

Ag Equipment Intelligence

News, Information & Analysis for the Ag Equipment Marketer

- Autonomous Vehicles
- TITN Results Improve
- WASDE's 'Uptick'

40% of Dealers Expect Improving Precision Revenues in 2016

The revenue stream from the sale of precision farming equipment is expected to be as good as, or better than, what dealers saw in 2015. According to *Precision Farming Dealer's* 2016 Benchmark Study, dealers share a cautiously optimistic outlook for total precision farming revenue in 2016, with 88.9% of the total respondents predicting similar or improved results from the 2015 totals.

Just 21.1% of dealers expect any kind of decrease in revenue, a considerable improvement from last year's results when 35.5% of dealers predicted losses. When it comes to projecting strong growth, however, dealers are less confident this year, with just one in 10 dealers expecting revenue increases of over

Precision Farming Revenue Comparison			
Variation	2014 vs. 2013	2015 vs. 2014	2016* vs. 2015
Up 8% or More	30.3%	17.9%	10.0%
Up 2-7%	28.8%	23.3%	30.0%
Little or No Change	16.7%	23.3%	38.9%
Down 2-7%	13.6%	13.3%	10.0%
Down 8% or More	10.6%	22.2%	11.1%
*2016 percentages are based on 1st quarter projections Source: Precision Farming Dealer 2016 Benchmark Study			

8% for this year vs. 18% a year ago. This marks a continuing downward trend in strong growth expectation among dealers, with a total decrease of over 20% since the 2014 survey.

As expected, sales of hardware is expected to be the top revenue source for dealerships in 2016, marking the fourth consecutive year it

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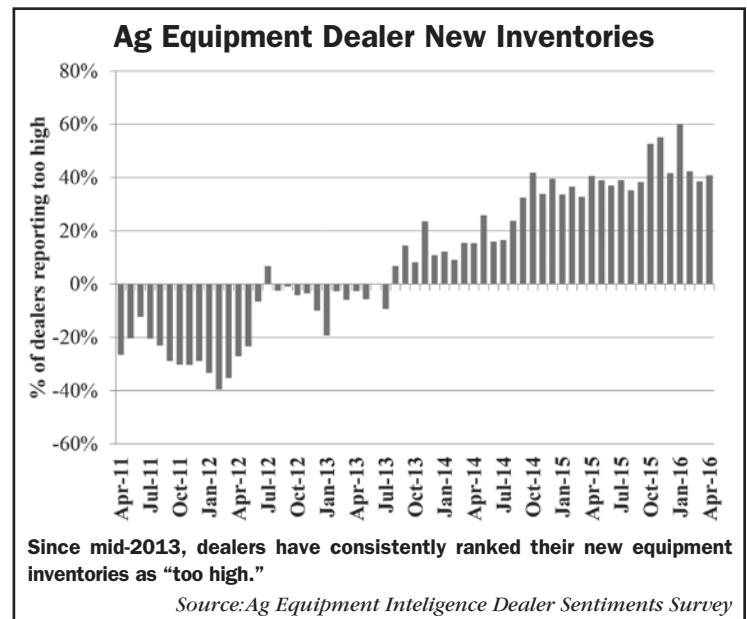
High New Equipment Inventories Continue to Plague Dealers

While the excessive backlog of used farm machinery has captured much attention for the past few years, high new ag equipment inventories are also posing major challenges for North American equipment dealers. Of course, the precipitous drop in used prices added much of the urgency surrounding growing inventories.

Six years ago when *Ag Equipment Intelligence* initiated its Dealer Sentiments survey, a net 26% of dealers reported new equipment inventories were "too low." The last time they rated their new machine inventories as "too low" was nearly 3 years ago, in July 2013.

Every month since then, dealers have reported their new equipment backlogs have been "too high." This peaked in January 2016 when 60% of dealers surveyed rated their new inventories as "too high."

The largest number of dealers to have rated their used inventories as "too high" was in March 2015 when 47% said their backlogs were "too high." **AEI**



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WASDE Report is Viewed as an 'Uptick' for Ag Machinery Sales Outlook

In the current ag economy, even a neutral or flat projection for crop receipts can be viewed as a positive. While no one is quite sure how big an impact the recent rise in soybean and corn prices will have on farm equipment sales, for the moment, things don't appear to be getting any worse.

If nothing else, the June 10 World Agricultural Supply and Demand Estimates report from USDA has improved sentiments among equipment dealers. Responding to the *Ag Equipment Intelligence's* most recent Dealer Sentiments survey, one dealer remarked, "April brought increased quoting activity and interest from customers ... It seems like custom-

ers are keeping their options open and adopting a wait-and-see approach with capital spending."

Analysts covering the industry were also slightly more upbeat about industry prospects. In a note to investors, BB&T analyst C. Schon Williams said, "With the cash receipts forecast now flattening out, we are now more neutral (was bearish) on agricultural machinery demand. Cash receipts are forecast to be down 1.1% year-over-year, which is an improvement vs. our May estimate (-2.9%)."

