or chemicals at varying application rates.

Ok, that's pretty fun, and it leads us to machine-to-machine (M2M) communications. Yes, the machines already do talk to one another. Some like to put this in the category of the "Internet of Things." Let's look at an example: A combine's hopper is getting full and needs to unload. So it contacts the tractor to bring the grain cart. Not only does the tractor bring the cart, it pulls up next to the combine while it is still moving across the field, allowing the combine to unload into the cart while continuing to harvest. Time is money in this business; and stopping or pausing the harvest can cut into profit. Now magnify that cost savings many times over when considering a larger farm.

And no, NOT a corporate farm. In spite of all the rhetoric out there, ninety-four percent of U.S. farms are still family farms. They are incorporated for tax reasons. Not sure where this movement against big bad corporate farms came from, but there are families behind these farms — not corporations. Sorry, I digress on a pet peeve of mine.

Anyway, back to the large fleet of machines

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Look to Ag Equipment Sector for High-Tech Careers

operating in concert on a farm. I always envision a musical conductor when I think about the orchestration of a fleet of equipment on a farm, just like a conductor bringing the musicians to perfect synchronized harmony. The farmer, who may be inside his home, shop or a tractor cab, directs and monitors the movement of his fleet and the communication among his machines.

In our world, the primary function of these machines is to grow and harvest food. With today's technology, crops can also be monitored with wireless sensors that measure air temperature, humidity, soil temperature, soil moisture, leaf wetness, atmospheric pressure, solar radiation, wind speed and direction, and much

more. All this data combines with data coming off the equipment to ultimately increase crop yields and quality to feed the expanding world population. Information about the equipment itself (idling time, fuel usage, speed, etc.) is used to optimize performance and prevent costly interruptions and downtime. And of course, the mountains of data (my technical term) have to be integrated, crunched and translated into decision making information for our farmers. In the end, data is king.

So how do farm managers get this information about growing their crops and maximizing their returns? Applications are written almost daily to have this information available at people's fingertips on their tablets, smartphones, etc.

And what about drones? You're talking about a whole new age of data and monitoring of fields and what is happening with crops, soil, moisture, etc.

So take your pick — the IT world, data analyst, data managers, project managers, information technician, support technicians, plant scientists, field agronomists and obviously many types of engineering positions. To be fair, the list of opportunities in the agricultural and agricultural equipment sector are countless. ■



*Charlie O'Brien
Senior Vice-President
and AEM Ag Sector Lead
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Less Farmer Fatigue + Increased Productivity = Tractor Implement Management (TIM)



The work of providing compatibility between tractor and implements has greatly improved through the efforts started in 2008 by the Agricultural Industry Electronics Foundation (AEF). This has been done through efforts of adapting ISOBUS (ISO 11783). This standard provided a design approach for communication between tractor and implements and between brands. As you walk around Ag shows you notice the decals on product pointing to the fact that they are ISOBUS certified. This is your assurance of compatibility.

Through the efforts of OEMs implementing the ISOBUS standardization on tractors and implements, the technical teams started to think about how else this system might benefit the farmer. The Tractor

Implement Management system (TIM) was the answer. The system allows an implement to automatically control specific functions, such as the forward speed or the remote valves of the tractor. By letting the implement optimize its operation, the



overall system can achieve higher levels of productivity with less operator fatigue. The idea was to improve a farmer's productivity in the tractor and lessen his fatigue. Let's look at a TIM example of a baling operation.

At high yield this sequence may take place every 30 seconds. This can lead to a lot of fatigue by the end of the day. Here is the potential to increase the efficiency all day

long. The implement knows the process and the stages through sensors, and takes over the control while the tractor provides the power. All the stages shown would be accomplished without the operators providing any action.

This project was kicked-off by the AEF ISOBUS Automation Project Team in 2012. This team is made up of resources from the member companies and has made considerable progress toward their goal. As you may have guessed, there are many obstacles to overcome, but progress is being made and they are on schedule for introduction in the near future.

AEM is a founding member of the AEF and provides the staff secretary for AEF.



For more information, visit www.aem.org/aef or contact AEM Technical Director Mark Benishek (mberishek@aem.org | 414-298-4118). ■

Meet the 2017 Ag Sector Board

The 2017 Ag Sector Board was announced at the November 2017 Annual Business meeting held during the AEM Annual Conference in Santa Barbara, California. In other actions, the AG Sector Board:

- Agreed that protecting the Renewable Fuel Standard continues to be an industry as well as an AEM priority.
- Created a Workforce Development Task Force to move forward with an initiative to inspire high school students to pursue careers in agriculture and ag equipment manufacturing (with a focus on technology).
- Supported continued involvement in Commodity Classic and approved exploring other opportunities to serve as market platforms.
- Approved a proposal to allow ag equipment manufacturers who only do business in Latin America to pay a non-member fee in order to take part in the Latin America Agriculture Statistics Program. ■



Chair John Lagemann
Deere & Company



Grant Adolph,
Buhler Industries Inc.



Mark Core
Vermeer Corporation



Matt Daley
GEA Farm Technologies



Richard Fox-Marrs,
JCB Inc



Gene Fraser
MacDon Industries, Inc.



Bill Hurley
AGCO Corporation



Mani Iyer
Mahindra USA



Jerry Johnson
Blount International, Inc.



Tommy Jones
Krone NA



Ian Keyworth
Eaton Corporation



David Koppenhofer
Cummins Inc.



Bret Lieberman,
New Holland Agriculture



Leif Magnusson
CLAAS Americas, Inc.



Darryl Matthews
Trimble Navigation, Inc.



Brian McKown
Kinze Manufacturing, Inc.



Greg Petras
Kuhn NA



Todd Stucke
Kubota Tractor Corporation



Dale Szuminski
Alo USA



Jim Wessing
Kondex Corporation

Welcome new AEM Agriculture members!

Baker Manufacturing Company LLC

Lockton Companies

Nationwide Transport Services

Beka-Lube Products Inc

Lumavate

New Standard Corporation

Bridgeview Manufacturing Inc.

Maanshan Tongli Slewing Ring Co.,Ltd

Quadrant EPP

Innovative Equipment LLC

Magna Tyres Group

Thor Global Enterprises Ltd.

Kincannon & Reed

Matracks Inc.

TOBROCO Machinery LLC

Lely North America, Inc.

MCL Engineered Electrical Solutions

Vaderstad Sales Inc.

