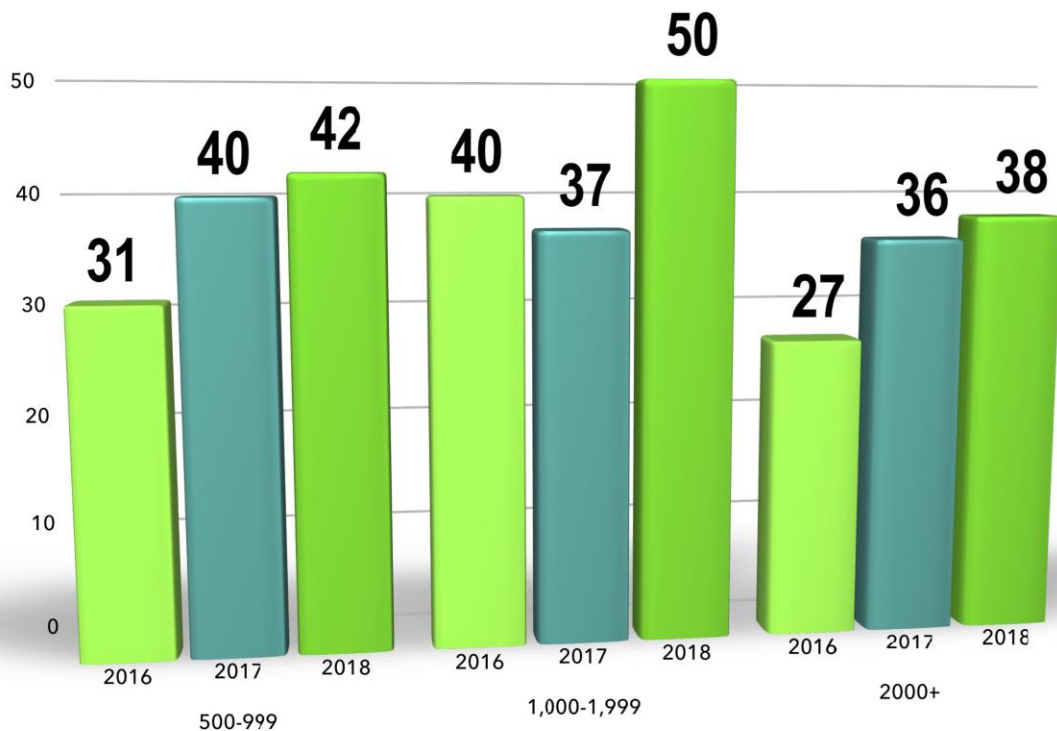


THE FARMER SPEAKS

Millennium Research Report commissioned by
J.L. Farmakis, Inc.

January, 2019

2019 SURVEY ADDS FARMERS IN ALL ACRE CATEGORIES



Using 2016 results as a baseline, you can see how the number of large farms included in the Farmer Speaks study has been increased over time.

Farmer Speaks panelists represent all sizes of 500+ acre commercial farms primarily in the Midwest and Plains states. The study is focused on traditional row crop commercial operations of significant size.

FARMER SPEAKS PARTICIPANT 2019 INTENTIONS



CORN ACRES = 99,700



SOYBEAN ACRES = 80,131



WHEAT ACRES = 31,931

PARTICIPANT DETAILS

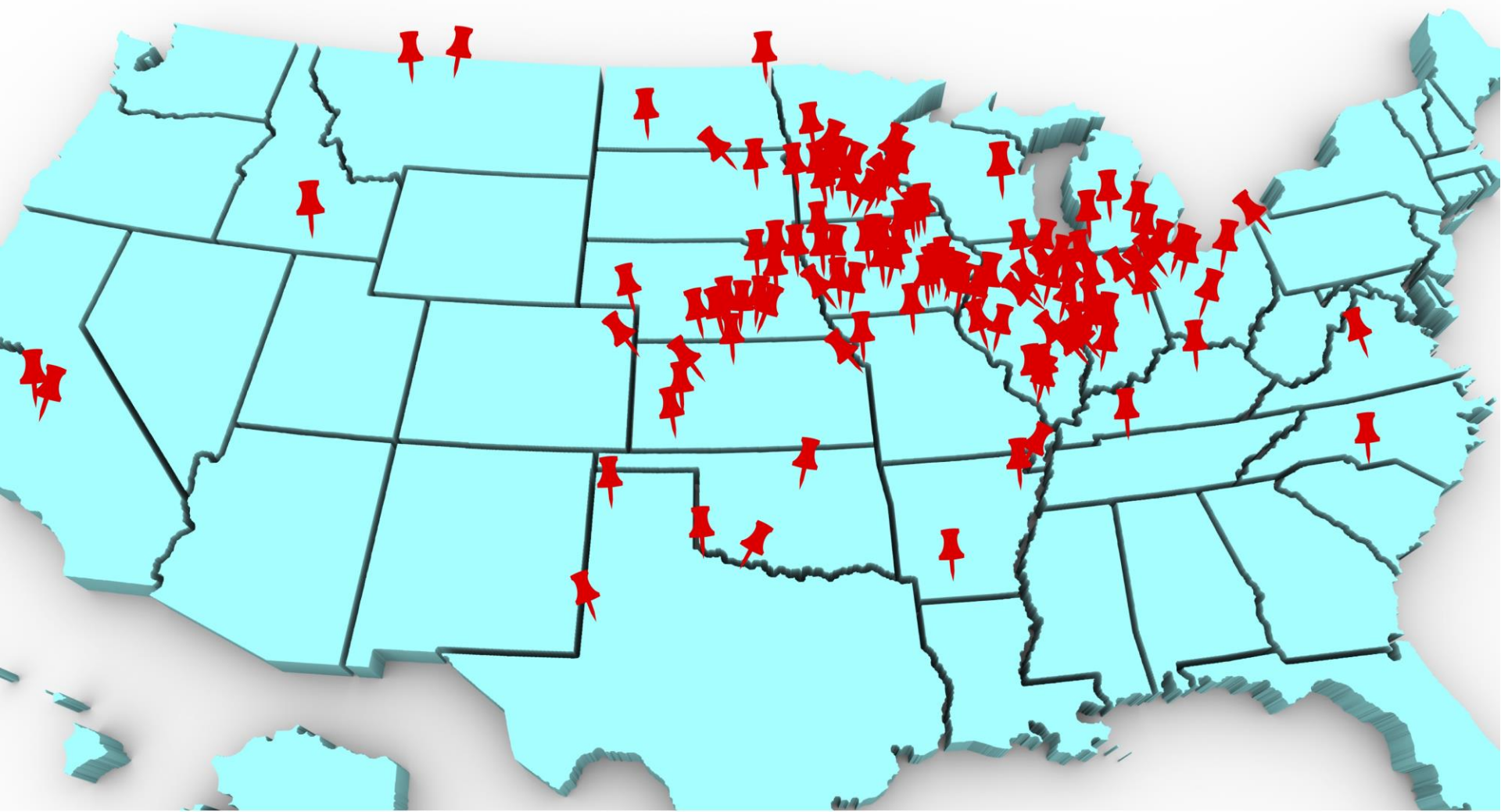
130 FARMERS

MINIMUM OF 500+ ACRES

CLOSED JANUARY 15, 2019

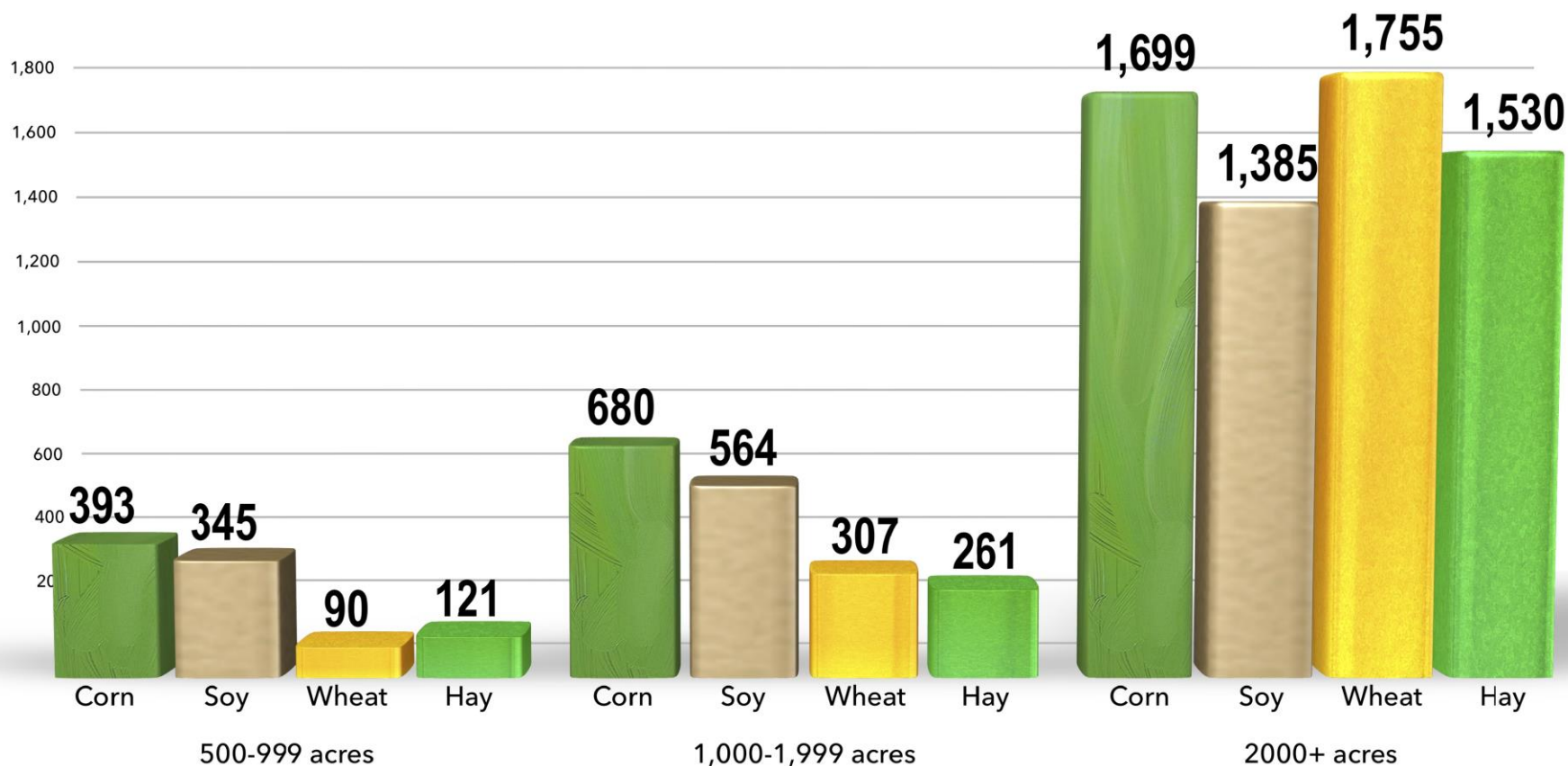
PARTICIPANTS CONCENTRATED IN MIDWEST

LARGE COMMERCIAL FARMS GROWING CORN, SOYBEANS AND WHEAT



AVERAGE CROP ACRES FOR 2019

BY FARMER ACRE CATEGORY



Q: How many acres of the following crops do you intend to grow this year?



After years of challenges,
there is an impact on

FARMER MINDSET

*"The farmer has to be an
optimist or he wouldn't
be a farmer. "*

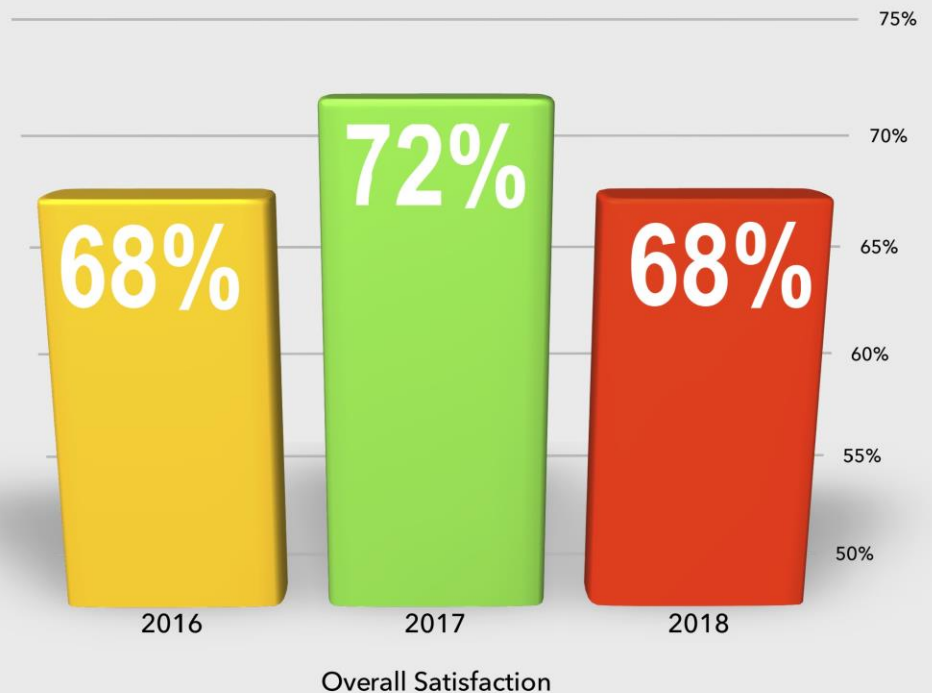
- Will Rogers

Farmers did not fare as well as last year

SATISFACTION WANES AFTER '18 HARVEST

- Down from 72% in 2018 survey
- Sentiment after harvest weighed down by ongoing trade issues and low commodity prices

Overall satisfaction about the decisions made and harvest results turned downward in the 2019 Farmer Speaks metrics. While 500-999 acre growers were unchanged from last year, growers with more than 1000 acres rated their satisfaction five points lower on the results of the 2018 growing season.



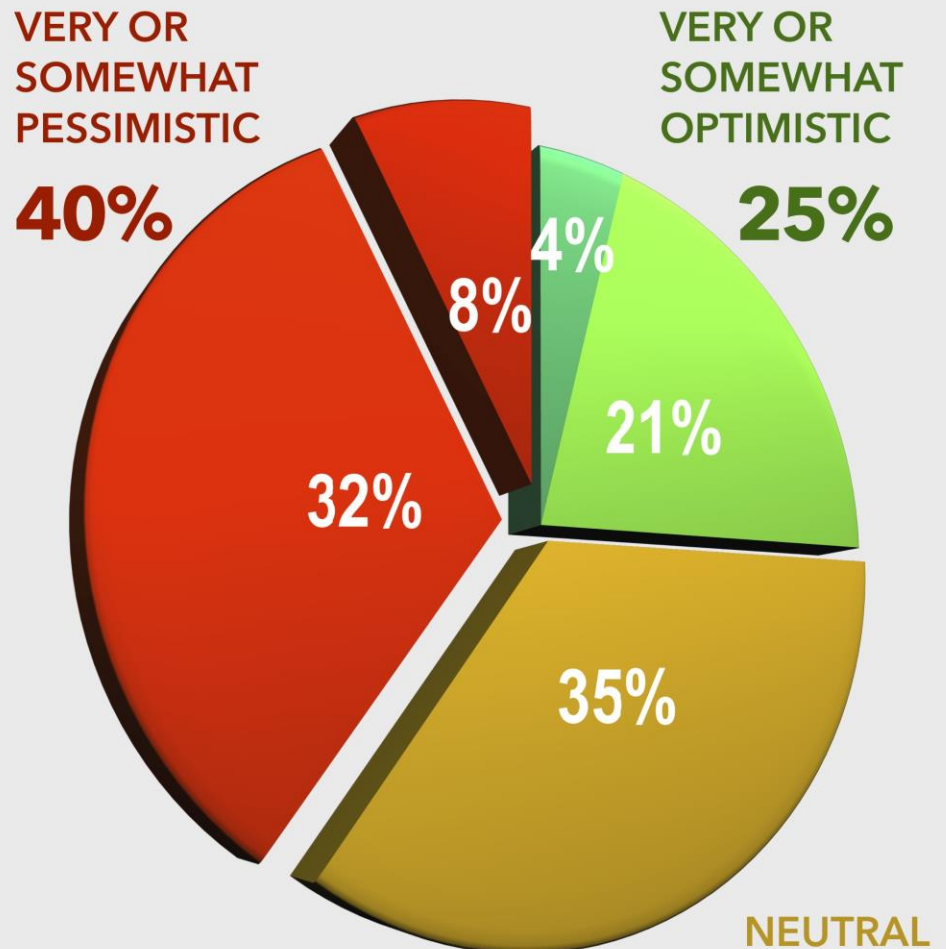
Q: Overall, on a scale of 0 to 100%, where 100% is "things couldn't have been any better" and 0 is "things couldn't have been any worse," please rate how you think your 2018 season was in terms of how good your production decisions and productions results were.

Only 25% optimistic...