Michael Shlisky, analyst with Seaport Global Securities, added, "Net-net, we view this month's WASDE data as positive for heavy Ag OEMs. Our 2016-17 major-crop receipts fore-

cast is now \$95.94 billion, flat year-over-year. When adjusted for the calendar year, other crops and livestock related expectations, however, we currently forecast that farmer cash receipts will be down 4% in CY2016 (including -4% for major crops), followed by an incremental decline of 1% in CY2017."

USDA raised the 2016-17 season price range for corn to \$3.20-\$3.80 vs. \$3.05-\$3.65 in the previous month. Soybean price range was also increased from \$8.35-\$9.85 per bushel to \$8.75-\$10.25. Price for wheat, on the other hand, was lowered to \$3.60-\$4.40 per bushel from last month's \$3.70-\$4.50. **AEI**

agBot Challenge Inches Autonomous Vehicles Closer to the Field

At the first-ever agBot Challenge held in Rockville, Ind., more than 1,000 attendees were given a chance to see just how far autonomous ag technology has come — and how far is still has to go.

Ten different design teams competed in the event held on May 5-6, which challenged each to build an unmanned, "robotic" planter able to follow programmed coordinates through a field and send real-time information on down pressure, seeding and fertilizing rates back to the remote operator.

Among the operational objectives for each team's model were precision planting observation methods, weather data influence decision making, return to docking and loading sensors for seed and fertilizer, connectivity and successful real-time observation and accuracy of data — storage, analytics and real-time application.

Each of the teams provided a presentation with details of their work and revealed components of their machines to a panel of 4 judges. The 3 person team of industrial systems engineering students from the

University of Regina in Sask., took first place and received a \$50,000 grant for their machine, a self-guided autonomous robot designed to plant 12 rows of corn, each a half mile long.

Placing second and earning a \$30,000 grant was a joint team from Purdue University and South Newton High School in Kentland, Ind., which developed a system compatible with

"We're looking at maintaining the effectiveness of current planters while trying to do away with the driver..."

any 3-point loader attachment, modified and augmented with connected planting technology.

Third place and a \$10,000 grant was a tie between Muchowski Farms for its automated hybrid electric cart, and Pee Dee Precision Ag, a small independent team of four hobbyists based in Latta, S.C. The Pee Dee team designed

a 2,500 pound, ground-based drone, called Cricket One, with an 18 horsepower diesel engine with hydraulic controls and a top speed of around 10 mph. The machine was fitted with two Case IH 1050 planter row units with Precision Planting vSet Select row control system and 60 gallons of combined seed capacity.

"From a precision farming perspective, we're looking at maintaining the effectiveness of current planters while trying to do away with the driver and having to hitch an implement up behind a tractor," says Jerry Martin II, Pee Dee Precision Ag's team leader. "There will be a fair amount of programming for field drones required, even for something very simply designed. There may end up being some liability attached to how the drones are programmed so a service industry may crop up around that."

The 2016 agBot Challenge was the first event in a planned 3-year series, each one targeting a different farm management need that student teams and entrepreneurs have to solve. **AEI**

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With Engine Emission Work Behind It, Deutz to Focus on Electronics and Software

Now liberated from successively more stringent exhaust emissions rules, engine maker Deutz will focus its R&D efforts on electronics and software development, more compact emissions systems, alternative fuels and extracting more power from fewer cubic inches.

"We do not anticipate being faced again with such a complex challenge as that presented by the EU Stage IV/U.S. Tier 4 Final emissions standards," says Dr. Ing. Helmut Leube, Deutz chairman. "Rather, we expect to be able to market the engines developed for these standards well into the next decade."

With expensive emissions development work completed — including for European Stage V due in 2019 (see *Ag Equipment Intelligence*, December 2015) — Deutz has trimmed R&D investment from 5.5% of net revenues in 2011 to 3.3% last year, amounting to €40.8 million (\$45.4 million).

The group continues to invest in new compact diesel engines for applications where downsizing can be beneficial. The new 5-liter TCD 5.0, for example, has installed dimensions virtually identical to those of the 70-115 kW (94-154 horsepower) TCD 4.1 engine yet delivers outputs of 100-150 kW (134-200 horsepower) to overlap those of the 120-180 kW (160-240 horsepower) 6-cylinder TC 6.1 engine.

Deutz hopes its current and new engines will underpin future agricultural OEM sales, which last year dropped 38% to €98.2 million (\$109.4 million) to account for a little under 13% of group revenues, which were down 18.5% to €1247.4 million (\$1.38 billion) vs. a 2014 figure of €1530.2 million (\$1.7 billion).

