From the editors of *Farm Equipment*...

Ag Equipment Intelligence

News, Information & Analysis for the Ag Equipment Marketer

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- Solid Sales Year for 'Big 3'
- Kinze Offers Tillage Tools
- More Expansion in Russia

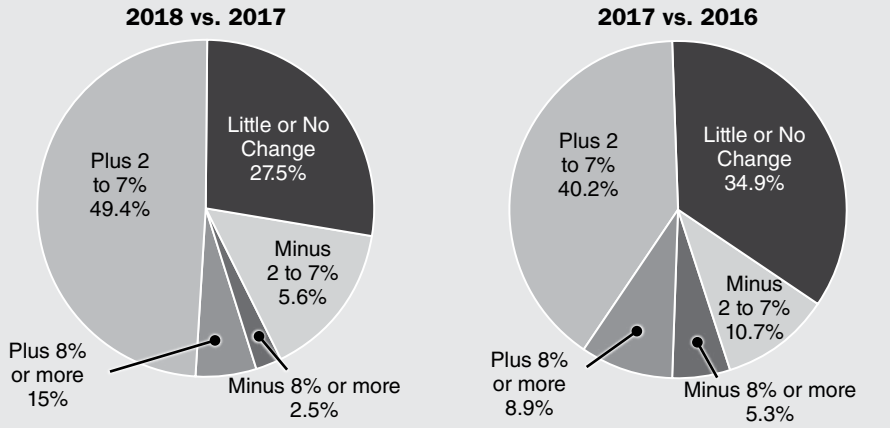
Dealers See Strong C&CE Sales Trends Carrying Over to 2018

North American equipment dealers expect the solid sales levels of commercial and consumer equipment experienced in recent years to maintain an upward trend in the year ahead, according to the results of *Rural Lifestyle Dealer's* most recent survey. Nearly two-thirds (64%) of dealers polled are forecasting sales growth of 2% or more during 2018. This compares with 49% of dealers who expected higher sales levels a year ago.

For dealers, this market segment tends to follow the overall trends of the general economy in terms of employment levels, housing starts and consumer spending. Positive or negative move-

Continued on page 2

RL Dealers' Change in Total Revenue



More than 63% of rural lifestyle dealers expect aftermarket revenues to increase 2-8% or more in 2018.

Source: Rural Lifestyle Dealer survey

For 2017, nearly 50% of rural lifestyle dealers expected growth in the 2-8% or more range.

Source: Rural Lifestyle Dealer survey

Nearly 70% of No-Till Farmers Were Profitable in 2017

No-till farmers report that despite rising expenses last year they were able to make some money. Of the 497 no-tillers from 26 states who responded to the recent survey of *No-Till Farmer* in January, 68% say they were profitable. This was down by about 2% compared to a year earlier when 69.8% reported being in the black in 2016. Compared to 2014, though, it was down by 13%, when 81% of no-tillers said they made a profit.

On average, the growers netted out nearly $52,000 last year, up from $46,300 in the year prior, but down roughly 40% compared to crop year 2014 when they reported average net income slightly over $73,000.

Unlike a year earlier when no-tillers slashed expenditures by almost $76 per acre, in 2017 no-tillers say their expenses were up by $25.32 per acre. The largest increases in the past year came in land rent (+31%) and fuel (+24%). Equipment expenses rose by 13% and machinery service and parts increased 15%. The most significant reduction of costs came in labor (–22%) and loan payments and interest (–12%).

Overall, total average expense was up by about 7% and average expense per acre was up roughly the same percentage.

Average cropping acres in 2017 were 1,147 compared with 1,153 the previous year. On average, no-till farmers owned 42.3% of their cropping acres in 2017 vs. 47.7% in 2016. Average cash rent acreage in the past year was 39.1% of the total. This compares with 39.4% in the year

Continued on page 8

No-Tillers Profit, Loss or Flat Net Income in 2017?
(% of farmers)

	2018	2017	2016	2015
Profit	68.0%	69.8%	67.2%	81.0%
Loss	15.1%	16.3%	15.9%	10.9%
Flat	16.9%	13.9%	16.9%	8.1%

Source: No-Till Farmer survey

No-Tillers' Avg. Net Income Per Farm

2018	2017	2016	2015
$51,713	$46,291	$43,289	$73,011

Source: No-Till Farmer survey

ments in these areas of the economy are generally signposts for purchasing levels of rural lifestyle-type equipment.

Lynn Woolf, managing editor of *Rural Lifestyle Dealer*, a sister publication of *Ag Equipment Intelligence*, points out that builder confidence in the market for newly-built, single-family homes rose to a level of 74 in December on the National Assn. of Home Builders/ Wells Fargo Housing Market Index. This was the highest level since July 1999, over 18 years ago. Also, the U.S. unemployment rate in December was 4.1%, down from 4.8% at the start of 2017.