MAJORITY PESSIMISTIC ABOUT 2019

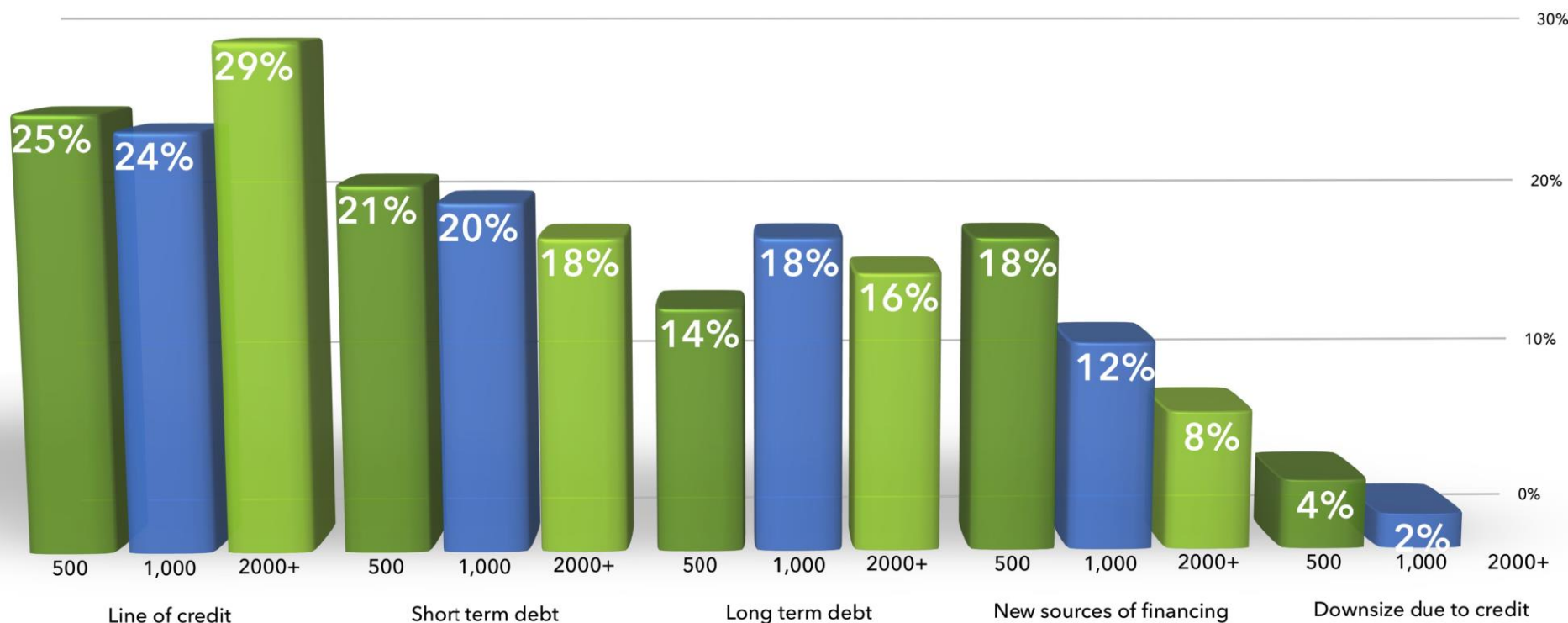
- Looking beyond 2019, for those who have succession plan, the expected transition year is 2029
- Only 48% of farms have someone committed to continue the operation after the current farmer retires
- Financial worries keep 5% percent of growers up at night with a total of 42% concerned about finances

Farmers were asked the question - "Looking ahead to 2019, what would you say you are?" Forty percent of the farmers surveyed were either somewhat pessimistic (32%) or very pessimistic (8%) as indicated in red below. This outnumbers those who are neutral (35%) indicated in gold or very (4%) or somewhat optimistic (21%) represented in green.



FARMERS ARE EXPANDING THEIR FINANCE OPTIONS

TO PREPARE FOR WHAT IS AHEAD, MOST ARE WORKING WITH TRADITIONAL SOURCES



Q: What financial changes are you making for 2019?

An aerial photograph of a rural landscape. A light-colored road or path runs vertically through the center-right of the frame. To the left of the road, there is a large field with many closely spaced, parallel furrows, suggesting recent plowing or planting. To the right of the road, there are several large, rectangular fields of varying shades of brown and tan, likely harvested crops. In the top left corner, there is a small patch of green field. The overall scene depicts a typical agricultural landscape.

Values remain strong while
farm income dropped

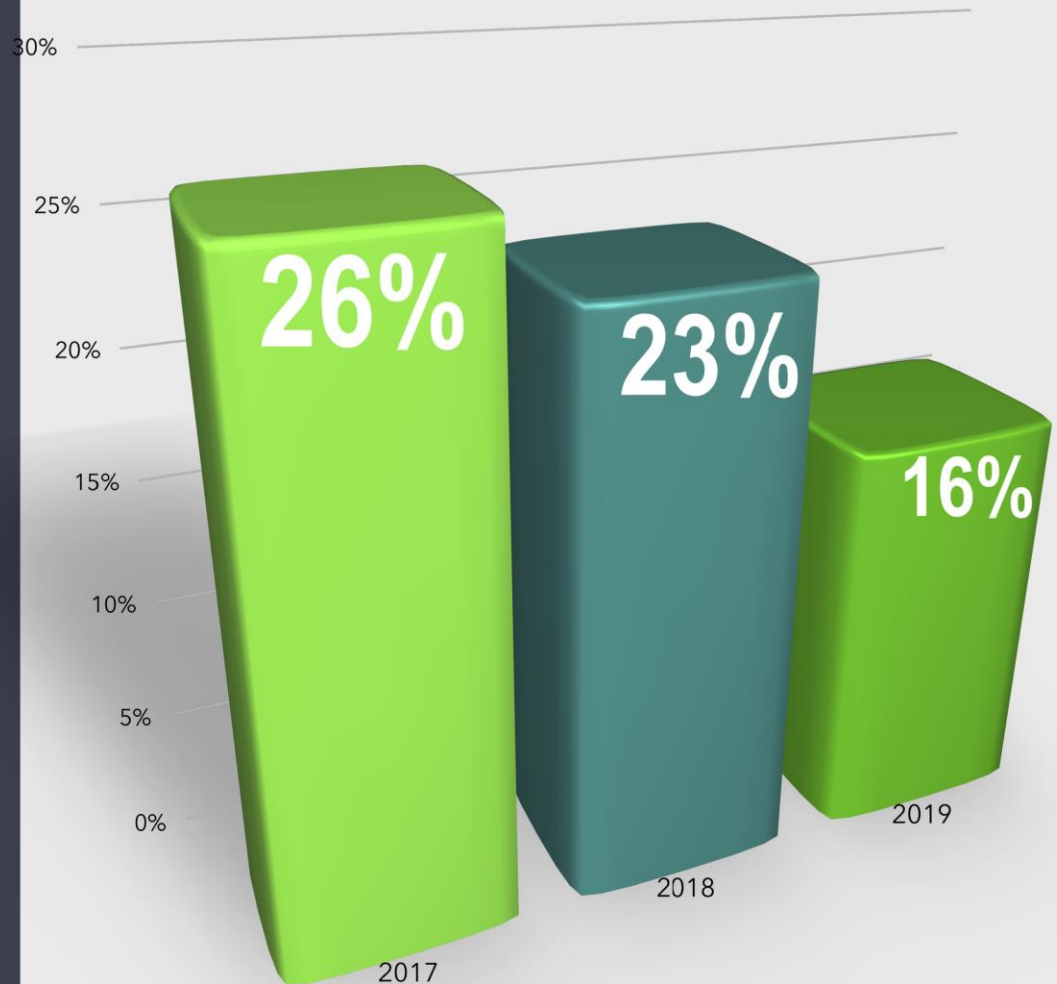
FARMLAND SALES SOFT

"Everyone seems to be holding their breath," according to a Farmers National Company release. An increase in land for sale after a period of low inventories is welcomed, but higher interest rates, a number of sellers looking to retire and the farm outlook will likely keep a damper on sales prospects.

Farmland purchases by farmers surveyed show a

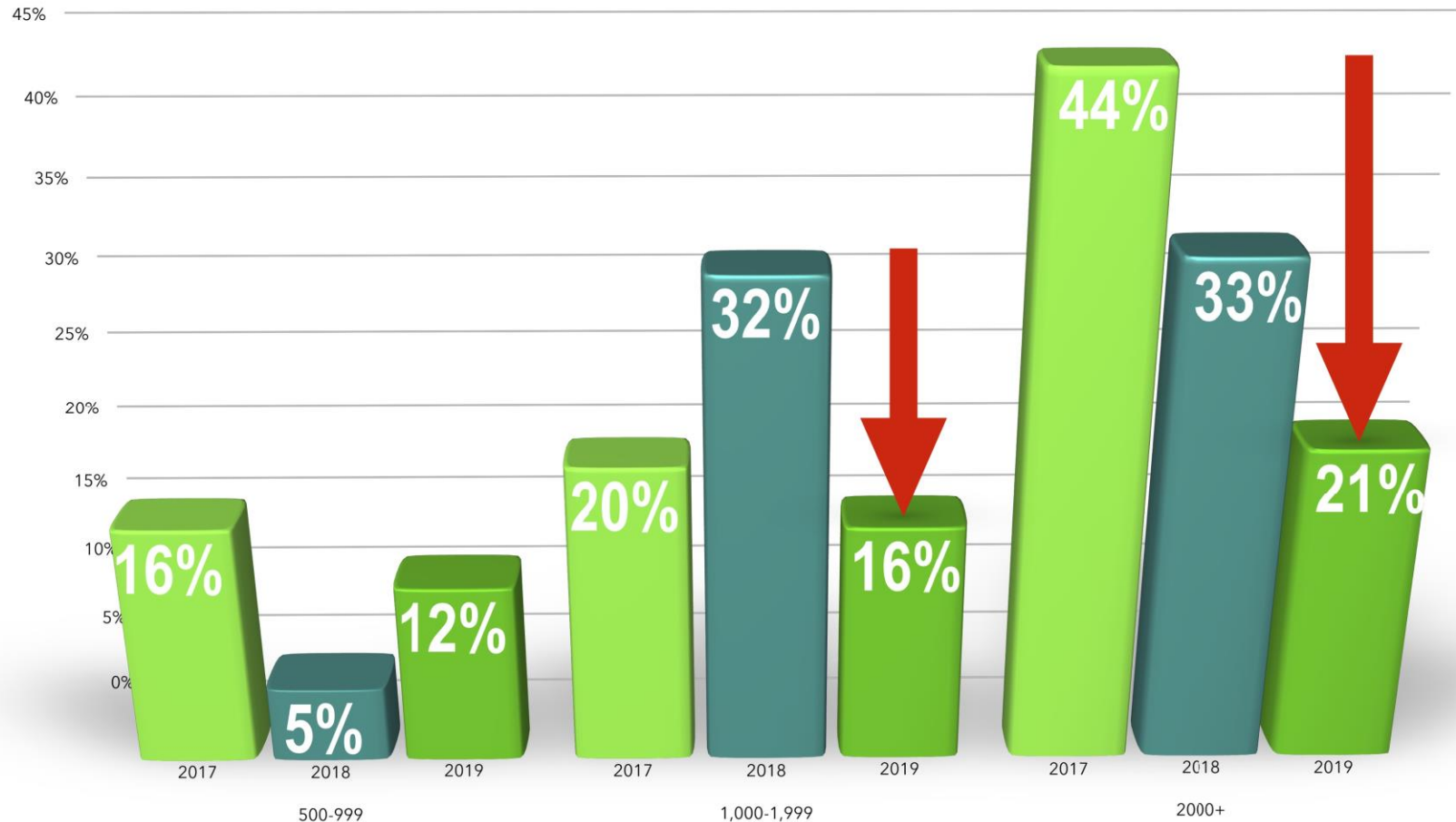
**40%
DECLINE
OVER 2 YEARS**

- Among those purchasing land, the average purchase was 150 acres
- Only farmers with 500-999 acres are increasing purchases compared to last year
- 5% will take owned land out of production and 3% will sell land



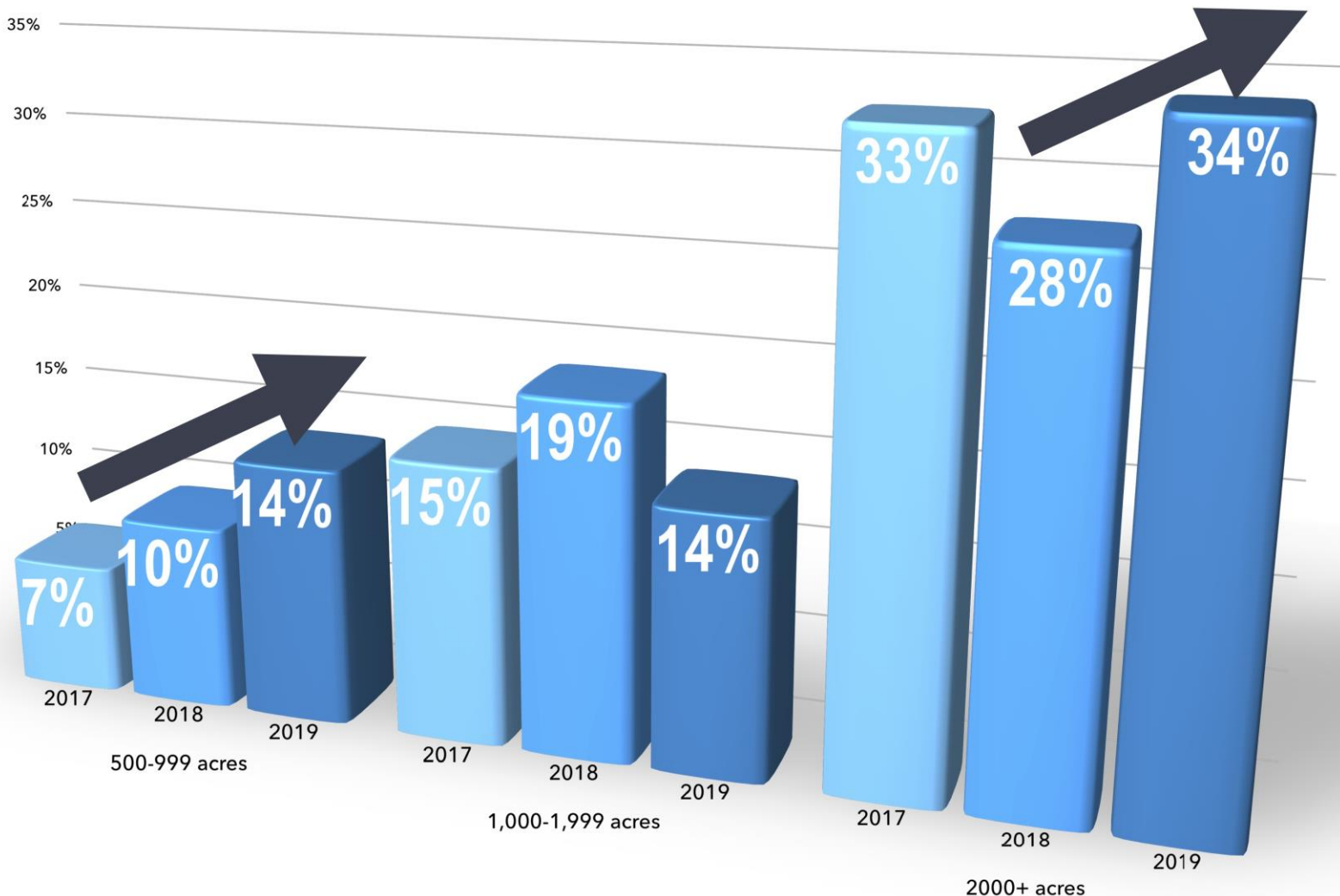
Q: Have you purchased any farmland in the past 12 months?

FARMERS WITH <1000 ACRES INCREASE LAND PURCHASES WHILE >1000 ACRES DECREASE



Q: Have you purchased any farmland in the past 12 months?

20% PLAN TO INCREASE RENTAL ACRES



Q: Do you plan to change your rented acres from last year to this?

FARMERS HAVE LIMITED SUCCESS IN RENEGOTIATING RENT



Q: Since last fall, have you been able to renegotiate more favorable land rents due to lower commodity prices?

Yes, No, I tried but was unsuccessful, I did not try



**47% OF FARMLAND IS
RENTED AMONG
THOSE SURVEYED**

2019 RENTING TRENDS

- 9% will let go of some acres rented with the number rising to 12% among 1000-1999 acre farmers in the survey
- 2% will rent land they own to others

2019 will be challenging...

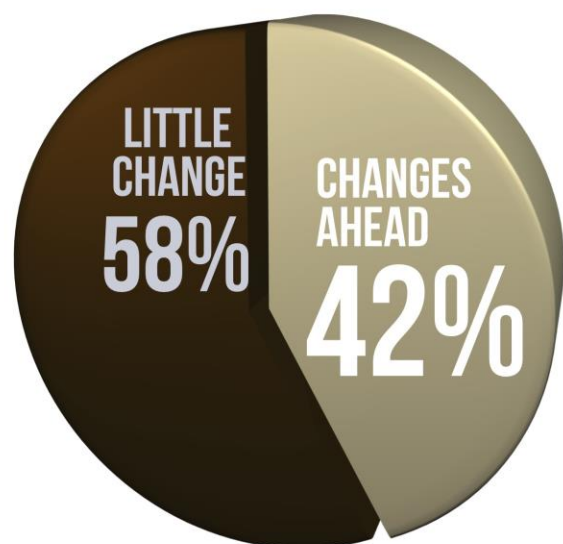
MORE CHANGE IS COMING

Specific changes depend upon farm size
and varies by category.