In total, Deutz supplied 137,781 engines of all shapes and sizes, almost 30% fewer than in 2014 when it shipped more than 196,000 units. Some of that decline resulted from

forward buying by European OEMs to stock up on sub-130 kW (174 horsepower) engines ahead of an emissions step. But weak end-user demand for tractors, loaders and compact construction machinery from mid-2015 onward also had a major impact.

Deutz managed to stay profitable, though, with net income of €3.5 million (\$3.9 million), down 82% on the €19.5 million (\$21.7 million) generated in 2014. Operating profit expressed as EBIT was also positive at €4.9 million (\$5.45 million), compared to €31.7 million (\$35.2 million) in the prior year.

While anticipating a challenging 2016, Deutz sees a glimmer of hope in the positive sales figures recorded so far with agricultural OEMs in contrast to a further slide in every other sector. Group-wide order value was up 2% for the same quarter of 2015 and approaching 12% ahead of the preceding quarter, with unit sales up 5%. **AEI**

FARM MACHINERY TICKER (AS OF 6/13/16)

MANUFACTURERS	Symbol	6/13/16 Price	5/11/16 Price	1-Year High	1-Year Low	P/E Ratio	Avg. Volume	Market Cap.
Ag Growth Int'l.	AFN	\$38.95	\$37.60	\$51.69	\$24.68	N/A	93,002	571.24M
AGCO	AGCO	\$52.86	\$52.21	\$57.90	\$41.91	18.57	928,598	4.36B
AgJunction Inc.	AJX	\$0.64	\$0.54	\$0.71	\$0.40	N/A	51,566	79.04M
Alamo	ALG	\$61.77	\$55.37	\$63.02	\$43.98	15.97	77,994	706.60M
Art's Way Mfg.	ARTW	\$3.13	\$3.04	\$5.58	\$2.46	N/A	1,778	12.38M
Buhler Industries	BUI	\$4.91	\$4.86	\$6.06	\$4.74	N/A	414	122.75M
Caterpillar	CAT	\$75.23	\$72.43	\$88.81	\$56.36	39.57	5,586,980	43.93B
CNH Industrial	CNHI	\$7.26	\$7.14	\$9.72	\$5.67	N/A	1,816,910	9.88B
Deere & Co.	DE	\$85.32	\$83.90	\$98.23	\$70.16	17.12	3,255,840	26.81B
Kubota	KUBTY	\$66.81	\$78.05	\$88.21	\$58.99	12.42	31,040	16.63B
Lindsay	LNN	\$71.45	\$69.63	\$91.93	\$62.99	64.49	116,042	769.72M
Raven Industries	RAVN	\$19.33	\$15.59	\$22.36	\$12.88	75.58	185,991	698.95M
Titan Int'l	TWI	\$6.74	\$6.28	\$11.16	\$2.50	N/A	425,535	363.85M
Trimble Navigation	TRMB	\$25.94	\$23.61	\$26.53	\$15.90	61.76	1,183,530	6.51B
Valmont Industries	VMI	\$133.13	\$134.87	\$145.94	\$92.33	72.55	198,463	3.02B
RETAILERS								
Cervus Equipment	CVL	\$11.51	\$11.14	\$16.44	\$10.41	N/A	32,102	179.76M
Rocky Mountain Equipment	RME	\$7.03	\$7.02	\$9.49	\$5.50	13.89	27,352	136.27M
Titan Machinery	TITN	\$11.09	\$11.47	\$16.99	\$7.87	N/A	134,277	234.96M
Tractor Supply	TSCO	\$91.27	\$92.45	\$97.25	\$75.00	29.57	958,478	12.18B

