



MSPB'S SOYBEAN MANAGEMENT PRACTICES SURVEY–2018 RESULTS

OsbornBarr, MSPB's communications contractor, commissioned a survey of Mississippi soybean producers to determine practices they used in producing a crop in 2018, and the sources they depend on for production information.

In the following narrative, participation in and responses to the 2018 survey are shown, with responses to the same queries in the 2017, 2016, and 2015 surveys, respectively, shown in parentheses.

2,000 (2,000, 1,900 and 1,900) surveys were distributed by mail to Mississippi soybean producers, and 284 (262, 280, and 283) completed surveys were returned. Only 245 were used in the analysis (39 were from retired, deceased, or no-longer-active-in-farming participants), for a net participation of 12.25% (10.6, 14.7, and 14.9). Survey participants in 2018 were from 43 Mississippi counties, with the largest number from Delta counties. Participants farm an average of 1,495 total acres and 756 soybean acres. 58% of the participants farm over 1,000 soybean acres.

General Crop Production

59% (66, 66, and 69) of responding producers rotate soybeans with another crop on an annual basis, and 85% (88, 90, and 86) of those growers rotate with corn. Rice and milo are the next most rotated crops with soybeans at 18% (21, 19, and 18) and 6% (14, 11, and 23), respectively.

37% (37, 35, and 42) of the respondents planted in rows that were less than 30 in. wide, while 49% (41, 42, and 40) planted in rows that were >30 in. wide. 26% (19, 19, and 18) still planted in 38-inch-wide single rows. 26% (28, 24, and 20) planted in twin rows that were on 38-in. centers. Thus, about two-thirds of respondents in all years planted in narrow or twin rows. **However, the percentage of survey respondents who plant in wide rows has increased.**

In 2018, 2017, and 2016, yield is the trait rated most important by respondents when selecting a variety, with maturity group/range of maturity groups and specific soil type of a field to be planted to a variety ranking as second and third most important.

Planting date (added in 2018 survey) was used by 92% of participants to increase yield. 96% (98, 95, and 96) of respondents viewed variety selection as the most important factor for increasing soybean yields, while soil sampling at 83% (81, 82, and 80), crop rotation at 65% (71, 76, and 74), agronomy factors such as row spacing and seeding rate at 73% (75, 69, and 65), and fungicide application at 65% (72, 71, and 70) were also viewed as significant factors to consider for yield increase.

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

Soil Factors

58% (58, 62, and 61) of the respondents always test soil for fertility at least every 3 years. 57% (58, 57, and 59) collect soil fertility samples on most (76-100%) of their acres.

64% (71, 67, and 61) of the respondents know the amounts of nutrients removed from the soil by their soybean crop.

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

42% (48, 49, and 48) of growers know their soil pH every year. This is a slight decline from the previous 3 years.



Irrigation

47% (43, 42, and 48) of the respondents do not irrigate soybeans.

Of those that irrigate, 45% (42, 49, and 42) use PHAUCET/Pipe Planner, 21% (24, 20, and 14) use surge valves, and 34% (38, 37, and 31) use soil moisture sensors.

In 2018, nearly half or 47% (49% in 2017) 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% (21, 16, and 8) who use well or flow meters. 48% (52, 60, and 72) of the irrigators monitor their water use on less than 40% of their irrigated acres.

All of these responses indicate that the adoption of water saving technologies by soybean irrigators in Mississippi is stagnant, when MSPB-funded research has proven their worth for both water use efficiency and economic reasons.

Insect and Disease Factors

71% (76, 74, and 77) of the respondents check or scout fields for presence of major diseases on a weekly basis, and 79% (84, 82, and 83) check for insects on a weekly basis.

74% (80, 75, and 77) of the weekly scouting is done by walking the fields.

48% (52, 50, and 49) of the respondents use scouting practices to make decisions that will manage weed, insect, and disease pests that are present.

57% (58, 58, and 52) of responding growers automatically apply a fungicide to their soybean crop, whereas 43% (42, 42, and 41) apply fungicides only

when diseases are present.

57% (65, 56, and 59) of responding producers use a sweep net or drop cloth to make weekly checks for insect presence.

77% (86, 88, and 78) of producers treat for insects when their numbers reach economic thresholds.

53% (64, 59, and 57) of the respondents use scouting results to choose varieties for next year's crop.

Nematode Factors

55% (50, 54, and 41) of the respondents do not know if they have nematodes in their fields. Fewer than 17% of those growers who did know of nematode presence in their fields indicated that they knew the specific species present—i.e., soybean cyst, reniform, and root knot. 22% (22, 20, and 37) of the respondents indicated they do not have any nematodes in their fields.