Rising Confidence. Overall, 92% of dealerships that focus on the equipment needs of hobby farmers, large property owners, turf, lawn and landscape contractors expect 2018 sales levels to be as good as or better than they saw in 2017: 15% up 8% or more, 49% up 2-7%, 28% little or no change, 6% down 2-7% and about 3% down 8% or more.

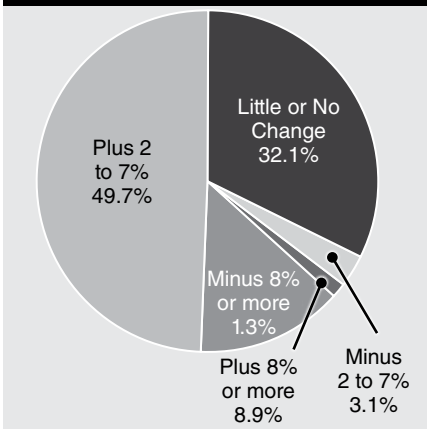
The breakdown a year ago, 84% of the dealers responding to the poll anticipated sales levels to be as good as or better than they were in 2016: 9% up 8% or more, 40% up 2-7%, 35% flat, 11% down 2-7%, 5% down 8% or more.

This year's survey results continued the every-other-year trend of more than half the dealers expecting sales growth in the year ahead. In 2014, 59% of dealers forecasted sales growth of 2% or more. In 2016, 59% expected higher sales levels and in 2018 64% are anticipating improving sales. During the in-between years, 2015 and 2017, just under half of dealers projected increased sales of new wholegoods: 47% in '15 and 49% in '17.

In the year ahead, nearly the same percentage of dealers are forecasting higher revenues from aftermarket sales in 2018 (64%) as are expecting increased wholegoods revenues.

Rural lifestyle dealers see sales of zero-turn mowers as offering the best potential for growth during the coming year, as 77% of them expect revenue gains of 2% or more.

RL Dealers' Change in Aftermarket Revenues 2018 vs. 2017



More than 63% of dealers expect aftermarket revenues to increase 2-8% or more in 2018.

Source: Rural Lifestyle Dealer survey

Next on their list is compact tractors (69.4% see 2% or higher sales levels), followed by utility vehicles (52%), rotary cutters (51%) and front end loaders (51%).

Fendt/Challenger Hits Production Milestone with 1000 Series Tractor

A growing appetite among farmers and custom operators for high-tech productivity solutions has resulted in a production milestone for agriculture's most powerful row-crop tractor sooner than expected.

In mid-December, production of Fendt 1000 Vario series tractors hit 1,000 units at AGCO's Marktoberdorf factory in southern Germany, with the milestone tractor destined for a large dairy farming operation in Canada.

The 380 horsepower Fendt 1038 Vario is one of almost 200 units supplied through the Fendt dealer network in North America. It is destined for Terpstra Farms, Brussels, Ont., a customer of Maple Lane Farm Service Inc., Mount Forest, Ont.

Another 310 units have been supplied in Challenger colors to customers of Caterpillar and other Challenger dealerships in the U.S. *(see Ag Equipment Intelligence September 2016 and August 2017)*. The other 500 units have gone to farmers and custom operators in Europe — mainly in Germany, France, Great Britain, Italy, Russia and Denmark — Africa, Australia, New Zealand and countries in Asia.

Peter-Josef Paffen, chairman of AGCO/Fendt management, says, "We are delighted with the outstanding global acceptance of the new Fendt 1000 Vario series, which has created a new market for row-crop tractors with up to 517 horsepower. Since main series production began in September 2016, tractors have been delivered to customers in 35 countries."

Although the range-leading 1050 Vario sets a new benchmark with 517 horsepower peak output, the machine is not all about raw power. For one thing, the 12.4 liter MAN engine delivers maximum torque at just 1,100 rpm. In combination with the Vario stepless transmission, it achieves efficient fuel use.

This has been confirmed by the PowerMix test program conducted by DLG, the German farmers' organization on the 420 and 460 horsepower versions of the tractor. These turned in new record low averages of 236 and 234 g/kWhr across 12 cycles representing different applications.

Also, the 1000 Vario is the first farm tractor with separate drive outputs to the front and rear axles, so torque can be apportioned as appropriate for the circumstances, while Grip Assistant recommends ballast weighting and operating speeds, and VarioGrip provides on-board tire pressure adjustment.

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Kinze Partners with Degelman to Enter Tillage Market

Kinze Mfg., best known for its innovation in the planter market announced it's entering the tillage market with four high-speed disc tillage tools, the Mach Till 201, 261, 331 and 401. The new product line is based on the Pro-Till produced by Degelman Industries that has been licensed to Kinze to build at its manufacturing facility in Williamsburg, Iowa.