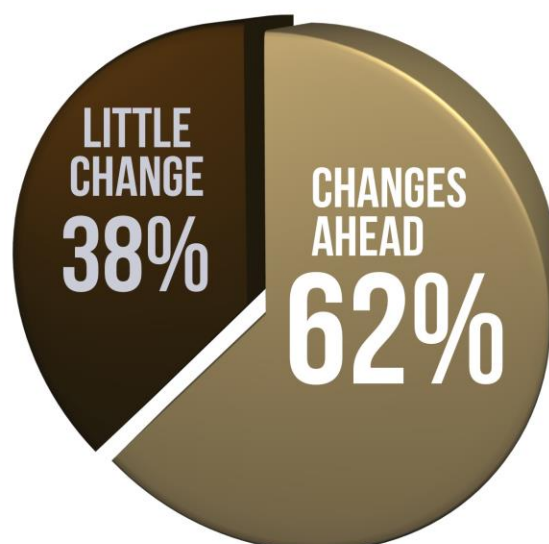


MULTIPLE CHANGES IN STORE

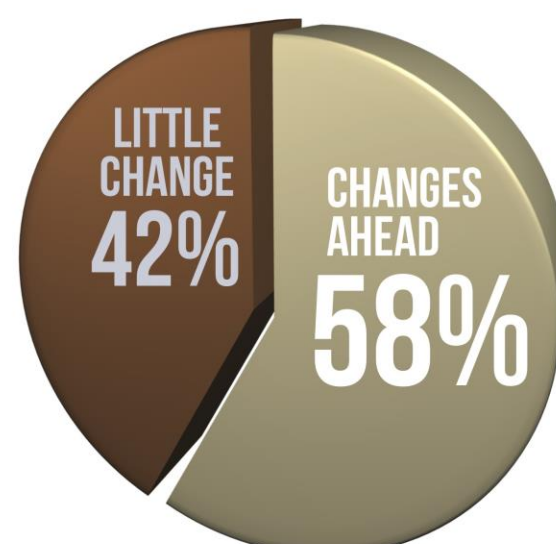
MORE THAN HALF OF FARMERS SURVEYED WILL BE MAKING SIGNIFICANT CHANGES



500-999 ACRES



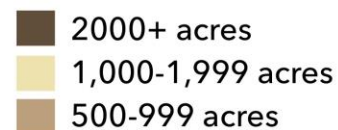
1000-1999 ACRES



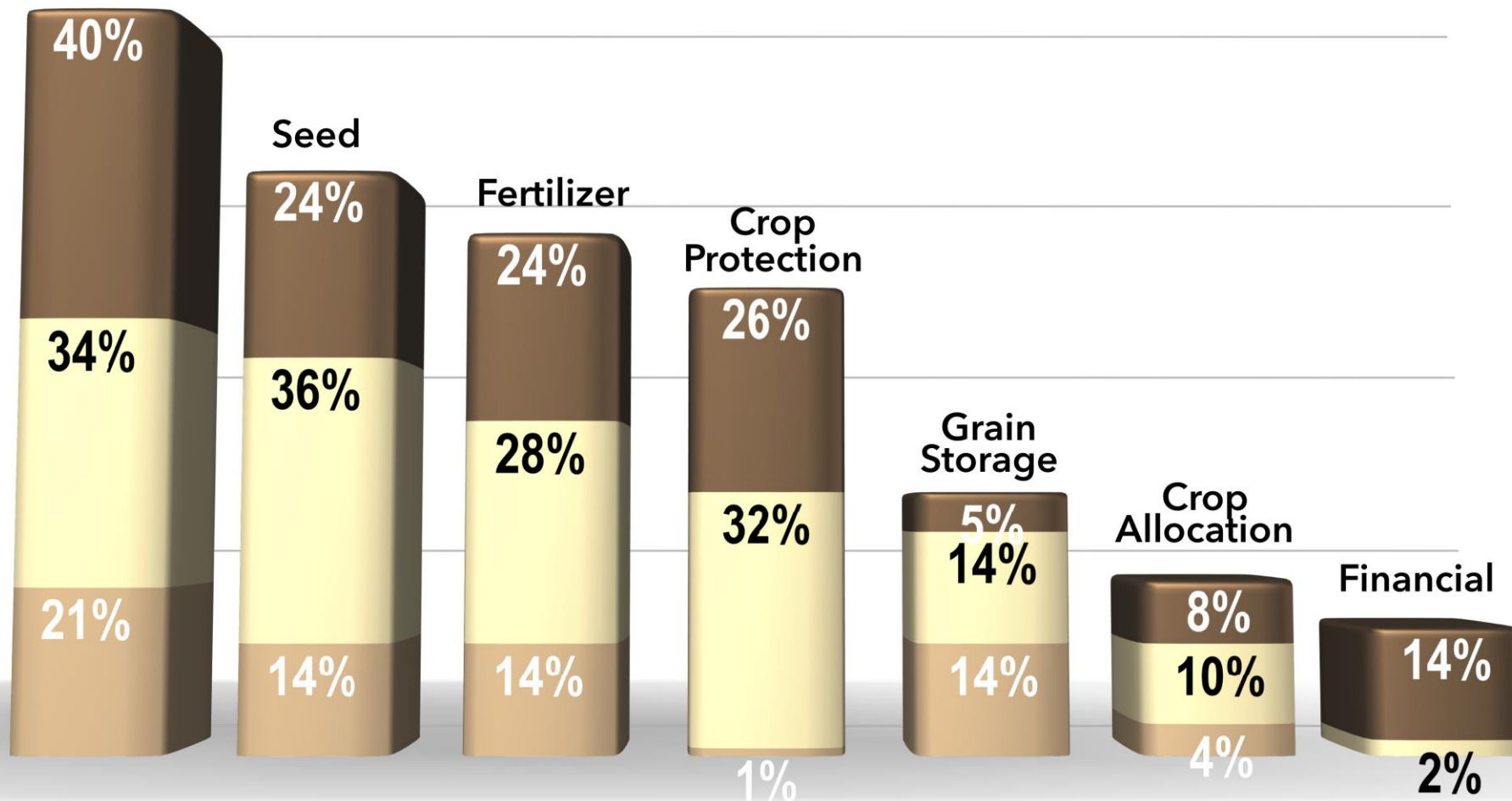
2000+ ACRES

Q: In which of the following areas, if any, have you made or will you make changes for the 2019 season, compared to 2018?

2019 TOP CHANGES RANKED



Equipment

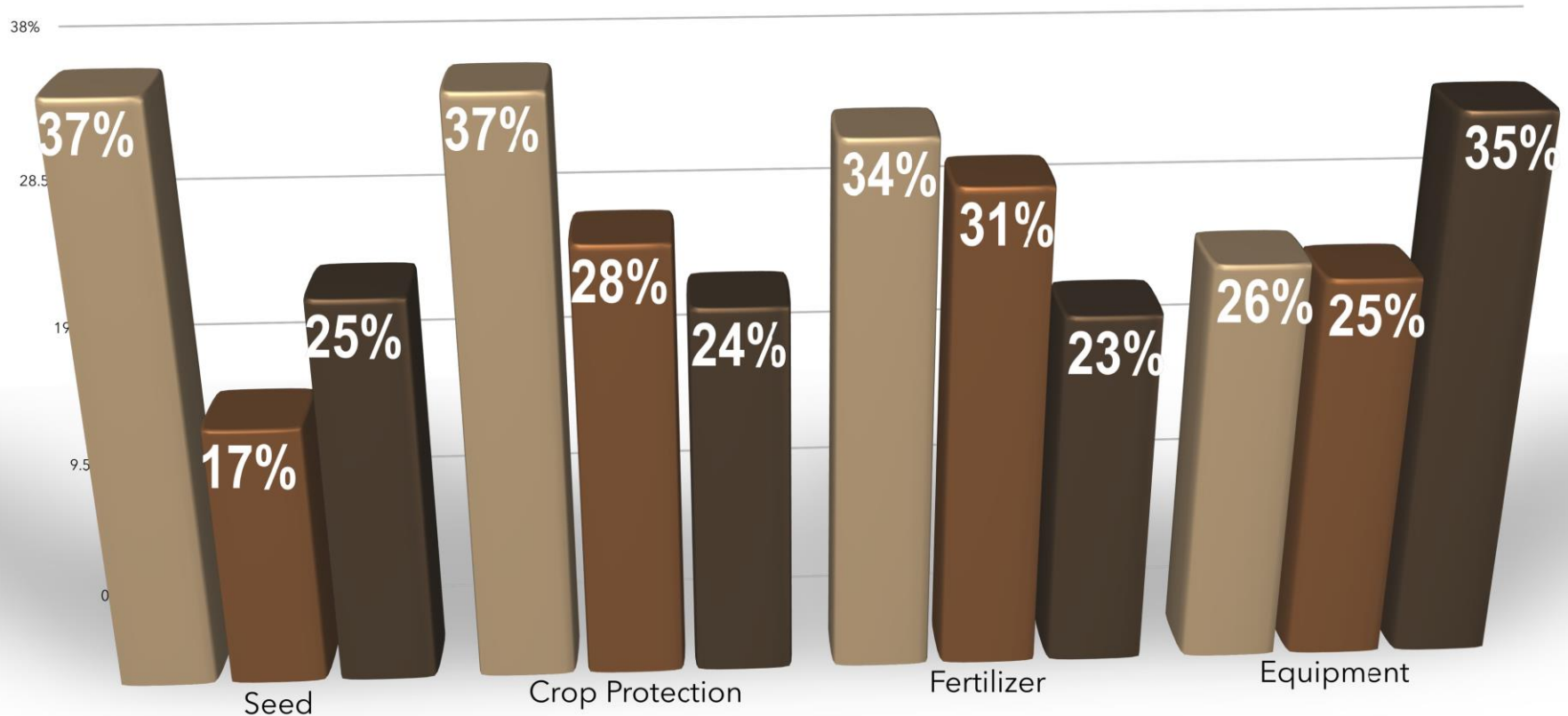


Q: In which of the following areas, if any, have you made or will you make changes for the 2019 season, compared to 2018?

TOP 4 CHANGES OVER 3 YEARS

MORE THAN HALF OF FARMERS SURVEYED WILL BE MAKING SIGNIFICANT CHANGES

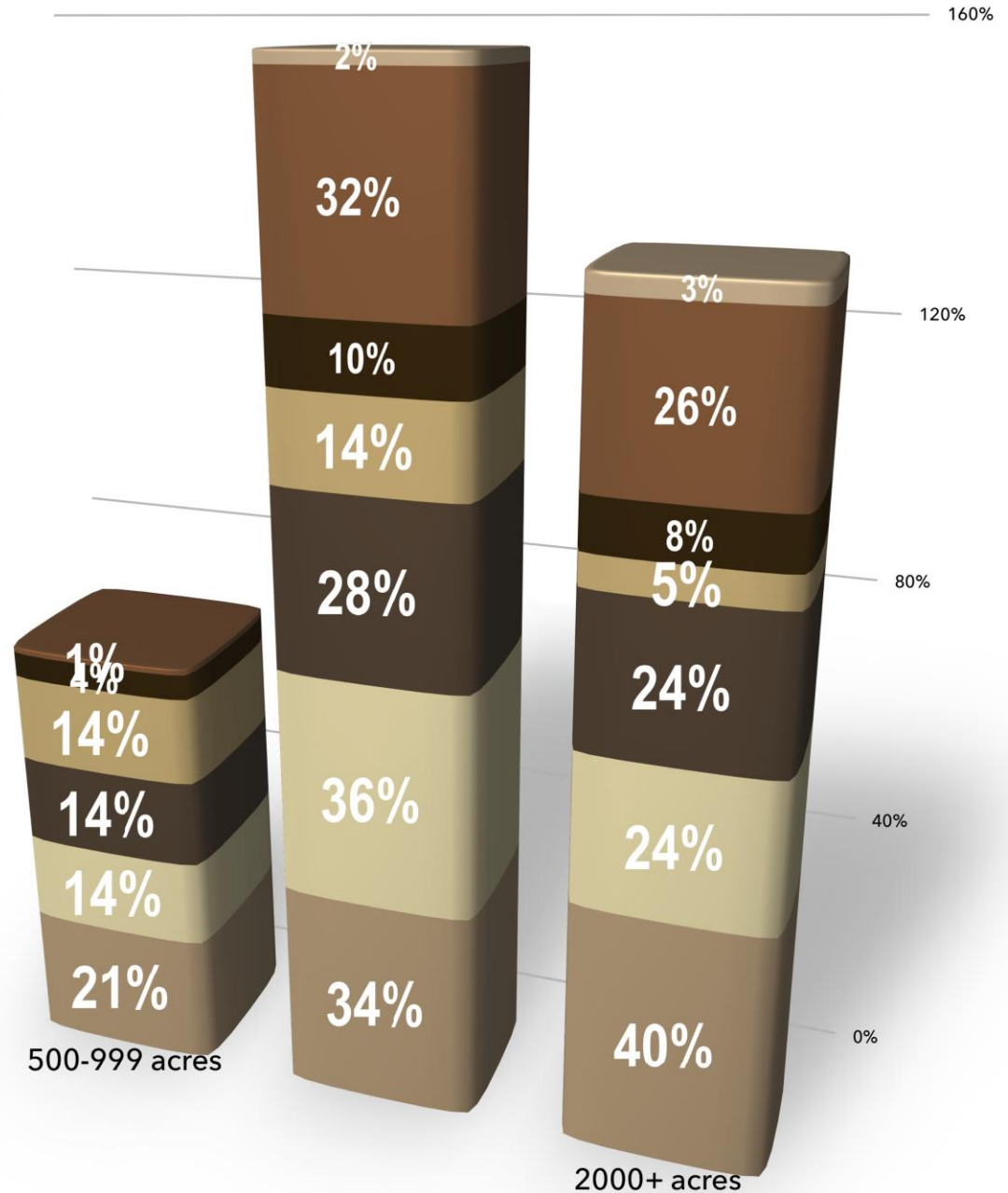
■ 2017
■ 2018
■ 2019



MULTIPLE CHANGES REALLY STACK UP

LESS THAN 1000 ACRE FARMS HAVE
THE FEWEST CHANGES PLANNED

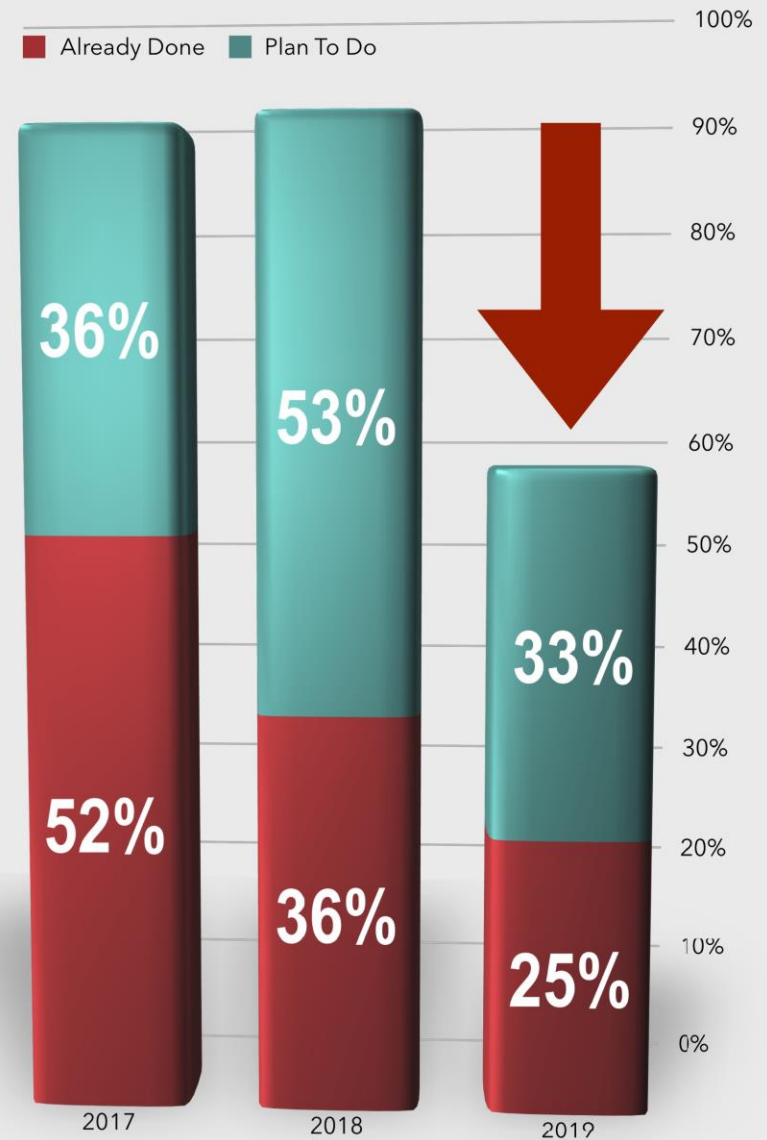
- Financial agreements
- Crop protection
- Crop allocation
- Grain storage
- Fertilizer
- Seed
- Equipment



For farm equipment, the recent recovery could be short-lived

DEMAND COULD BE WANING

- Farmers indicate 20% less equipment to be acquired compared to similar period last year
- This follows an 11% drop in purchases made in anticipation of 2019, ahead of the survey



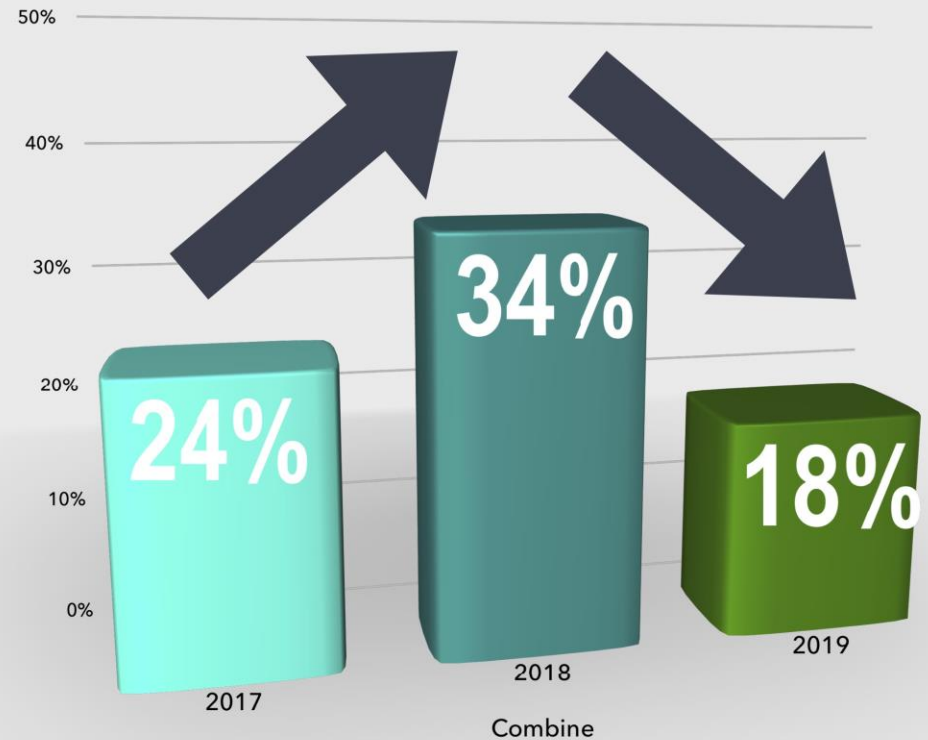
Q: Do you plan to purchase or lease new equipment?