Analysts See 'Bright Spots' in Titan Machinery's 1QFY17 Results

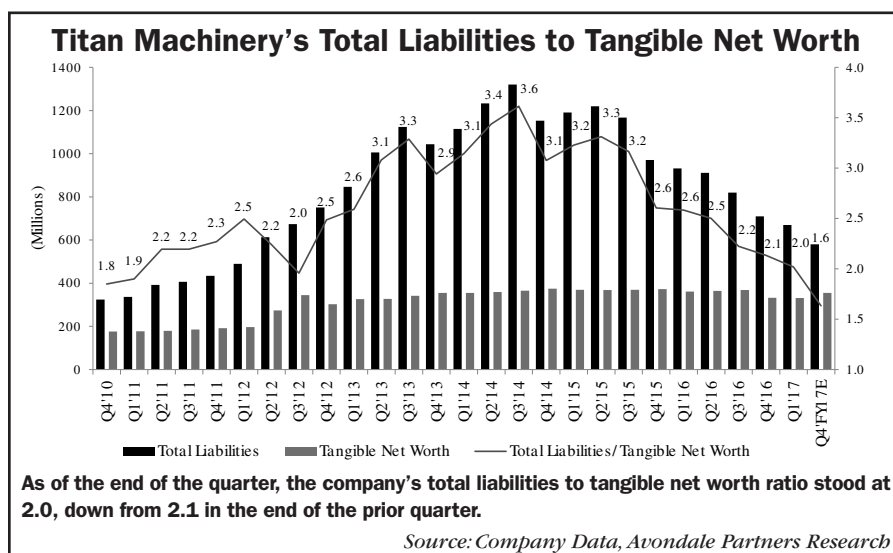
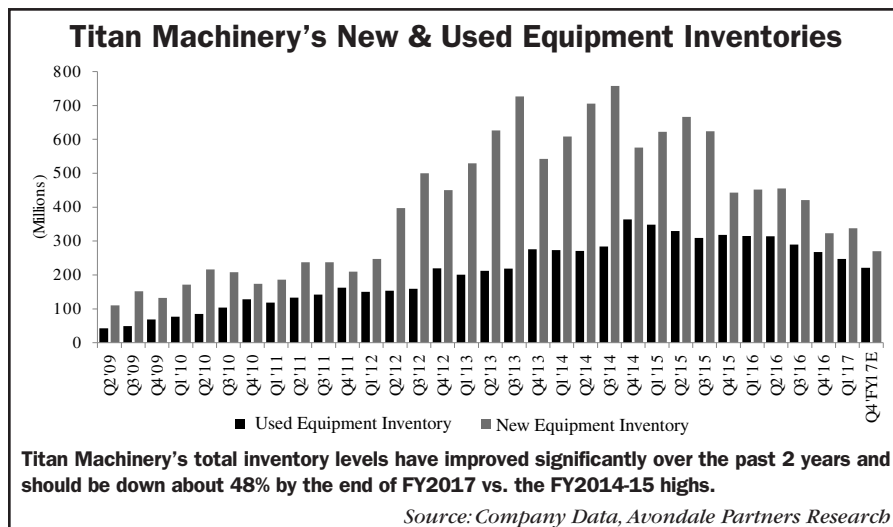
While Titan Machinery continues to battle agricultural headwinds of lower commodity prices and excessive equipment inventories, analysts covering Case IH's largest farm equipment dealer group agree that the company is making progress in its efforts to get back to profitability.

During the first quarter of its fiscal year, Titan saw a 19.3% drop in total revenue, which was an improvement over the preceding quarter's decline of 32%. The company's gross margin also improved to 18.8%, up from 17.1% (+170 basis points) in the first quarter vs. the same period a year earlier.

Titan sold \$25 million of the \$74 million targeted aged equipment inventory in the first quarter, above management's \$22 million target, at margins in line with expectations, according to Mig Dobre, machinery analyst for RW Baird. He pointed out in a note, "The fourth quarter 2016 write-down appears to have been sufficient."

Continuing Reductions. In total, Titan reduced its inventory by \$20.9 million, or by 7.8% quarter-over-quarter. Going forward, the company plans additional aged inventory reductions that include \$10 million in the second quarter of the fiscal year and \$19 million in the third quarter.

According to Rick Nelson, analyst for Stephens Inc., of the \$74 million of aged inventory reductions this year, \$36 million is ag equipment, \$29 million construction equipment and \$9 million related to Titan's exiting from its Terex haul truck business. Of this total, \$28 million is con-



sidered new equipment and \$46 million is used product.

In a note, Nelson said, "Titan's remaining new inventory, comprised of core products supported by manufacturer retail programs, has limited valuation exposure according to management. The remaining used inventory, scheduled to be sold through the normal retail channel, has more valuation exposure vs. the new inventory. The company's full year equipment margin guidance of 7.7- 8.3% considers any valuation risk to used inventory."

Reducing Debt. Avondale Partners' analyst Igor Maryasis noted that Titan also continued to

reduce its debt. "In the first quarter of fiscal year 2017, Titan proactively repurchased \$30 million, or about 20% of its total outstanding 3.75% senior convertible notes at about 17% discount resulting in \$2 million pre-tax gain. After this transaction, Titan has about \$105 million in remaining notes, which are due in 2019," Maryasis said in a note to investors.

"This is essentially the only meaningful debt the company has aside from floorplan financing of the existing inventory. As of the end of the quarter, the company's total liabilities to tangible net worth ratio stood at 2.0, down from 2.1 at the end of the prior quarter."

Looking Ahead. As for the remainder of the year, Titan's goal is reduce inventories by \$100 million by the

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Titan Machinery 1Q17 Selected Data (millions of dollars)			
	Q1 FY2017	Q2 FY2016	Change
Total Revenue	\$284.9	\$353.2	-19.3%
Equipment	\$184.9	\$245.0	-24.5%
Parts	\$57.5	\$61.5	-6.5%
Service	\$31.0	\$32.9	-5.8%
Rental & Other	\$11.5	\$13.8	-16.7%
Segment Overview			
Agriculture	\$178.8	\$239.9	-25.5%
Construction	\$78.0	\$81.2	-3.9%
International	\$28.1	\$32.2	-12.8%

end of its fiscal year 2017, which ends April 30. According to Nelson, if Titan reaches its goal, it will have reduced inventory by approximately \$450 million over a 3 year time frame. Most of the reduction is expected to take

place in the second half of the year with a bulk of it coming in the fourth quarter of FY2017.