What Does a Trump Administration Mean for Ag?



A library's worth of books will be written about the historic 2016 presidential election. One thing they all will agree on is the fact that President-Elect Donald Trump was carried to victory on the strength of the rural vote. With Trump in the White House and Republicans in control of both houses of Congress for at least the next two years, it could mean major shifts for the farm equipment and agricultural sectors. Here's what to expect out of the new administration:

- **Regulations:** It's safe to say no federal agency did more to drive rural turnout than the EPA. The list of grievances is long, but the highly controversial expansion of the "Waters of the U.S." is atop it. Farmers and ranchers across the country fought against the expanded jurisdiction EPA sought for the Clean Water Act like never before and achieved a temporary victory when the courts intervened to delay implementation of the rule. Trump singled out the Waters of the United States (WOTUS) rule in particular as one he would most likely target once in office. The Trump administration is unlikely to introduce new regulations for farmers and manufacturers and indeed may roll back some of the most cumbersome rules from the Obama era.

- **Trade:** Commodity and manufacturing exports are of particular importance to AEM members and their customers, which is why Trump's anti-trade rhetoric on the campaign trail was so alarming. Agriculture is one of the few sectors where America enjoys a trade-surplus, and upsetting the current environment could spell tough times for many commodities.

Economic analysis by the American Farm Bureau Federation estimated passage of the Trans-Pacific Partnership (TPP) alone would add \$4.5 billion to farm income. However, the TPP is likely dead, along with a European trade deal that had been under negotiation. The question now is how far President-elect Trump would go in disrupting current trade accords.

- **Renewable Fuel Standard (RFS):** Trump expressed support for the RFS while campaigning for president, and his Iowa director was the former state director for a pro-ethanol group and the son of current Iowa Gov. Terry Branstad, another proponent of the RFS. While his administration is likely to continue to follow the path set forth by congress in the 2005 and 2007 energy bills, we can also predict the new EPA will be far more receptive to the views of the oil industry.

- **Infrastructure:** Though a Trump infrastructure plan might not necessarily hit the \$1 trillion price tag he promised, the president-elect has signaled an intention to pursue some type of package. Beyond the obvious advantages to farmers and ranchers of the more efficient movement of commodities through inland waterways, ports and rural roads, the level of support demonstrated by these areas could help entice support for other initiatives, such as expanding wireless broadband connectivity.

For the most part it is still too early to tell what the priorities will be for a Trump presidency on several issues critical to agriculture. It is a promising sign that Vice President-Elect Mike Pence, who represented an ag heavy district in congress and served as governor of an ag state, appears to have been given the lead on developing the administration's ag policy.

"The first few months of the new administration should yield significantly more insight as to what a Trump presidency will mean for manufacturing, agriculture and the entire economy."

Official Washington remains somewhat uncertain of how Trump – who rode to power in one of the most unconventional campaigns in recent memory – may try to make good on his campaign promises, and navigate traditional Washington institutions, like Congress. The first few months of the new administration should yield significantly more insight as to what a Trump presidency will mean for manufacturing, agriculture and the entire economy. ■

— AEM DC Office Perspective

Reaching Voters on Manufacturing, Agriculture Issues

With the help of our member companies, AEM and I Make America (IMA) reached millions of voters, including thousands of member company employees, helping to educate them on the importance of being a "Manufacturing Voter" in 2016.

AEM members hosted 35 events across the country in 2016, featuring 4 governors, 10 congressmen and record media coverage. Thousands of new grassroots supporters signed up, adding their voices to the tens of thousands already supporting, and continuing to affect change on policies affecting the manufacturing industry. Kuhn North America, Hagie Manufacturing, Woods Equipment, Kuhn Krause, Geringhoff, Mahindra USA, Kondex, AGCO, Digi-Star, Kinze, and CLAAS of America are just a few of the companies that hosted events.

Six videos were produced by IMA this year, furthering the reach of our messaging on key election issues related to manufacturing and agriculture. These videos were pushed out digitally through social media, and were viewed over a million times by voters across the United States in the weeks leading up to the caucuses, primaries and election day.

Moving into 2017 we look forward to working with our member companies and their elected local, state and federal leaders to discuss the important issues affecting agriculture and manufacturing. We will continue to focus our efforts on issues such as the Renewable Fuel Standard and



infrastructure. There will be an opportunity in September 2017 for AEM members to join us in Washington D.C. for the first ever I Make America Federal Fly-In. This is a chance for AEM members to sit down with their senators and congressmen to have a conversation about the important issues affecting their communities and businesses.

Keep an eye out for additional information regarding the Fly-In early 2017.

If your company is interested in participating in I Make America please contact AEM Public Affairs Coordinator Abby Lannoye (alannoye@aem.org | 414-298-4746). ■

EPA Planter Technology Demo Day Set

Building on the success of the June 15 spray drift control demo day for officials with the Environmental Protection Agency's Office of Pesticide Programs, AEM is working with the National Corn Growers Association (NCGA) and American Seed Trade Association (ASTA) to put together another informative program focusing on planters and seed treatments.

The demo is set for **Wednesday, April 26, 2017** in Charlotte Hall, Maryland on the family farm of Chip Bowling, current Chairman of NCGA. AEM Planter/Seeder manufacturer members are invited to participate. For more information please contact AEM's Nick Tindall (ntindall@aem.org) or Anita Sennett (asennett@aem.org).

November 2016 Farm Income Forecast Highlights

USDA Economist James Williamson provided the third and final forecast of the 2016 U.S. Farm income on November 30, 2016. Farm sector profitability is forecast to decline for the third straight year.