Already Done for this crop year, Plan to do

Three-year trend shows
demand weakens for

COMBINES

- Strong sales of late were reported for the largest equipment in 2018
- AEM reports combine sales up 18% in 2018

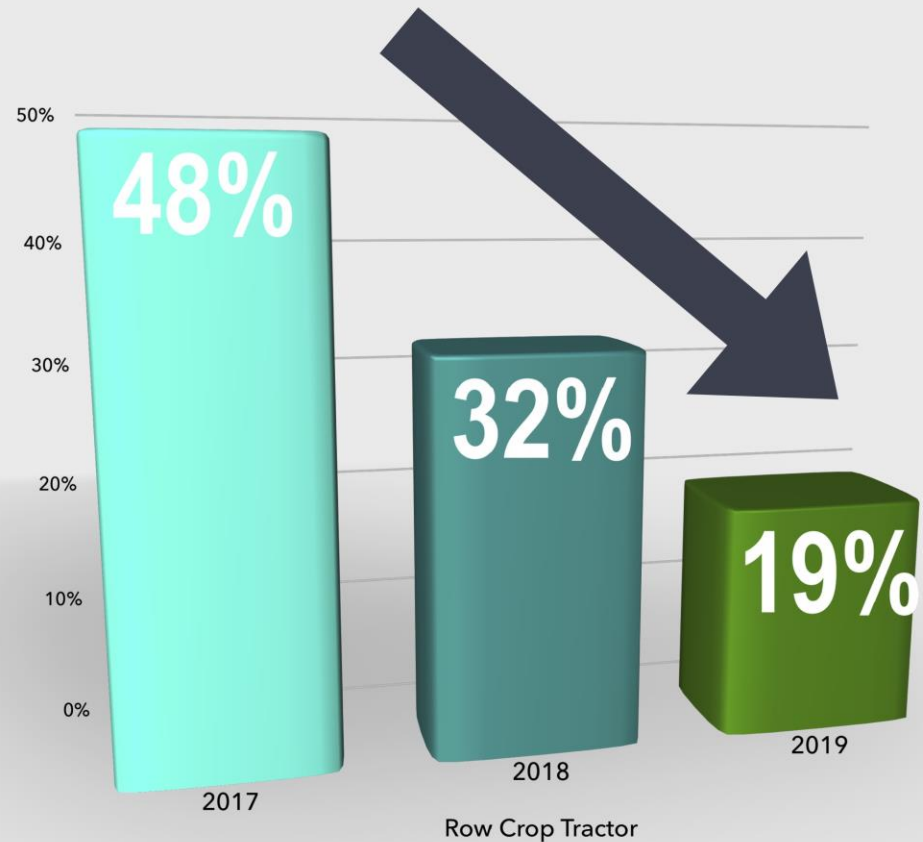


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year trend shows
demand diving for

ROW CROP TRACTORS

- Less than half the farmers are in the market for row crop tractors than just two years ago
- There was a 5.9% gain for 100-plus HP tractors reported by AEM for December, month-over-month.

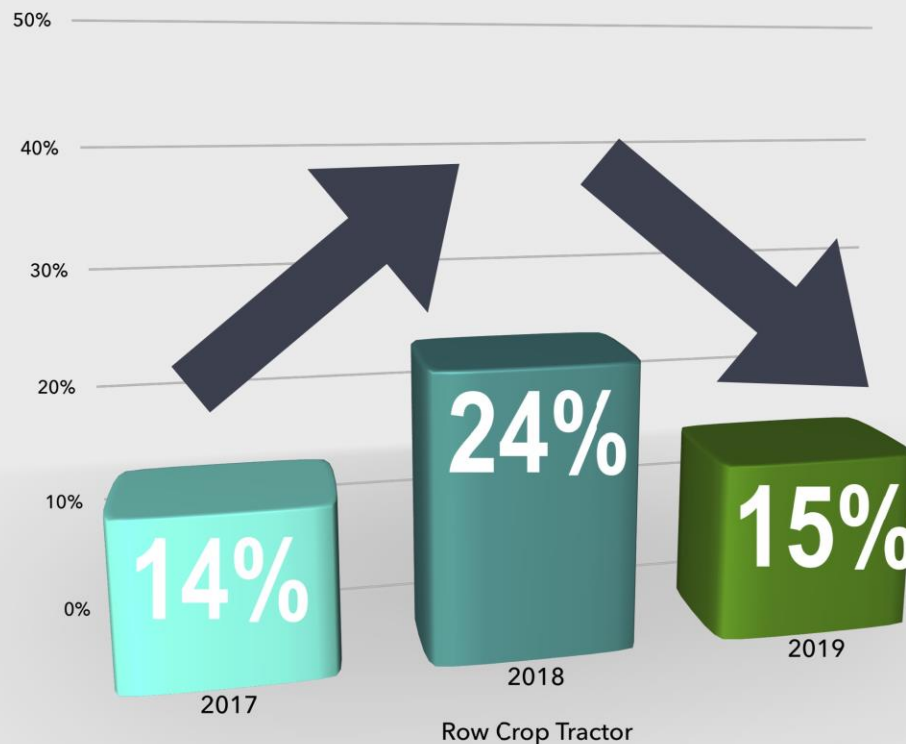


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year trend reflects
the sales jump predicted
by last year's Farmer
Speaks study for

4WD TRACTORS

- Much like combines, the demand for four wheel drive tractors was strong in 2018, with a jump of nearly 13% for the year
- Demand could be cooling based on the Farmer Speaks results showing declining interest

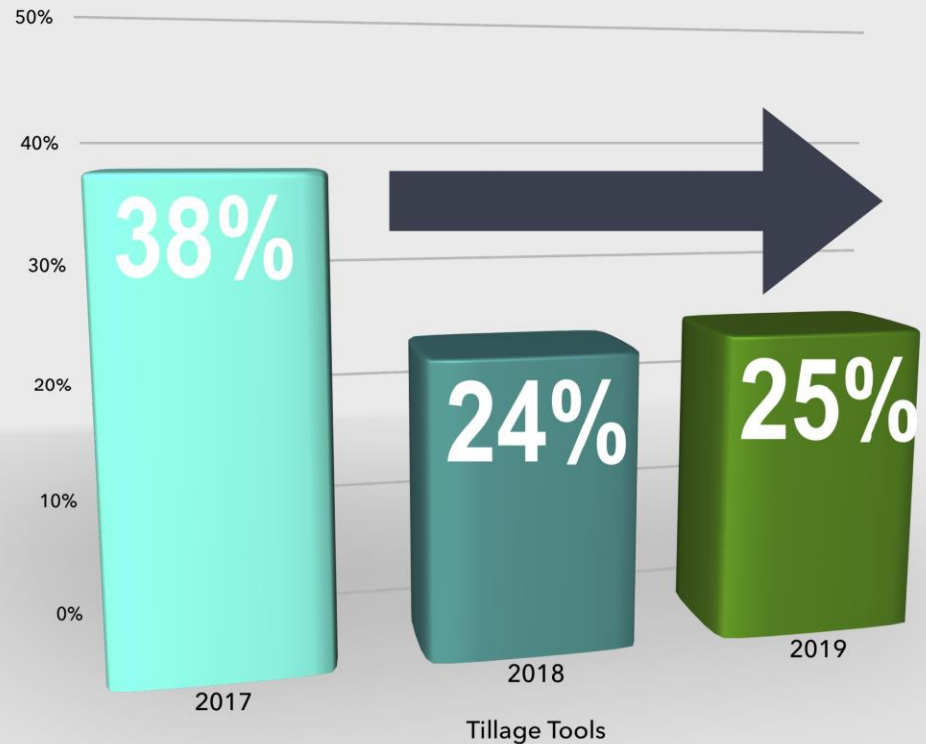


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

**Three-year trend reflects
little change in demand
from 2018 for**

TILLAGE TOOLS

- A drop of 14% was recorded in tillage tool demand from 2017 to 2018 in the Farmer Speaks survey
- Demand is steady with about 25% of those purchasing equipment including tillage tools in their acquisition plans

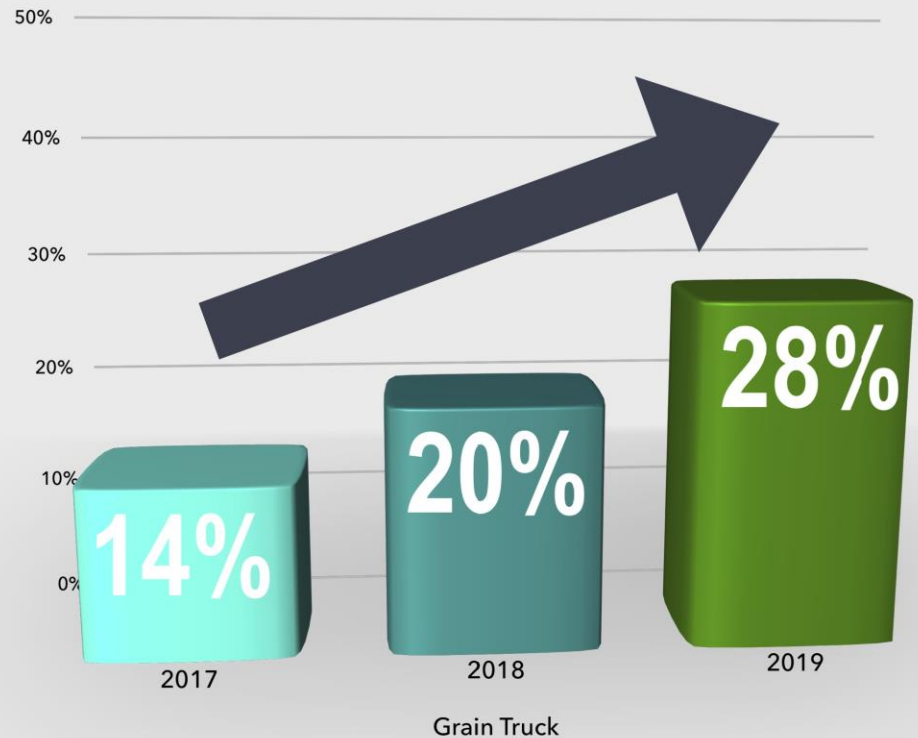


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year trend shows demand accelerating for

GRAIN TRUCKS

- More farmers marketing their grain on their own may contribute to demand
- Specialty crop production could also be a factor as segregation is required
- Replacement may be requiring farmers to invest in trucks as they have not been a top priority

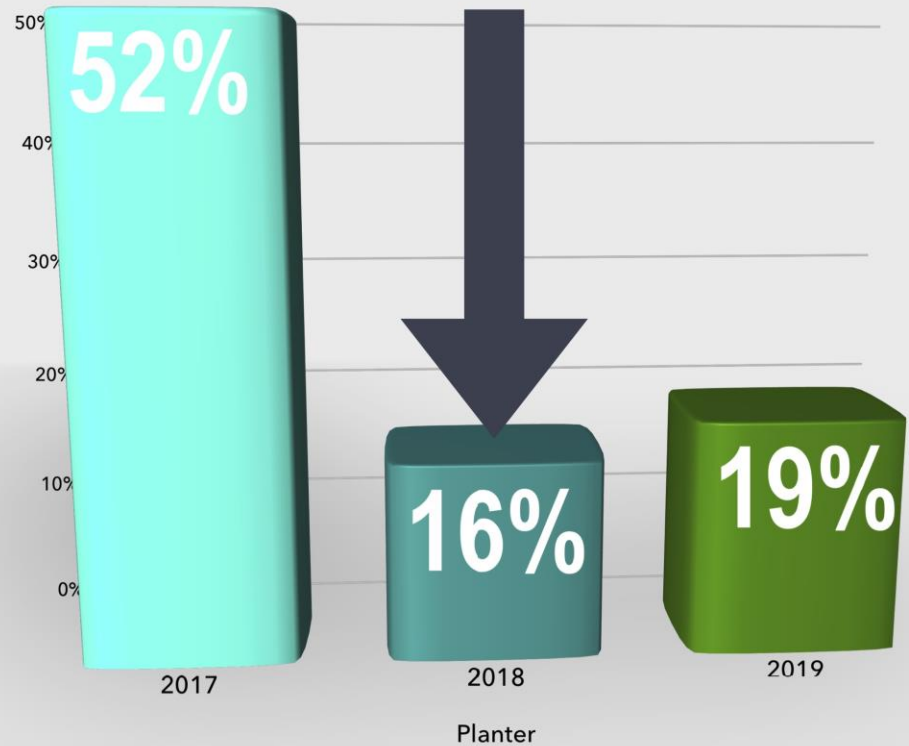


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

**Three-year trend shows
new tech dazzled
growers in 2017**

PLANTER DEMAND STEADY

- High speed planters were all the rage when introduced in 2017
- 2018 demand fell quickly to about 1/3 of the previous year
- Following the introduction, demand remains steady, but at a much lower level

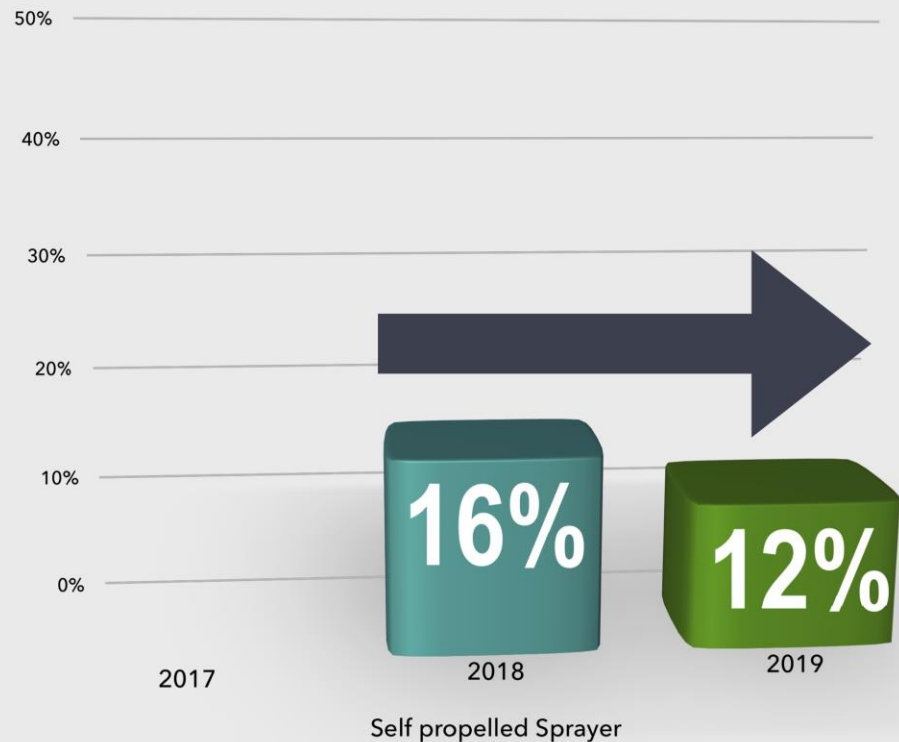


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year demand for farmers to apply more crop protection products themselves maintains demand for

SELF PROPELLED SPRAYERS

- Based on fertilizer management intentions, sprayers should record some increased demand
- More split applications and more self-applied applications should boost demand for spray equipment