The high percentage of respondents who do not know if they have nematodes in their fields indicates that more producers should become aware of the importance of sampling for the presence of these pests (cyst, reniform, and root-knot).

Weed Factors

80% (81, 77, and 71) of growers use pre-plant or pre-emergence herbicides on more than 50% of their acres, and 72% (72, 66, and 61) use them on more than 75% of their acres. Obviously, producers are following recommendations to use PRE herbicides as part of an integrated weed control program to provide more modes of action to manage the increasing presence of herbicide-resistant weeds.

61% (72, 68, and 67) of responding producers who apply harvest aids or desiccants do so to enhance early harvest, whereas 30% (29, 33, and 29) of respondents apply harvest aids/desiccants for weed control prior to



harvest. 25% (15, 19, and 19) do not apply harvest aids to any of their soybean acres. These data indicate a decrease in harvest aid/desiccant use by producers in 2018.

Resistance Management

82% (84, 77, and 74) of responding growers always apply fungicides, insecticides, and herbicides at the full labeled rate. This indicates that a large number of producers are aware of the importance of this when applying pesticides.

91% (95, 98, and 95) of respondents used 2 or more modes of action (MOA) when applying herbicides for weed control. 36% (40, 27, and 26) used 3 or more MOA's.

In 2018, 51, 46, and 37% (51, 30, and 38 in 2017) of respondents always used multiple MOA's when applying herbicides, insecticides, and fungicides, respectively.

The increased use of multiple modes of action when applying insecticides in 2018 vs. 2017 indicates that producers have become more aware of the importance of this factor in striving for sustainable insect control in soybeans.

Cover Crops

This new category was added to the survey in 2018.

69% of the respondents do not use cover crops. Soil improvement is the major reason for using cover crops by those respondents that use them.

Nearly half of cover crop users use them on less than 25% of their acres.

Production Recommendations

83% (90, 87, and 86) of producers who responded are comfortable or very comfortable with

recommendations made by agricultural retailers.

Ag Retailers [72% (73, 71, and 71)], Crop Consultants [58% (70, 70 and 70)], MSU-Extension [63% (68, 61, and 66)], and Field Trials [57% (62, 63, and 63)] are significant sources of information that producers use for making soybean production decisions. 26% (27, 25, 25) of respondents indicated they use MSPB sources for production information.

Over half of the responders in all years stated that they need more information on soil fertility [59%, (55, 60 and 60)] and weed management [51% (54, 61 and 56)]. A significant number of survey respondents indicated a need for more information on disease management [32% (35, 40, and 32)] and irrigation efficiency [30% (27, 37, and 35)].

58% (75, 65, and 60) of respondents recall receiving production information from MSPB, and 53% (66, 59 and 57) of the respondents found MSPB information helpful.

General Conclusions–2015-2018

Results from all 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 has stagnated, and the adoption percentage is still below 50%. This indicates that 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 voluntary 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 development 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



**WWW.MSSOY.ORG ⇒ MSPB WEBSITE WITH
UP-TO-DATE SOYBEAN PRODUCTION
INFORMATION**

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 survey instruments, 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 these survey results, producers can see the value of the information they 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. 2018,
larryheatherly@bellsouth.net*



2018

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

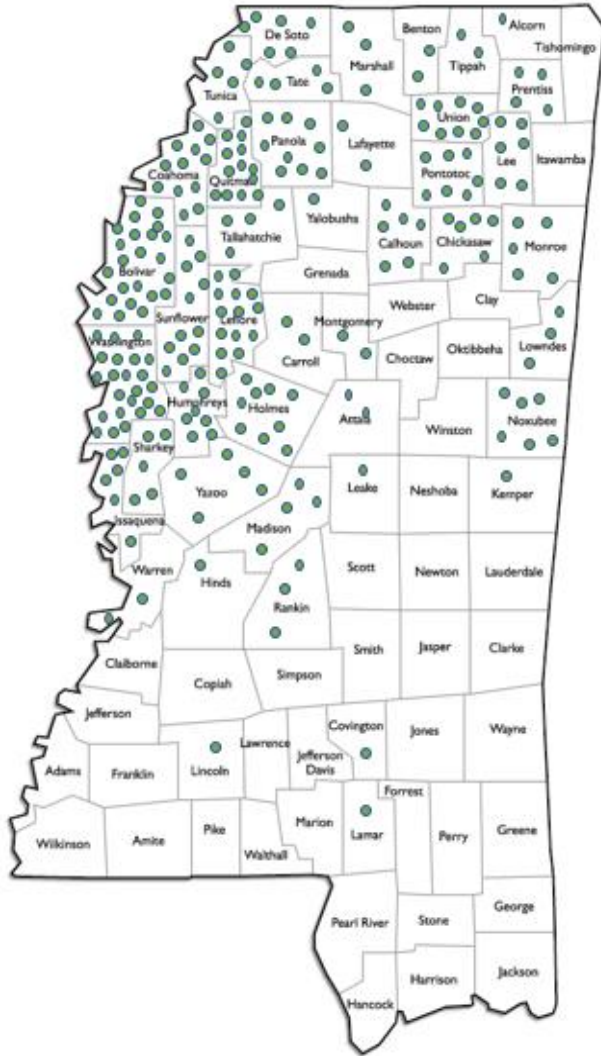
A four-page, 40-question survey was mailed to 2,000 farmers from a database supplied by MSPB. An email invitation was also sent to growers. The survey included a participation incentive of two (2) Walmart \$500 gift cards. Winners were randomly drawn from all completed survey participants.