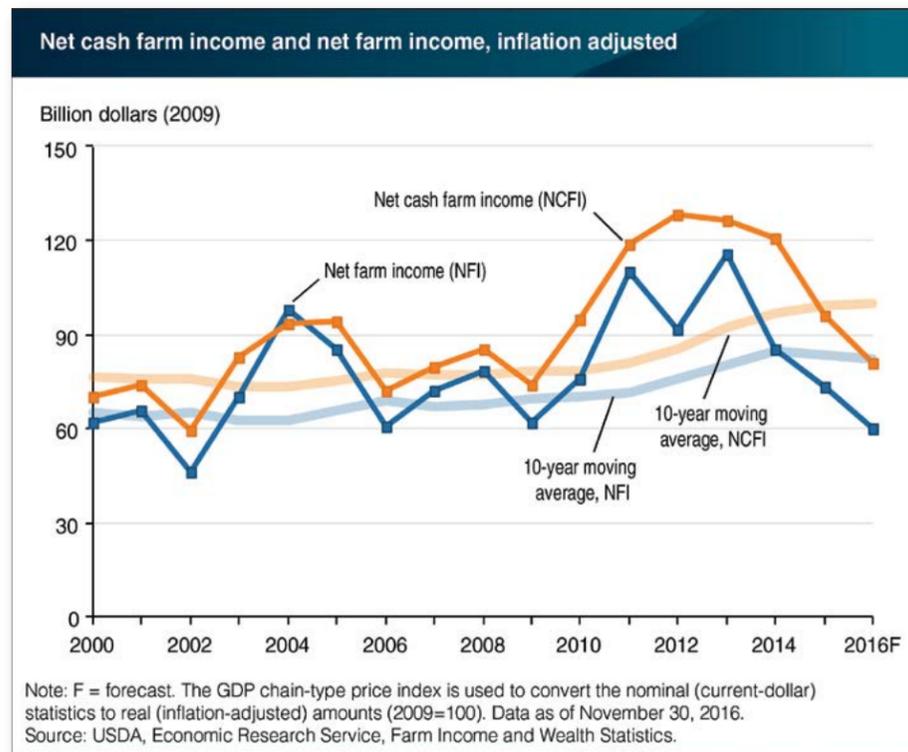
Net cash farm income for 2016 is forecast at \$90.1 billion, down 14.6 percent from the 2015 estimate. Net farm income, a more comprehensive measure of profitability, is forecast to be \$66.9 billion in 2016, down 17.2 percent. If realized, 2016 net farm income would be the lowest since 2009 in both real and nominal terms. This newest forecast is a downgrade from the August estimates that placed net farm income at \$94.1 billion. Highlights:

- Overall, cash receipts are forecast to fall \$23.4 billion (6.2 percent) in 2016 due to a \$23.4-billion (12.3 percent) drop in animal/animal product receipts; crop receipts are forecast essentially unchanged from 2015.
- Nearly all major animal specialties—including dairy, meat animals, and poultry/eggs—are forecast to have lower receipts, including a 14.8-percent drop (\$11.6 billion) in cattle/calf receipts.
- The slight gain in crop cash receipts is driven largely by a \$5.3-billion increase in oil crop receipts, namely soybeans, while feed crops and vegetables/melons are down \$2.2 billion (3.8 percent) and \$1.4 billion (6.9 percent), respectively.
- While overall cash receipts are expected to decline, receipts for several commodities—including turkeys, rye, cotton (cotton lint), miscellaneous oil crops, and tobacco—are forecast to rise by 10 percent or more.
- Direct government farm program payments are forecast to increase in 2016 by \$2.1 billion, or 19.1 percent, to \$12.9 billion. Increases were primarily in price- and revenue-contingent farm programs.

- A 2.6 percent drop in overall production expenses forecast for 2016, on top of an 8.1-percent decline in 2015, partly offsets the forecast decline in cash receipts. Notably, expenses for inputs that typically are produced by the farm sector itself—including feed and livestock/poultry purchases—are expected down (6.1 percent). Also, expenses for fuels and oils are forecast down by 12.2 percent in 2016. If realized, expenses across each of these three categories will have fallen for 3 straight years. Interest expenses are forecast to decline 3.8 percent relative to 2015 due to falling real estate interest expenses. In contrast, cash labor expenses are forecast to increase 5.4 percent due to an increase in hired labor costs.
- The value of total farm sector equity is forecast down by \$79.9 billion (3.1 percent) in 2016, due to a rise in farm sector debt and a modest decline in sector assets relative to 2015. The value of real estate, the largest component by far of the asset portfolio, is forecast down by \$12.0 billion (0.5 percent). The (inventory) value of crops, animals/animal products, and purchased inputs is forecast down by \$17.4 billion (9.3 percent) and the value of machinery/vehicles is expected down \$22.7 billion (9.5 percent) from 2015.

- The balance sheet forecast indicates a fourth consecutive year in which farm solvency measures have declined. Liquidity positions have likewise declined, but these indicators of financial health remain near historic lows for the sector as a whole.

- Following the decline in net farm income, the rate of return on farm assets and the rate of return on farm equity are both negative for 2016, and both have declined every year since their recent peaks in 2012.



U.S. Farm Equipment Exports Continue to Decline

Exports of U.S.-made agricultural equipment were down 14 percent overall for the first three quarters of 2016 compared to the same period in 2015, for a total \$5.1 billion shipped to global markets.

Europe and Central America continued to be the growth leaders with Asia leading the double-digit declines for the other world regions.

January-September 2016 U.S. agricultural equipment exports by major world regions compared to January-September 2015:

- Canada dropped 15 percent, for a total \$1.5 billion
- Europe gained 4 percent, for a total \$1.2 billion
- Central America gained 16 percent, for a total \$978 million
- Asia fell 44 percent, for a total \$440 million
- Australia/Oceania fell 30 percent, for a total \$395 million
- South America dropped 28 percent, for a total \$374 million
- Africa decreased 21 percent, for a total \$160 million

In the third quarter of 2016, U.S. agriculture equipment exports to the world continue to decline, and the year-over-year

third-quarter exports were lower than year-to-date, with a 17.6 percent Y/Y decline, the highest Y/Y quarterly decline this year so far.

The ag equipment industry continues to suffer from a global ag downturn in large part due to low commodity prices. While some countries might benefit from their higher commodity production levels, the U.S. manufacturers are watching from the sidelines as a strong dollar is making them less competitive in the global marketplace.

Our expectations for the fourth quarter remain subdued as the U.S. dollar is experiencing its longest rally in 16 years. With the global economic malaise, the slowdown in emerging markets and the negative interest rates seen in several economies' bond markets, investment is flowing to the U.S. and U.S. stocks, driving up demand for our dollar, inadvertently affecting our competitiveness abroad.



Find more information like this or for import/export statistics reports focused on your products and countries please contact AEM Director, Market Intelligence, Benjamin Duyck at bduyck@aem.org.

