MSPB'S SOYBEAN MANAGEMENT PRACTICES SURVEY–2017 RESULTS

OsbornBarr, MSPB's communications contractor, commissioned a survey of Mississippi soybean producers to determine practices they used in producing a crop in 2017, and the sources they depend on for production information.

In the following narrative, participation in and responses to the 2017 survey are shown, with responses to the same queries in the 2016 and 2015 surveys, respectively, shown in brackets.

2,000 [1,900 and 1,900] surveys were distributed by mail to Mississippi soybean producers, and 262 [280 and 283] completed surveys were returned. Only 213 were used in the analysis [49 were from retired, deceased, or no-longer-active-in-farming participants], for a net participation of 10.6% [14.7 and 14.9%]. Survey participants in 2017 were from 44 Mississippi counties, with the largest number from Delta counties. Total average soybean acres of the participants is 1,487.

General Crop Production

66% [66 and 69%] of responding producers rotate soybeans with another crop on an annual basis, and 88% [90 and 86%] of those growers rotate with corn. Rice and milo are the next most rotated crops with soybeans at 21% [19 and 18%] and 14% [11 and 23%], respectively.

37% [35 and 42%] of the respondents planted in rows that were less than 30 in. wide, while 41% [42 and 40%] planted in rows that were >30 in. wide. 19% [19 and 18%] still planted in 38-inch-wide single rows. 28% [24 and 20 %] planted in twin rows that were on 30- to 40-in. centers. Thus, about two-thirds of respondents in all years planted in narrow or twin rows.

In both 2017 and 2016, yield is the trait rated most important by respondents when selecting a variety, with range of maturity groups and specific soil type of a field to be planted to a variety ranking as second and third most important.

98% [95 and 96%] of respondents viewed variety selection as the most important factor for increasing soybean yields, while soil sampling at 81% [82 and 80%], crop rotation at 71% [76 and 74%], agronomy factors such as row spacing and seeding rate at 75% [69 and 65%], and fungicide application at 72% [71 and 70%] were also viewed as significant factors to consider for yield increase.

Weed resistance was the dominant, most-listed soybean production issue or problem and yield was the next most-listed issue in all three years.

Soil Factors

58% [62 and 61%] of the respondents always test soil for fertility at least every 3 years; these 2017 results indicate a slight decline in this practice. 58% [57 and 59%] collect soil fertility samples on most [76-100%] of their acres.

71% [67 and 61%] of the respondents know the amounts of nutrients removed from the soil by their soybean crop.

70% [74 and 69%] of the respondents ensure adequate fertility on their soybean acres based on soil test results.

48% [49 and 48%] of growers know their soil pH every year.

Irrigation

43% [42 and 48%] of the respondents do not irrigate soybeans.

Of those that irrigate, 42% [49 and 42%] use PHAUCET/Pipe Planner, 24% [20 and 14%] use surge valves, and 38% [37 and 31%] use soil moisture

sensors.

In 2017, nearly half [49%] of the producers who irrigate use Pipe Planner on over 80% of their irrigated acres.

A low percentage of irrigated producers know the amount of water they are using to irrigate most [81-100%] of their irrigated soybean acreage as indicated by only 21% [16 and 8%] who use well or flow meters. 52% [60 and 72%] of the irrigators monitor their water use on less than 40% of their irrigated acres.

Insect and Disease Factors

76% [74 and 77%] of the respondents check or scout fields for presence of major diseases on a weekly basis, and 84% [82 and 83%] check for insects on a weekly basis.

80% [75 and 77%] of the weekly scouting is done by walking the fields.

52% [50 and 49%] of the respondents use scouting practices to make decisions that will manage weed, insect, and disease pests that are present.

58% [58 and 52%] of responding growers automatically apply a fungicide to their soybean crop, whereas 42% [42 and 41%] apply fungicides only when diseases are present.

65% [56 and 59%] of responding producers use a sweep net or drop cloth to make weekly checks for insect presence.

86% [88 and 78%] of producers treat for insects when their numbers reach economic thresholds.

64% [59 and 57%] of the respondents use scouting results to choose varieties for next year's crop.

Nematode Factors

50% [54 and 41%] of the respondents do not know if they have nematodes in their fields. Those growers who did know of nematode presence identified soybean cyst, reniform, and root knot nematodes as present in a significant number of fields in both 2016 and 2017.

Weed Factors

81% [77 and 71%] of growers use pre-plant or pre-emergence herbicides on more than 50% of their acres, and 72% [66 and 61%] use them on more than 75% of their acres.

72% [68 and 67%] of responding producers who apply harvest aids or desiccants do so to enhance early harvest. 16% [19 and 19%] do not apply harvest aids to any of their soybean acres.

Resistance Management

84% [77 and 74%] of responding growers always apply fungicides, insecticides, and herbicides at the full labeled rate. This indicates a rather large increase in the number of producers who are becoming aware of the importance of this when applying pesticides.

95% [98 and 95%] of respondents used 2 or more modes of action (MOA) when applying herbicides for weed control. 40% [27 and 26%] used 3 or more MOA's.

40% [35 and 36%] of respondents always use multiple MOA's when applying fungicides/insecticides/herbicides.

In 2017, 51% of responding producers always used multiple MOA's when applying herbicides, 30% always used multiple MOA's when applying insecticide, and 38% always used multiple MOA's when applying fungicides.

Production Recommendations

90% [87 and 86%] of producers who responded are

comfortable or very comfortable with recommendations made by agricultural retailers.

Ag Retailers [73% (71 and 71%)], Crop Consultants [70% (70 and 70%)], MSU-Extension [68 (61 and 66%)], and Field Trials [62% (63 and 63%)] are significant sources of information used in making soybean production decisions.

Over half of the responders stated that they need more information on soil fertility [55% (60 and 60%)] and weed management [54% (61 and 56%)]. The survey respondents indicated a need for more information on disease management [35% (40% and 32%)] and irrigation efficiency [27% (37% and 35%)].

75% [65 and 60%] of respondents recall receiving production information from MSPB, and 66% [59 and 57%] of the respondents found MSPB information helpful.

General Conclusions–2015-2017

Results from all three years of the survey indicate that about two-thirds of responding producers rotate soybean with another crop on an annual basis, and the vast majority of those producers rotate soybean with corn. Thus, a concerted effort should be directed toward developing the knowledge needed to properly manage a rotational crop production system that involves soybean.

About two-thirds of responding producers plant in rows that can be categorized as less than wide (rows <30-in. wide or twin rows). However, a significant number of producers still plant soybeans on wide rows, and the reasons for this are not apparent.

Only about two-thirds of producers are aware of the amount of nutrients removed from the soil by a soybean crop. The awareness of this as an important factor for continued high yields should be increased through extension and industry education efforts.

Because a large percentage of producers are unaware of possible nematode presence in their fields, an increased education effort about sampling soil for nematodes is warranted. This is especially true since disease surveys indicate that SCN is the soybean pest responsible for the greatest yield loss in Midsouth soybean production systems. Also, with increased rotation of soybean with corn and cotton, sampling for reniform and root knot nematodes has become important as well.

The survey results indicate that increased use of tools to improve irrigation efficiency is occurring, but the adoption percentage is still below 50%. This indicated slight increase in the use of these tools is not in the amount needed to reduce/eliminate the decline in the Mississippi River Valley Alluvial Aquifer [MRVAA]. Thus, outreach and education efforts must be increased to ensure that information about all irrigation management tools that can increase irrigation efficiency and enhance knowledge of crop water use by irrigated soybeans is available to and adopted by every irrigator. These tools must be rapidly and completely adopted by all irrigators to ensure the longevity of the MRVAA and to preclude regulatory measures that likely will be needed in the absence of their adoption to conserve this water resource.

Greater than 75% of responding producers use timely and accurate scouting to monitor insect and disease pests in soybean. However, the large percentage of producers who automatically apply a foliar fungicide indicates that knowledge of this practice's contribution to resistance development in targeted diseases is lacking or being ignored. This can only be remedied by continued and/or increased educational efforts on this subject. Also, producers should understand that the so-called "plant-health enhancement" that is touted from using foliar fungicides is not real and should not be used as a reason for their automatic application.

The vast majority of respondents use economic thresholds to determine if and when to treat for insect infestations. This indicates that continued research is

needed to ensure that threshold numbers are adequate and accurate for the various soybean production systems (e.g. irrigated vs. dryland, early-planted vs. late-planted/doublecropped, monocropped vs. rotated) in Mississippi.

Producers have obviously taken heed about the importance of weeds developing resistance to herbicides as indicated by the large majority of respondents who use more than one herbicide mode of action, pre-plant and pre-emergence herbicides, and the full labeled rate of herbicides. Proper use and application of all these factors are recommended to prevent or delay herbicide resistance in weeds and to protect the increasingly limited number of MOA's that are available for effective control of problematic weeds.

It is perceived from these results that the use of multiple MOA's in pesticide applications likely pertains mostly to herbicides. Producers must continually be reminded of the importance of this factor in the application of insecticides and fungicides as well. This is especially so since a large percentage of soybean acres are treated for insects each year, a large percentage of growers automatically apply a fungicide to their soybean crop, and resistance development in several fungal pathogens has been documented. Producers must use sound IPM practices when managing both insect and disease pests, and this includes using scouting results and multiple MOA pesticides when needed to manage both pest classes. Application of scouting results to decide when to apply these pesticides should replace their automatic application. This is especially so for managing soybean diseases.

It is obvious that Mississippi soybean producers have a high regard for the information provided and recommendations made by agricultural retailers and crop consultants/advisers. It is thus imperative that the developers of new information and technology engage these information suppliers in educational opportunities that will transfer this new information to them. It is also incumbent on these advisers to stay abreast of the latest information technology from multiple sources regarding all phases of soybean production.

As with all surveys, this survey provides only a sampling of production practices and information sources used by Mississippi soybean producers. However, these results do provide a glimpse into what is being done to produce soybeans in the state, and can provide agricultural practitioners with a clue as to what needs more attention and increased educational opportunities.

Hopefully, through this and other summaries that will come from the survey results, producers can see the value of the information you provided and how it can be used to provide insight into what Mississippi soybean producers are now doing or maybe should not be doing to continue the trend of increasing soybean yields in the state.

Composed by Larry G. Heatherly, Oct. 2017,
larryheatherly@bellsouth.net

2017

Best Practices Study

Study Overview

The Mississippi Soybean Promotion Board is focused on supporting the needs of farmers and the soy industry. This study was conducted with Mississippi soybean farmers to identify specific practices and trends that will assist all growers.

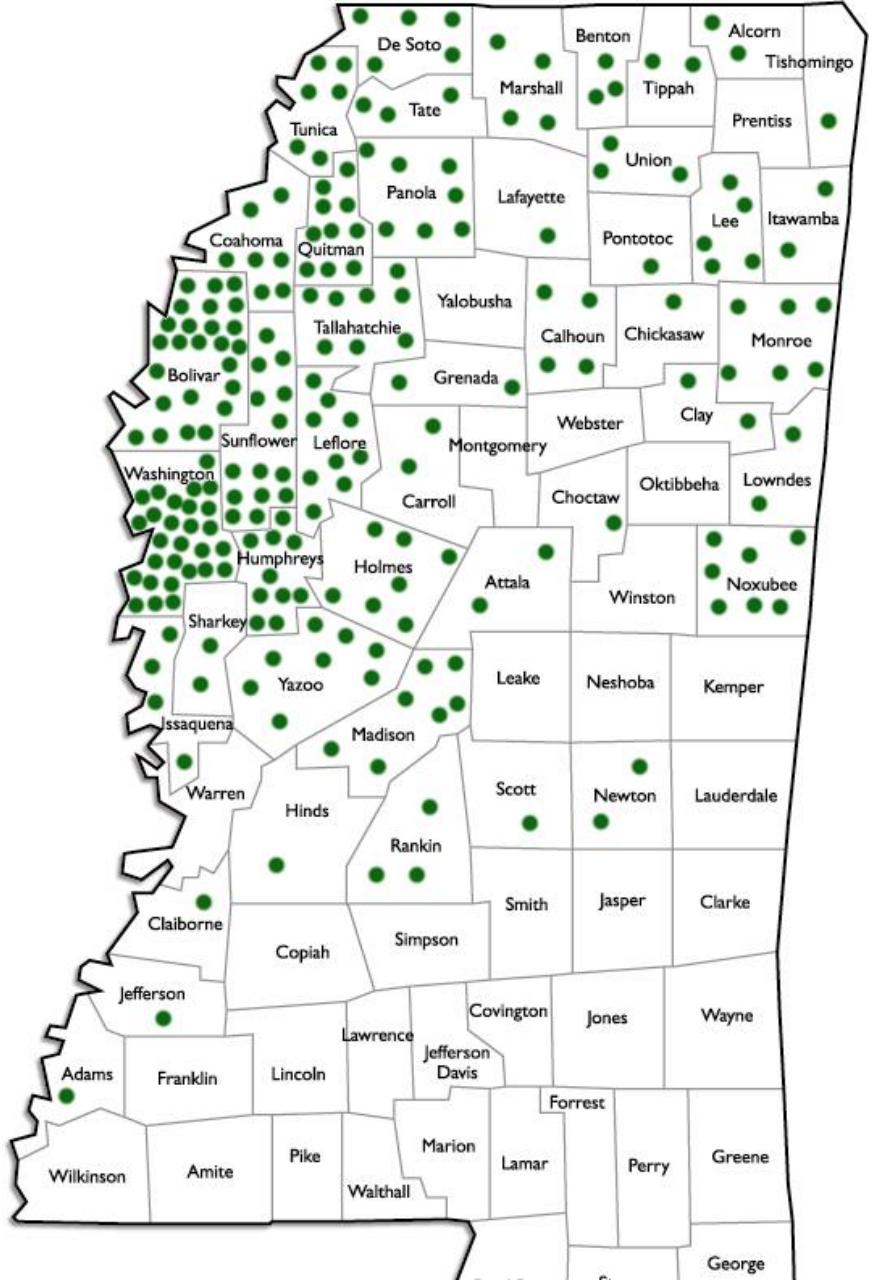
Study Methodology

A four-page, 37-question survey was mailed to 2,000 farmers identified as having soybean crop production in 2017. The survey included a participation incentive of two (2) Walmart $500 gift cards. Winners were randomly drawn from all completed survey participants.

The mail distribution was conducted in August 2017 and responses was accepted through September 30, 2017.

Study Participation

A total of 262 surveys were returned. Forty-nine surveys were not recorded (retired, deceased and/or no longer active in farming) for a net return of 213 or 10.6%.



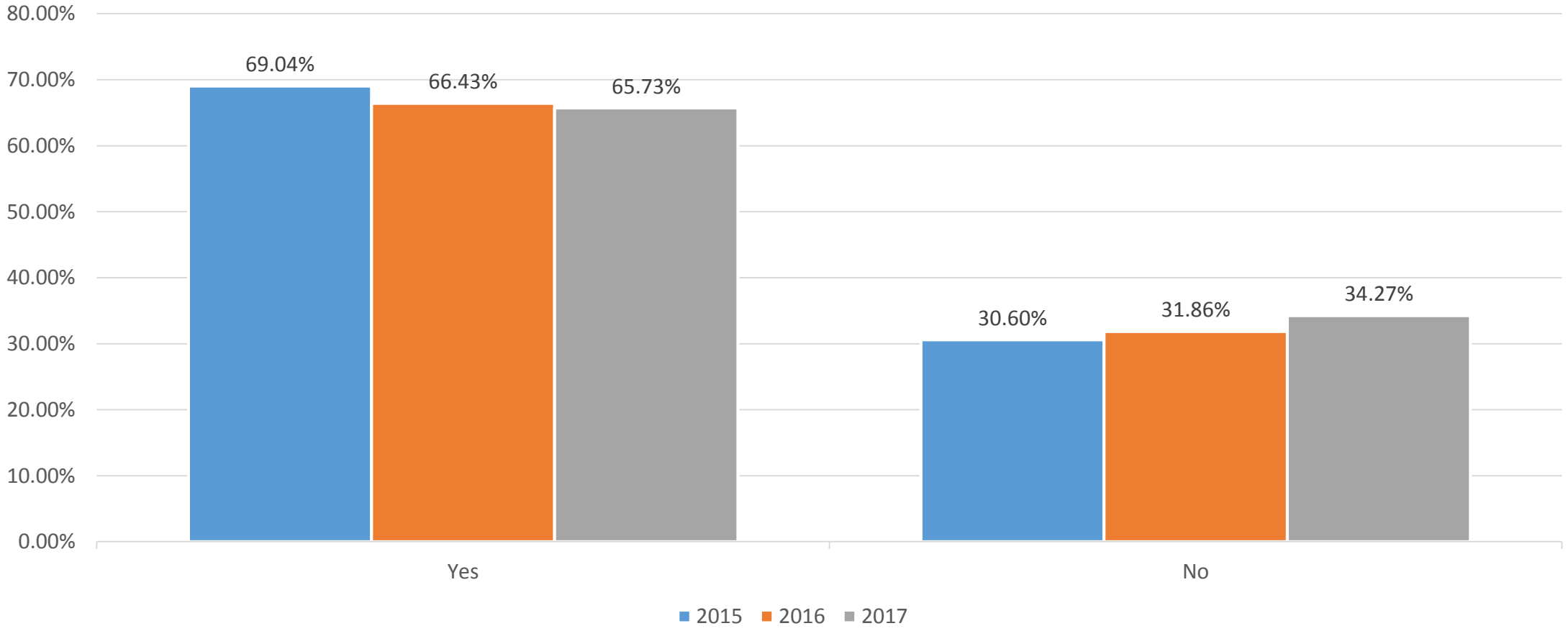
County Location of Participants

- **Participants represent 44 Counties in Mississippi.**

- **Top Counties Include:**
  - Bolivar
  - Humphreys
  - Leflore
  - Quitman
  - Sunflower
  - Tallahatchie
  - Washington

Annual Crop Rotation

Sixty-six percent of participants rotate crops on an annual basis.