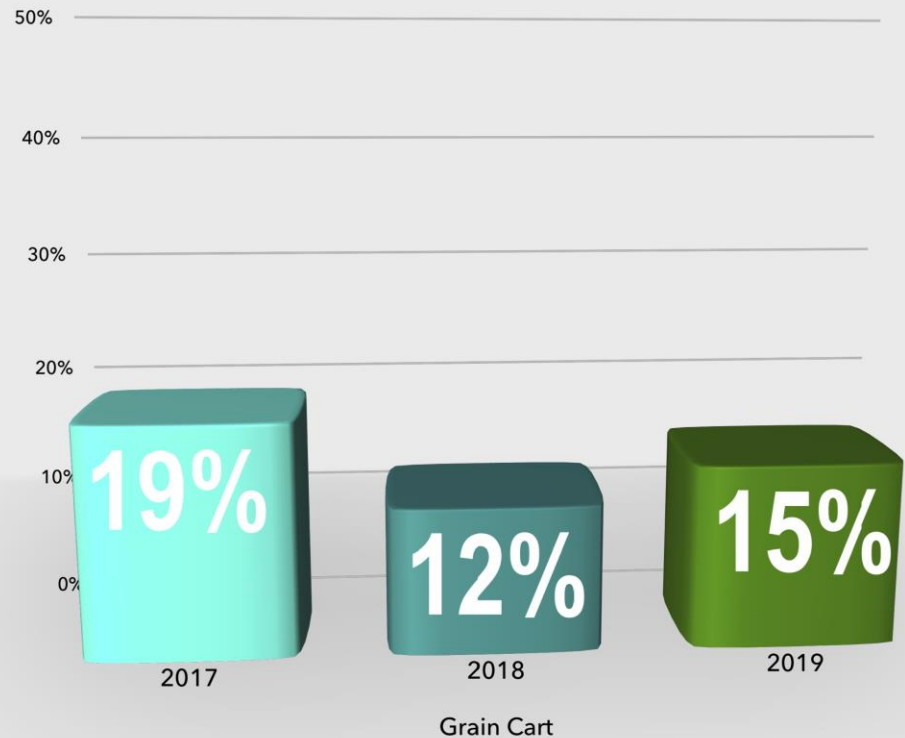


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year trends shows
that someone is always in
the market for

GRAIN CARTS

- The pressure to get crops out of the field keeps demand for grain carts steady
- Slight increase in demand for grain carts in 2019 from the low of 12% last year

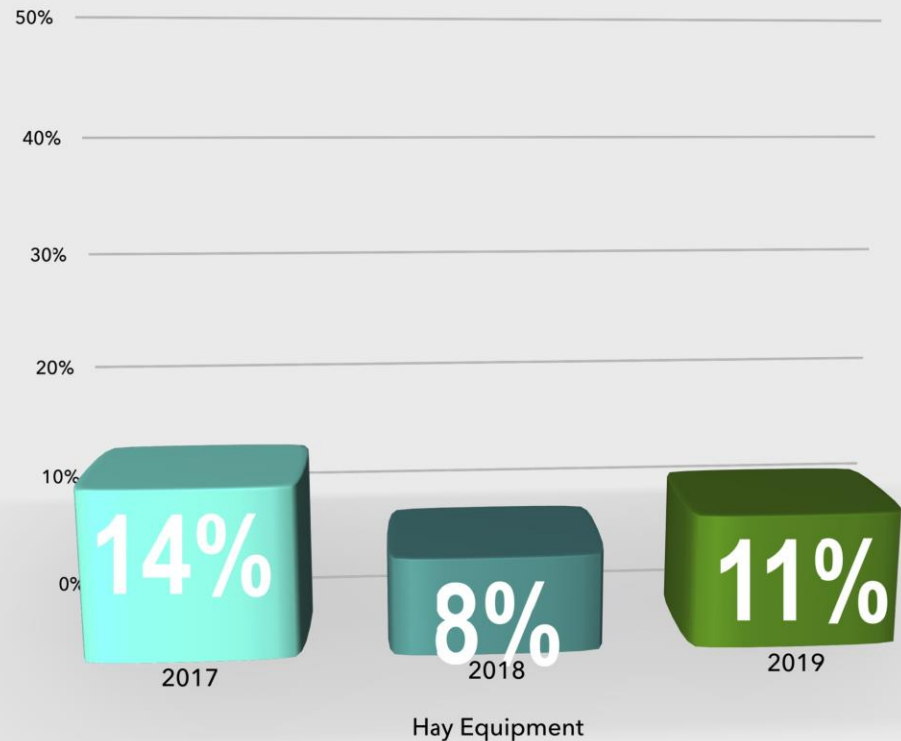


Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

Three-year trend shows improvement for 2019 in

HAY EQUIPMENT

- Over the past three years, demand was highest in 2017
- Depending upon the region, hay prices have been good due to dry weather in competitive hay production areas



Q: For those who plan to purchase or lease new equipment, what type of equipment will you acquire?

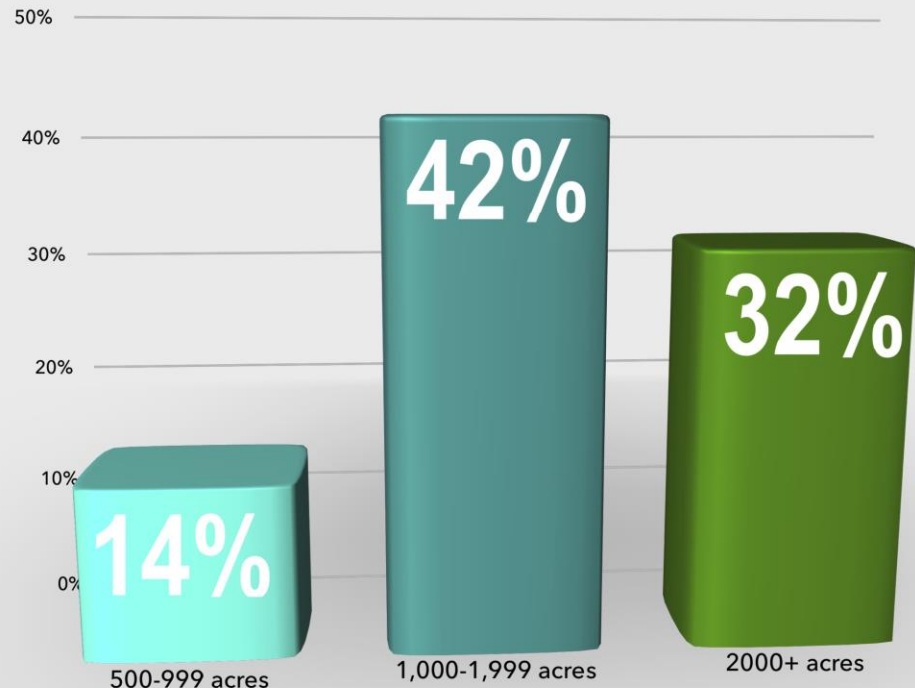
In tandem with precision ag technology, 30% of farmers plan to

INCREASE BIG DATA & ANALYTICS USE

- 35% are shopping for ag inputs online for 2019
- 19% seek to start or expand specialty and premium crops on their farms

The largest jump in adoption of data analytic tools will be with farmers in the 1,000-1,999 acre range. This drive for leveraging information is consistent with other changes indicated in the study, where every farmer is looking to optimize their operation, minimize expenses and generate new revenue if possible.

FARMERS SEEK DATA & ANALYTIC TOOLS TO HELP MANAGE THEIR FARMS



With the potential of
genetics to make more
yield from every acre...

SEED TOPS LIST OF INPUT CHANGES



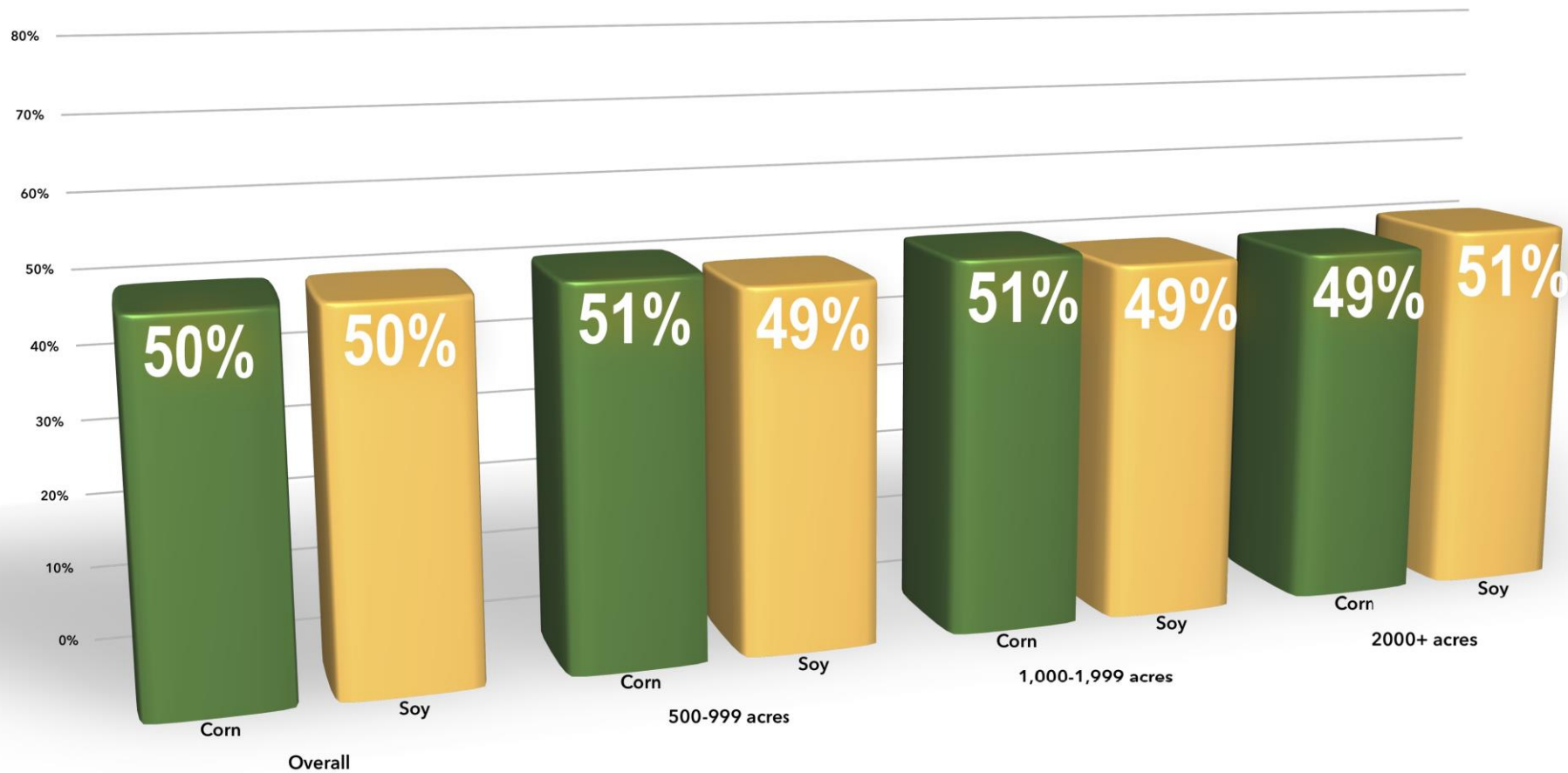
Farmers use record
number of traits in seed
to protect yields

**1/2 OF
ACRES GET
FULL TRAITS**

Farmer adoption of seed-based
technology shows little change given the
promise of higher yields and more
effective weed control.

SEED WITH FULL TRAITS 1/2 OF THE MARKET

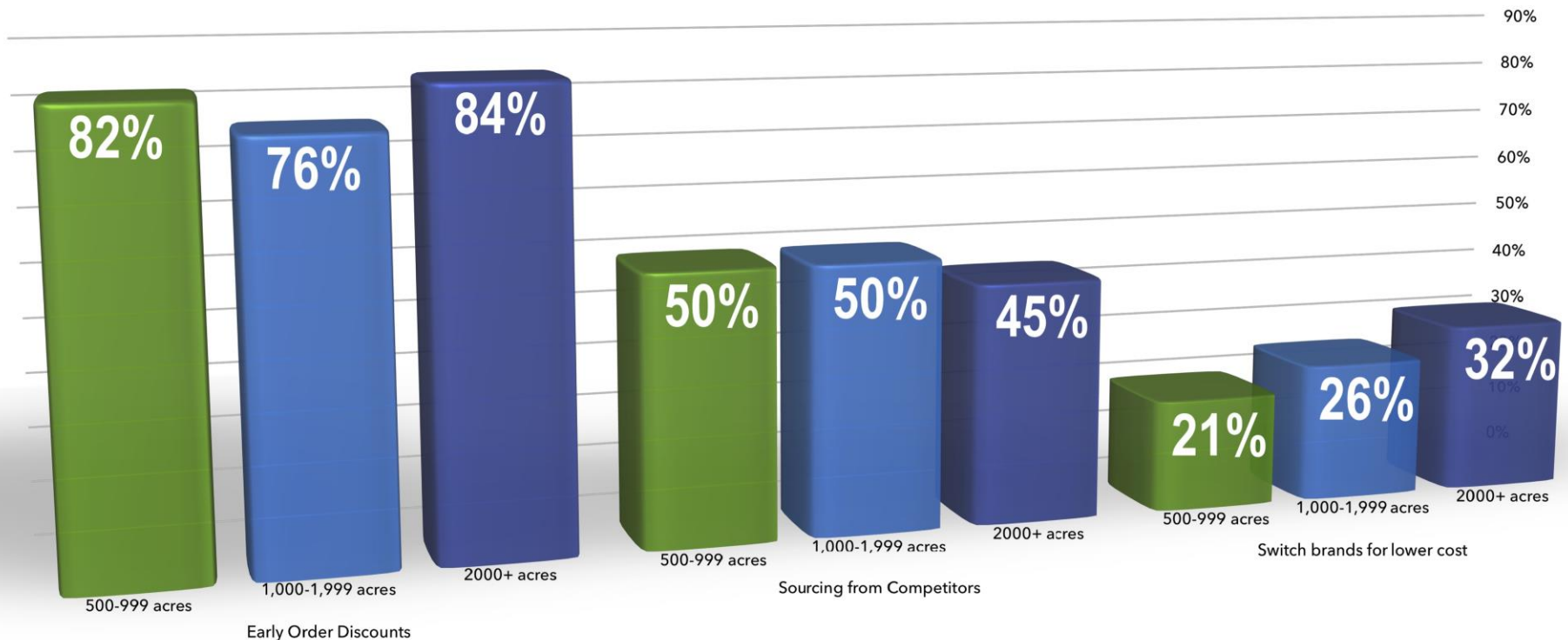
REGARDLESS OF SIZE, FARMERS EMBRACE THE TECHNOLOGY



Q: What percent of your acres will you plant in each of the following? Full multiple trait corn and/or soybean seed.

GETTING SEED AT A LOWER PRICE A PRIORITY

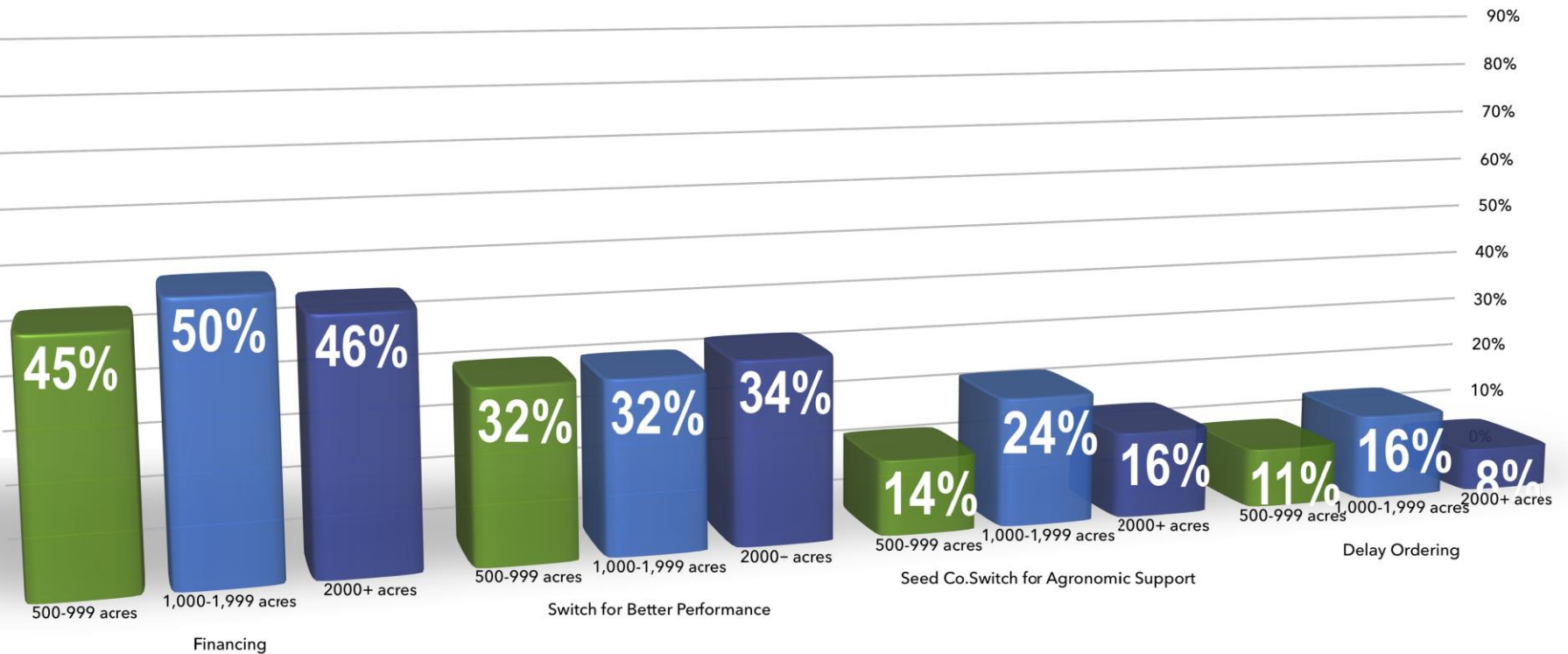
PROMOTIONAL DISCOUNTS AND PITTING BRANDS AGAINST EACH OTHER



Q: What seed changes will you make for 2019?