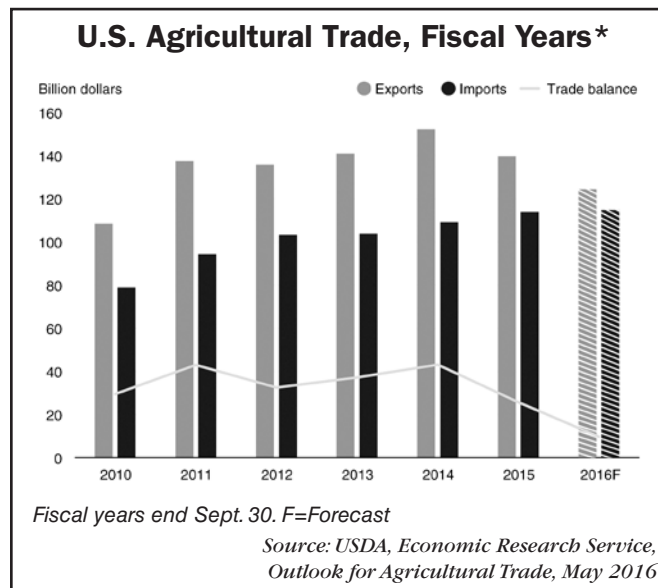
As far as overall business levels for the remainder of this fiscal year, same-store ag sales are forecast down

13-18%, reflecting lower equipment revenue and a slight decrease in service and parts revenue. Construction and international same-store sales are expected to be flat. Titan is projecting margins of 7.7-8.3%. **AEI**

FY 2016 U.S. Ag Export Trade Surplus Lowest Since 2006

Despite the recent good news on the rising prices for soybeans and corn, overall USDA is projecting the lowest U.S. agricultural trade balance in more than a decade in 2016.

According to last month's Outlook for U.S. Agricultural Trade, the value of U.S. agricultural exports is forecast at \$124.5 billion for fiscal year (FY) 2016 (ending Sept. 30), down \$15.2 billion from FY2015 and the second consecutive decline since a record \$152.3 billion in agricultural exports was achieved in FY2014. The declining export values over the past few years reflect a combination of lower commodity prices, a relatively weak global economy and a strong U.S. dollar — which makes U.S. products more expensive in foreign currency terms. The value of imports, on the other hand, continues to grow and is forecast to reach a record \$114.8 billion this year, up \$800 million from FY2015. With lower exports and higher imports, the FY2016 agricultural trade balance is forecast to fall to \$9.7 billion, down \$16 billion from last year and the lowest since FY2006. **AEI**



Breviglieri Expands Product Lineup for U.S. Dealers

An expanded Breviglieri product range for U.S. dealers will result from the Italian manufacturer's merger with Agrimaster following its acquisition by private equity operator B4 Investments.

The move creates a group that manufacturing power harrows, rotary tillers, flail mowers and shredders with €25 million (\$28.3 million) turnover and EBITDA of €3.5 million (\$3.96 million), with 75% of revenues earned in export markets.

"The group already has a presence in the North American market — both the U.S.A. and Canada — through the Breviglieri brand," notes Fabio Marsili, export sales manager, Breviglieri SpA. "In the future, we will add products from the Agrimaster range according to the requirements of the North American market in the Breviglieri colors."

"The integration of the two product catalogues will therefore enable Breviglieri to continue to offer the rotary tillers and power harrows, which are already part of our regular offering on the U.S. market, and then an even wider range of shredders," he adds.

"These will cater for several applications, from maintenance of green/public areas to traditional farming operations such as pruning in orchards and vineyards, and crop stalk shredding with professional folding models up to 8 meters wide for 350 horsepower tractors; and there

will be a range for the forestry sector."

Marsili identifies General Implement Distributors, based in Salt Lake City, as the group's largest distributor in the U.S., with six branches covering a 14 state territory composed of 800 dealers.

B4 Investments was set up in 2012 with capital from Italian and international private investors with the goal of investing in the development of small and medium-size Italian companies with good profitability, strong commitment to internationalization and leadership positions in niche markets. Agrimaster SpA was acquired in 2014.

The operator notes that, apart from some consolidation in recent years, companies in the Italian agricultural equipment sector remain numerous and almost always small, resulting in difficulties facing competition from larger groups because of the significant investment needed in production, technology and commercial activities. **AEI**

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2016 Crop Acres Would Have Been Lower Except for CRP Cap

If U.S. farmers had their druthers this year, considering the low level of commodity prices over the past 3 years, a lot more acres would have gone into USDA's Conservation Reserve Program (CRP) and not into production. At the same time, even if all the acres applied for had been accepted, it probably wouldn't have been enough to impact commodity prices or equipment sales.