THE BELOW CHARTS ILLUSTRATE A ROLLING 4 QUARTERS VS. PREVIOUS 4 QUARTERS FOR COUNTRIES WITH > \$25 MIL./YR IN EXPORTS

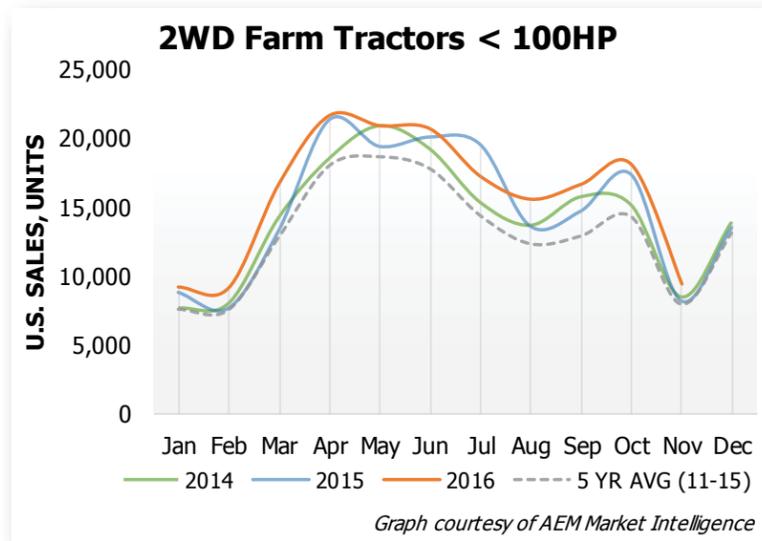
Top 10 Growth Countries - US Ag Equipment Exports				Bottom 10 Growth Countries - US Ag Equipment Exports			
Country	Last 4 Qtrs	Prev 4 Qtrs	% Change	Country	Last 4 Qtrs	Prev 4 Qtrs	% Change
UKRAINE	\$ 144,325,240	\$ 46,611,127	209.6%	CHINA	\$ 209,625,374	\$ 452,614,213	-53.7%
DENMARK	\$ 38,405,961	\$ 28,003,448	37.1%	URUGUAY	\$ 15,873,444	\$ 32,433,883	-51.1%
TURKEY	\$ 52,141,154	\$ 41,494,738	25.7%	VENEZUELA	\$ 29,982,708	\$ 49,130,714	-39.0%
RUSSIA	\$ 97,310,860	\$ 79,557,194	22.3%	NEW ZEALAND	\$ 52,943,659	\$ 84,233,983	-37.1%
MEXICO	\$ 1,154,147,218	\$ 976,349,642	18.2%	BRAZIL	\$ 150,473,748	\$ 239,337,209	-37.1%
HUNGARY	\$ 36,041,139	\$ 31,364,468	14.9%	BELGIUM	\$ 107,752,511	\$ 168,715,750	-36.1%
THAILAND	\$ 47,789,054	\$ 42,934,355	11.3%	UNITED KINGDOM	\$ 116,958,172	\$ 167,473,217	-30.2%
SPAIN	\$ 61,479,952	\$ 60,254,333	2.0%	UNITED ARAB EMIR	\$ 21,642,956	\$ 30,956,827	-30.1%
POLAND	\$ 51,933,211	\$ 50,959,135	1.9%	SOUTH AFRICA	\$ 130,755,708	\$ 185,248,458	-29.4%
ITALY	\$ 50,867,139	\$ 49,933,464	1.9%	SINGAPORE	\$ 25,957,425	\$ 35,165,907	-26.2%
Global Total	\$ 6,655,035,497	\$ 7,427,388,793	-10.4%	Global Total	\$ 6,655,035,497	\$ 7,427,388,793	-10.4%

Sourcing: U.S. Census

AEM Ag Equipment Sales Report and Analysis

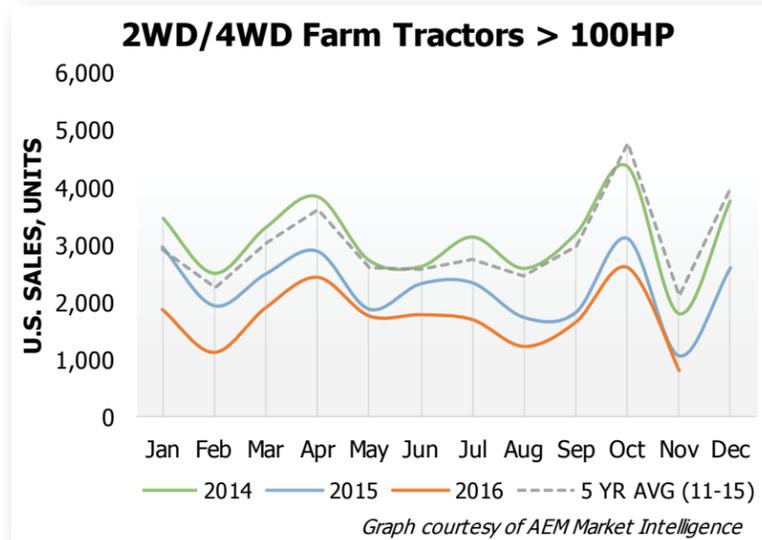
	November			YTD — November			Beginning Inventory Nov 2016
	2016	2015	% Chg	2016	2015	% Chg	
2WD Farm Tractors							
<40 HP	6,442	5,254	22.6%	123,891	110,909	11.7%	69,457
40< 100 HP	2,974	3,131	-5.0%	51,422	53,685	-4.2%	34,758
100+ HP	663	909	-27.1%	16,791	21,727	-22.7%	9,207
Total 2WD Farm Tractors	10,079	9,294	8.4%	192,104	186,321	3.1%	113,422
4WD Farm Tractors	137	143	-4.2%	2,074	2,703	-23.3%	755
Total Farm Tractors	10,216	9,437	8.3%	194,178	189,024	2.7%	114,177
Self-Prop Combines	142	203	-30.0%	3,485	4,690	-25.7%	750

Data courtesy: Association of Equipment Manufacturers Statistics



Ahead: Small and Mid-size Tractors

Less than 100 HP tractors came in well above the 5-year average, indicating continued demand for small and mid-size farm tractors. Less than 100HP demand is linked to the livestock segment, hobby farmers and housing. Farm tractors <40hp reported a growth of 22.6% in November 2016, compared to the same period last year. YTD, this category has experienced an 11.7% growth. Farm Tractors 40-100HP, continued to underperform compared to the previous year, but straddles the 5-year average. The relatively strong incomes in the livestock sub-segment that supported the demand is expected to become subdued over the next year.