FINANCING & FIELD PERFORMANCE MATTER

GROWERS MAKE CHOICES BASED ON MORE THAN PRICE, YET FINANCING PLAYS A MAJOR ROLE



Q: What seed changes will you make for 2019?

Farmers quick to
adopt what works to

PROTECT THE CROP

New active ingredients are few
and far between. When
technology enables the use of a
new tool, adoption can happen
rapidly.



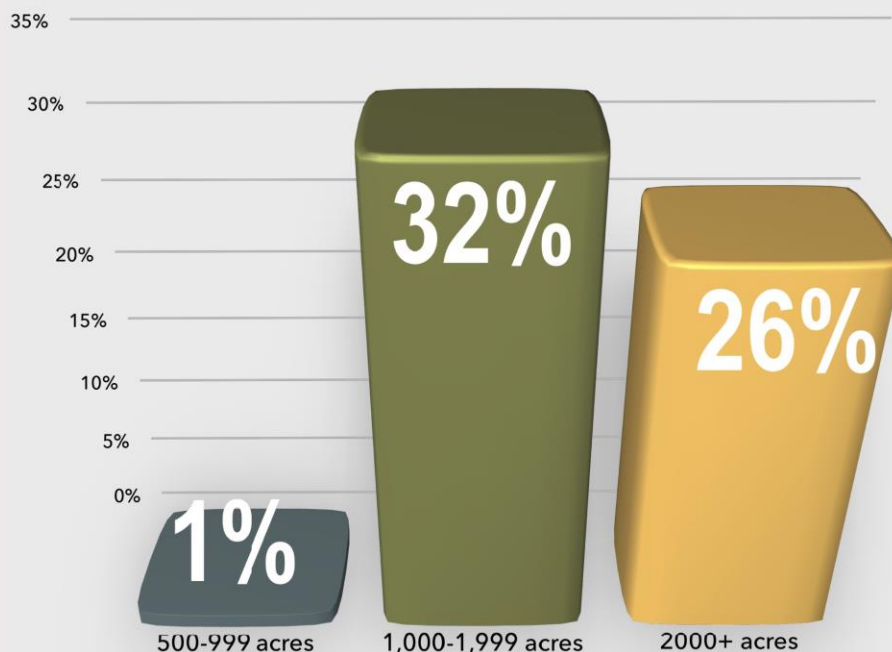
Farmers concerned about controlling input costs

HOLD OUT ON COMMITMENT

- Some categories have a significant number of holdouts for a decision on products for 2019
- The largest growers appear to hold out the longest, most likely leveraging bargaining power
- Less than 1000 acre growers are fully committed to their crop protection brands for 2019 with only 1% making changes

Growers in the 500-999 acre category are the exception to making changes in the crop protection category. Meanwhile, growers with more than 1000 acres are highly likely to make changes.

SURPRISING DISPARITY IN PLANS FOR CROP PROTECTION CHANGES DEPENDS UPON FARM SIZE



Q: In which of the following areas , if any, have you made or will you make changes for the next season compared to last season?

SOY HERBICIDES MORE SETTLED THIS YEAR

OTHER PRODUCT TYPES STILL UP IN THE AIR

For 2019 soybean acres, will you:	Use same as 2018	Switch to generic	Use different product	Not sure 2019	Not sure 2018	Not sure 2017
Non-selective herbicides	64%	3%	5%	12%	22%	3%
Broadleaf herbicides	65%	4%	7%	17%	25%	6%
Grass herbicides	67%	5%	5%	15%	22%	6%
Insecticides	43%	6%	3%	19%	22%	28%
Fungicides	38%	5%	7%	23%	22%	34%
Seed treatments	60%	2%	6%	16%	19%	13%

NON-SELECTIVE HERBICIDE UNCERTAIN FOR CORN

FARMERS NOT SURE OF FUNGICIDE AND INSECTICIDE, BUT TRACKING WITH HISTORY

For 2019 corn acres, will you:	Use same as 2018	Switch to generic	Use different product	Not sure 2019	Not sure 2018	Not sure 2017
Non-selective herbicides	61%	4%	2%	22%	13%	9%
Broadleaf herbicides	62%	6%	10%	16%	19%	6%
Grass herbicides	65%	6%	5%	17%	22%	12%
Insecticides	50%	5%	1%	24%	25%	27%
Fungicides	43%	3%	6%	25%	19%	29%
Seed treatments	62%	2%	8%	15%	22%	18%

Crop protection dominated
by the advent of new tools

DICAMBA GETS HIGH MARKS

The second year of field use proves the effectiveness of the system. Farmers rated their satisfaction as 8.1 overall, with an 8.8 rating for 2000+ acre farmers.



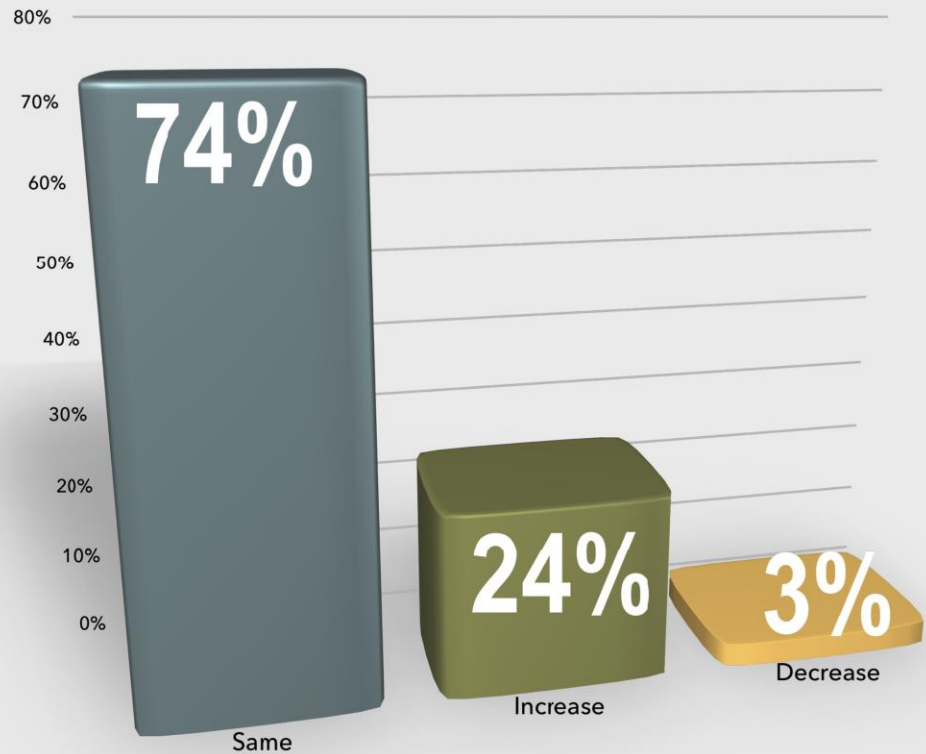
**Dicamba soybean
technology is on the rise**

INCREASED USE IN 2019 EXPECTED

- Yield increases reported by 49% of dicamba users
- Average yield increase was 10%
- Among 2000+ acre growers the yield increase was 12%

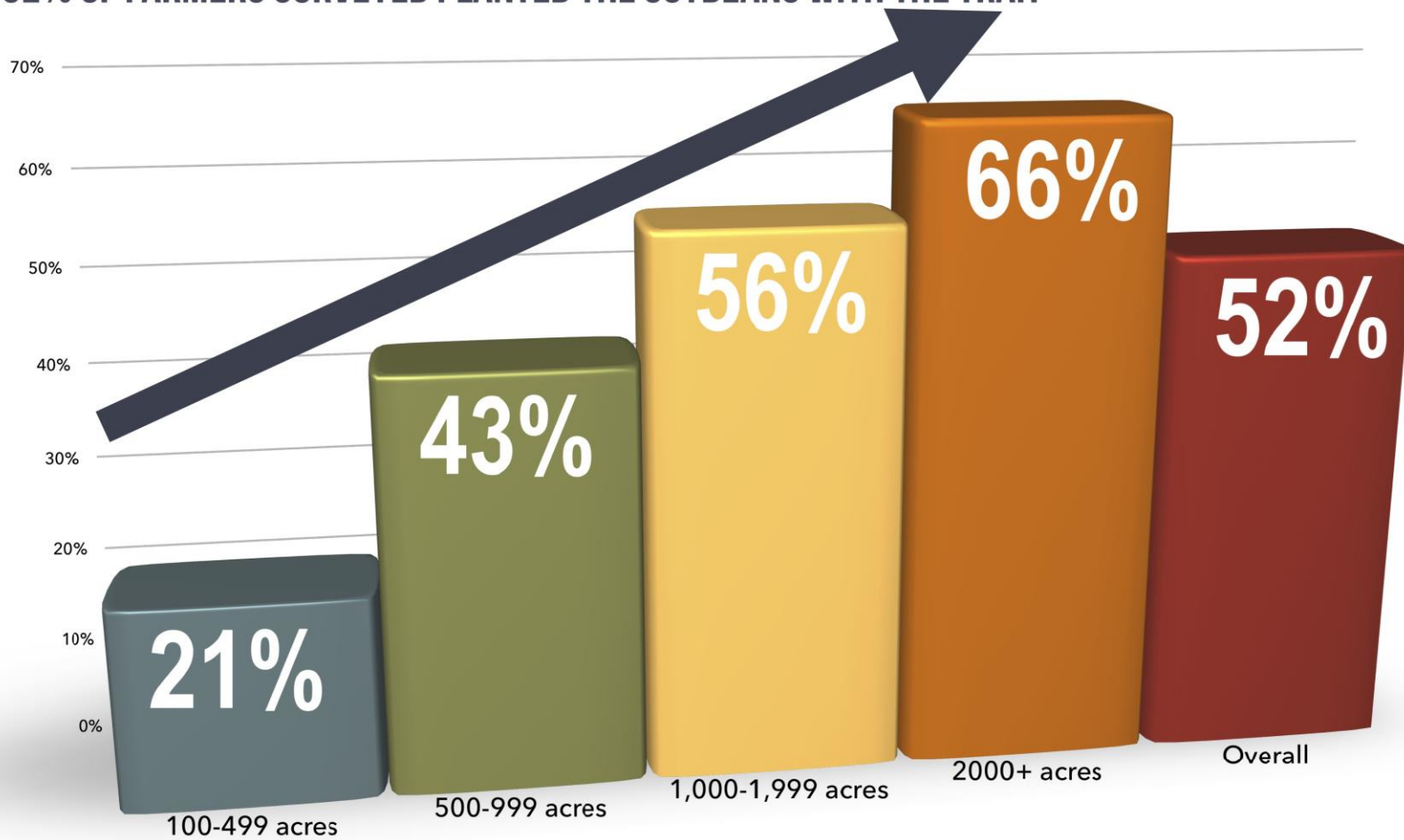
With the positive impact on weed control and the yield results of 10-12% improvement, it is no surprise that dicamba-traits in soybeans and dicamba herbicides dominate the conversations about weed control today. It is a vital system to combat resistant weed populations in key soybean production areas and farmers intend to expand its use in 2019.

2019 PLANS FOR PLANTING DICAMBA-TRAIT SOYBEANS



LARGER FARMS = MORE DICAMBA-TRAIT SOYBEANS

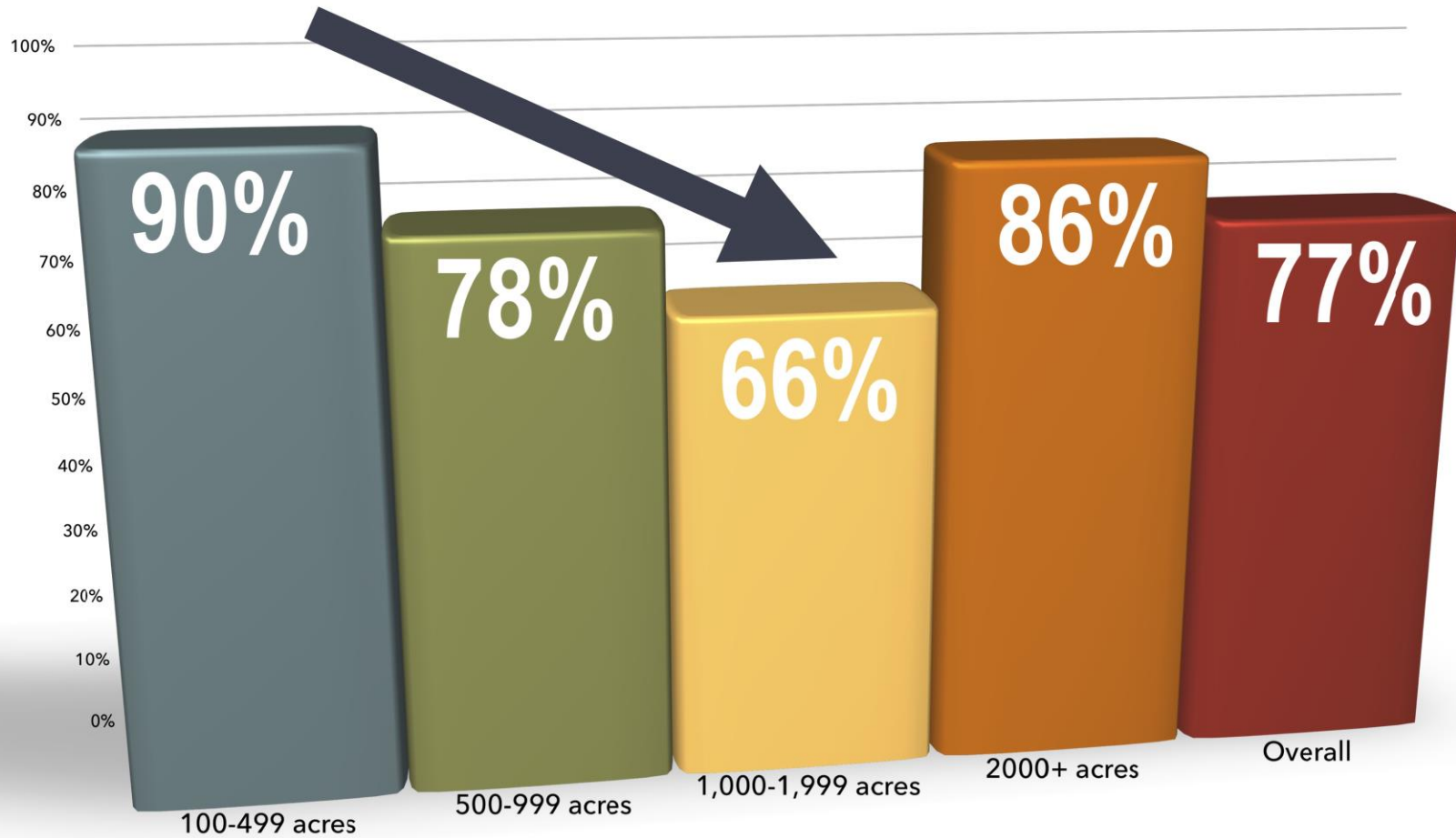
52% OF FARMERS SURVEYED PLANTED THE SOYBEANS WITH THE TRAIT



Q: Did you plant any dicamba-resistant soybeans in 2018?