Kinze President Susie Veatch says the decision to pursue the tillage segment was in response to direct feedback from Kinze dealers. "One of the things that we, as a company, have been doing in this down market is looking for ways to diversify our product offering. Every year we survey our dealers and ask them various questions," she says.

"Over the course of the past 2 years we've asked them, 'If Kinze were to expand our product offering what would you like to see,' and the number one request that came back from them 2 years ago was tillage.

"We began a study of the tillage market and, as we looked at the data, we found the compact high speed disc is the only segment of the tillage market to have double-digit growth here in the last couple of years. That, of course, caught our eye," Veatch says.

"And then we started investigating further what products are in the market place, who are the players, and we met with several companies that were interested in working with us, brought their equipment here, demonstrated it, and we brought in dealer focus groups then to learn more about each product and to see them demoed in the field."

Of all the products Kinze evaluated, Degelman's Pro-Till machine stood out to both the manufacturer and its dealers. Degelman "is all about a quality, well built, durable product that is simple to use, and that's exactly what we're about as a company. We found a lot of alignment there between our two companies," she says.

Veatch adds that the Pro-Till was appealing because the high speed disc is still somewhat of an emerging market in the U.S., without many competitors yet. "They've had great success in Western Canada and in parts of the U.S. where they have already introduced the product," she says. "And [Degelman] has had such high demand they're unable to keep up with the production of it."

Veatch predicts we'll see a number of products like the Mach Till and Pro-Till coming to the market from both other U.S. manufacturers as well manufacturers from around the world.

As part of the arrangement, Kinze will be building the machine as its own blue Mach Till as well as the yellow Degelman Pro-Till unit.

The Mach-Till is scheduled to be available from Kinze dealers in the U.S. and Canada, as well as for export to customers in Eastern Europe and Russia. Pricing information will be released this spring, with product availability projected for the fall 2018. AEI

FARM MACHINERY TICKER (AS OF 2/12/18)

MANUFACTURERS	Symbol	2/12/18 Price	1/10/18 Price	1-Year High	1-Year Low	P/E Ratio	Avg. Volume	Market Cap.
Ag Growth Int'l.	AFN	$56.01	$58.06	$60.63	$47.08	28.39	45,890	905.17M
AGCO	AGCO	$68.21	$72.24	$75.95	$58.00	29.40	775,990	5.43B
AgJunction Inc.	AJX	$0.54	$0.50	$0.67	$0.44	—	41,260	63.11M
Alamo	ALG	$110.30	$111.85	$120.59	$70.53	26.43	59,240	1.28B
Art's Way Mfg.	ARTW	$2.65	$3.00	$4.15	$2.00	—	22,850	11.02M
Buhler Industries	BUI	$4.15	$4.60	$4.90	$4.03	194.62	568	113.75M
Caterpillar	CAT	$152.29	$165.87	$173.24	$90.34	120.87	5,130,000	90.60B
CNH Industrial	CNHI	$13.70	$14.22	$15.65	$9.15	62.27	2,140,000	18.68B
Deere & Co.	DE	$159.21	$164.94	$171.96	$106.72	23.83	2,300,000	51.47B
Kubota	KUBTY	$97.18	$102.28	$107.13	$73.00	18.16	10,360	24.64B
Lindsay	LNN	$91.59	$89.17	$96.22	$75.63	38.39	100,640	981.97M
Raven Industries	RAVN	$34.55	$35.75	$40.85	$24.60	33.87	134,590	1.25B
Titan Int'l.	TWI	$11.70	$13.18	$14.31	$7.97	—	244,470	698.64M
Trimble Navigation	TRMB	$40.00	$42.68	$45.70	$30.45	85.11	1,010,000	9.96B
Valmont Industries	VMI	$154.90	$165.85	$176.35	$140.90	18.50	107,390	3.50B
RETAILERS								
Cervus Equipment	CERV	$14.40	$15.30	$15.85	$10.98	9.55	10,400	225.74M
Rocky Mountain Equipment	RME	$12.90	$13.93	$14.34	$9.20	12.91	50,270	256.41M
Titan Machinery	TITN	$18.81	$23.02	$24.19	$11.68	—	228,190	401.21M
Tractor Supply	TSCO	$66.67	$78.53	$82.68	$49.87	20.20	2,120,000	8.37B

Big 3 Finish 2017 in Growth Mode; Look for Solid Gains in 2018

After struggling with shrinking sales and revenues since 2014, the Big 3 of ag equipment — AGCO Corp., CNH Industrial and Deere & Co. — each posted the strongest results they've seen in a while.

AGCO Full-Year 2017. It's clear that much of AGCO's strong showing in 2017 resulted from its activities in Europe and the Middle East (EME). The company credits most of it sales growth from key markets in the U.K., Germany and Italy. For the full year,

AGCO Corp.
(millions of dollars)

	12 Months Ended		
	Dec. 31 2017	Dec. 31 2016	% Change
Net sales	$8,307	$7,411	+12.1
Operating income	$403	$288	+40.0

Source: Company reports

EME net sales increased by 11.4% for the region and income from operations increased by nearly $91 million compared to 2016.