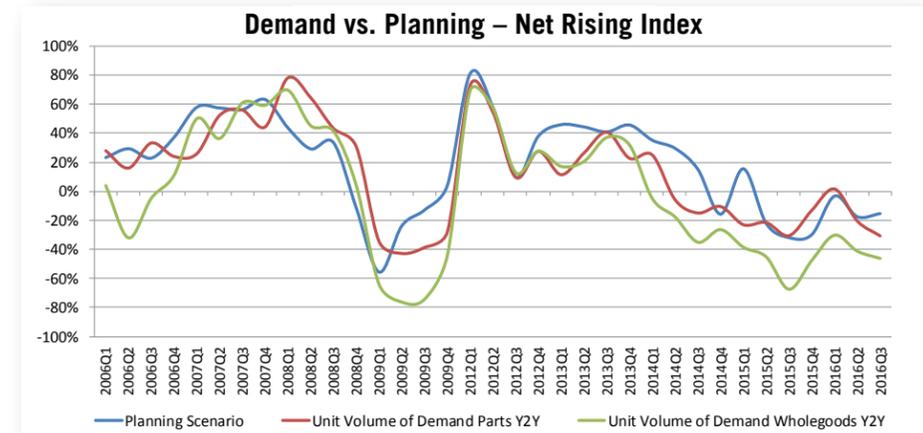
Large Farm Tractors sales continue to suffer

Larger, production ag tractor sales (>100hp 2WD and 4WD) continue to underperform. 100HP+ 2WD tractors declined 27.1% while 4WD tractors declined 4.2% in November compared to the same period in the previous year. Sales for the larger Farm Tractors often spike in the month of October, with residual sales flowing into November. With no improvement in crop receipts forecasted for 2016 compared to 2015, and subdued commodity prices, the USDA expects the current downturn to continue into 2017. ■

Demand, Planning, Employment Levels, Wages

Demand and Planning

The Net Rising Index (NRI) for Unit Volume of Demand (Whole Goods) for agriculture equipment year over year came in at -41, down from -30 in Q1 but up from -45 in Q2 2015. This is the 10th consecutive quarter of negative year over year NRIs. While there are always opportunities for segments outperforming other segments, the ag downturn is far from over. The NRI for Unit Volume of Demand (Parts) year over year is following the same trends as for Whole Goods, but is performing at a slightly better level, coming in at -20, down from 1 in Q1 2016, but up slightly from -21 a year ago. Overall, it appears that, disregarding movements over the last year, the market sentiment is back where it was in Q2 2015. Looking towards the future, the consensus planning for the next 12 months came in at -17.5, down from -3.3



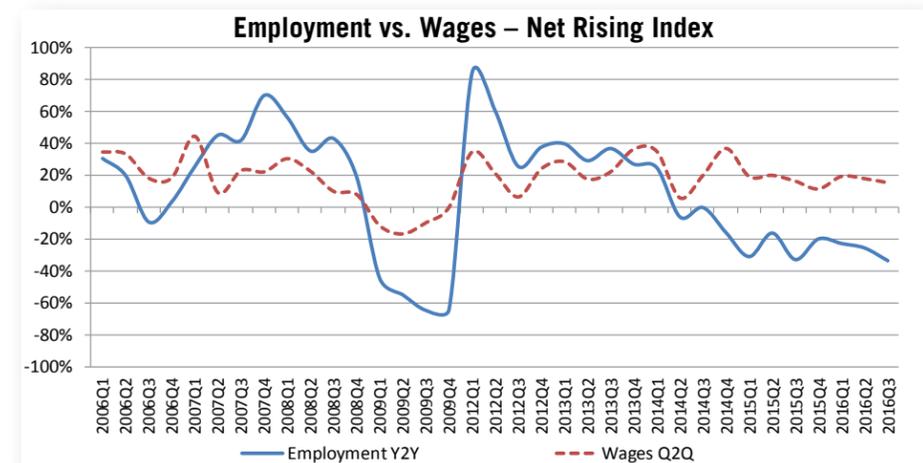
Source: AEM Market Intelligence - North American ag Equipment Trends report.

in Q1 2016 but up from -22 in the same quarter last year. The slight improvement that we saw in the previous quarter has dissipated. Some members commented on the Q3 market performance: "Concerned but cautiously optimistic";

"Commodity prices will likely stay low due to high carry over inventories"; "Demand seems to have flattened a little compared to last year"; "Sharp declines which have been seen in crop sector, have spread to livestock sector this year."

Employment Levels & Wages

The Net Rising Index for Employment year over year came in at -25.37, down from -22.57 last quarter and -16 in Q2 2015. We expect this to improve in the future as 65.7% of respondents already felt employment was stable. Though, employment does lag behind demand so we would most likely have to see an improvement there first. While the NRI for Employment year over year keeps decreasing, 22.8% of members do feel that there is a shortage in skilled labor available to them. The NRI for Employment year over year was negative for both sub-segments. The Whole Goods sub-segment had a NRI of only -43, while Components and Attachments came in around -62.7. 19.4% of respondents felt wages were rising while



Source: AEM Market Intelligence - North American ag Equipment Trends report.

none felt they were declining, indicating tightness in the labor force. About 4 out of 5

responding members felt that wages were staying the same.

Survey Explanation

North America Ag Equipment Industry Trends Report, formerly called Ag Industry Conditions Survey, is a quarterly state of the industry report for the agriculture/dairy industry that asks participants about their unit volume of demand for whole goods and parts, company employment, unit

volume of company and dealer inventories, capital spending, profit margins, wages and salaries, prices of input materials, prices charged, shortages, export performance and planning scenarios. The survey is based on Net Rising Indexes. We take the positive answers and detract the negative

ones, creating a net rising index. Anything below zero means a market contraction, anything above growth. The stronger the contraction or growth, the stronger the market consensus. To receive the full results of this survey, please sign up by contacting Benjamin Duyck at bduyck@aem.org. ■