UNSPRAYED DICAMBA-TRAIT SOYBEANS=23%

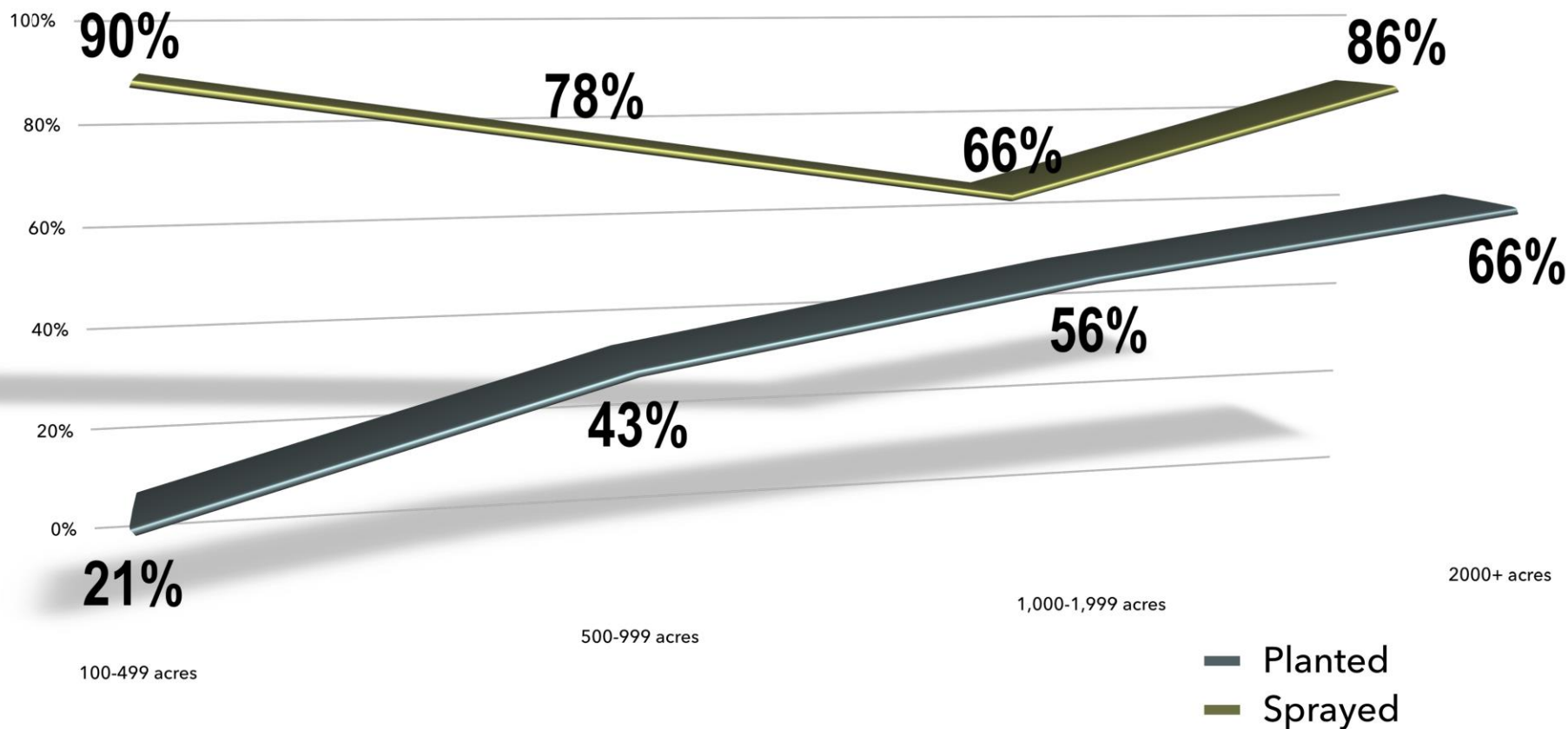
OVERALL 77% OF FARMERS SPRAYED DICAMBA ON SOYBEANS WITH THE TRAIT



Q: On what percent of your total dicamba-resistant soybean acres did you use a dicamba-based product in 2018?

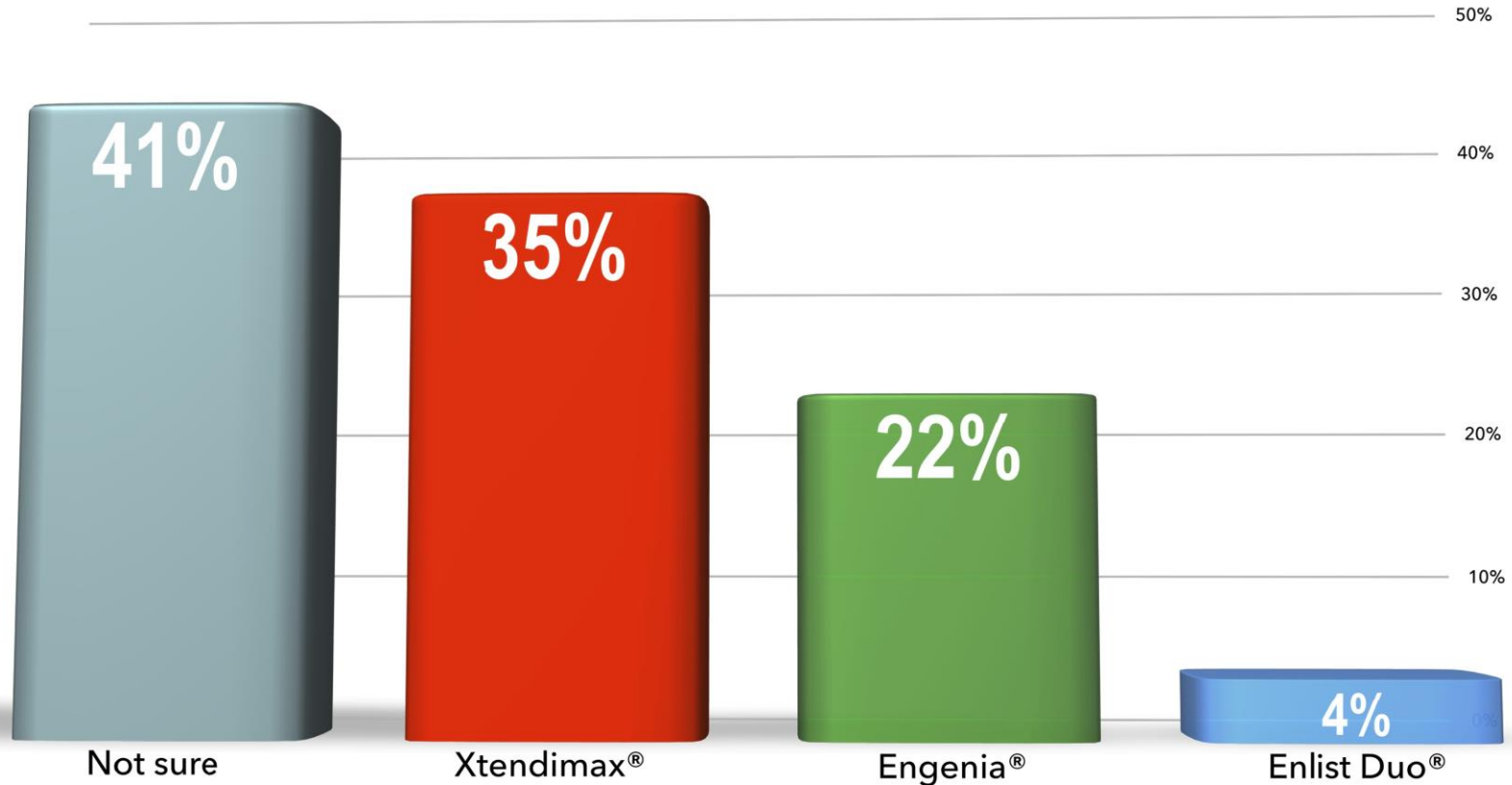
DICAMBA-TRAITED SOYBEANS COMPARISON

PLANTED VS. SPRAYED SHOWS INTENSIFICATION OF MANAGEMENT



4 OF 10 BROADLEAF HERBICIDE USERS UNDECIDED

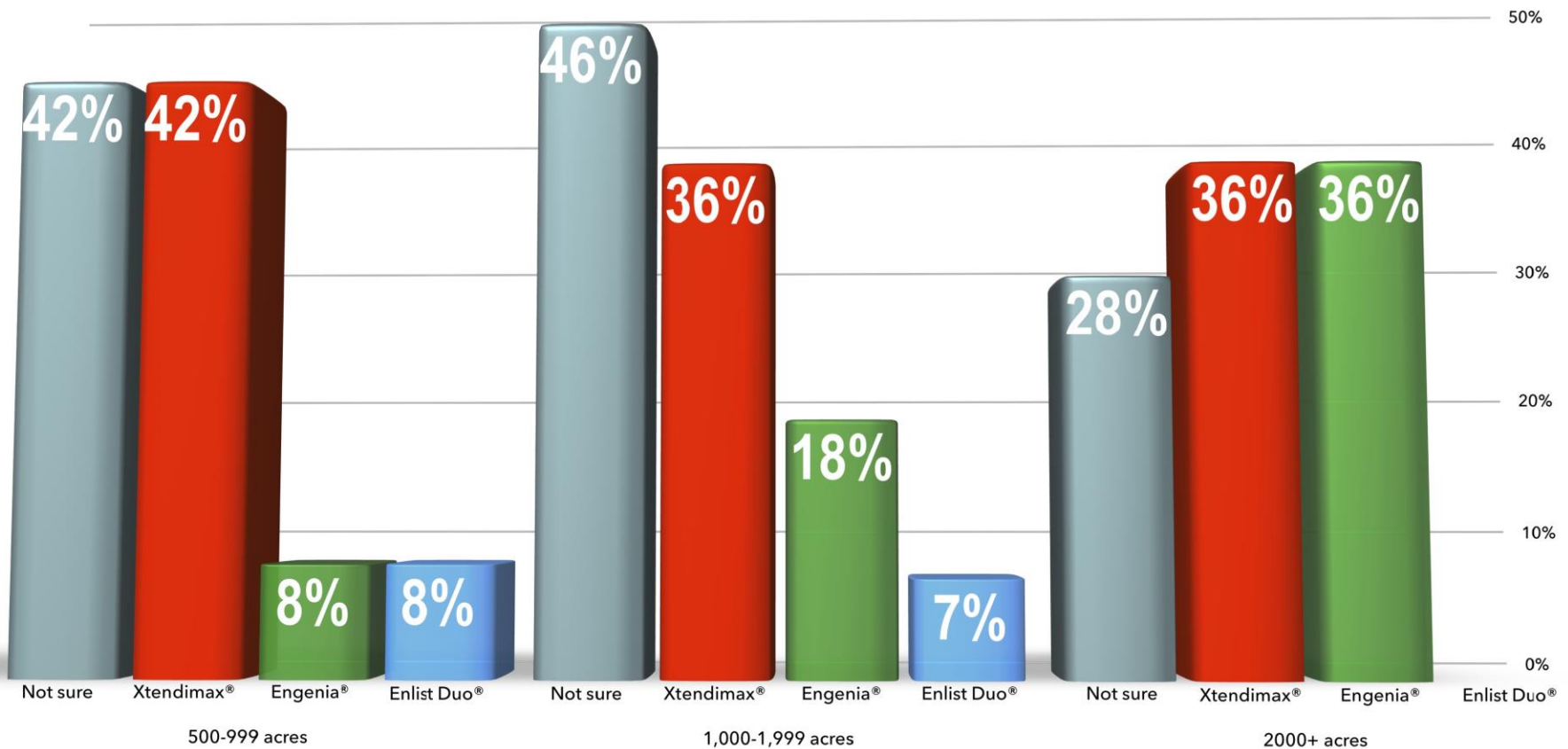
TWO CONTENDERS FIGHT FOR BROADLEAF LEADERSHIP WITH THE NATION'S SOYBEAN FARMERS



Q: Thinking ahead to 2019, which, if any of these broadleaf products will you use on your soybeans?

BAYER & BASF FIGHT FOR BROADLEAF SHARE

XTENDIMAX LEADS OVERALL, BUT ENGENIA IS ON JUST AS MANY OF THE LARGEST SOYBEAN FARMS



Q: Thinking ahead to 2019, which, if any of these broadleaf products will you use on your soybeans?



Prices are only going up so
farmers continue to pursue...

MANAGING NUTRIENTS BETTER

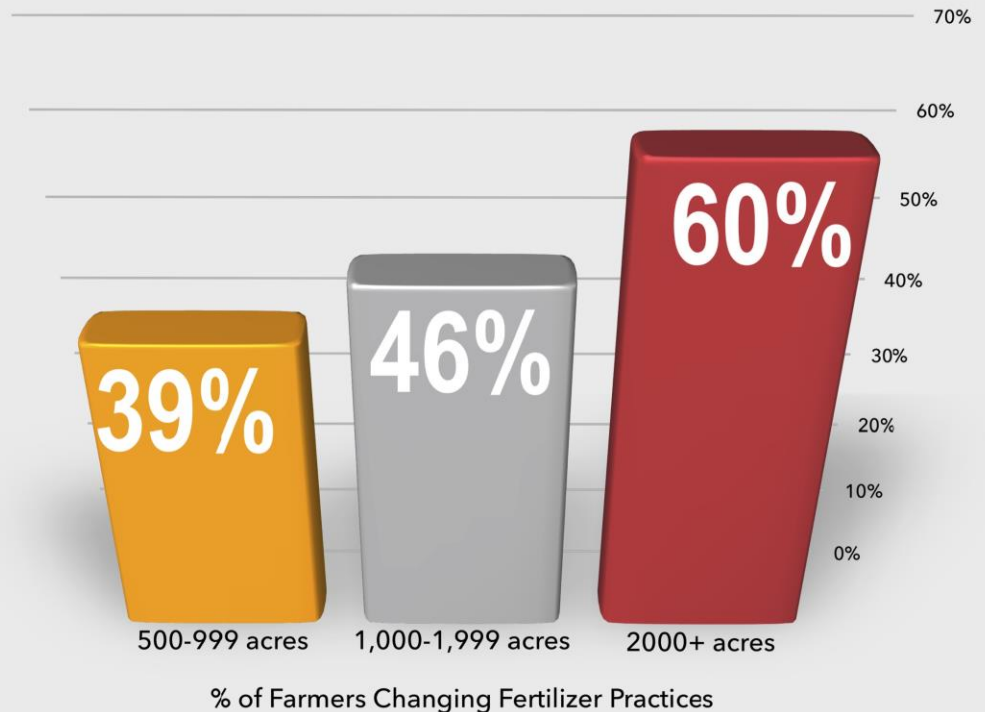
This major input has opportunities for improved efficiency and our research show multiple approaches are being used to maximize the investment and minimize losses into the environment.

As acres increase so does the likelihood a farmer in our survey is making

CHANGES FOR FERTILIZER EFFICIENCY

- A wide range of changes are included in what farmers will do differently on their farms in 2019

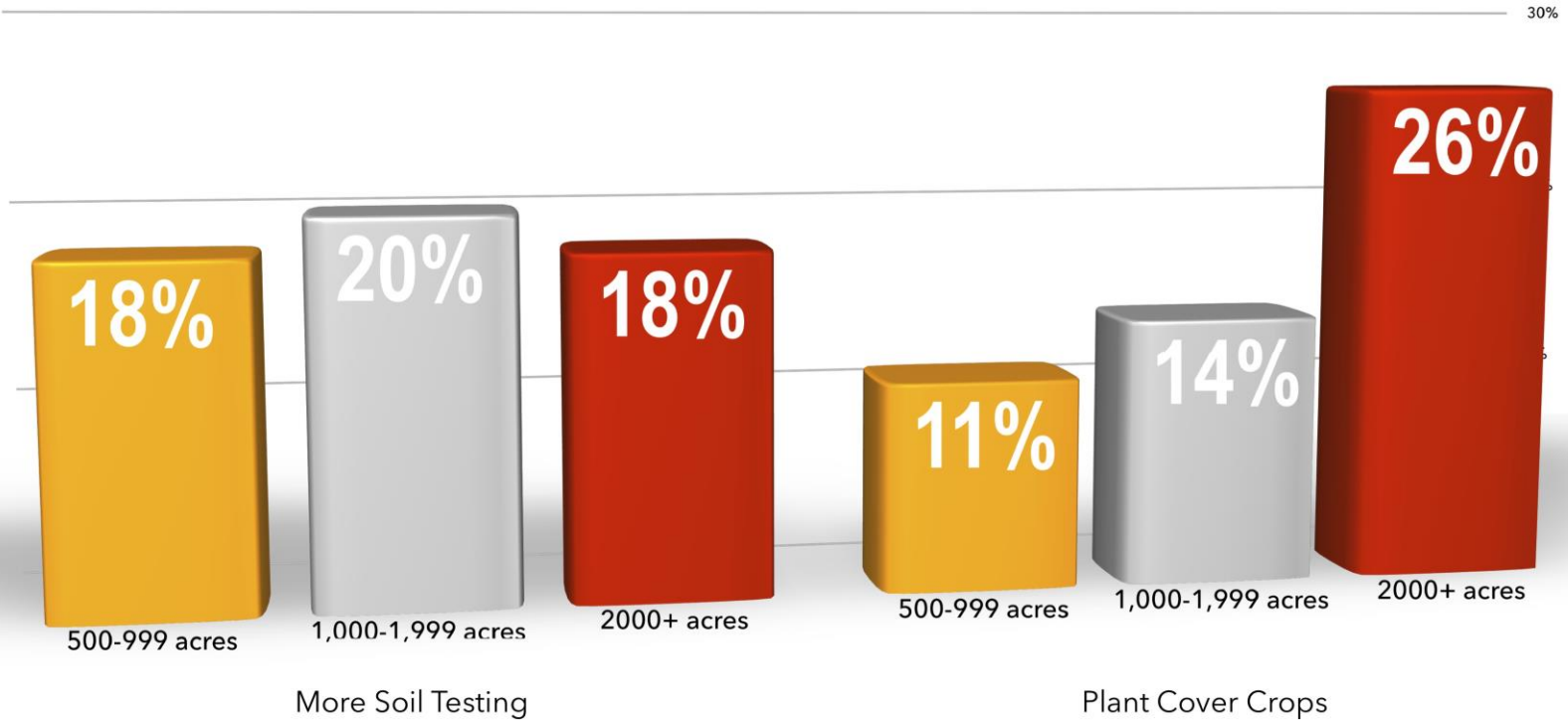
MANAGING FERTILITY IS A KEY COMPONENT FOR YIELD AND REMAINS A FOCUS FOR FARMERS



Q: When thinking about fertilizer application and efficiency, what do you expect to be your approach?