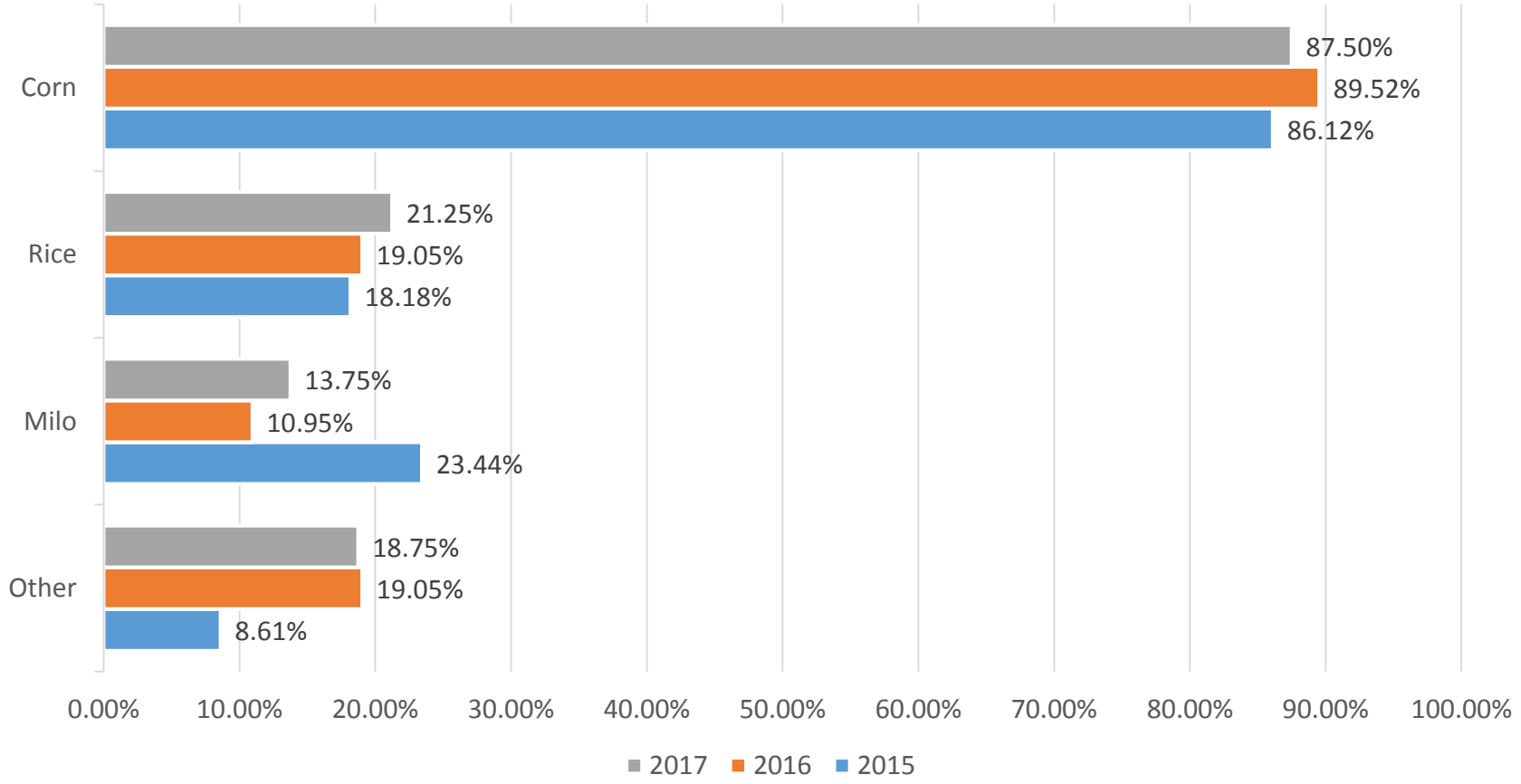
OSBORNBARR

Q2: Do you rotate your crops annually?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Crops Rotated With Soybeans (n=160)

Nearly 90 percent of rotating participants rotate corn with soybeans.



Other Crops Include:

- Cotton (primary)
- Wheat
- Sweet Potatoes

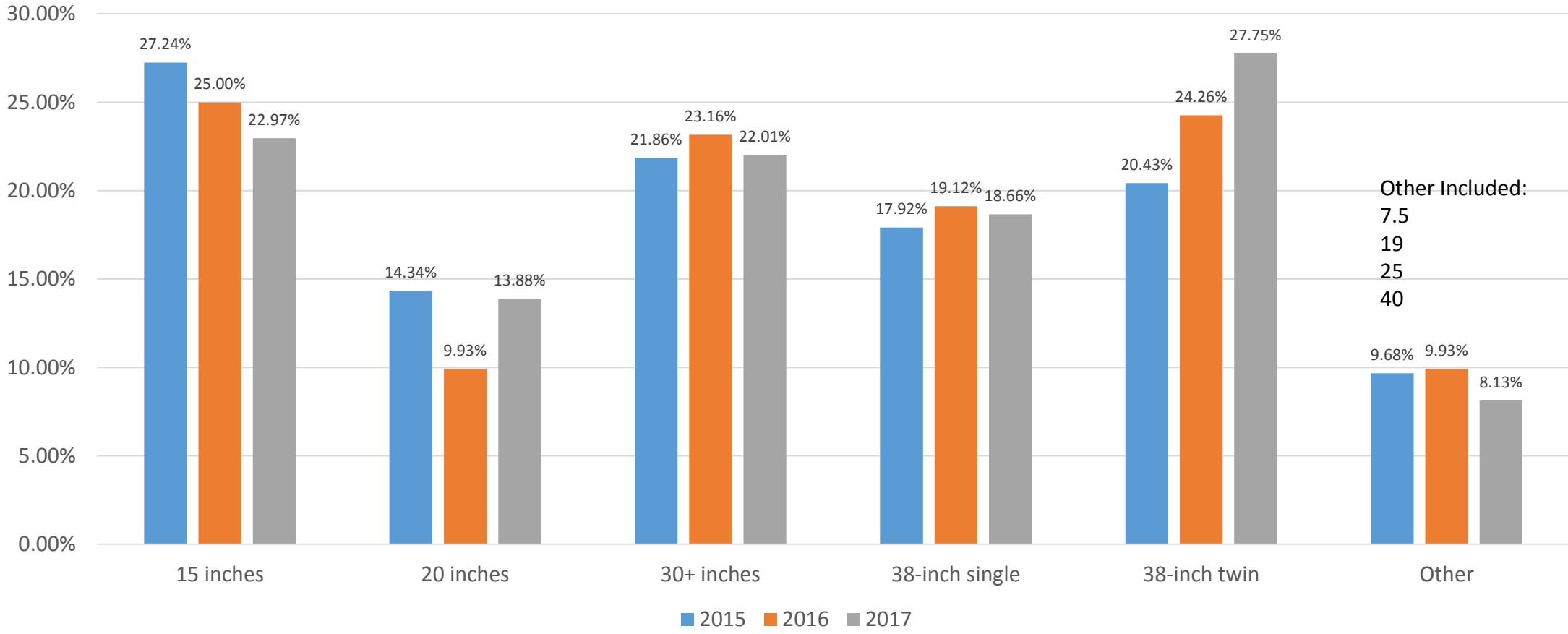
OSBORNBARR

Q3: If you do rotate crops annually, what crop do you rotate with soybeans?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Soybean Row Width

2017 results reflect a decrease in 15-inch row and an increase in 38-inch twin row.



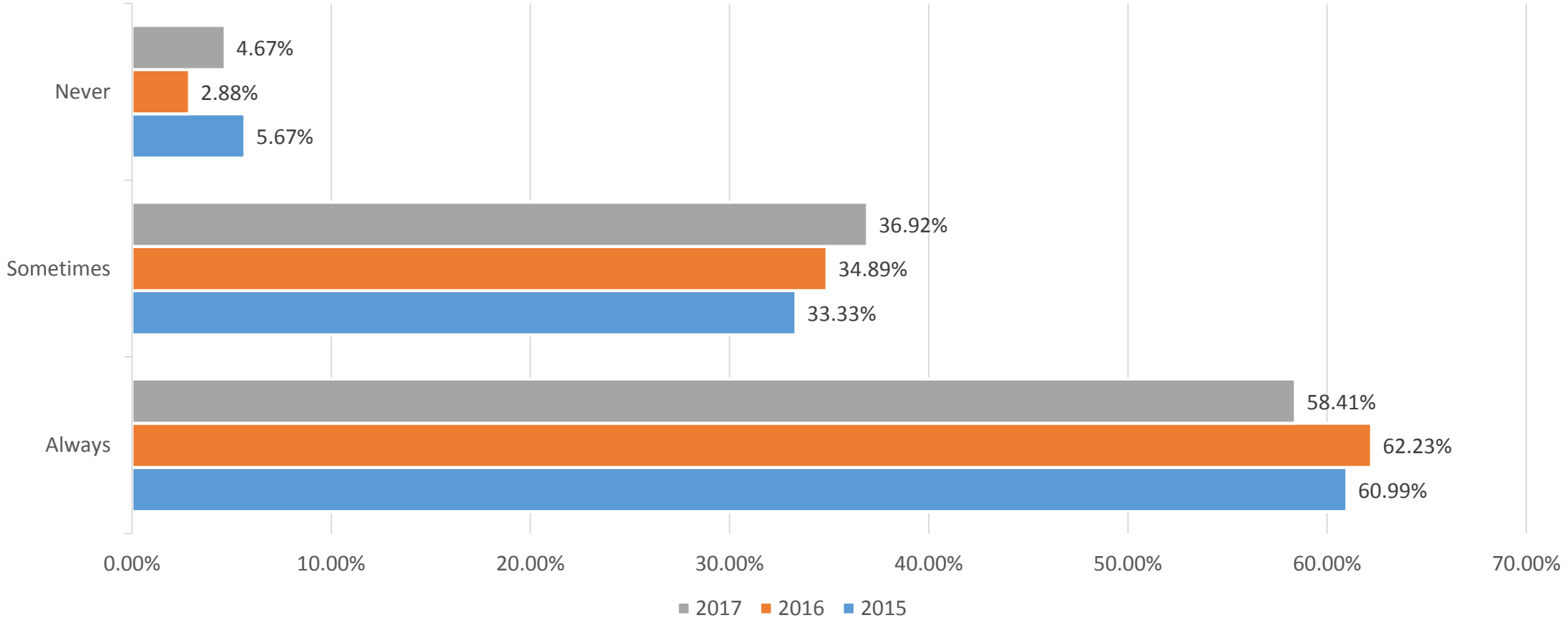
OSBORNBARR

Q4: What row width do you typically use when planting soybeans?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Soil Testing

2017 results reflect a slight decline in soil testing protocol.



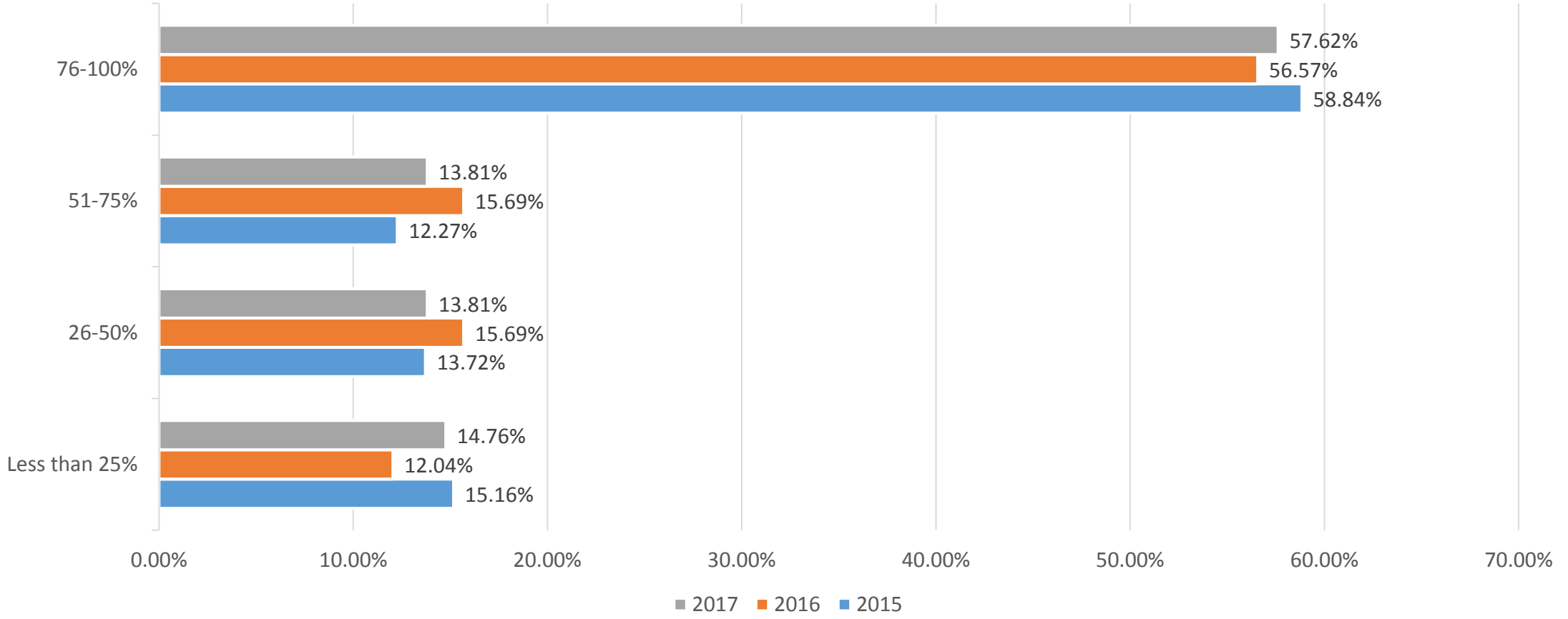
OSBORNBARR

Q5: Do you soul test your soybean fields at least every 3 years?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Soil Sampling Acreage (n=210)

Percent of acres soil tested remained consistent compared to other years.