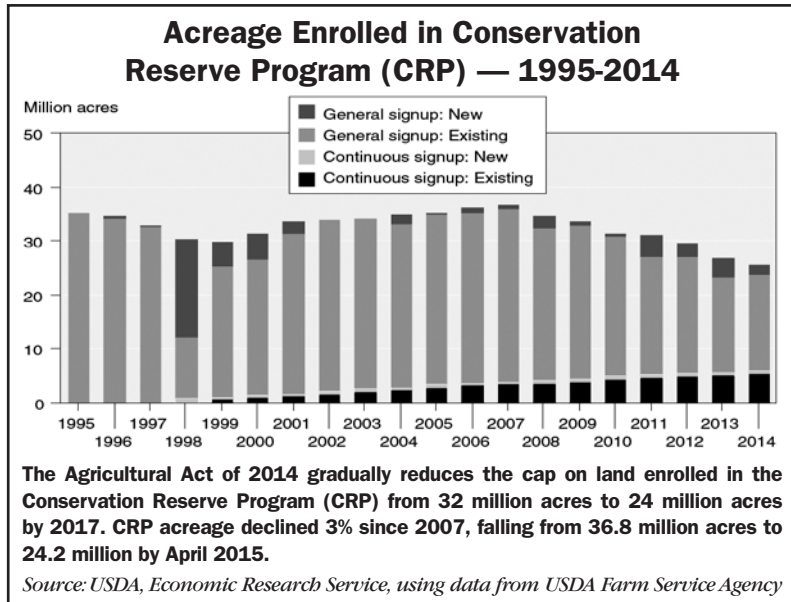
Last month the ag agency reported that when the general signup was completed at the end of February, more than 1.8 million acres in offers were made, but it only accepted 23% of the 26,000 landowners' applications because of the program's 24 million acre cap. In total, 800,000 acres will be enrolled through three different CRP programs.

In addition to the general CRP signup, USDA also reported 4,600 additional offers were made for 1 million acres in the new CRP Grasslands program. Only 10%, or 100,000 acres, were accepted. Since 2007, CRP acreage has declined by 34% from 36.8 million acres to 24.2 million by April 2015.

As part of the negotiations for the 2014 Farm Bill, Congress capped the CRP at 24 million acres. "The lower acreage cap was largely a cost-savings measure as the farm bill was worked out during the heat of the federal budget debates. The previous cap was at 32 million acres," said David Widmar, an agricultural economist, in a recent *Agricultural Economic Insights* newsletter.

Even with the higher acreage in CRP a few years ago, Widmar said that it probably wouldn't have been enough to effect overall commodity prices.

"Across the farm economy as a whole, additional CRP acres would also result in fewer acres in production. Fewer acres of production indirectly support overall commodity



prices and, given the margin squeeze producers are facing, this could be very attractive."

But Widmar says criticism of this approach include: the acre reduction wouldn't be enough to matter, especially given the global nature of agriculture; and even if prices are supported by fewer acres of U.S. production, international agricultural producers would also benefit.

This year marks the 30th anniversary of the CRP, which was signed into law in 1986 to encourage farmers to establish long-term, resource-conserving "covers" (grasses or trees) to control soil erosion, improve water quality and develop wildlife habitats on marginally productive agricultural lands. In return, the Farm Service Agency provides participants with rental payments and cost-share assistance. Contract duration is between 10-15 years. **AEI**

Need to Reduce Labor Helps Lely Increase Revenues

Dairy producers in the U.S. looking to improve efficiency — or simply to handle a shortage of labor — helped one of the industry's leading robotic dairy equipment makers to record revenues.

At a time when most ag equipment suppliers — especially those aligned with livestock production — have seen revenues decline, Lely Group increased its income stream in 2015, albeit by just 0.3% over the prior year. Net sales amounted to €619 million (\$689.4 million), up €2 million (\$2.2 million) on the 2014 figure, which represented a 5% gain over 2013.

"In North America, we experienced a record order uptake for the Lely Astronaut A4 milking robot, which was

also driven by an uptake in Dairy XL projects for farmers with more than 500 cows," says Alexander van der Lely, CEO. "We will bring more customer tailored benefits to the market such as the recent introduction of option choices for the Astronaut milk robot."

The Dutch group is a pioneer of voluntary milking, which rids dairy farms of fixed-time routines and enables cows to settle into their own milking pattern. Improved milk yields and reduced herd hierarchy stress resulting in more relaxed cows are claimed for this approach, along with high level milk and cow health monitoring in addition to reduced labor demand.

Lely's labor-saving equipment range

also includes robotic feed preparation, dispensing and push-up systems, as well as barn cleaning robots, which can also be exploited on farms with a conventional milking approach.