In North America, net sales increased by 3.6% vs. 2016, while sales from operations increased by about $25.6 million for the full year. South American net sales were up 11.4%, but income from operations decreased by about $5.4 million for the full year. In the company's Asia/Pacific/Africa (APA) region sales grew by nearly 24% and income from operations improved approximately $29.1 million in 2017 compared to the full year of 2016.

Sales in South America accounted for 13% of total sales in the past year vs. 12% in the year prior. Its APA region brought in 9% of total net sales in 2017 vs. 8% in 2016.

Breaking down AGCO's full-year 2017 regional net sales shows that 56% came from EME, the same percentage as the year before. About 22% came from North America, which was down from 24% in 2016.

Adjusted operating margin for all of 2017 was 5% compared with 4.1% in the year prior.

AGCO's outlook for 2018 includes an increase in net sales to $9.1 billion, up nearly 10% vs. 2017. "Looking forward to 2018, we are forecasting further earnings improvement as industry conditions trend positively from the lower end of the agricultural equipment cycle in key markets," the company said.

CNHI Full Year 2017. CNH Industrial, parent company of Case IH and New Holland Agriculture, saw operating margins improve slightly from 8.1% in 2016 to 8.5% in 2017. Total ag revenues were up by 10% for the year to $10.1 million. Full year operating profit increased by 16% "mainly due to the favorable volume and product mix in all regions except NAFTA."

For ag equipment sales on a regional basis, the company reported, "In LATAM, the increase was mainly due to higher industry volume, market share gains, a favorable mix of higher horsepower products and net price realization. Net sales increased in APAC

CNH Industrial — Ag
(millions of dollars)

	12 Months Ended		
	Dec. 31 2017	Dec. 31 2016	% Change
Net sales	$11,130	$10,120	+10.0
Operating profit	$949	$818	+16.0

Source: Company reports

mainly driven by favorable volume in Australia, Russia and South East Asia. In EMEA, net sales increased due to higher industry volume, a favorable product mix and net price realization. In NAFTA, net sales decreased as a result of de-stocking actions in our dealer network, primarily with the high horsepower tractors and the hay and forage product lines. NAFTA industry volumes were flat overall, with the row-crop sector higher, offset by lower livestock sector volumes."

In its ag outlook for 2018, CNHI reported that worldwide demand for ag equipment is expected to improve with all regions flat to up 5% on average. Farm incomes are expected to remain stable, leading to no significant changes in planted acreage. Consolidated net sales are expected to be $27-$28 billion.

Deere & Co. Full Year 2017. Deere saw a nice jump in its ag operating margin in the fourth quarter 2017, up to 10.7% vs. 8.4% in the last quarter of the previous year. Net sales and rev-

Deere & Co. — Ag
(millions of dollars)

	12 Months Ended		
	Oct. 29 2017	Oct. 30 2016	% Change
Net sales & revenues	$20,167	$18,487	+9.0
Operating profit	$2,484	$1,700	+46.0

Source: Company reports

enues for ag increased by 9% to $20.2 billion, while operating profit soared by 46%. "Results were higher for the year primarily due to increased shipment volumes, price realization and a favorable sales mix," the company said.

Deere didn't provide a regional breakdown for full year 2017 ag equipment sales in its most recent report. In total, it said, "Equipment net sales in the United States and Canada increased 23% for the quarter and 5% for the year. Outside the U.S. and Canada, net sales increased 30% for the quarter and 20% for the year."

In its outlook for ag and turf equipment, Deere expects worldwide sales to increase by about 9% for fiscal year 2018. Industry sales for ag equipment in the U.S. and Canada are forecast to be up 5-10% for 2018, supported by higher demand for large equipment. Full-year industry sales in the EU28 member nations are forecast to be up about 5% due to improving conditions in the dairy and livestock sectors. South American industry sales of tractors and combines are projected to be flat to up 5% as a result of continued positive conditions, particularly in Argentina. Asian sales are forecast to be flat with strength in India offsetting weakness in China.

Industry sales of turf and utility equipment in the U.S. and Canada are expected to be about flat for 2018. Deere's turf sales are expected to outperform the industry owing to the success of new products. AEI

Doosan and Lovol Establish Engine Joint Venture

The compact diesel engines business of South Korean construction machinery giant Doosan Infracore has reached a joint venture agreement with Lovol Heavy Industry, the manufacturer of Foton and Lovol brand tractors in China. The two companies' 50:50 investment will bring together Doosan Infracore's engine technologies and mass production know-how and Lovol's production facilities at Tianjin in Shandong Province, eastern China.