Commodity Forecasts by Global Business Monitor

SELECT COMMODITIES - PERFORMANCE & BMI FORECASTS								
Commodity	Unit	Current Price	YTD (%Chg)	1 Year (%Chg)	2015 (ave)	YTD (ave)	2016f (ave)	2017f (ave)
Class III Milk (Third-Month)	USD/cwt	16.21	14.3	10.2	15.75	14.96	14.5	15
Cocoa (London)	GBP/tonne	2060	-8.9	-8.9	2098	2238	2200	2220
Coffee	USc/lb	155	22.1	28.9	132	136	130	135
Corn	USc/bushel	351	-2.2	-4.5	377	359	360	380
Cotton	USc/lb	73	15.5	21.5	63.3	65	64	67.5
Feeder Cattle	USc/lb	125	-25.2	-24.5	202.3	144.4	na	na
Lean Hogs	USc/lb	50	-16.8	-13.4	69	66.4	na	na
Live Cattle	USc/lb	110	-19.2	-17	146	119.2	na	na
Palm Oil (Third-Month)	MYR/tonne	2993	20.4	31.6	2235	2579	2500	2350
Rough Rice	USD/cwt	10	-17.6	-21.2	11.1	10.4	10.3	11
Soybean	USc/bushel	1034	18.7	19.7	945	985	985	1000
Sugar #11	USc/lb	20	28.5	27.1	13.1	18.11	17.7	18
Wheat	USc/bushel	402	-14.6	-18.9	507	440	430	450

Note: All ag prices refer to generic front-month unless otherwise stated. Source: Bloomberg, BMI. Last updated: 11/24/2016.

Note: All ag prices refer to generic front-month unless otherwise stated. Source: Bloomberg, BMI. Last updated: 11/24/16.

Grains

BMI expects prices to be subdued over the coming weeks as record US 2016/17 harvests and stable progress in the South American planting season keep supplies ample over the coming months. We expect soybean to continue outperformance

over corn as relatively strong demand for soybean oil (due to elevated palm oil prices) will keep soybean prices supported. BMI continues to expect grain prices to average higher over the coming years as the market eventually re-balances. However, grain

prices are at risk of declining should US President-elect Donald Trump implement and enforce more protectionist trade policies.

Softs

The 2016 rally in sugar prices has started to unwind as global supply will improve in 2016/17. This is in line with BMI's view for prices to average lower than spot prices

in 2017 (at USc18.00/lb). Meanwhile, we remain positive on cotton and dairy (in the US and New Zealand) prices in 2017, expecting prices to average higher y-o-y,

while palm oil, cocoa and coffee will also show more muted performance next year.

Oil

Firming expectations of a coordinated output cut by OPEC, to be decided at their November 30 meeting, have led to a recovery in Brent towards USD50.0/bbl. BMI views the prospects for a cut as highly

uncertain and assign a 55.0% probability weighting to the deal and 45.0% to no deal being reached. A commitment to cut above 1.0mn b/d would be the trigger for a rally towards the USD60.0/bbl mark. Conversely,

a failure to reach agreement would be a strong bearish indicator for prices, with Brent likely to re-test support at around USD42.0/bbl.

From AEM's Global Monitor

The data on this page was compiled from the data provided by Business Monitor International. AEM has consumption, production and price data (historical and

forecasted) for various commodities and countries worldwide. This information and additional analysis for sale for members on a report by report basis. For more

information, please email Benjamin Duyck at bduyck@aem.org. ■

Global Agribusiness Post U.S. Election: Winners and Losers

Source: Business Monitor International (BMI)

BMI expects agricultural equities, represented by their modified Bloomberg Food Index, to outperform major equity benchmarks over the coming quarters as a rebound in earnings will see improved share price performance. Agribusiness companies will broadly benefit from some of the macro-economic implications of Donald Trump's presidency, but suffer from some of his other proposals, including stricter immigration enforcement and increased trade protectionism.

Key Takeaways:

- The agribusiness sector will outperform benchmark equity indexes over the coming quarters as the earnings downturn facing the sector will reverse.
- Globally, the sector will broadly benefit from the macro-economic implications of Donald Trump's victory, including increased fiscal stimulus, higher inflation and a stronger US dollar.
- However, agribusiness company performance will be constrained by increased trade protectionism, while US-based companies will additionally suffer if more draconian labor regulations (especially pertaining to immigration) are implemented and enforced.
- Overall, input and sugar companies will see the best performance among the industry's sub-sectors over the coming quarters, while grain traders, livestock companies, and chocolate companies will see more muted performance in local currency terms. ■

Key Issue	AGRIBUSINESS SUB-SECTOR OUTLOOK BY KEY ISSUE		
	Livestock	Grain Traders/processors	Dairy
Higher Average Grain/Commodity Prices	Mixed - higher retail food prices to increase sales, but higher grain/animal prices will increase costs	Mixed - higher costs if unable to maintain spread between retain and benchmark food prices	Losers - Milk is an input cost for most companies, higher milk prices reduce margins
Global infrastructure stimulus/Headline inflation	Losers - Accelerating wage inflation to increase operating costs	Losers - higher energy costs to reduce earnings, LT outlook better	limited impact
US Dollar strength	Mixed - US companies to suffer	Losers - stronger dollar will reduce earnings, sub-sector has high exposure to US companies	Mixed - US companies to suffer
Rising bond yields	Mixed - Less M&A potential but relatively limited leverage across sector	Losers - Relatively high reliance on short-term financing	limited impact
Labour restrictions	Losers - labour intensive sector, higher operating costs likely	limited impact	limited impact
Trade renegotiation (antagonistic)	Losers - animal raw material costs could rise	Losers - operating costs likely to increase	Mixed - Export-oriented companies will face increased costs
Reduced regulation	Winners - US companies to benefit	Winners - financial deregulation may reduce costs	limited impact
Geo-political shifts	Losers - High exposure to China	limited impact	limited impact
Beta	Medium	High	Low

Key Issue	AGRIBUSINESS SUB-SECTOR OUTLOOK BY KEY ISSUE		
	Machinery	Fertiliser	Seeds
Higher Average Grain/Commodity Prices	Winner - higher grain prices to lead to more purchases	Winners - higher prices to increase demand for fertiliser	Winners - more demand for higher-end seeds
Global infrastructure stimulus/Headline inflation	Winner - construction and finance divisions to benefit	limited impact	limited impact
US Dollar strength	Losers - stronger dollar will reduce earnings, sub-sector has high exposure to US companies	Losers - Sub-sector has high exposure to US companies, most companies have multi-national operations	Losers - Sub-sector comprises mostly US based companies with multi-national operations
Rising bond yields	limited impact	Mixed - sector focussed on fiscal consolidation, but leverage levels elevated	Mixed - Debt levels could increase due to increased M&A activity
Labour restrictions	limited impact - construction involves high-skilled labour	limited impact	limited impact
Trade renegotiation (antagonistic)	Losers - trade restrictions will likely increase costs	Losers - trade restrictions will likely increase costs	limited impact - seeds frequently produced in county of sale
Reduced regulation	limited impact - Corporate finance divisions may benefit from reduced compliance costs	limited impact	Winners - labelling laws could be liberalised, reducing packaging costs
Geo-political shifts	limited impact	Winners - most exposure to Russia	Limited impact
Beta	High	High	Medium

Source: BMI

What's AEM's Role in Commodity Classic?