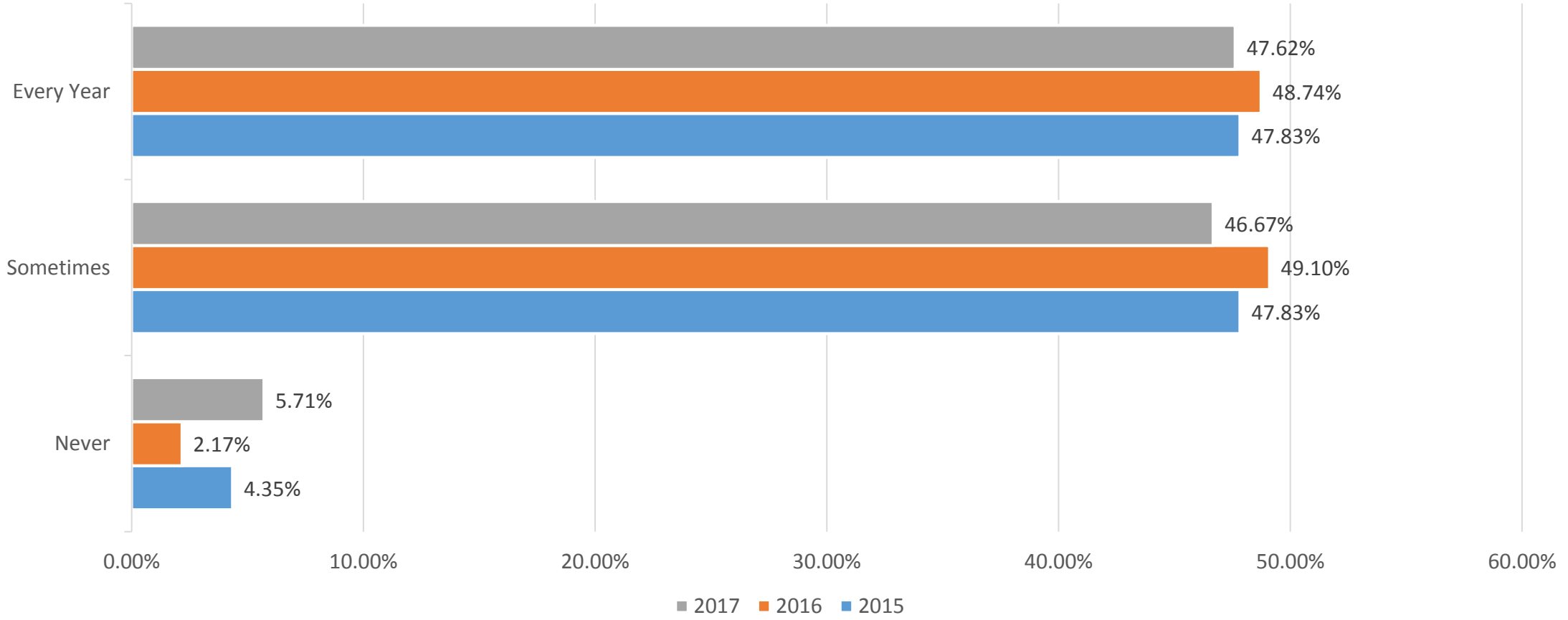
OSBORNBARR

Q6: On what percentage of your soybean acres do you take soil samples?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Knowledge of Soil pH

Forty-eight percent of participants know their Soil pH every year.



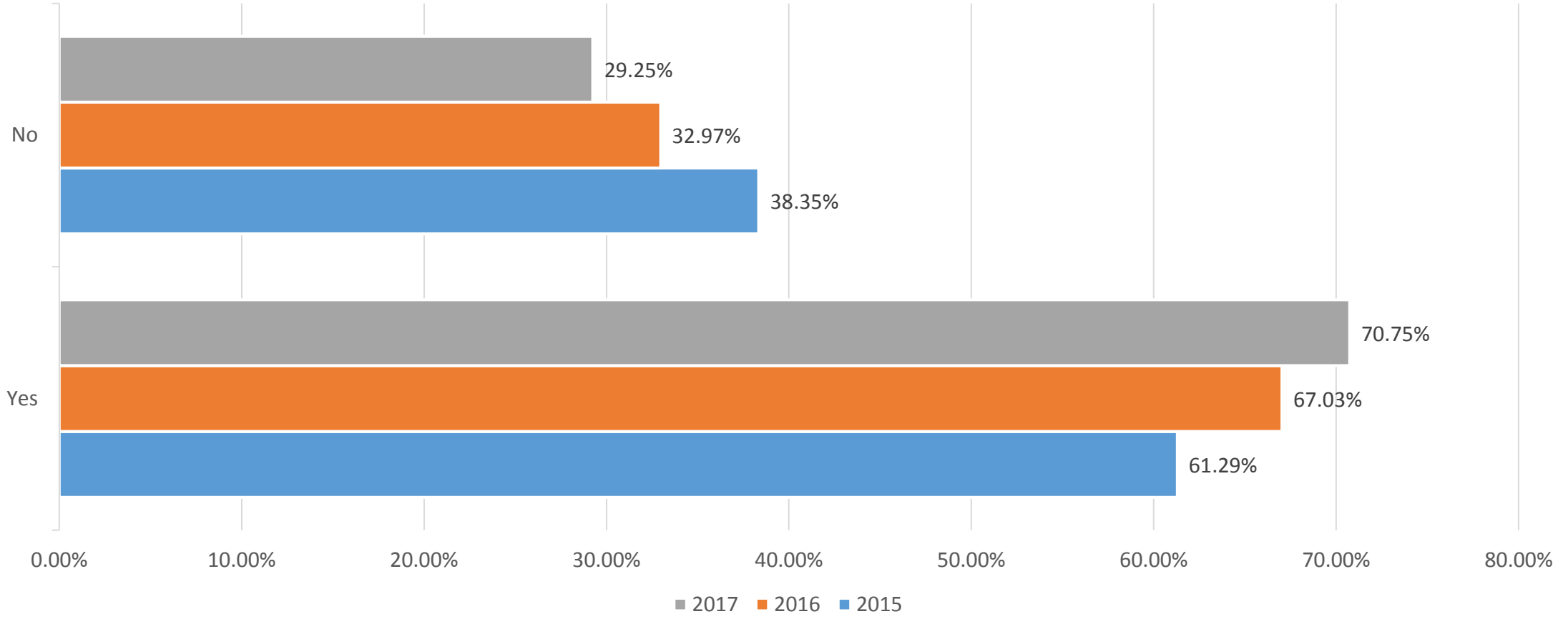
OSBORNBARR

Q7: Do you know your soil pH?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Knowledge of Nutrient Removal

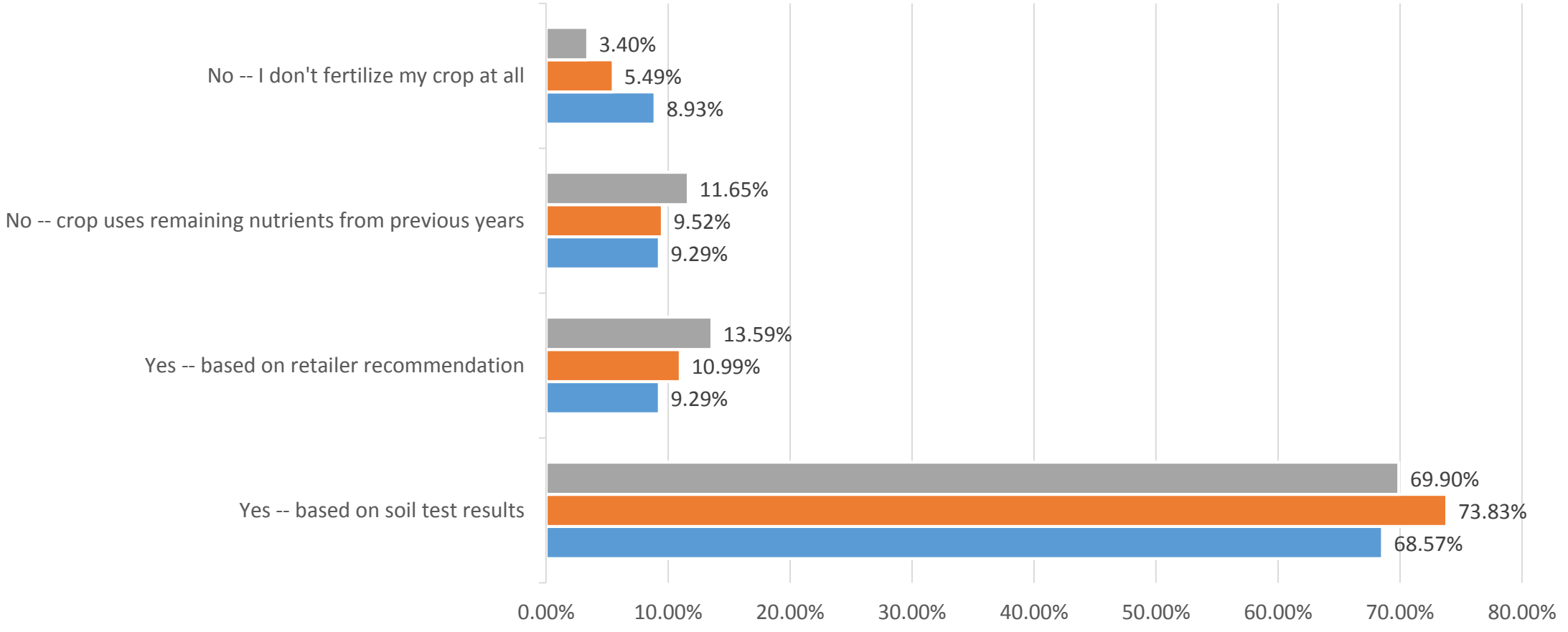
Over 70 percent of participants are aware of the amount of nutrients removed in each bushel of harvested soybean grain.



Q8: Are you aware of the amount of nutrients removed in each bushel of harvested soybean grain?

Soybean Field Fertilization

Seventy percent of participants fertilize based on soil test results.



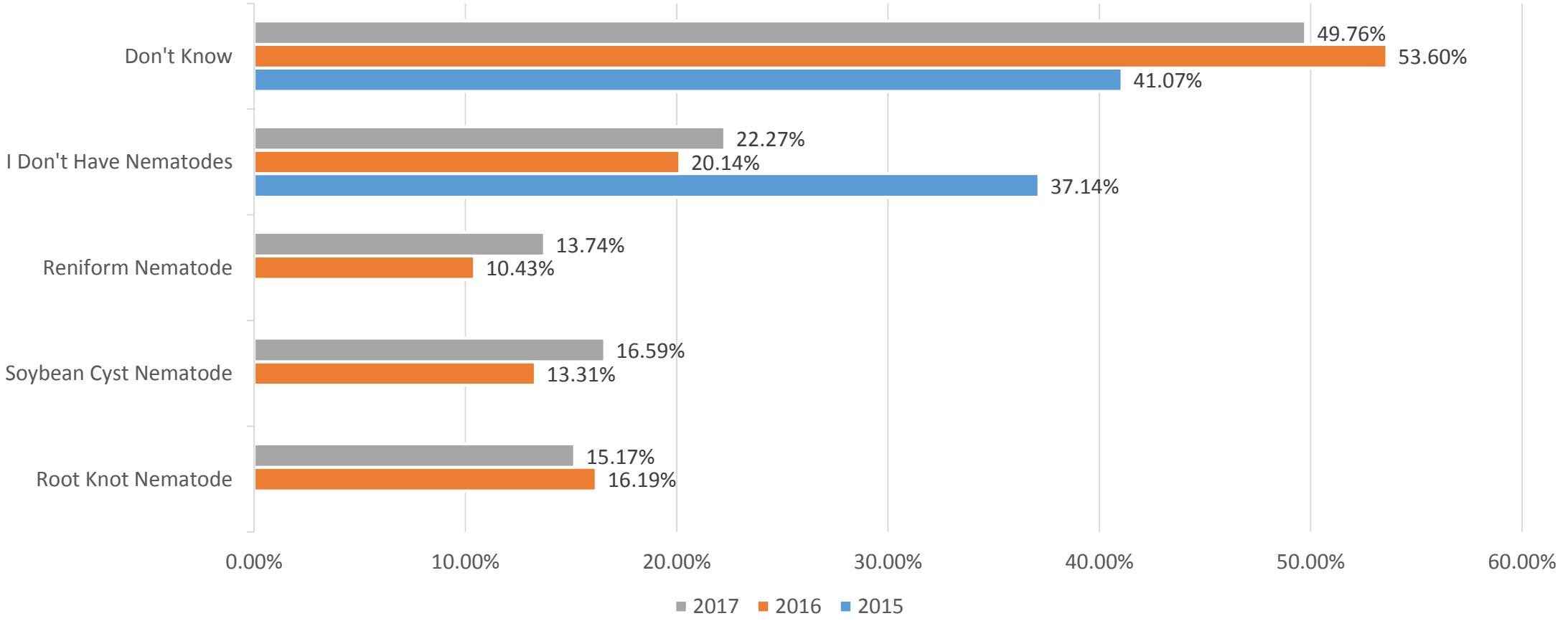
OSBORNBARR

Q9: Do you fertilize your soybean fields before planting?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Nematode Presence

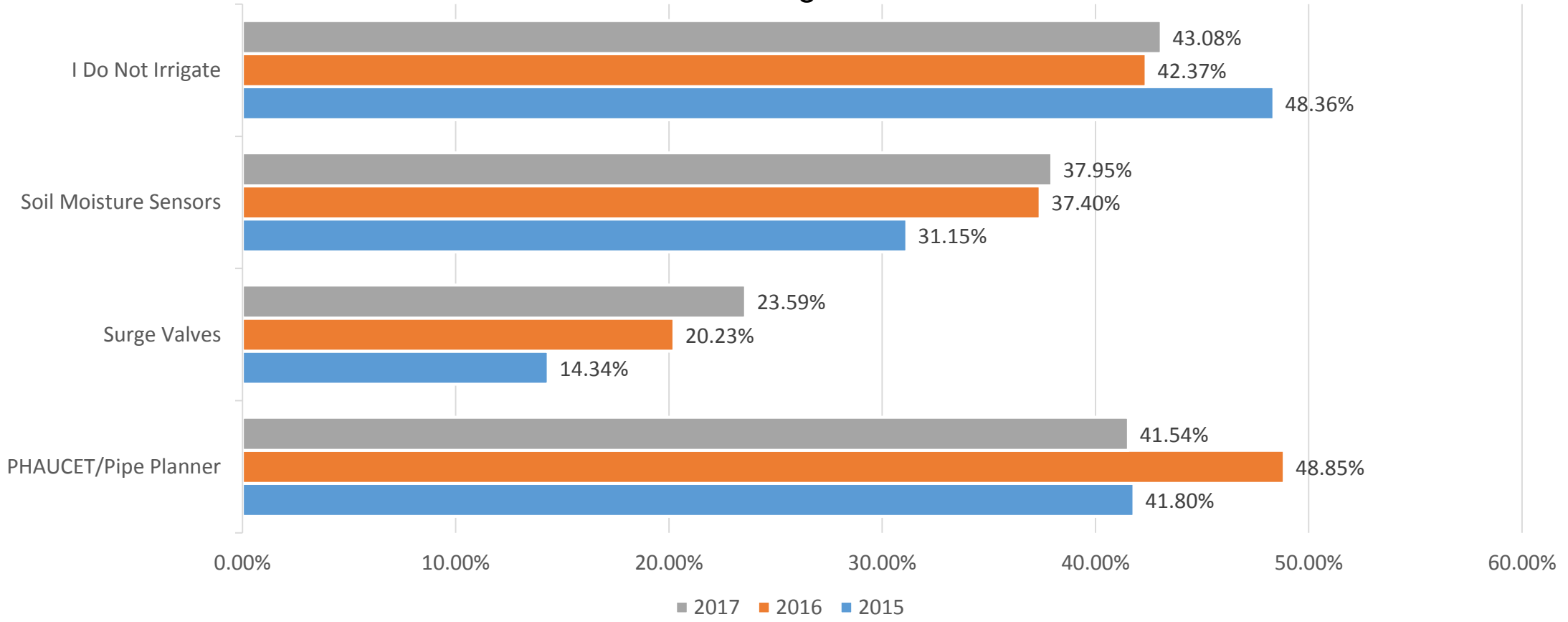
Fifty percent of participants don't know if they have nematodes present in their fields.



Q10: What nematodes are present in your fields?