Lovol Doosan will produce Doosan's G2 engine family, which comprises compact 4 cylinder off-highway engines of 2.4-liter and 3.4-liter capacity, for use in Lovol's agricultural equipment and, potentially, in farm equipment from other Chinese manufacturers.

After signing the agreement, Dongyuan Sohn, CEO of Doosan Infracore, said, "By establishing this joint venture, we will secure the world's largest consumer of our agricultural machinery engines and, in the long term, enjoy the same effect as setting up a G2 engine plant in China. The JV will serve as a springboard for the growth of our engine business and generate higher profits in emerging markets, including China."

Doosan Infracore has ambitious plans to produce 100,000 G2 engine units a year by 2020 and last year secured Kioti tractor maker Daedong as a customer for more than 6,000 units over 5 years (*see Ag Equipment Intelligence, April 2017*). The engines are also used in selected TYM tractors from Tong Yang Moolsan of South Korea and Doosan's own Bobcat skid steer loaders and telescopic handlers.

Lovol is said to be China's biggest agricultural machinery manufacturer, producing tractors from 20-185 horsepower using its own and other China-built engines. It also makes combines and implements including simple cultivators and plows, small balers and trailers.

The group's new Arbos venture based in Italy has designed and engineered a range of higher specification tractors for production in China, which are currently being launched in selected European markets (*see Ag Equipment Intelligence, August 2017*).

This business, which anticipates revenues approaching €80 million ($96 million) for 2017, recently opened a new engineering and test center to combine the resources of the former Goldoni specialized tractor plant acquired in 2016 with those of Lovol EU Engineering, previously based near Bologna in northern Italy. The facility is equipped to handle bench testing of components for Arbos tractors from orchard models to field tractors currently up to 270 horsepower. AEI

Kuhn and Claas Expanding in Russia

A revived agricultural machinery market in Russia is attracting further investment from Claas, while Kuhn also looks to upgrade its presence in the country.

Kuhn Farm Machinery is expected to establish its own base in Russia following the acquisition of a 50 acre plot of land in Voronezh Oblast located in the central belt of the European part of Russia.

Nicolas Rimbaud, head of the Kuhn representative office in the country, told dealers, "Investments and new technologies are at the core of Kuhn's development strategy. Moreover, our company's significant investments are aimed at long term development precisely for the Russian market."

Kuhn is understood to be planning a modern complex to handle sales, distribution and service activities, as well as for the production of agricultural machinery destined for sale in the Russian Federation.

Claas, meanwhile, is strengthening its long established manufacturing presence in Russia by allocating €6.6 million ($8 million) for expansion and modernization of its combine factory where mid-size Tucano straw walker and rotary separation combines are assembled. The company has a contract to meet investment obligations negotiated to gain status as a local manufacturer but demand for its products continues to grow anyway.

Claas has been operating in Russia since 1992, started building combines there in 2003 and installed a second assembly line in 2015. A 20% increase in production has been scheduled for the plant this year following significantly increased demand in 2017.

Bernd Ludewig, who heads Claas activities in the region, said, "Since 2010, our turnover here has grown three-fold and we consider this a long term trend that will continue. The needs of the agricultural sector in Eastern Europe, including Russia, in terms of the renewal of the agricultural machinery fleet, are huge and the potential of the market is far from over. Therefore, in spite of the fact that we have already done a lot to expand our presence in Russia, the company will continue this work."

A bumper harvest and increased state support for agriculture has spurred demand for equipment from all western manufacturers in the market.

Dirk Seelig, deputy general director at Claas Vostok LLC, said, "The increase in sales of imported Lexion combine harvesters and of Tucano combines produced in Russia amounted to 38% last year, which was largely due to the subsidy and preferential financing programs."

Thanks to its status as a Russian manufacturer, farmers buying Tucano combines from the Claas factory qualify for preferential leasing terms and a 15-20% discount subsidy.

For 2018, Seelig forecasts continued positive dynamics in Russia as the state exports more wheat, as well as poultry, pork and milk, and investors' interest gradually shifts toward the Far Eastern federal district.

Apart from increasing Tucano production, Claas is set to push into the hay tools market for balers, mowers, rakes and forage choppers in anticipation of increased meat and dairy production. The likelihood is that more of these products will be built locally as volumes build. AEI

South American Ag Equipment Intelligence

Anfavea President Sees Good Year for Brazil's Ag Machinery Sector

In 2017, the total wholesale volume of agricultural machinery in Brazil reached 42,800 units.This is 1.7% higher than in 2016. It is the first year of growth after 4 consecutive years of retraction, according to data from the country's National Assn. of Automotor Vehicle Manufacturers (Anfavea). Exports also had a positive performance with 9,800 units sold, a 40% increase.

For Antonio Megale, president of Anfavea, 2018 will be a year of expansion for domestic sales, exports and production. "Our expectation is based on the economy, stabilization of the economy, commodity prices, financial lines and credit availability," said Megale in an op-ed article published by Porto Alegre newspaper *Zero Hora*.