In North America, these products are distributed conventionally through equipment dealers, whereas in Europe a novel franchise approach — said to be unique in agriculture — was adopted.

This established sales and service centers, often located on commercial farms, dedicated to the group's dairy line with the aim of ensuring Lely Centre operators would build maximum expertise in servicing and on advising the most appropriate robotic dairying setup for individual farms. **AEI**

Ag Equipment Sales Show Signs of Improvement

North American large ag equipment sales continued to be weak in May, according to the latest numbers released by the Assn. of Equipment Manufacturers. Row-crop tractor sales were down just 1.2% year-over-year, marking the smallest decrease in nearly 2 years. "May 2016 marked the 28th month of large ag year-over-year declines but the smallest decline in 20 months, as 2-year stacked comparisons continue to ease," said Mircea (Mig) Dobre, analyst with Baird Equity Research, in a note to investors.

- U.S. and Canadian large tractor and combine sales dropped 9% year-over-year in May, up from the 21% decrease in April. U.S. sales were down 12%, while Canadian sales remained flat.

- The decline in combine sales increased in May, posting a 39.3% year-over-year drop vs. down 30% the previous month. U.S. combine inventories were 36% lower year-over-year in March, compared to down 37.8% the month before. May is typically a slower-than-average month for combine sales, accounting for 5.9% of annual sales over the last 5 years.

- Row-crop tractor sales were down 1.2%, an improvement from the 18.8% decrease in April. U.S. row-crop inventories increased 0.6% year-over-year in April vs. a 4.5% decrease the month prior. Typically, May is an average month for row-crop tractor sales, accounting for 7.6% of annual sales over the last 5 years.

- 4WD tractor sales were down 10% year-over-year in May, an improvement from the 21.6% decline the previous month. U.S. dealer inventories of 4WD tractors decreased 20.2% year-over-year in April. May is typically a below average month for 4WD tractor sales, accounting for 6.5% of annual sales over the last 5 years.

- Mid-range tractor sales increased in May, up 0.5% year-over-year after a 13.8% decrease the previous month. Compact tractor sales were up 6.7% year-over-year in May, up slightly from the 6.6% increase the month before.



MAY U.S. UNIT RETAIL SALES



Equipment	May 2016	May 2015	Percent Change	YTD 2016	YTD 2015	Percent Change	April 2016 Field Inventory
Farm Wheel Tractors-2WD							
Under 40 HP	15,714	14,369	9.4	55,596	48,143	15.5	79,864
40-100 HP	5,201	5,127	1.4	22,067	22,534	-2.1	39,962
100 HP Plus	1,612	1,670	-3.5	8,166	10,790	-24.3	10,674
Total-2WD	22,527	21,166	6.4	85,829	81,467	5.4	130,500
Total-4WD	147	199	-26.1	912	1,314	-30.6	791
Total Tractors	22,674	21,365	6.1	86,741	82,781	4.8	131,291
Combines	234	391	-40.2	1,408	1,978	-28.8	853

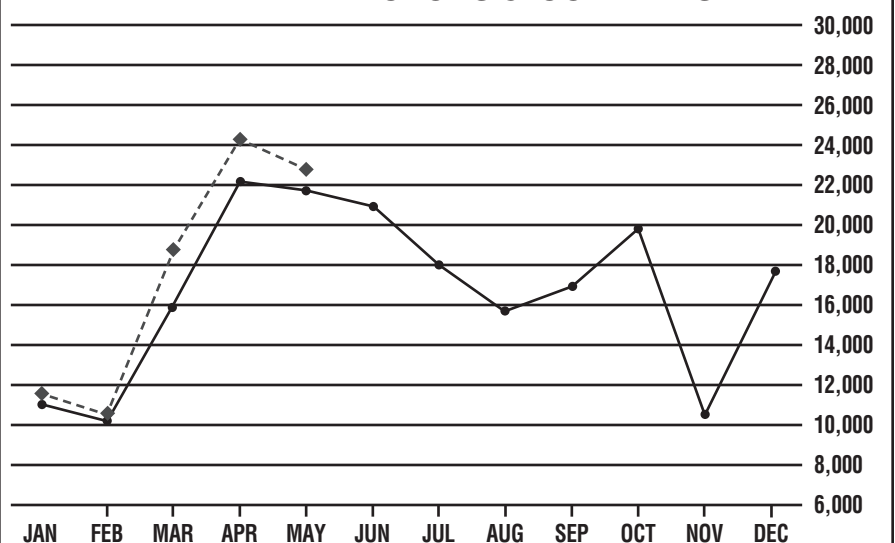
MAY CANADIAN UNIT RETAIL SALES



Equipment	May 2016	May 2015	Percent Change	YTD 2016	YTD 2015	Percent Change	April 2016 Field Inventory
Farm Wheel Tractors-2WD							
Under 40 HP	1,487	1,748	-14.9	4,198	4,985	-15.8	10,517
40-100 HP	433	478	-9.4	1,927	2,074	-7.1	4,537
100 HP Plus	364	330	10.3	1,424	1,948	-26.9	2,462
Total-2WD	2,284	2,556	-10.6	7,549	9,007	-16.2	17,516
Total-4WD	87	61	42.6	383	441	-13.2	324
Total Tractors	2,371	2,617	-9.4	7,932	9,448	-16.0	17,840
Combines	99	158	-37.3	437	490	-10.8	459