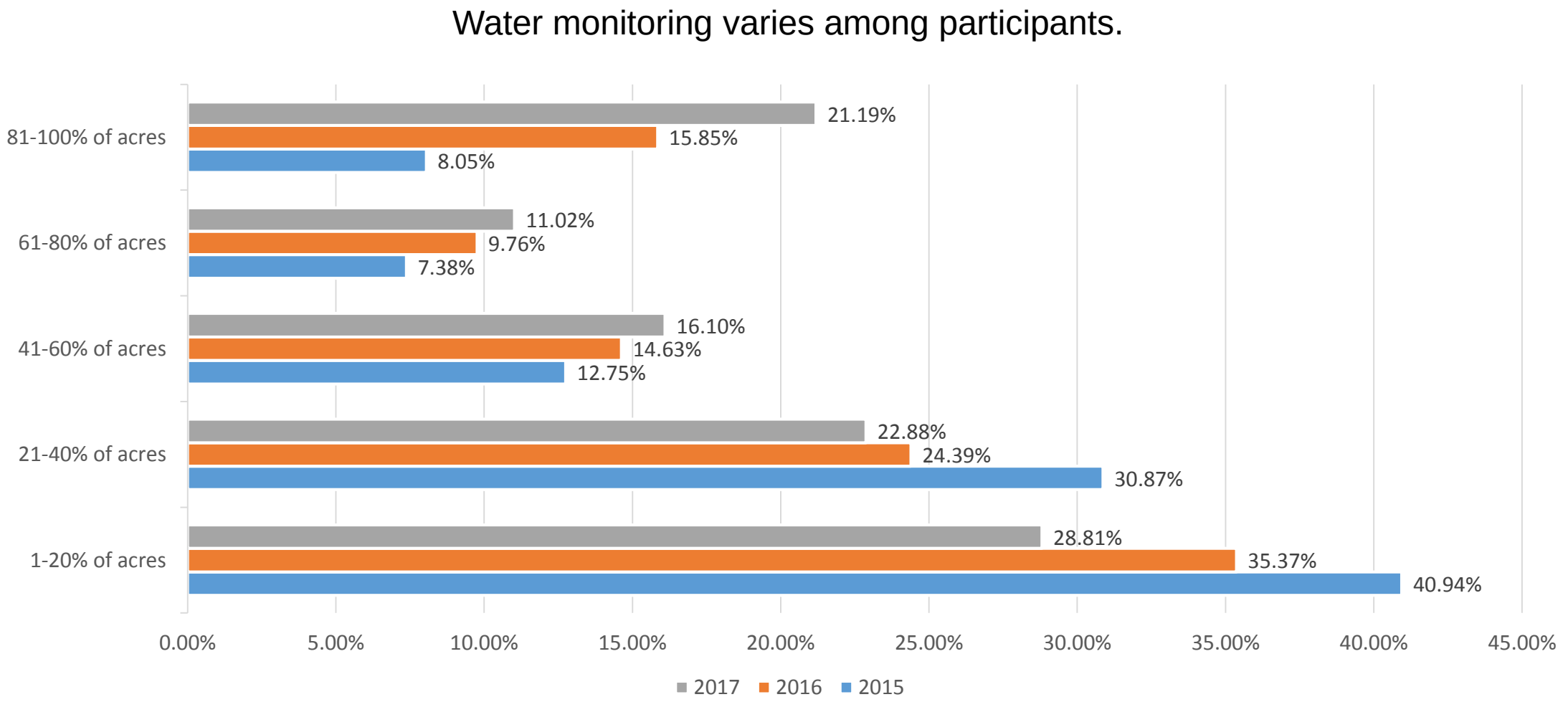
Irrigation

Forty-two percent of participants use PHAUCET/Pipe Planner while another 43 percent do not irrigate.



Q11: Do you use any of the following on your farm?

Irrigation Monitoring (n=118)



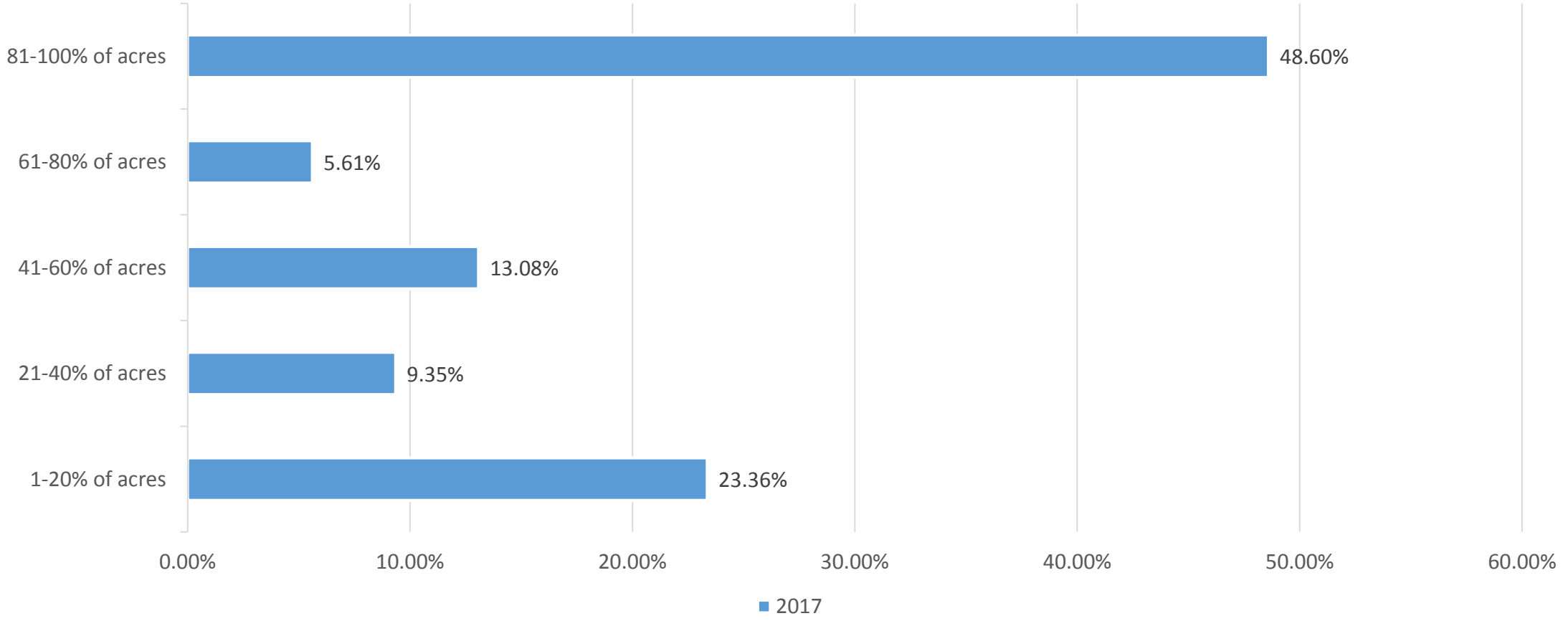
OSBORNBARR

Q12: If you irrigate, on what percentage of acres do you monitor your water use with well or flow meters?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Use of PipePlanner (n=107)

PipePlanner is utilized on 81-100 percent of acres by nearly half of participants.



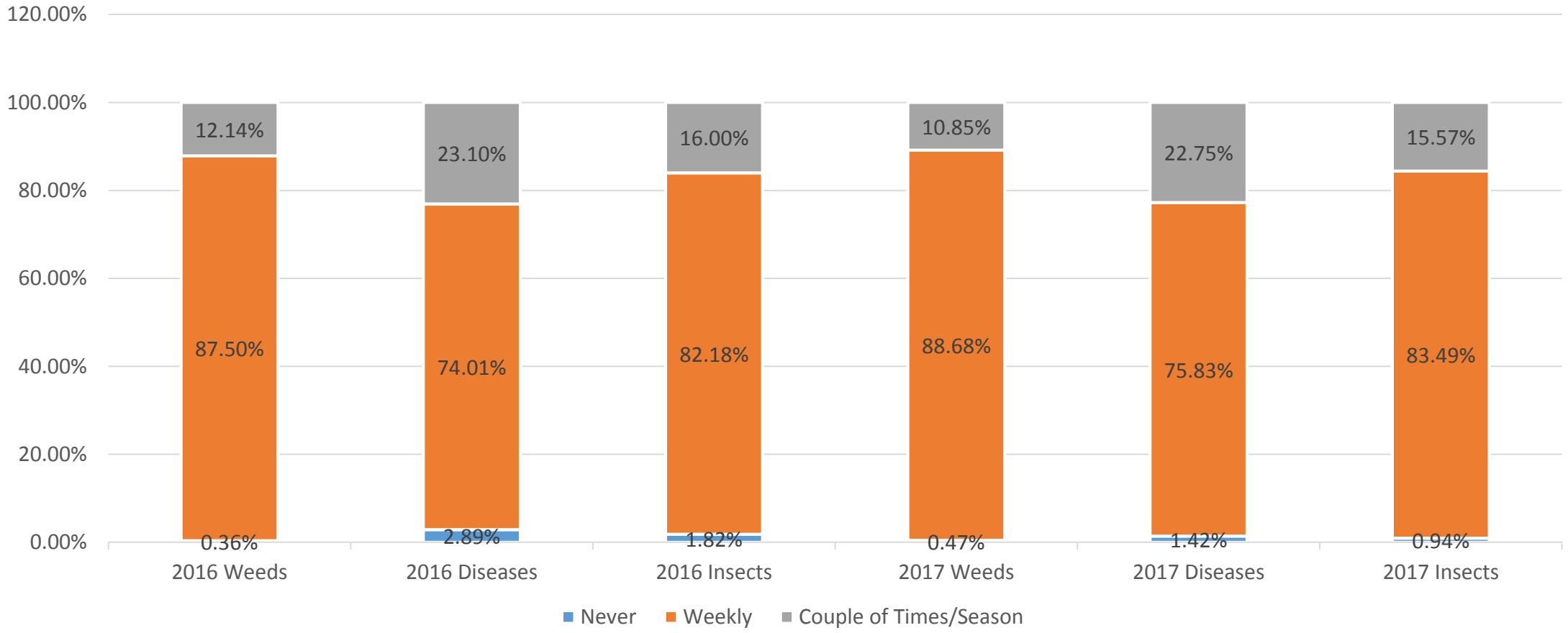
OSBORNBARR

Q13: If you irrigate, on what percentage of irrigated acres do you implement PipePlanner?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Frequency of Field Scouting

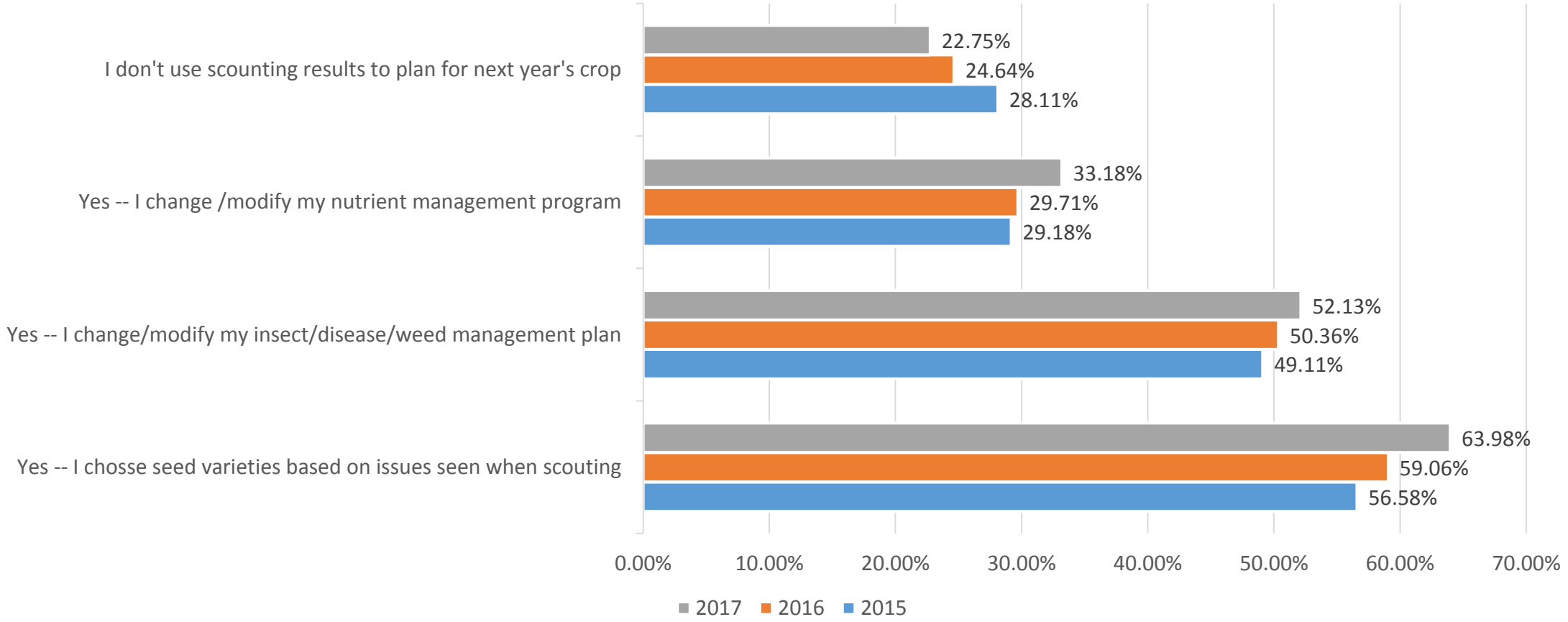
.The majority of participants scout fields on a weekly basis.



Q14: How often do you or someone on behalf of your farm, scout your fields to check for the presence of insects, weeds and diseases during the growing season?

Usage of Field Scouting for Crop Planning

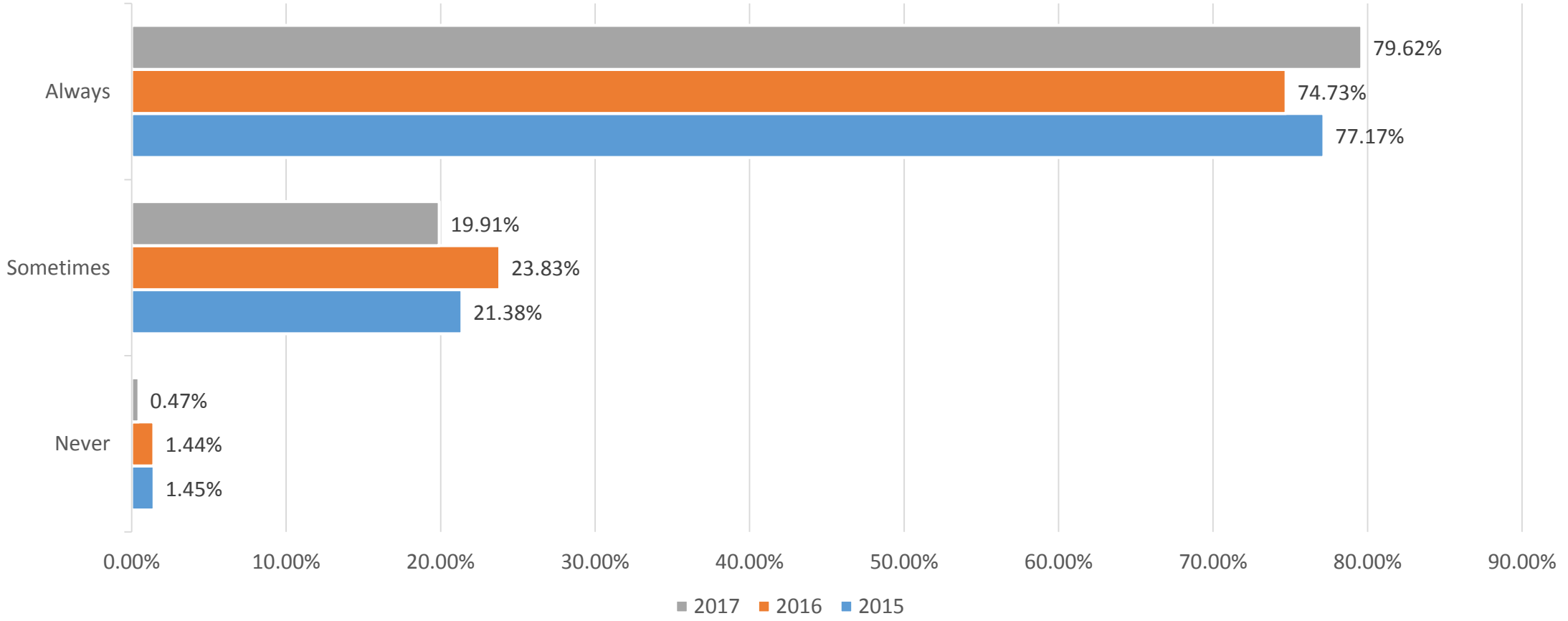
A large increase in participants (64%) choose varieties based on issues when scouting.



Q15: Do you use scouting results to plan for next year's crop (Check all that apply)?