AEM is in its second year as an official affiliate of Commodity Classic. While the most noticeable aspect of AEM's participation was the addition of the Ag Connect stage this year, the real work has occurred behind the scenes in working with Classic's leadership team to help attract more farmers to the show and increasing exhibitor ROI.

Commodity Classic brings together thousands of the largest row crop farmers in one place to network with peers and learn what's new in equipment and inputs. If you've been considering joining dozens of AEM members as an exhibitor at the 2017 Commodity Classic in San Antonio in March, now's the time to commit!



Space for the 2017 show is extremely limited, but there is still opportunity to get a good space. If you would like more information on becoming an exhibitor, visit www.commodityclassic.com/exhibitors/why-exhibit- or contact AEM Director of Ag Events John Rozum at jrozum@aem.org | 414-298-4647. ■

Latin America Ag Statistics Program Launched

AEM has launched a new Latin America Regional Ag Statistics Program, with the release of industry data for four initial products in the Brazil market:

- 2WD Tractors
- Self-Propelled Combines
- Power Sprayers with monthly data from January 2015 through September 2016 and,
- Self-Propelled Sugar Cane Harvesters with monthly data from January 2015 through September 2016

The published reports to participating member companies included monthly shipment data from January 2015 through September 2016. Initially, data will be reported down to the state level for Brazil, Argentina, and Mexico. All other countries in the Caribbean, Central and South America, will be reported at a country level. Up to fifteen different products will be reported in this first phase of the Latin America Ag Program.



While the reporting system is able to accommodate specific local requirements, overall data submission and industry output report formats are consistent with North America.

This is the first time Sugar Cane Harvesters have been reported by AEM and will be the first monthly report of this type of equipment at the state level for all Latin America countries. There will be additional output reports for front-wheel assist tractors

Members currently participating in this self-funded regional statistics program include: AGCO, CLAAS Global, CNH Latin



America, Deere, Krone, Kubota, LS Tractor, MacDon and Woods. More companies will begin reporting in 2017, including Agrale, Mahindra, and PLA, among others.

This program is open to AEM member companies. Companies that conduct business in Latin America but not North America may participate in this program on a fee basis.

For more information on the Latin America Regional Ag Statistics program, contact AEM's Rex Sprietsma (rsprietsma@aem.org) | 414-298-4147 or Arnold Huerta (ahuerta@aem.org) | 414-298-4119. ■

Hagie, Vermeer Inducted into AEM Hall of Fame

Ray Hagie (Hagie Manufacturing LLC)

Ray Hagie never intended on bringing to market the world's first self-propelled sprayer in 1947. He was an entrepreneur and an innovator who spent his lifetime in pursuit of solving problems and finding a better way.

In 1933, the Iowa State College graduate returned to his family farm and decided to experiment with hybrid seed corn. A drought hit and the hybrids withstood the challenge and so did Ray, leading to the opening of Hagie's Hybrids seed corn plant in 1944.

As the agricultural industry experienced a labor shortage during WWII, Ray's entrepreneurial spirit struck again. He developed a self-propelled "personnel carrier" to help reduce the painstaking time and fatigue associated with detasseling corn. At the end of World War II, Dow

released the pesticide/herbicide, known today as 2,4-D, for use in the control of broadleaf weeds. Ray envisioned a more efficient solution to apply this product, which led to him bringing to market the world's first self-propelled sprayer and founding of Hagie Manufacturing in 1947.

In years to follow, Hagie Manufacturing earned a reputation as an industry innovator by providing the market with new solutions for evolving farming needs. A few of Hagie Manufacturing's industry firsts include the invention of the four-wheeled Hagie sprayer, front-mounted boom, and a high-clearance nitrogen toolbar.

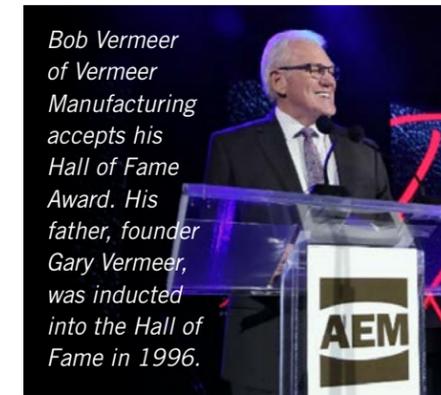
Committed to the community, the environment and the industry, Ray served in numerous leadership roles throughout his career including as an Iowa state representative and senator, chairman of the



Lisa and Alan Hagie accept the Hall of Fame award from AEM 2016 Chair Leif Magnusson on behalf of Ray Hagie, Alan's grandfather and founder of Hagie Manufacturing.

Iowa Manufacturers Association and on the Iowa State University Board of Governors.

Robert L. Vermeer (Vermeer Corporation)



Bob Vermeer of Vermeer Manufacturing accepts his Hall of Fame Award. His father, founder Gary Vermeer, was inducted into the Hall of Fame in 1996.

With an intense focus on the well-being of his team, Robert "Bob" Vermeer continued the legacy of bringing innovative processes to Vermeer Corporation that were integral in expanding the business to where it is today.

Under Bob's leadership, sales at Vermeer grew nearly 13 times. He initiated a program to evaluate and coach dealers

to higher levels of performance through improved customer relationships. He oversaw key advancements in finance that improved equipment availability and allowed dealers to stock inventory globally, ultimately growing business domestically and outside the United States. Bob also challenged his team members to expedite processes which resulted in huge productivity improvements.

A shining example of compassion and service, Bob spearheaded numerous employee and community service programs including the Vermeer Chaplain Program, the Vermeer Charitable Foundation Scholarship Program and the Vermeer Spirit of Caring Award. To stay connected to the pulse of the Vermeer people, Bob emphasized an open-door policy expectation of his leadership. You will often find him walking the production floor with a

sincere interest in every person he meets.