Another factor included by Megale is the robust crop to be harvested. According to the National Supply Co. (Conab), the country will harvest 230 million metric tons of grain, which would be 8 million metric tons lower than last season.

Exports, Megale said, will continue to be impacted by Brazil's Latin American neighbors. "Export growth to Argentina was at a rate of 195%. We expected the economy to continue to be hot in the case of our neighbors," he added.

Argentinian Manufacturers Want to Slow Ag Machinery Imports

The agricultural machinery manufacturing sector in Argentina has been recovering, employs more people and invests more, but also expresses worries about the lack of competitiveness because of the increase of imports.

"We are worried because there is a gradualism on the solutions, but not at the opening of imports," said Raul Crucianelli, president of the Argentinian Chamber of Agricultural Machinery Manufacturers in an interview to Buenos Aires newspaper *La Nación*.

"We are not against open trade, but as there is gradualism on tax and labor reform, the entrance of imports should not be so abrupt. First, in 2016 and the beginning of last year were bins and after [that] sprayers and seeders," he explained.

Imports of self-propelled sprayers jumped last year to 180 units, which represented 25% of the total market dominated by local companies like Pla and Metalfor.The case of harvesters is even more notable. The number of units imported in Argentina jumped from 187 to 810, a 311% hike. Nine out of 10 harvesters originated from Brazil.

Crucianelli also added that companies have to be more prepared to compete. "At the Palermo Rural Show, nearly 80% of the machinery exposed were imported and at the same price. Frequently, the producer chooses an outside product even if the Argentinian product has quality and follows international parameters," he said.

Most imported sprayers come from Brazil. Case IH, Jacto and John Deeere have typically competed in the Argentine market, and this year New Holland joined the competition.There is an import duty of 14% on this equipment. Imported sprayers historically had captured 10% of the total market in Argentina, but this jumped to 16% in 2016 and reached 25% in 2017.

"We are prepared to compete, but some aspects have to be closed. For the local companies, there is lack of financial tools to export, to Brazil, for instance," explained Jose Morena, commercial manager at Pla. AEI

New Agreement Gives Zetor Access to Russian Tractor Market

Czech tractor maker Zetor is buying selected models from South Korean manufacturer TYM and has gained a foothold in the Russian market as it continues a drive to expand export sales.

An element of Zetor's strategy is to broaden the product line, which in addition to developing its own smaller and larger tractors now involves sourcing specialized 50-70 horsepower models from Tong Yang Moolsan (TYM). These tractors are headed for selected markets, including the U.S. where the familiar machines in Zetor colors are aimed at private landowners, government agencies and the "sundowner" sector.

In Russia, an initial deal penned last year for 100 units of Zetor's 136 horsepower Forterra 135 was followed by another agreement for 450 semi-knockdown component sets for assembly in Russia.

Now, Zetor's newly appointed distributor Kovrov Electro Mechanical Plant (KEMP) has agreed to a more substantial deal for 6,000 CKD sets to be delivered from 2018-22.

David Kolhammer, director of Zetor's strategy division seeking out new markets, says the latest agreement also covers the supply of Zetor 3 cylinder diesel engines for a 50 horsepower tractor that the new customer plans to build with Zetor's help.

He adds that the Russian distributor has also expressed interest in Zetor's 80-116 horsepower Proxima and 140-160 horsepower Crystal models as KEMP seeks to strengthen its involvement in the farming sector. The Zetor tractors will join the company's Ant-branded range of skid steer, articulated and backhoe loaders.

This is welcome business for Zetor, which in 2016 supplied just 3,144 tractors worldwide from its factory in Brno, Czech Republic, 16% or 630 units fewer than in 2015 owing to soft demand in some key European markets. That saw revenues slump 13% to €133 million ($159 million), while heavy expenditure on R&D for new models and to meet Tier 4 engine emissions requirements hammered profitability, which plummeted from €5.36 million ($6.39 million) in 2015 to just €53,000 ($63,000) after taxes in 2016.

Owner HTC Holdings is understandably pressing its largest business unit to improve its financial performance as well as to increase sales volumes. AEI

2018 Large Ag Sales Off to Good Start

North American large ag equipment sales are off to a good start for 2018. According to the latest numbers released by the Assn. of Equipment Manufacturers, large ag equipment sales were up 4% year-over-year in January, including low double digit growth in Canada and low single digit growth in the U.S.

"U.S. dealer inventory in absolute and day-sales terms declined across large ag categories as new equipment channel tightening continues supporting production closer to or at retail demand," Baird analyst Mircea (Mig) Dobre said in a note.

U.S. and Canada large tractor and combine retail sales increased in January after a flattish December and a 5% increase in November 2017. U.S. sales increased 2% year-over-year (4WD +21%, combines +12%, row-crop –2%); while Canadian sales increased 12% (4WD +68%, row-crop +25%, combines –45%).