Scouting Protocol

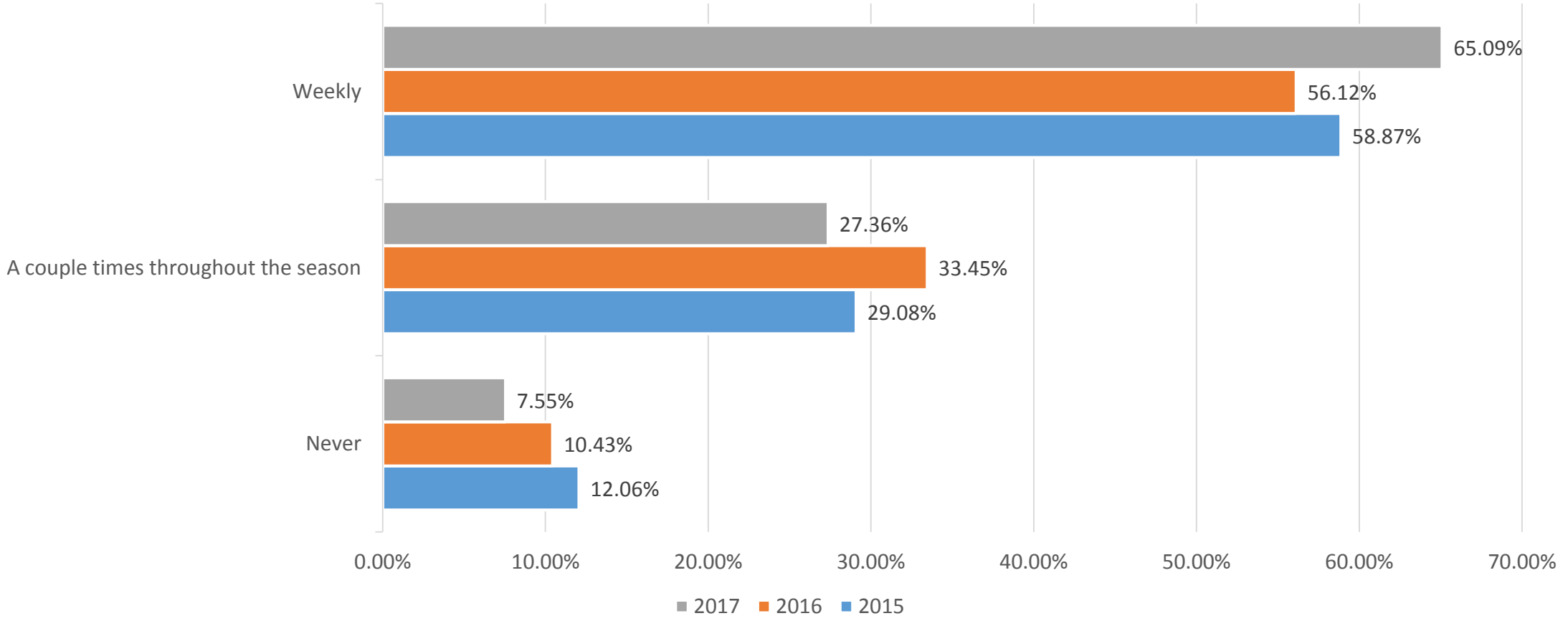
Eighty percent of participants actually walk the fields when scouting.



Q16: When scouting, do you, or someone on behalf of your farm, actually walk the fields?

Use of Sweep Net/Drop Cloth for Insect Measurement

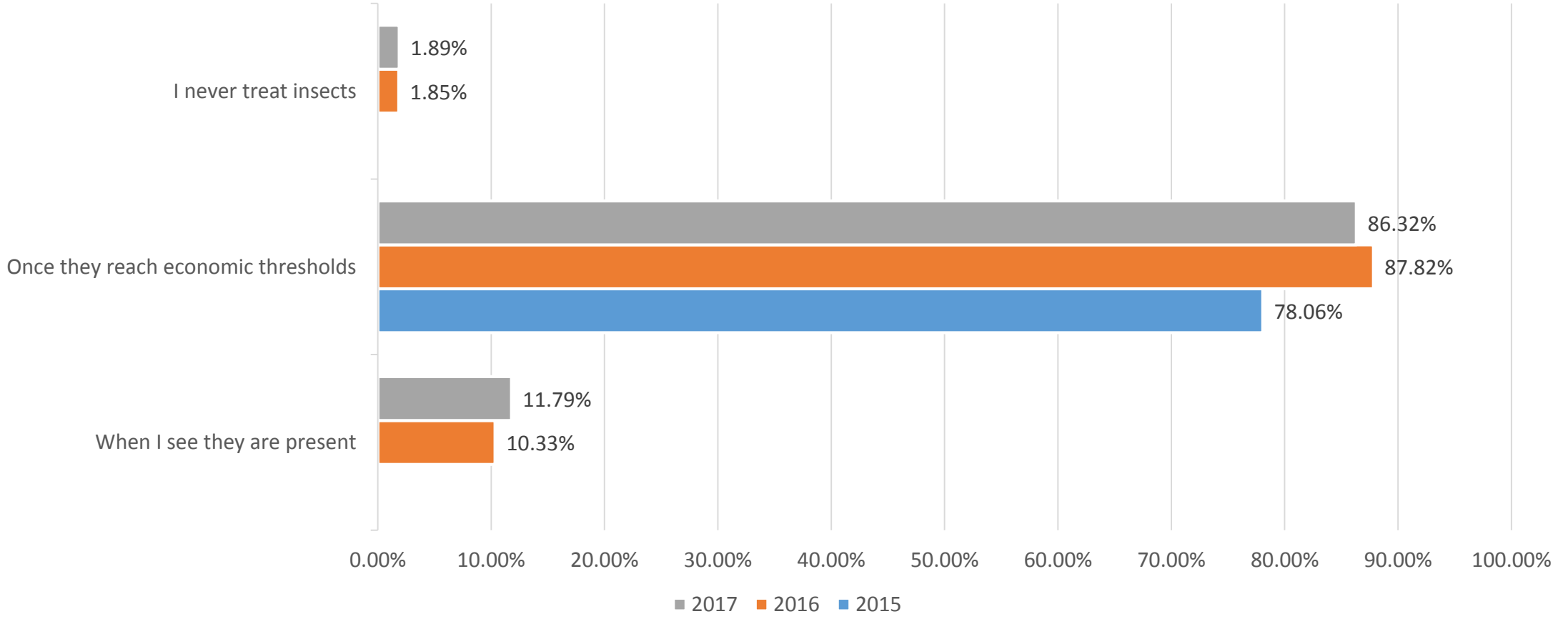
Sixty-five percent of participants use a sweep net/drop cloth to measure the amount of insects on a weekly basis.



Q17: Throughout the growing season, how often do you, or someone on behalf of your farm, use a sweep net or drop cloth to measure the amount of insects in a field?

Insect Treatment Scheduling

Eighty-six percent of participants treat for insects when they reach economic thresholds.



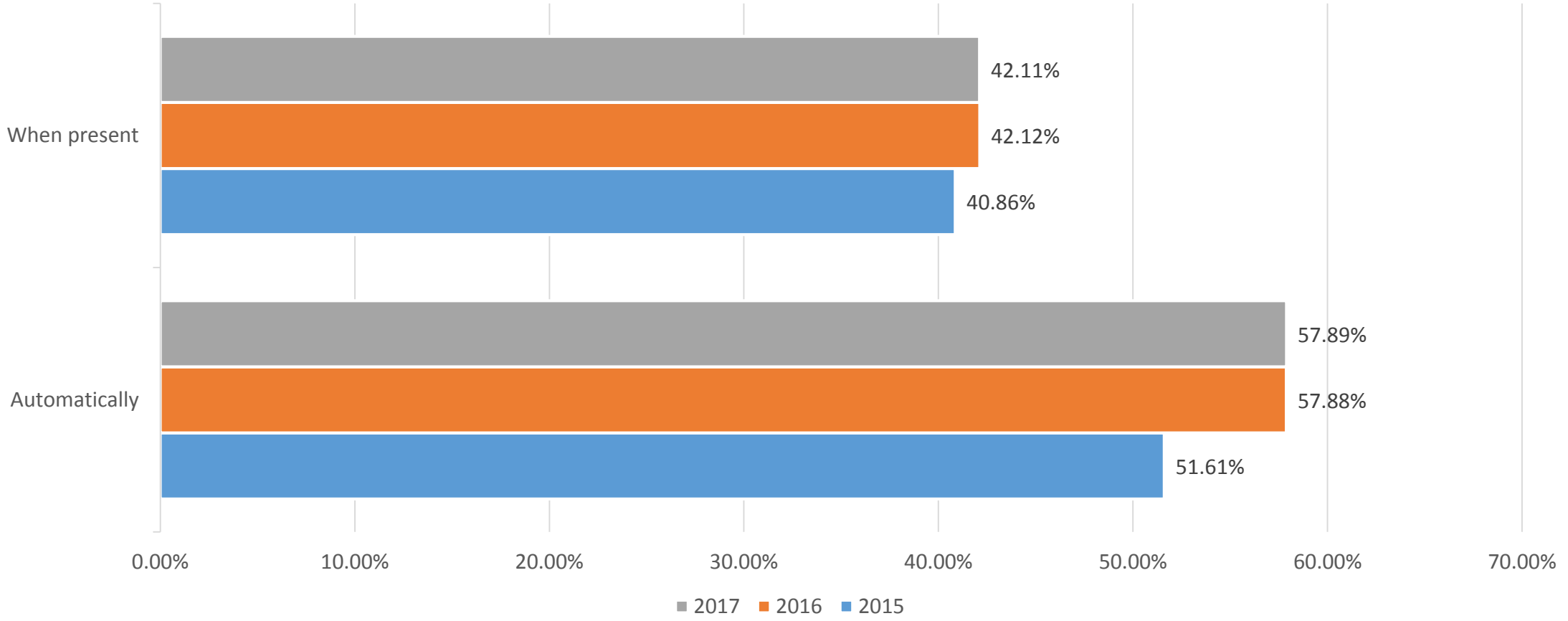
OSBORNBARR

Q18: When do you treat for insects?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Fungicide Application

Fifty-eight percent of participants are applying fungicides automatically.



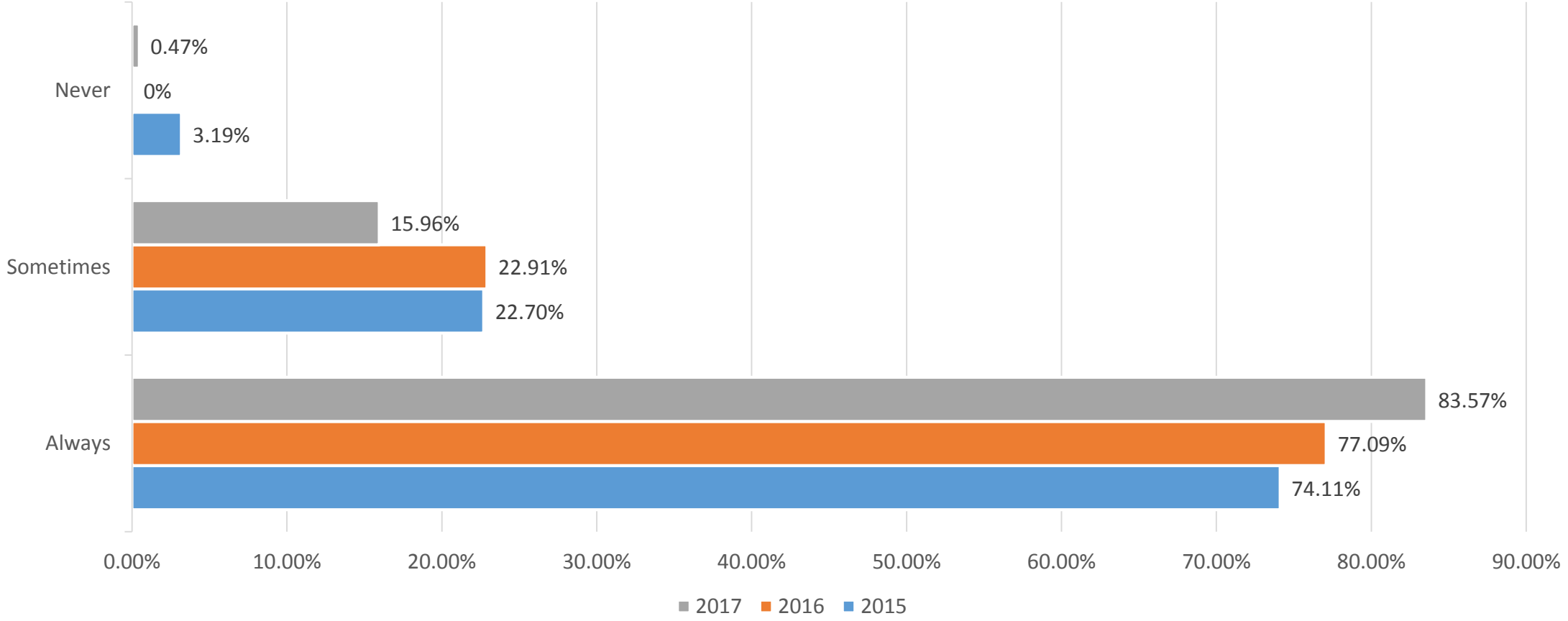
OSBORNBARR

Q19: Are you applying fungicides automatically, or only when diseases are present?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Fungicide/Insecticide/Herbicide Application Rates

Eighty-four percent of participants always use the full labeled rate when applying fungicides, insecticides or herbicides.



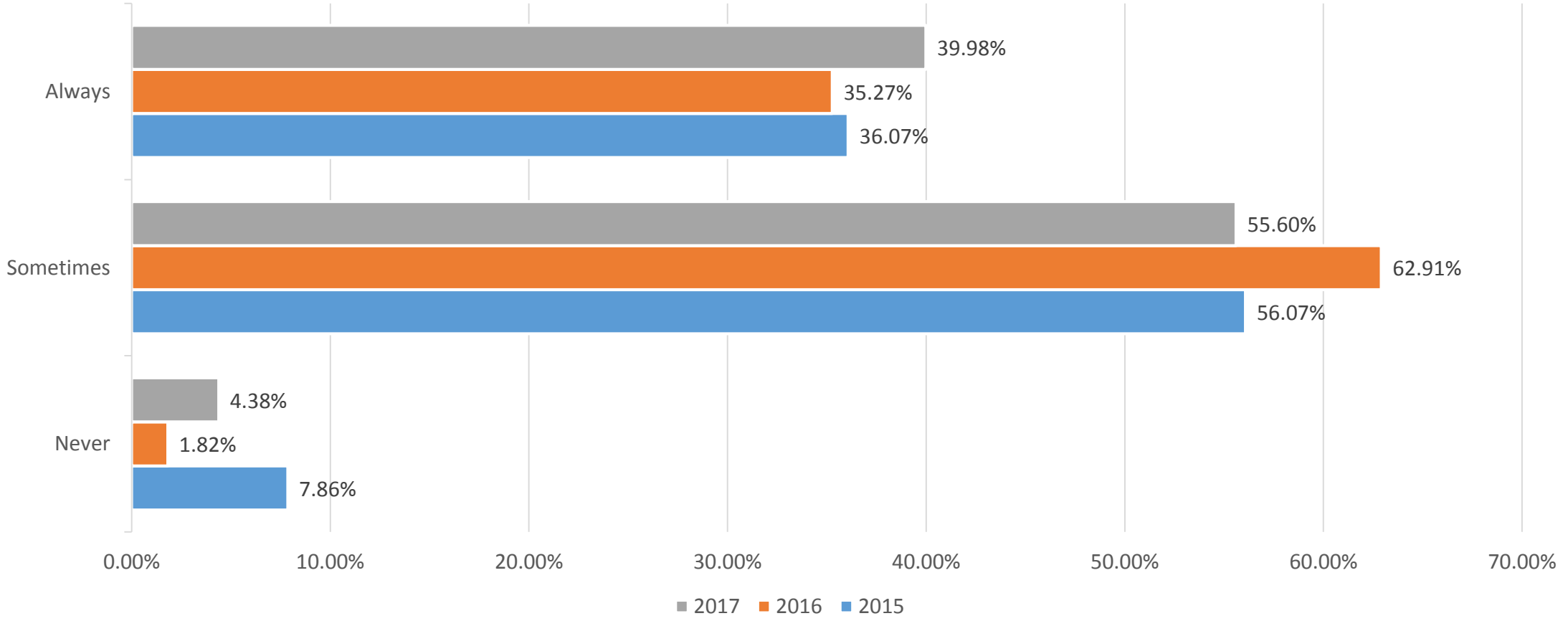
OSBORNBARR

Q20: When applying fungicides, insecticides or herbicides, do you use the full labeled rate?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Fungicide/Insecticide/Herbicide Modes of Action

Forty percent of participants always apply multiple modes of action.