Active within the industry and community, Bob has served as Chair of both the Association of Equipment Manufacturers and the Iowa Business Council. In addition, Bob has been a member of, and served as an officer for, several boards, including Central College Board of Trustees, Dordt College Board, Calvin Theological Seminary Board of Trustees and the Pella Chamber of Commerce.

Bob started his career at Vermeer in 1974, later assumed CEO responsibilities, and served as Chairman of the Vermeer Board of Directors beginning in 1989. He has been involved in all aspects of the business and strategy in support of the long-term health and growth of Vermeer, and continues to devotedly serve his team, industry and community.

AEM welcomed these two new inductees into its Hall of Fame, helping to raise public appreciation for the role equipment manufacturers play in improving our quality of life. Hall of Fame inductees are evaluated by an independent panel of industry experts on five criteria that are vital to the health of the off-road equipment manufacturing industry: 1) innovation, 2) industry contributions, 3) leadership, 4) corporate citizenship/social responsibility and 5) sustainability. For more information on the AEM Hall of Fame and all its inductees, visit www.aem.org/HallofFame. ■

Industry Thought Leaders Focus on Future at Annual Conference

AEM's 2016 Annual Conference brought thought-leading ideas to its members who had the opportunity to supercharge their vision through sessions that inspired, informed and energized. Topics ranged from innovation to automation, space technology to marketing, additive manufacturing to industry 4.0, among other important themes. The conference theme was "Rise – Make your Mark" and also included networking opportunities, entertainment, and the chance to give back to the Make-A-Wish Foundation. All this was held at the beautiful Bacara Resort & Spa in Santa Barbara, Calif.



Whether you're manufacturing equipment or writing songs, the key is to be inspired. "You innovate, you create, but it still starts with an initial flicker of inspiration and that joy of inventing," said **John Ondrasik**, singer, songwriter, Five for Fighting.



Scott Jenkins, President, North American Sales & Marketing for Yaskawa – "To smaller and mid-sized manufacturers, there's technology coming out that will help you automate in the future and the ROI is positive."



Conference attendees enjoy the weather and some networking time.



AEM welcomes our new officers for 2017, from left: **Jim Walker**, treasurer, CNH Industrial; **Rich Goldsbury**, vice chair, Doosan Bobcat; **Mike Haberman**, chair, Gradall Industries Inc.; **John Lagemann**, AG chair, Deere & Co.; **Jeffrey Reed**, CE chair, Reed International/VSS Macropaver; **Dennis Slater**, secretary, AEM president.



"It has been a great honor to serve as your AEM Chair during a busy, eventful and productive year," said **Leif Magnusson**, CLAAS president, global sales America.



The annual AEMPAC fundraising dinner featured live music and opportunities to bid on some amazing silent auction items.



"When we turn customers into advocates we get them to do the work for us", said **Jonah Berger**, marketing professor, author, University of Pennsylvania Wharton School.

Be sure to join us next year in Palm Beach, Florida, November 1-3, 2017. ■



American Society of Agricultural and Biological Engineers (ASABE)

ASABE has completed revisions to the following:

- ANSI/ASABE S592.1, Best Management Practices for Boom Spraying, which identifies and formalizes basic spray application best management practices. It addresses areas that are not discussed on product labels and helps educate the average user on proper handling of spray equipment. The revision reflects advanced boom-sprayer technologies that can affect nozzle performance and the potential for varied off-site drift potential of released spray.
- ASAE S225.2 AUG2016, Chisel Plows, Field Cultivators, Row Crop Cultivators, Ripper Shanks and Ground Tool Mountings, which includes new specifications for positive stops and for the wedge on ripper shank points. The revisions will facilitate greater interchangeability among these implements.
- Its adoption of ISO 26322-1:2008, a standard on agricultural tractor safety that was originally adopted in 2012. The revised standard, ANSI/ASABE AD26322-1:2008 NOV2016, Tractors for agriculture and forestry — Safety — Part 1: Standard tractors, was revised to update format and normative references. A typo in the original document's normative references was also corrected.
- ANSI/ASAE S354.6, Safety for Farmstead Equipment, which includes specifications that are not covered by other ASABE safety standards and that are intended to provide a reasonable degree of personal safety during normal operation and servicing of farmstead equipment. The document was revised to include updates to the normative references. The standard applies to agricultural field equipment used in agricultural operations for the production of food and fiber (i.e. livestock feeding systems, livestock watering and waste handling systems, crop dryers, milling systems, material handling equipment, etc.). It does not apply to agricultural field equipment nor to self-propelled mobile equipment such as motor vehicles, all-terrain vehicles, and skid-steer loaders. In addition, it does not apply to farmstead equipment covered by other ASABE safety standards unless it is specifically referenced by these standards.

For information on these or any other ASABE standard, contact Scott Cedarquist at 269-932-7031, cedarq@asabe.org. A current listing of all ASABE standards projects can be found on the ASABE web site at www.asabe.org/projects.

ASABE has adopted an international standard for U-frame-type three-point-hitch couplers on agricultural tractors. The adopted document is designated ANSI/ASABE AD11001-1:2016 NOV2016, Agricultural wheeled tractors – Three-point hitch couplers – Part 1: U-frame couplers. It replaces ANSI/ASAE S278.7 JUL2003 (ISO 11001-1:1993). A previous version of ASABE S278 served as the original basis of the ISO document.

ASABE has initiated the national adoption of ISO 3767-1:2016, Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays, Part 1: Common symbols and Part 2: Symbols for agricultural tractors and machinery. These ISO standards were revised in 2016 and will replace earlier versions of the ISO documents initially adopted by ASABE in 2006. Adoption of the 2016 ISO standard versions will make available on the national level many new symbols utilized internationally.

2017

ASABE Conferences

2017 AGRICULTURAL EQUIPMENT TECHNOLOGY CONFERENCE

February 13-15, 2017

Seelbach Hilton, Louisville, Kentucky

Registration is now open

Early Bird registration deadline is December 28, 2016.

Register [now!](#)

For up-to-date information please visit www.asabe.org/AETC2017. Here you will find details about the program, keynote speaker, housing and registration rates for the 2017 conference.



Sharon McKnight or Jessica Bell, ASABE Meetings and Conferences
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