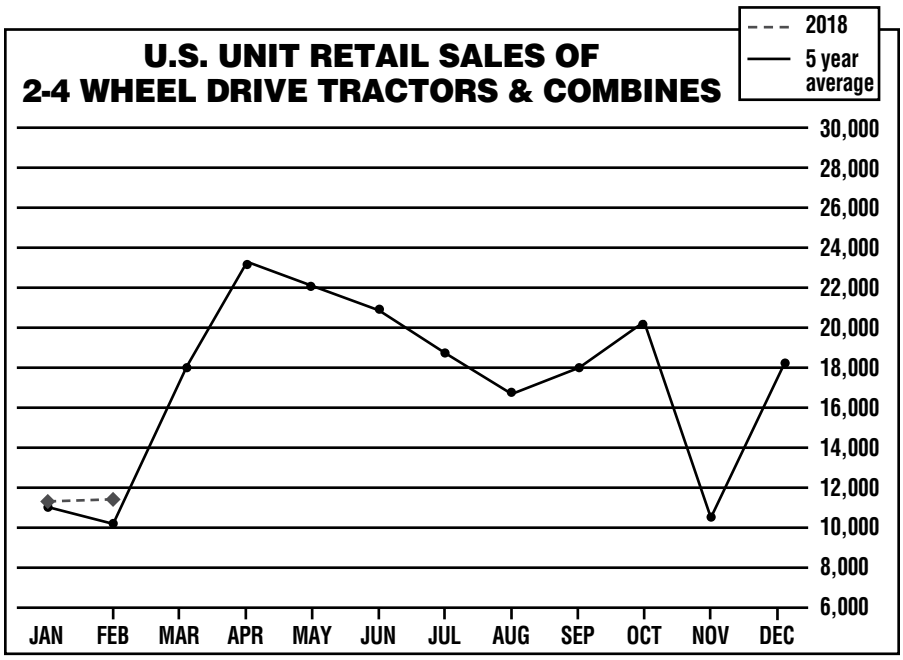
- Row-crop tractor sales increased 2.2% year-over-year after declining 4.4% in December. U.S. row-crop tractor inventories decreased 16.5% year-over-year in December. January is typically an average month for row-crop tractor sales, accounting for 8.4% of annual sales the last 5 years.
- Combine sales decreased 4.8% in January following 1.6% growth in December. Combine inventories in the U.S. decreased 16.2% year-over-year in December. January is usually a below-average month for combine sales, accounting for 7.6% of annual sales the last 5 years.
- 4WD tractor sales increased 33.3% n January following the 27.1% increase in December. Last 3 month (L3M) sales increased 17.6% year-over-year after 14.8% growth in the December L3M period. U.S. dealer inventories decreased 7.2% vs. 2017. January is a below-average month for 4WD tractor sales, with 7% of annual sales over the last 5 years.
- Mid-range tractor sales increased 3.3% in January after declining 0.4% last month. Compact tractor sales increased 6.2% after a 5.6% increase last month. AEI

JANUARY U.S. UNIT RETAIL SALES

Equipment	January 2018	January 2017	Percent Change	YTD 20 18	YTD 2017	Percent Change	Beginning Inventory Jan. 2018
Farm Wheel Tractors-2WD							
Under 40 HP	6,461	6,101	5.9	6,461	6,101	5.9	82,486
40-100 HP	3,505	3,427	2.3	3,505	3,427	2.3	31,517
100 HP Plus	1,179	1,194	–1.5	1,179	1,194	–1.5	7,983
Total-2WD	11,145	10,725	3.9	11,145	10,725	3.9	121,986
Total-4WD	132	109	21.1	132	109	21.1	665
Total Tractors	11,277	10,834	4.1	11,277	10,834	4.1	122,641
SP Combines	229	205	11.7	229	205	11.7	614

JANUARY CANADIAN UNIT RETAIL SALES

Equipment	January 2018	January 2017	Percent Change	YTD 2018	YTD 2017	Percent Change	Beginning Inventory Jan. 2018
Farm Wheel Tractors-2WD							
Under 40 HP	800	735	8.8	800	735	8.8	7,680
40-100 HP	455	405	12.3	455	405	12.3	3,563
100 HP Plus	244	195	25.1	244	195	25.1	2,208
Total-2WD	1,499	1,335	12.3	1,499	1,335	12.3	13,451
Total-4WD	64	38	68.4	64	38	68.4	267
Total Tractors	1,563	1,373	13.8	1,563	1,373	13.8	13,718
SP Combines	46	84	–45.2	46	84	–45.2	345