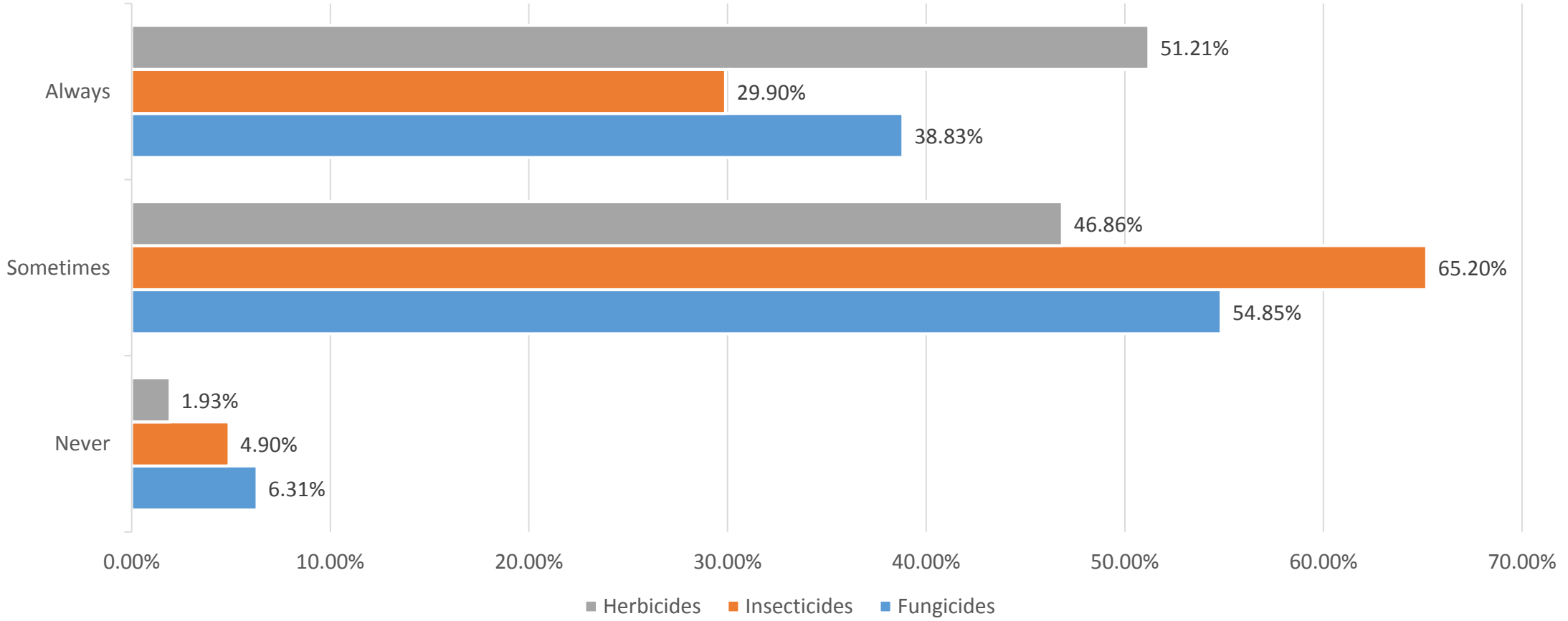
OSBORNBARR

Q21: When applying fungicides, insecticides or herbicides, do you use multiple modes of action?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Fungicide/Insecticide/Herbicide Modes of Action By Category (2017)

Participants use multiple modes of action most with herbicides.



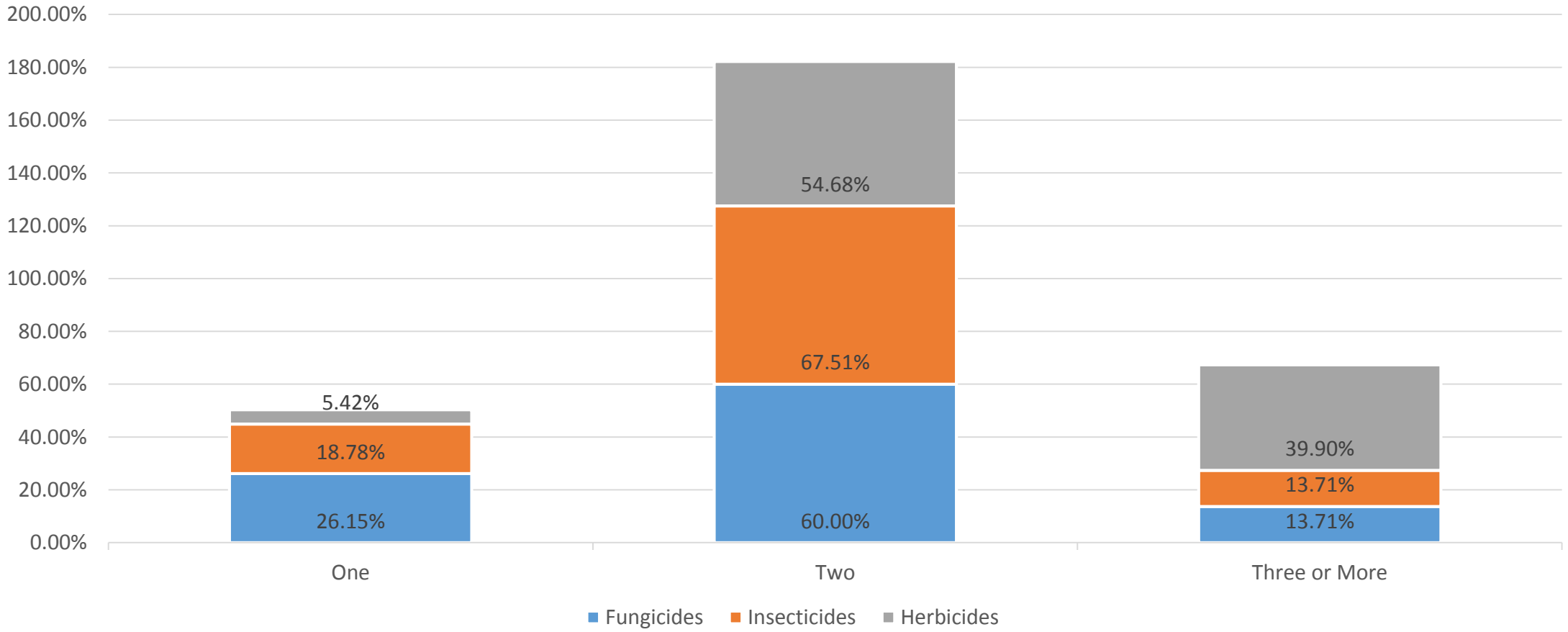
OSBORNBARR

Q22: When applying fungicides, insecticides or herbicides, do you use multiple modes of action?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Multiple Modes of Action (2017)

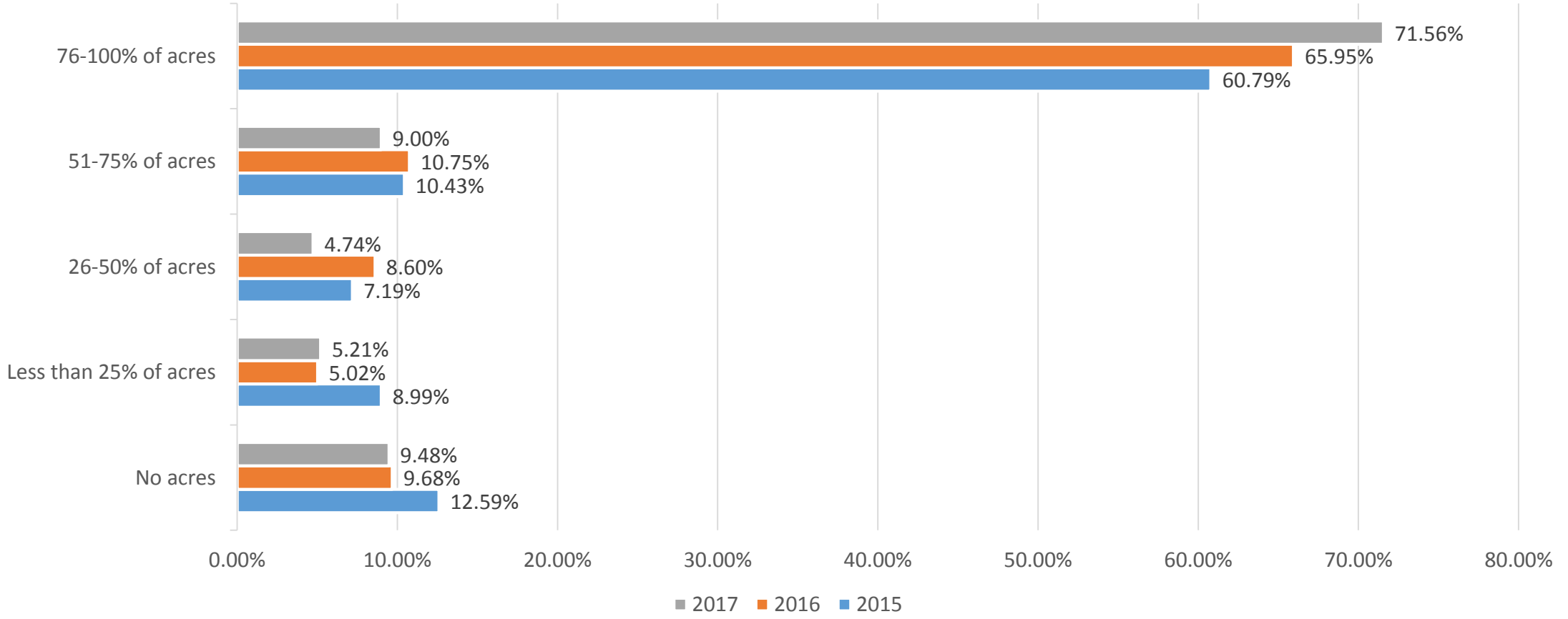
A majority of participants use at least 2 modes of action.



Q22: How many modes and sites of action do you typically use?

Pre-plant/Pre-emergence Herbicide Usage

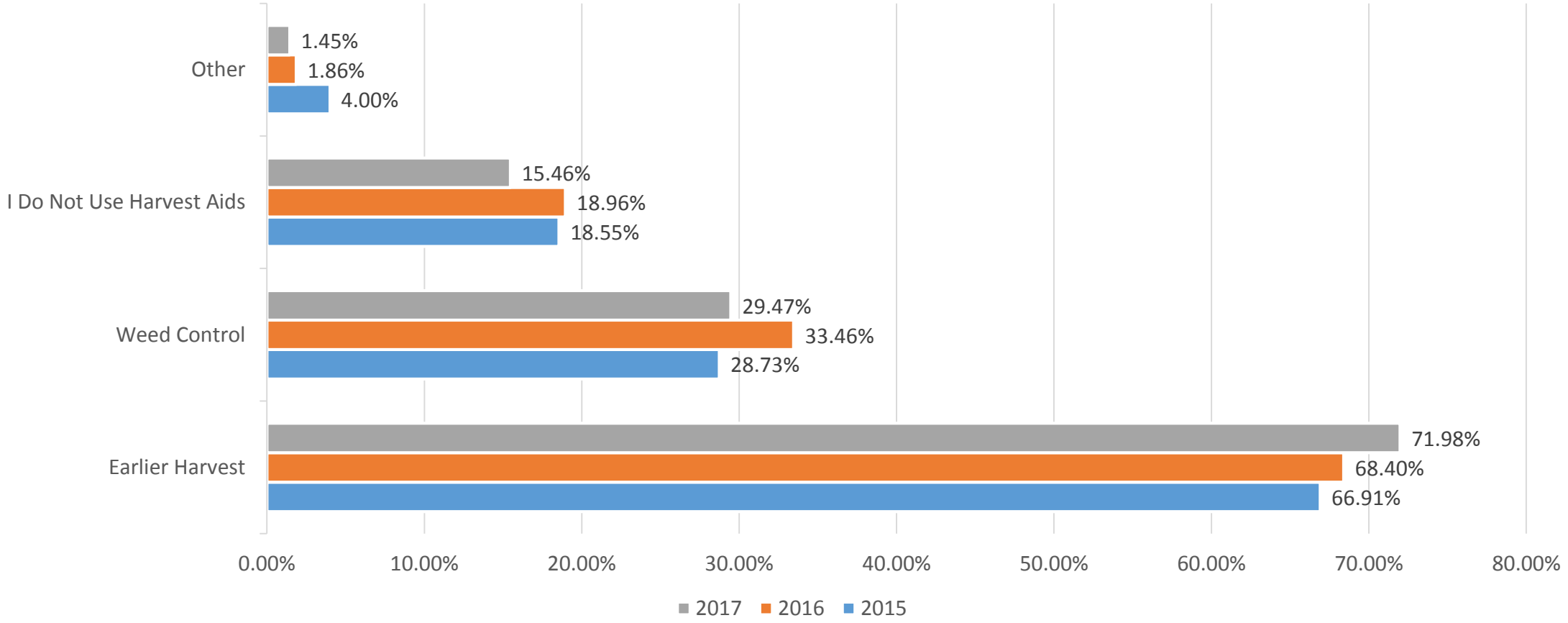
Application of a pre-plant/pre-emergence herbicide has increased to 72 percent.



Q23: On what percentage of your acres do you use a pre-plant or pre-emergent herbicide

Factors for Using Harvest Aids/Desiccants

Seventy-two percent of participants use harvest aids/desiccants for earlier harvest.



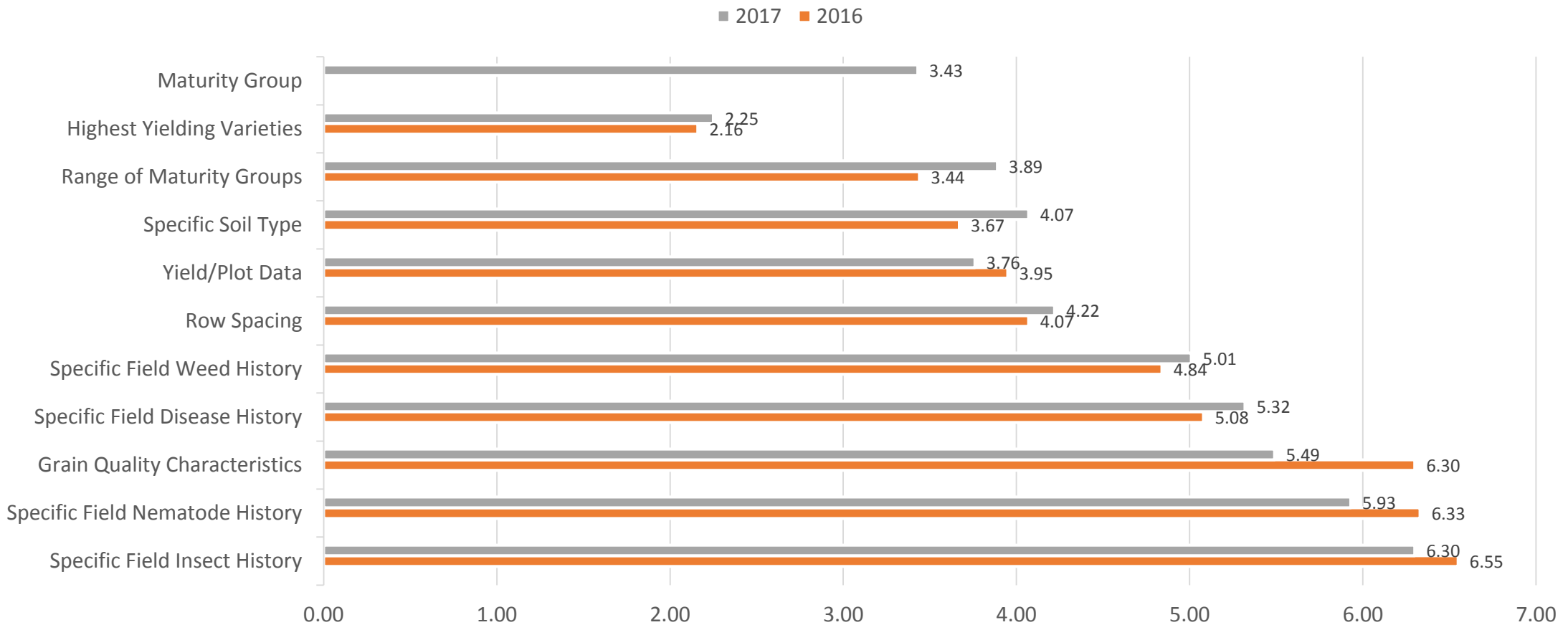
OSBORNBARR

Q24: What factors do you consider when applying harvest aids or harvest desiccants?