U.S. UNIT RETAIL SALES OF 2-4 WHEEL DRIVE TRACTORS & COMBINES

--- 2016
— 5 year average



— Assn. of Equipment Manufacturers

has found the top spot. More notably, the percentage of dealers expecting a bump in hardware sales increased from 49.9% in 2015 to 53.4% in 2016, ending a 3-year downward trend. While the number of dealers projecting software and signal subscriptions remained relatively consistent year-over-year at 8.8% and 9.5% respectively, service support and data management both suffered significant drops in revenue expectations for the first time in 2016. Prior to this year, a growing number of dealers had projected both segments to rise consistently in each year since 2013. After accounting for just 1.5% of total projected revenue in 2015, “other” unspecified revenue sources are forecast to jump to 6.7%, indicating dealerships will be looking for new strategies to stay ahead.

Future Revenue. While the results were close at the top of the list of revenue sources in 2016, planting/seeding control systems are expected to be the primary source of dealership revenue over the next 5 years, with over 96% of respondents considering it to be most important revenue source. Only 2.7% of the dealers polled indicated it would be the least important source for the future.

Coming in at a tie for second were application technology hardware and GPS & guidance systems, with each revenue source considered to be “most” or “somewhat important” in the future by 93.6% of respondents.

Variable-rate planting/fertilizing technology was ranked at number 3. While this category received the highest percentage in the “most important” column of any segment with 64%, only 26.7% of respondents considered it to be “somewhat important,” indicating disagreement among dealers over its capability to generate revenue.

Two revenue sources that saw a decline in the percentage of dealers expecting growing revenue include data management services and signal subscriptions, which found themselves at 5th and 6th in the rankings respectively in 2016 after being tied for 3rd just a year ago.

Selling Precision. Consistent with previous years, three distinct methods for selling precision farming products

Dealers' Precision Revenue Breakdown

Revenue Source	2013	2014	2015	2016
Hardware Sales	62.0%	57.5%	49.4%	53.4%
Service/Support	13.7%	18.9%	22.2%	17.3%
Software Sales	12.3%	8.1%	8.2%	8.8%
Signal Subscriptions	6.7%	7.1%	10.4%	9.5%
Data Management	0.6%	6.8%	8.3%	5.3%
Other	4.7%	1.6%	1.5%	5.7%

Source: Precision Farming Dealer 2016 Benchmark Study

Projected 5-Year Precision Farming Revenue Sources 2016

Revenue Source	Most Important or Important	Somewhat Important	Least Important	2015 Rank
1. Planter/Seeding Control Systems	60.3%	36.0%	2.7%	1
2. Application Technology Hardware	52.1%	42.5%	5.4%	2
2. GPS & Guidance Systems	41.9%	52.7%	5.4%	4
3. Variable-Rate Planting/Fertilizing	64.0%	26.7%	9.3%	2
4. Software Service	26.1%	61.6%	12.3%	5
5. Data Management Service	46.0%	40.5%	13.5%	3
6. Signal Subscriptions	37.0%	46.6%	16.4%	3
7. Agronomic Services	30.1%	27.4%	42.5%	6
8. Water Management	17.1%	34.3%	48.6%	7
9. Unmanned Aerial Vehicles	11.3%	36.6%	52.1%	8

Source: Precision Farming Dealer 2016 Benchmark Study

How Precision Farming Products are Being Sold

Method	2013	2014	2015	2016
Factory-Installed	53.8%	40.5%	38.1%	41.6%
Aftermarket Sales	37.3%	52.1%	53.1%	48.0%
Used Precision Equipment	7.6%	7.9%	8.3%	10.0%
Other	< 1%	1.4%	0.5%	0.4%

Source: Precision Farming Dealer 2016 Benchmark Study

have been established and are expected to account for 99.6% of total sales in 2016: factory-installed sales, aftermarket sales and used precision equipment sales. Ever since it surpassed factory-installed sales in 2014 as the top way to sell precision products and services, aftermarket sales continue to lead the way as the expected top-

seller in 2016. An even 48% of dealers ranked it as producing the most sales, but the margin is smaller than last year when 53% of dealers ranked it at the top of their list. Sitting in a distant third are projected sales stemming from used precision equipment, albeit dealers gave it more weight for the year ahead.