— Assn. of Equipment Manufacturers

No-Till Farmers' Average Operating Expenses

	Actual Operating Expenses			Estimated Operating Expenses	
Expense Type	2017 vs. 2016		Change (%)	2018 Est.	Change (%) vs. 2017
Fuel	$15,709	$12,641	+24%	$17,209	+10%
Land rent	$77,508	$59,026	+31%	$84,250	+9%
Seed/Seed treatments	$50,860	$48,869	+4%	$52,684	+4%
Pesticides	$38,110	$32,826	+16%	$36,070	–6%
Fertilizer	$57,536	$55,419	+4%	$59,605	+4%
Lime/Gypsum/Bios	$4,839	$4,137	+17%	$4,535	– 6%
Equipment	$41,100	$36,257	+13%	$25,887	+37%
Machinery service/parts	$24,061	$20,916	+15%	$22,314	–7%
Precision equipment	$2,319	$2,412	–4%	$2,107	–9%
Custom app./hauling	$8,204	$9,046	–9%	$8,291	+1%
Labor	$20,945	$26,882	–22%	$21,394	+2%
Crop/property insurance	$17,238	$17,991	–4%	$18,204	+6%
Loan payments/interest	$36,978	$41,863	–12%	$39,422	+7%
Total average expenses	**$395,407**	**$368,285**	**+7**	**$392,692**	**<1%**
Expenses per acre	**$344.73**	**$319.41**	**+8%**	**$342.36**	**<1%**

Source: No-Till Farmer survey

earlier. The remaining acres — 18.6% in 2017 and 12.9% in 2016 — were share cropped.

Equipment Purchasing. The percentage of farmers who have purchased or are planning to purchase in 2018 is nearly identical to that in 2017, but up by nearly 12% compared to 2016. No distinction was made between new and used equipment.

Overall, about 9% of farmers have acquired or plan to acquire a tractor for 2018, 7.5% have plans for a combine and 7.1% have or intend to purchase a planter. Most categories of precision technologies will see some growth in 2018 vs. 2017, and most have seen significant growth compared to 2016.

In the year ahead, field mapping has grown by 10.3% in terms of the number of farmers utilizing the technology. The number of no-tillers using auto-boom/nozzle shutoff for spraying has grown by 9.3% since 2016 and 8.6% more farmers will be using auto-seed shutoff in 2018 vs. 2016. AEI

Equipment Purchased or Plan to Purchase for 2018

	2018	2017	2016
Tractor	9.1%	10.3%	7.8%
Planter	7.1%	6.5%	6.2%
Combine	7.5%	6.5%	4.2%
Drill	3.8%	4.4%	3.4%
Sprayer	5.8%	7.2%	4.2%
Air seeder	3.4%	2.5%	1.3%
Strip-till toolbar	1.8%	1.7%	1.3%

Source: No-Till Farmer survey

Precision Technologies Used by No-Tillers in 2018

	2018	2017	2016
GPS/tractor auto-steer	54.8%	57.1%	49.6%
Yield monitor data analysis	48.6%	49.5%	41.0%
Field mapping	50.6%	48.2%	40.3%
GPS guidance/lightbar	38.1%	37.2%	40.1%
Auto-boom/nozzle shutoff	41.5%	40.3%	32.2%
Auto-seed shutoff	38.5%	34.2%	29.9%
Variable-rate fertilizing	34.7%	32.5%	29.9%
Variable-rate seeding	27.4%	21.9%	19.7%
Satellite aerial imagery	17.9%	13.4%	10.1%
GPS/implement auto-steer	6.9%	6.8%	7.0%
Remote sensing	2.0%	2.0%	1.6%
Drones	10.1%	9.5%	6.0%

Source: No-Till Farmer survey

Microsoft India Plans Low Cost IoT Farm Solutions

The Indian government focus on agriculture now involves technology giant Microsoft, which is working on building an internet of things (IoT) for farms.

The company is working on a project with Gandhi Krishi Vignana Kendra (GKVK), part of the University of Agricultural Sciences in the state of Karnataka to reduce the cost in farming with the help of low cost sensors.

Sriram Rajamani, managing director, Microsoft Research India, said, "There are lots of parts and costs involved in building a sensor box, but we found that with the help of software we can reduce the usage of parts in the box that will reduce the cost of sensors.

"If the sensor box fails, with the help of the software, we can detect when it failed and the reason and we can ask farmers to replace it," Rajamani said. He added that in India, as the farm holdings are small, the concept of drones to map farms is not feasible, so Microsoft is deploying helium gas-based balloons fitted with a camera to capture pictures of the farm.

These cameras can also detect heat signatures to determine what sowing pattern will be conducive to the soil. They say this new method is cost effective and is being tested. With the use of intelligent sensors, the company aims to increase crop yield and help farmers use expert methods adopted by agronomists.

Delhi-based SenRa is partnering with Turkey-based Skysens to also bring IoT solutions to agriculture in India. The company plans to launch soil sensors, where farmers can have the ability to monitor soil and determine the health of their crops in real-time. AEI