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Attributes Important in Selection of Soybean Variety

Participants rank “Highest Yielding Varieties” as most important in choosing soybean varieties.



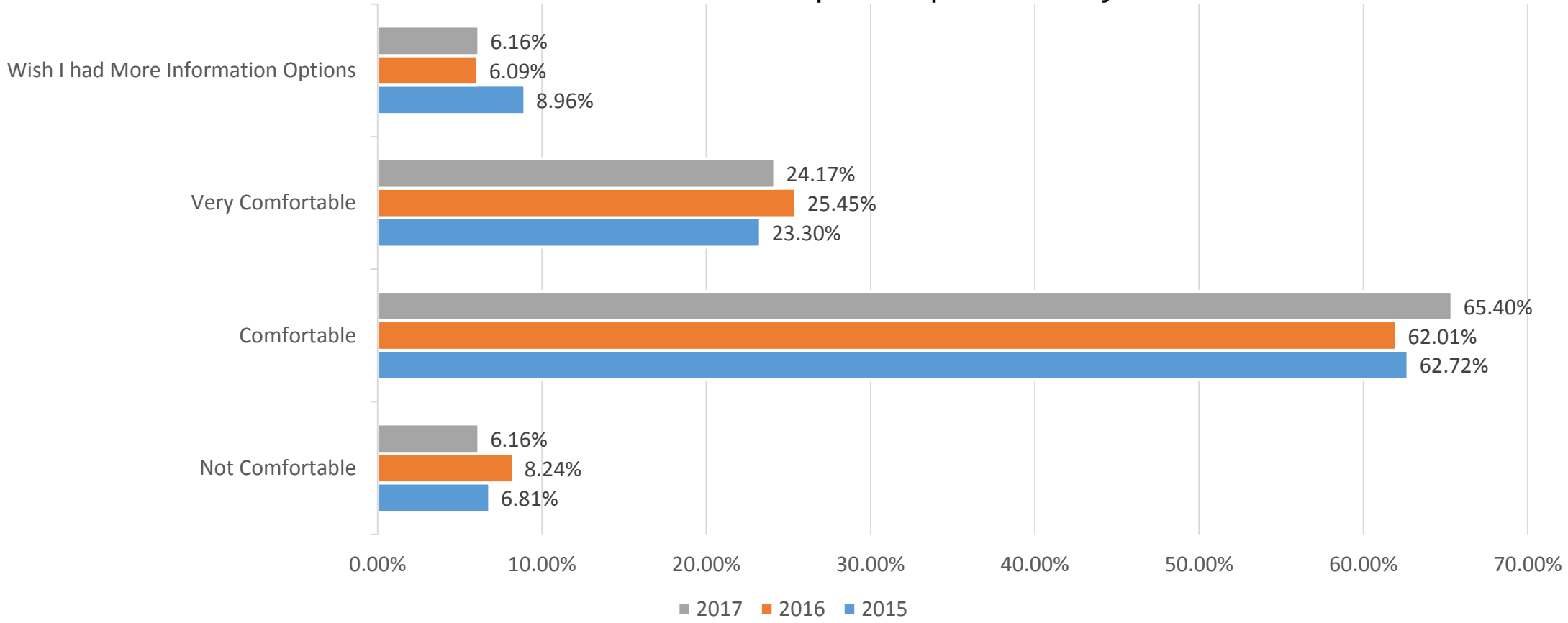
OSBORNBARR

Q25: Using the numbers from 1 to 9, please rank the following in importance when choosing soybeans varieties with “1” being “Most Important” and “9” being “Least Important” (use each number only once).

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Comfort Level With Retailer Recommendations

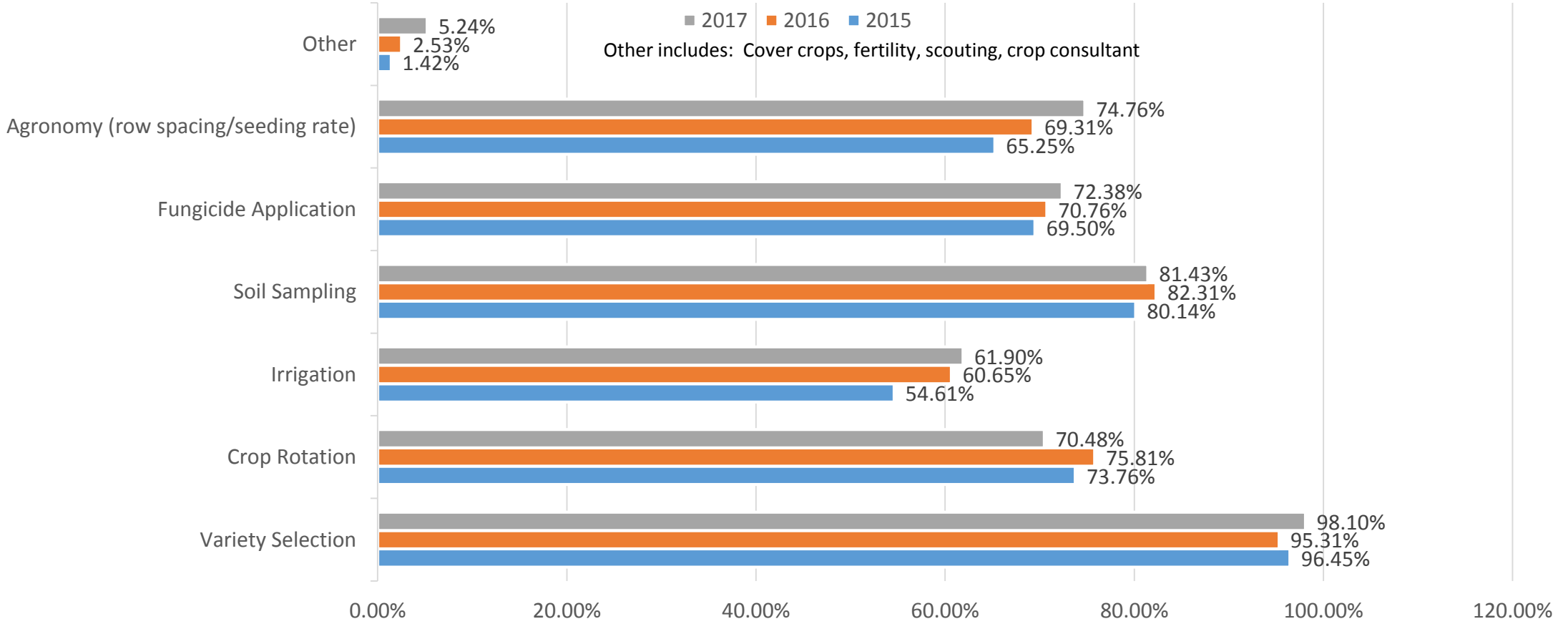
Seventy-one percent of participants are either “comfortable” or “very comfortable” with their ag retailers recommendations to help them produce soybeans.



Q26: How comfortable are you with the recommendations you receive from ag retailers to help you produce soybeans?

Methods Used to Increase Soybean Yields

Ninety-eight percent of participants are selecting varieties to increase soybean yields.



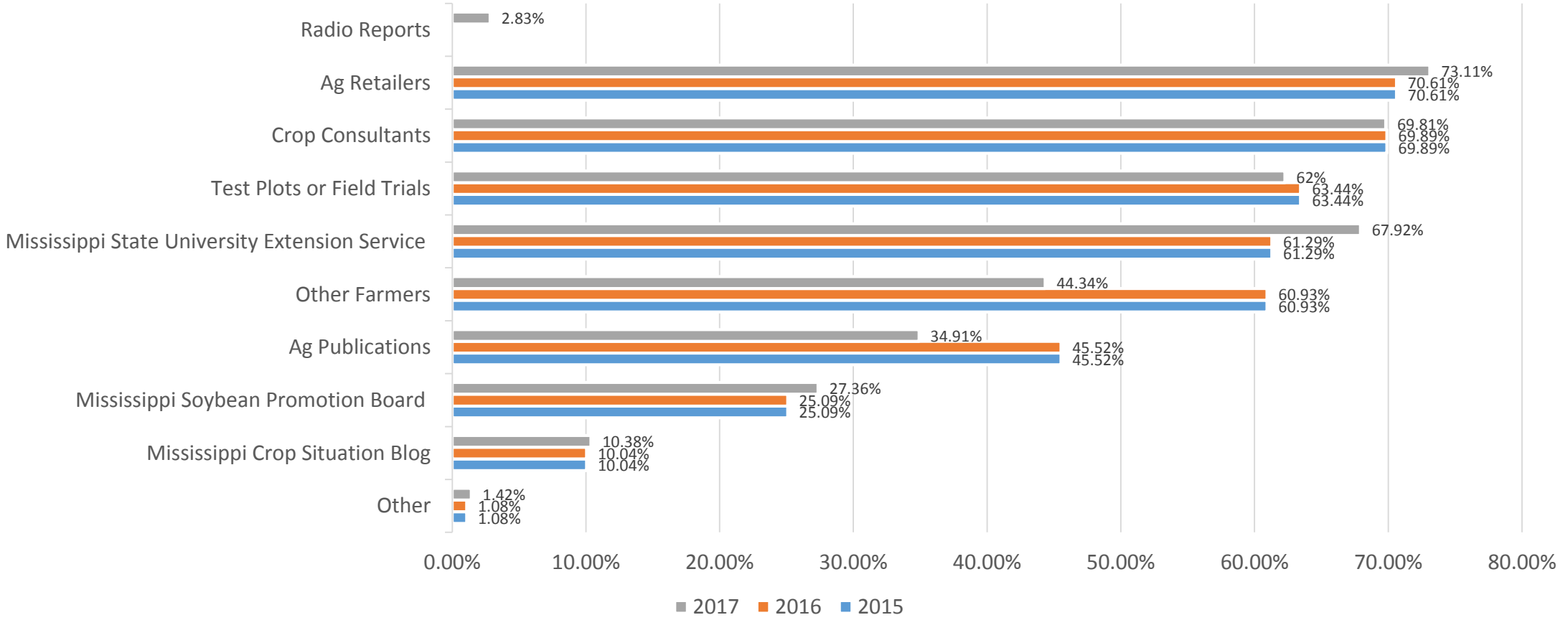
OSBORNBARR

Q27: What things are you doing on your farm to increase soybean yields? (Check all that apply)

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Sources for Soybean Production Information

Participants seek soybean production information from a variety of sources.



Q28: What sources do you use to assist you in making soybean production decisions? (Please check all that apply)

OSBORNBARR

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Top Soybean Production Issues

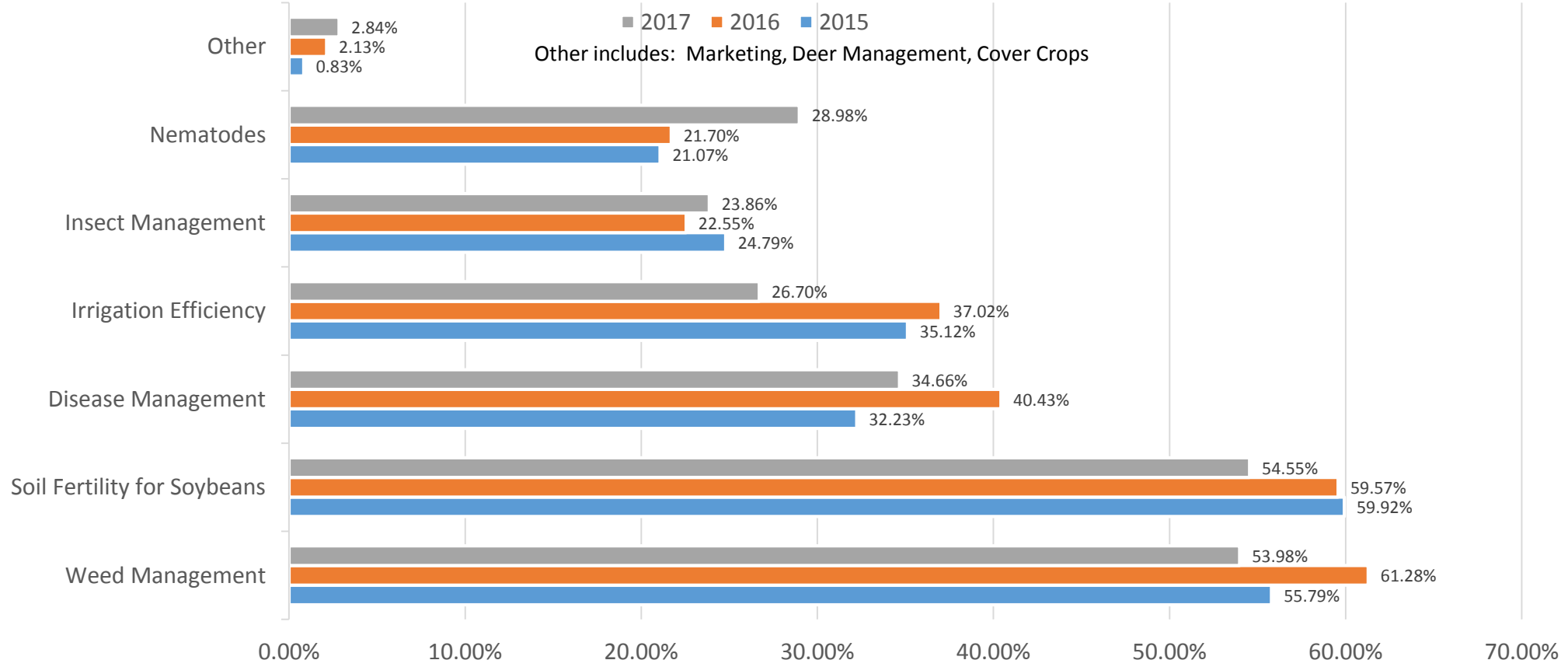
Weed control, particularly herbicide resistance is participants' top production issue.

Top Mentions – In Ranking Order:

1. Weed Control/Resistance *(Dominant Mention)*
2. Yield
3. Weather/Moisture
4. Disease
5. Irrigation Management
6. Input Costs
7. Insects
8. Profitability/Market Prices
9. Lodging
10. Animal Damage

More Information Topics

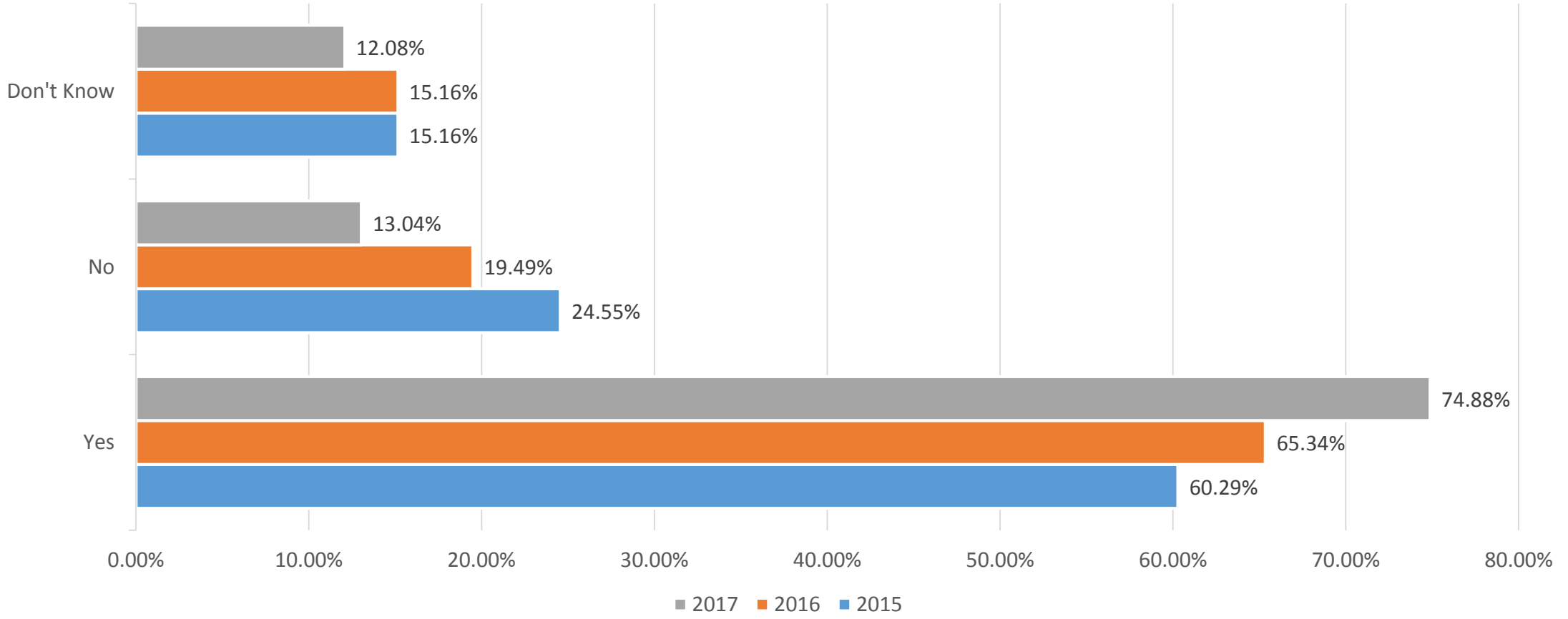
Soil Fertility and Weed Management were the most mentioned topics by participants.