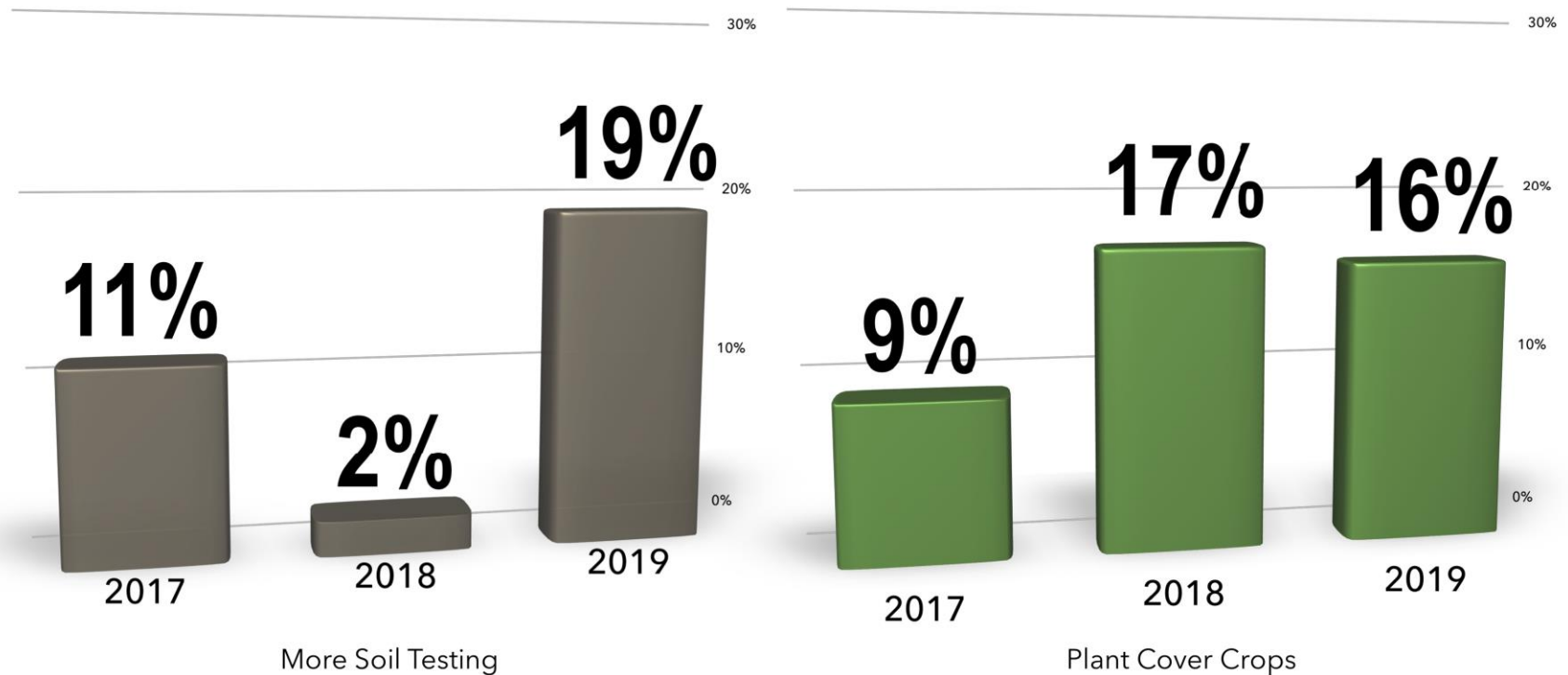
COVER CROPS FAVORED BY LARGEST GROWERS

SOIL SAMPLING KEEPS GROWING IN POPULARITY YEAR AFTER YEAR



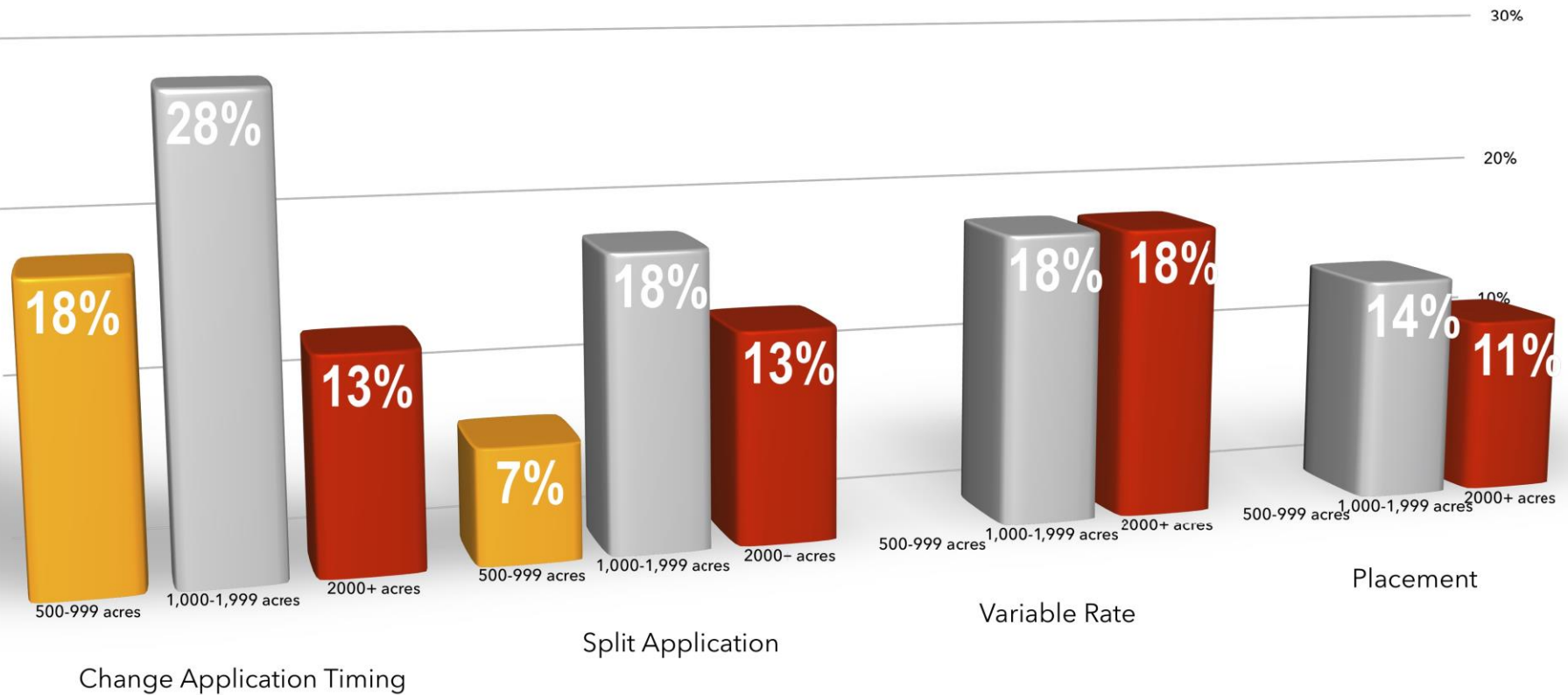
TREND FOR SOIL TESTS AND COVER CROP SEED

THREE-YEAR TREND SHOWS CONTINUED INTEREST FROM FARMERS



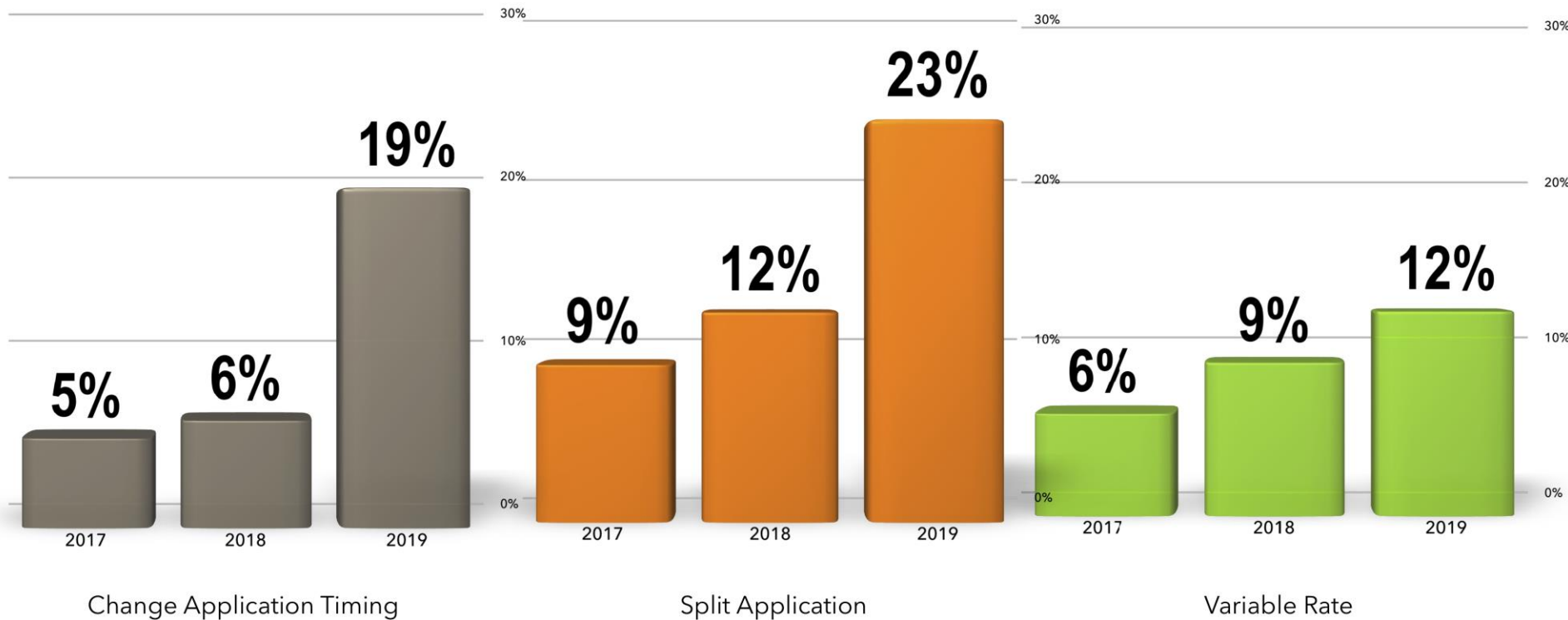
APPLICATION, RATE & TIMING CHANGES COMING

VARIABLE RATE, SPLIT APPLICATION & APPLICATION TIMING POPULAR WITH 1000+ ACRE FARMS



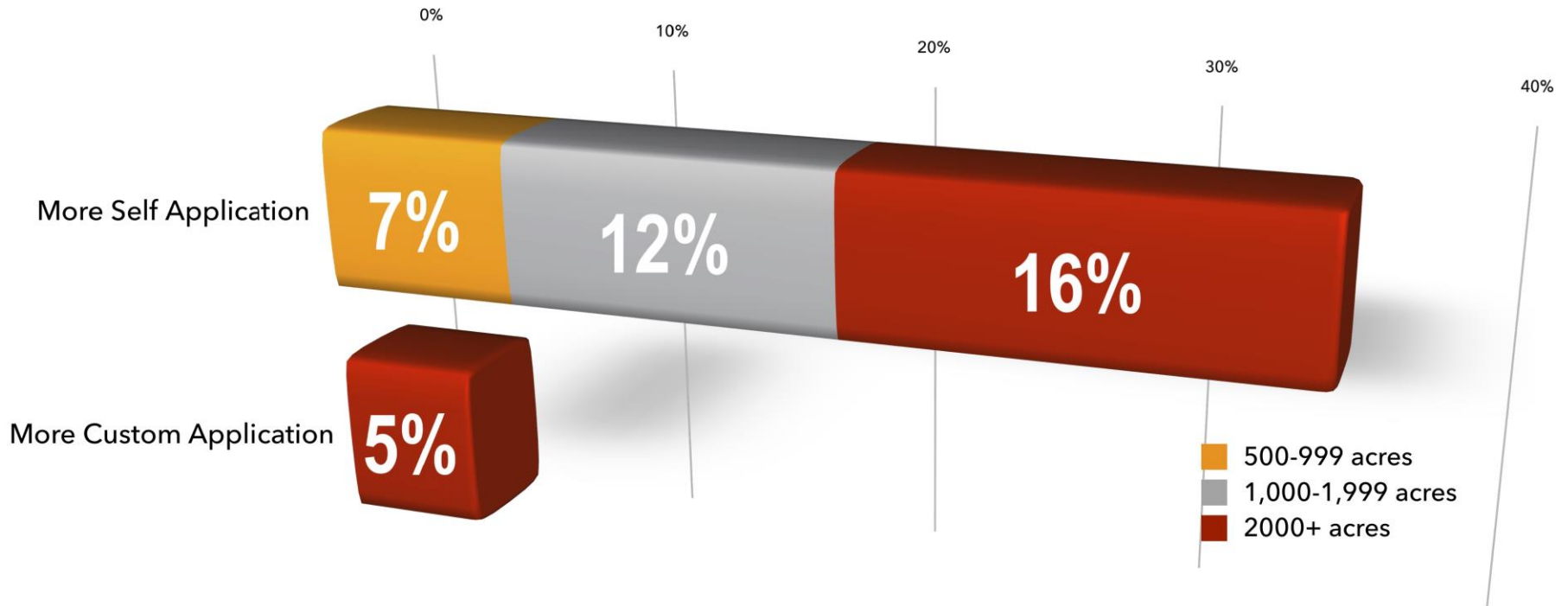
NEED FOR APPLICATION EQUIPMENT & TECH RISES

VARIABLE RATE, SPLIT APPLICATION & APPLICATION COULD REQUIRE UPGRADES



FARMERS DRIVEN TO SELF APPLICATION

ONLY THE VERY LARGEST FARMS LOOKING TO INCREASE CUSTOM APPLICATION



On-farm storage trend

BUILDING MORE BINS

Driven by the need to store more grain and segregate new crops, investing in bin space is necessary to let farmers take more control of their destiny.

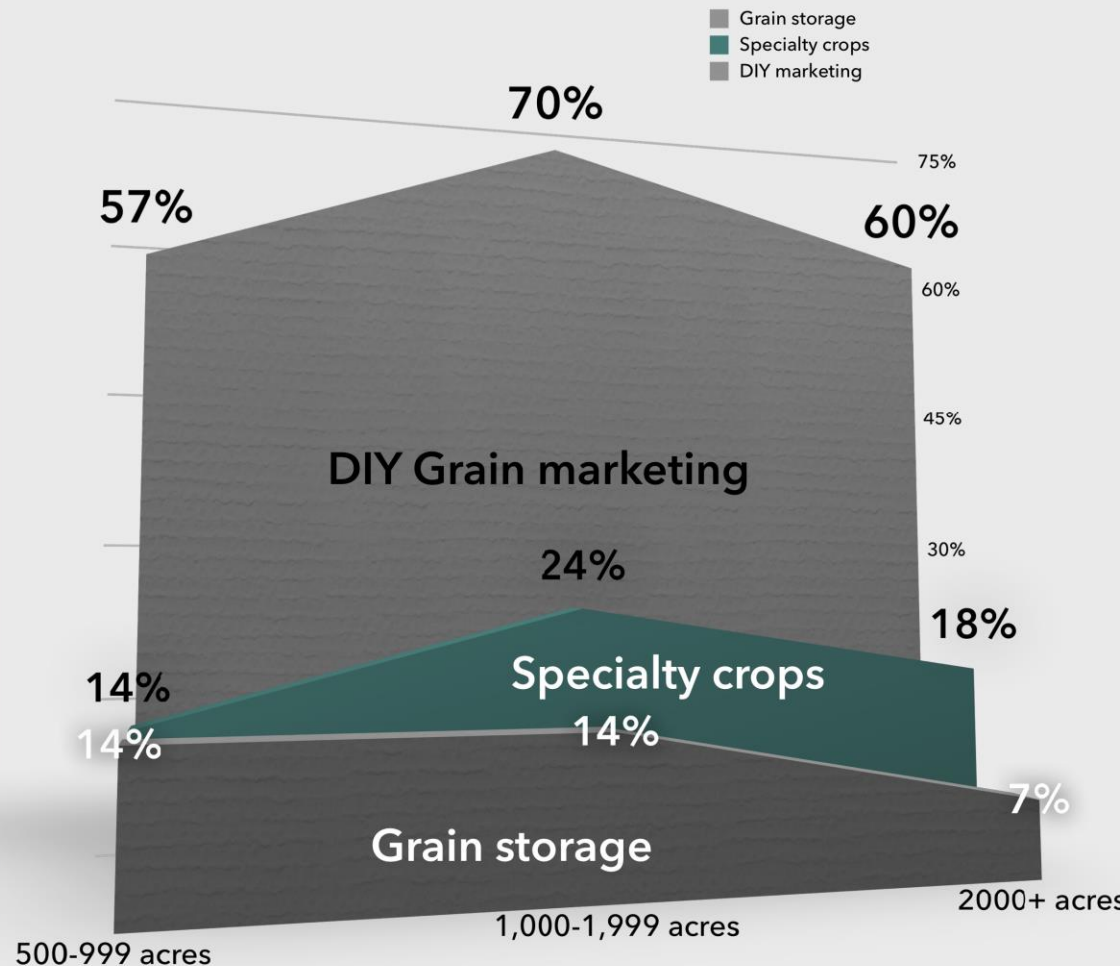


**Farmers <2000 acres
twice as likely to add
grain storage**

BINS ARE IN DEMAND

- DIY grain marketing activities is significantly increasing
- Specialty crop production demands product segregation driving need for dedicated bins
- Financing will be key to getting new storage built

It isn't surprising when looking at farmer intentions to start marketing grain on their own or to start/increase their production of specialty crops that grain storage would be required. Not to mention the current slowdown in export markets has everyone thinking about storage.



QUESTIONS WELCOMED THANK YOU

Millennium Research Report commissioned by
J.L. Farmakis, Inc.

January, 2019