Q30: Is there a topic which you wish you had more information on? (Check all that apply)

Recall of MSPB Information

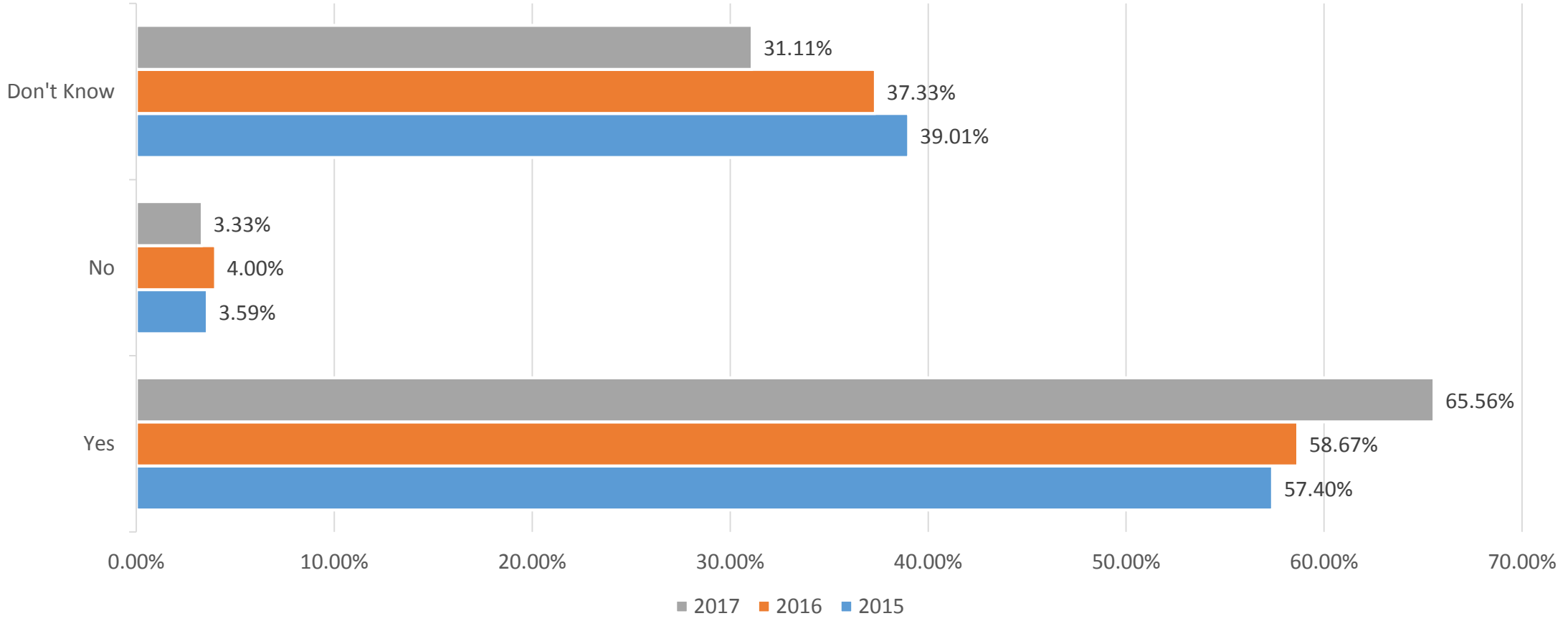
A substantial increase (75%) of participants recall receiving MSPB information.



Q31: Do you recall receiving information from MSPB?

Helpfulness of MSPB Information Received (n=180)

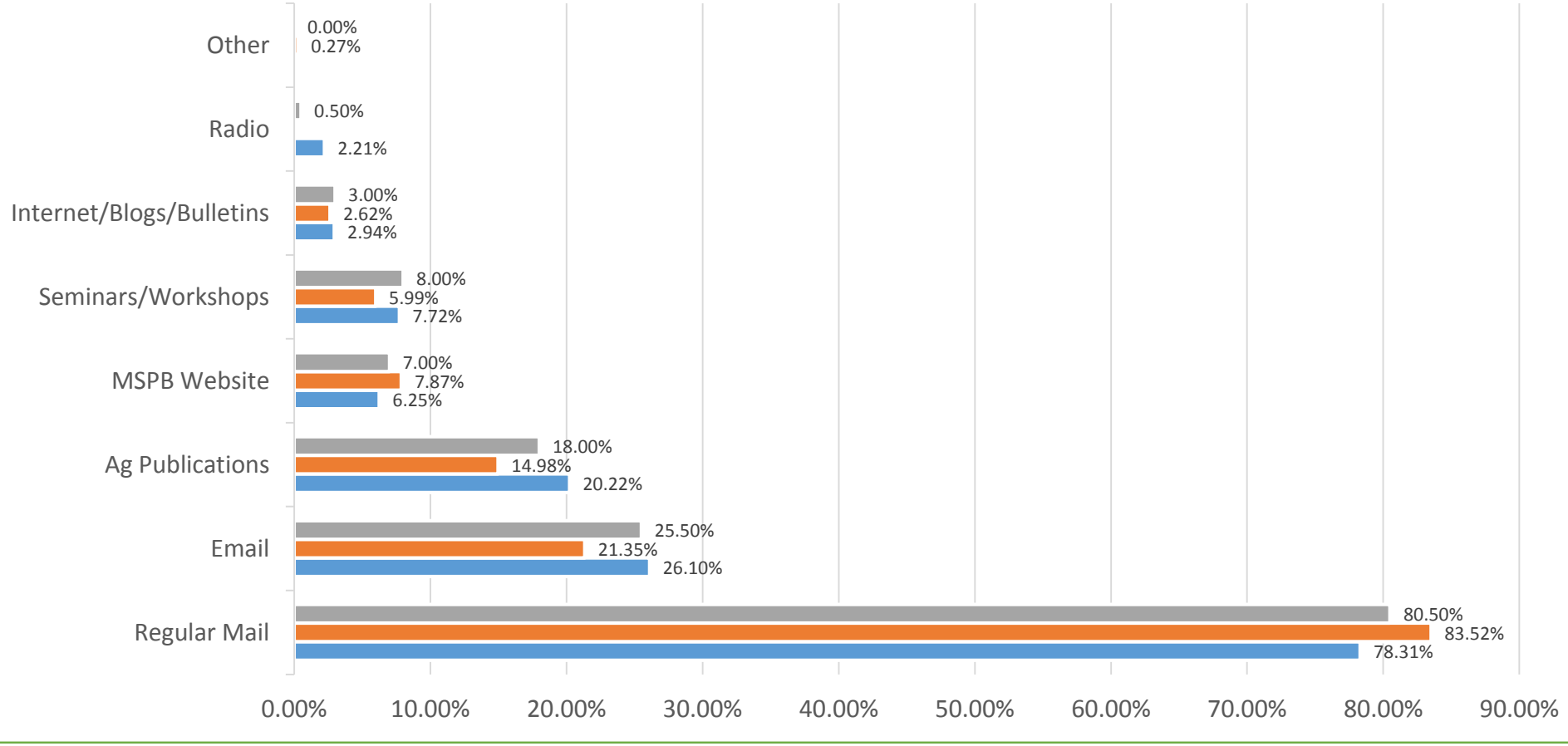
There is a substantial increase in participants who recall receiving MSPB Information found it helpful.



Q32: If you recall receiving information, did you find it helpful for your operation?

Communication Preference

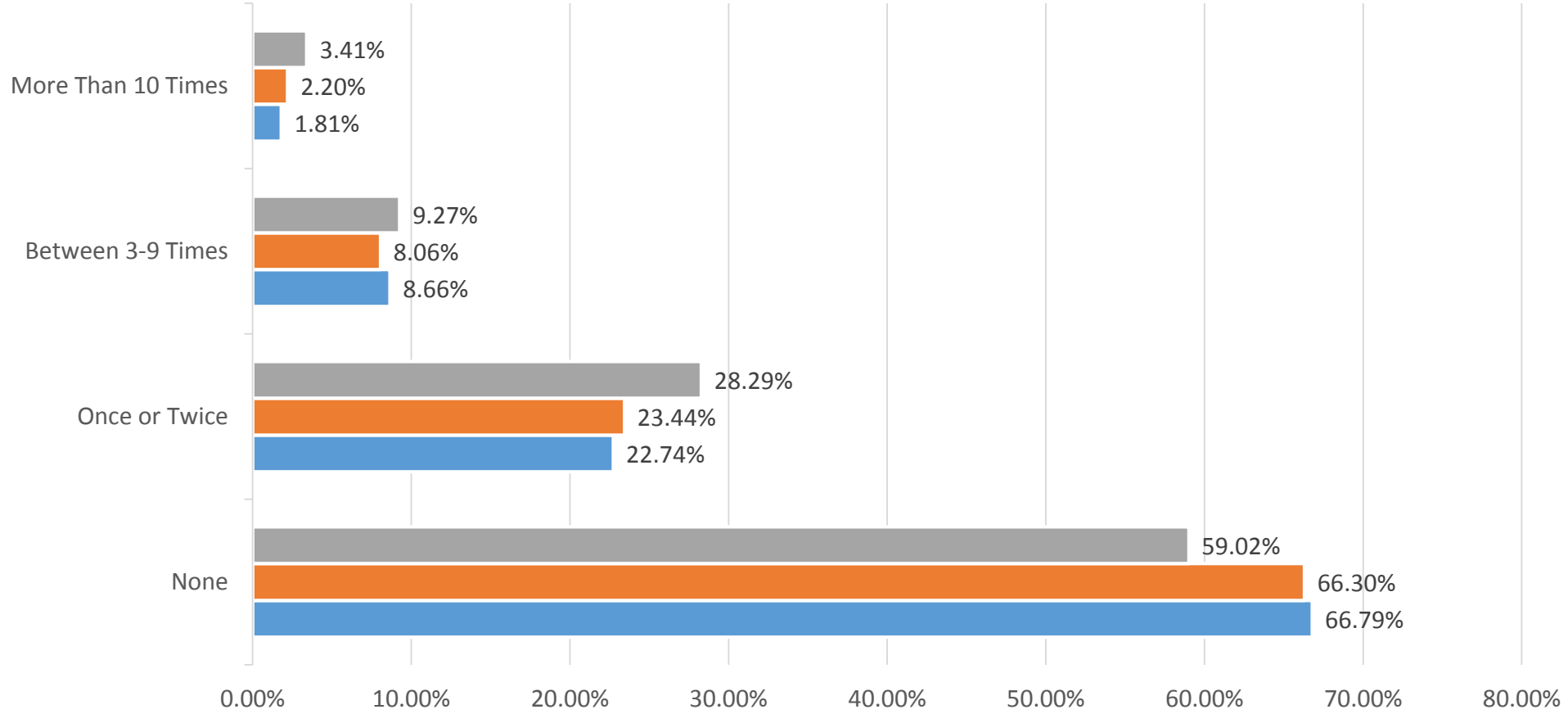
Regular mail remains the preference for soybean production information.



Q33: How do you like to receive soybean production information from the MSPB?

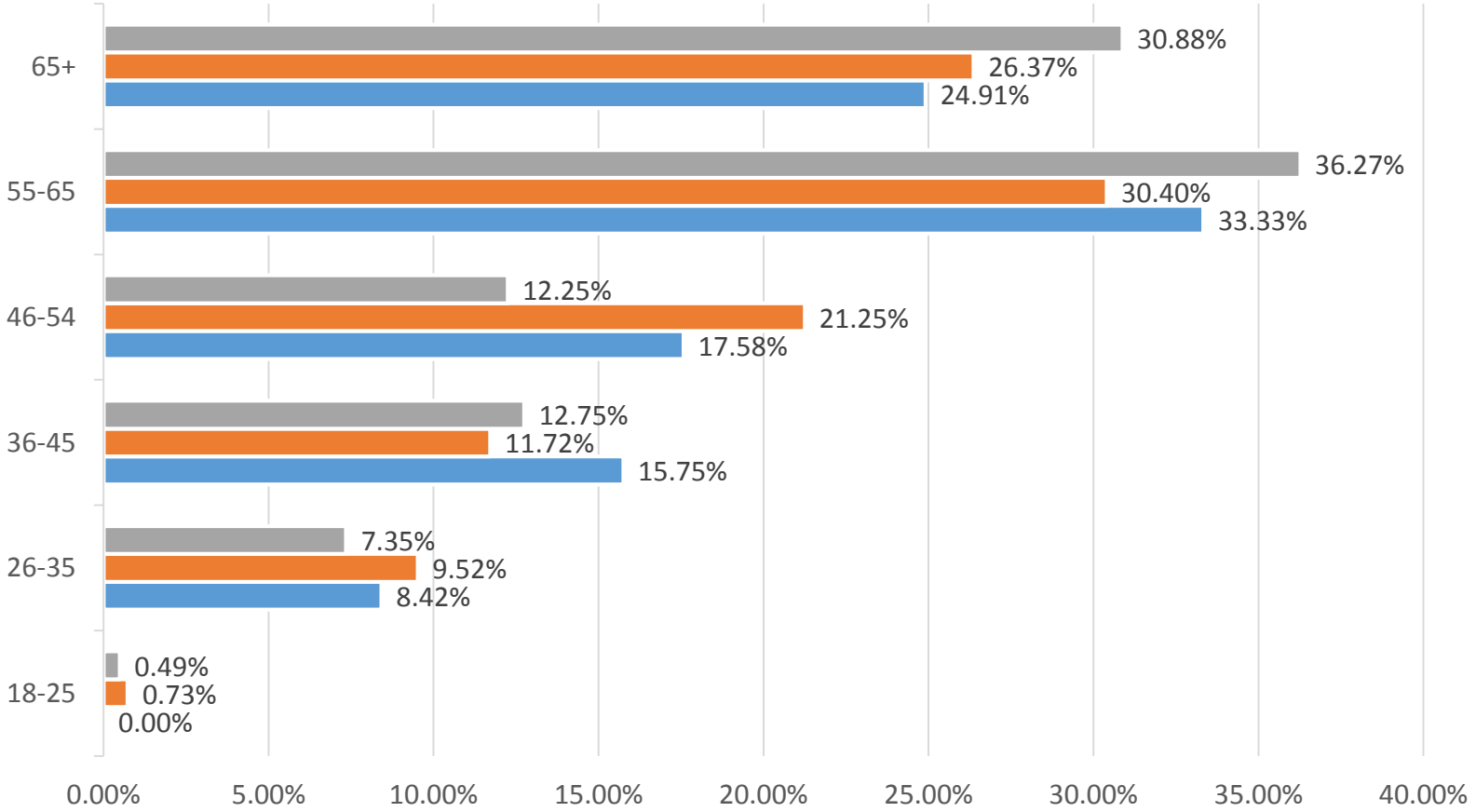
MSPB Website Use

There is an increase in MSPB website visits compared to previous years.



Q34: How many times have you been to the MSPB website, www.mssoy.org in the past year?

Age of Participants



OSBORNBARR

Q35 Your Age:

MSPB MISSISSIPPI SOYBEAN PROMOTION BOARD

Total Acres/Soybean Acres Farmed (2017)

.

Total Average Acres:	2,363.3
Total Average Soybean Acres:	1,486.7