The mail distribution was conducted in August 2018 and responses were accepted through September 21, 2017.

Study Participation

A total of 269 surveys were returned by mail with 15 online participants for a total of 284. Thirty-nine surveys were not recorded (retired, deceased and/or no longer active in farming) for a net return of 245 or 12.25%.

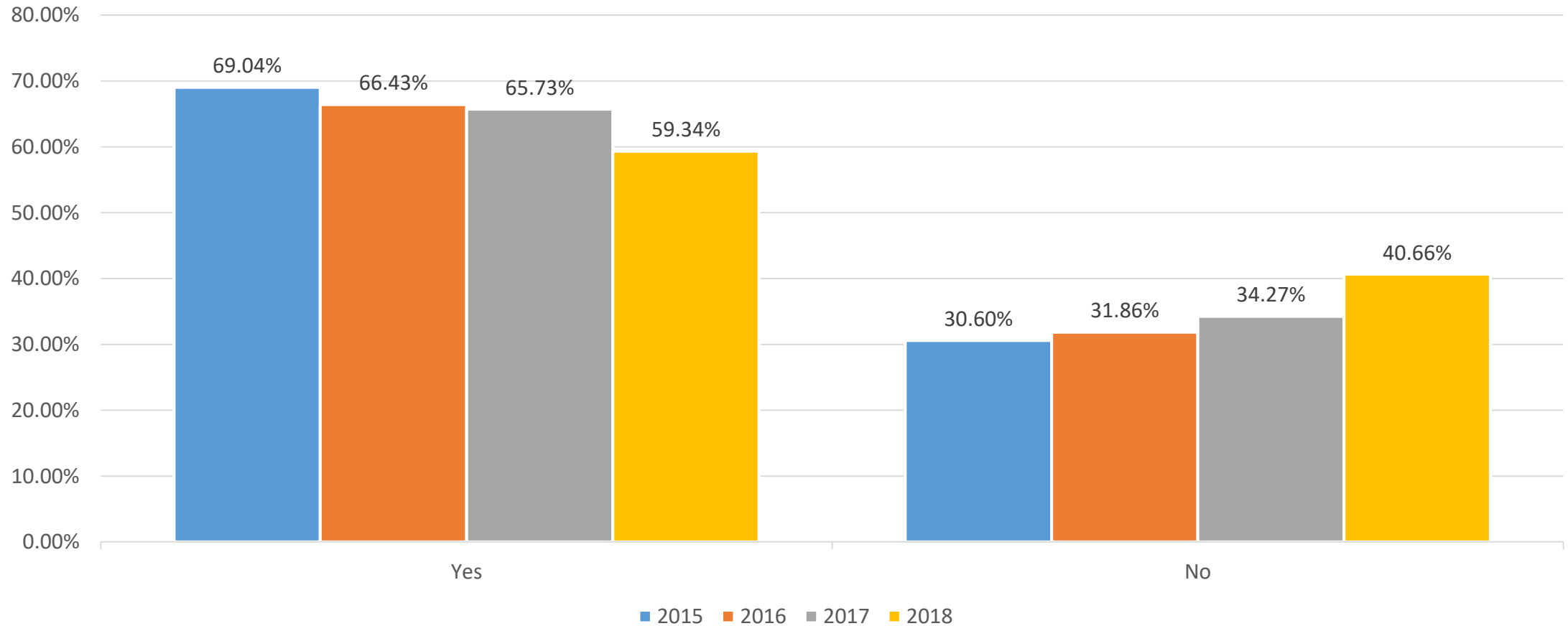
County Location of Participants



- **Participants represent 43 Counties in Mississippi.**
- **Top Counties Include:**
 - Washington
 - Bolivar
 - LeFlore
 - Quitman
 - Coahoma
 - Sunflower

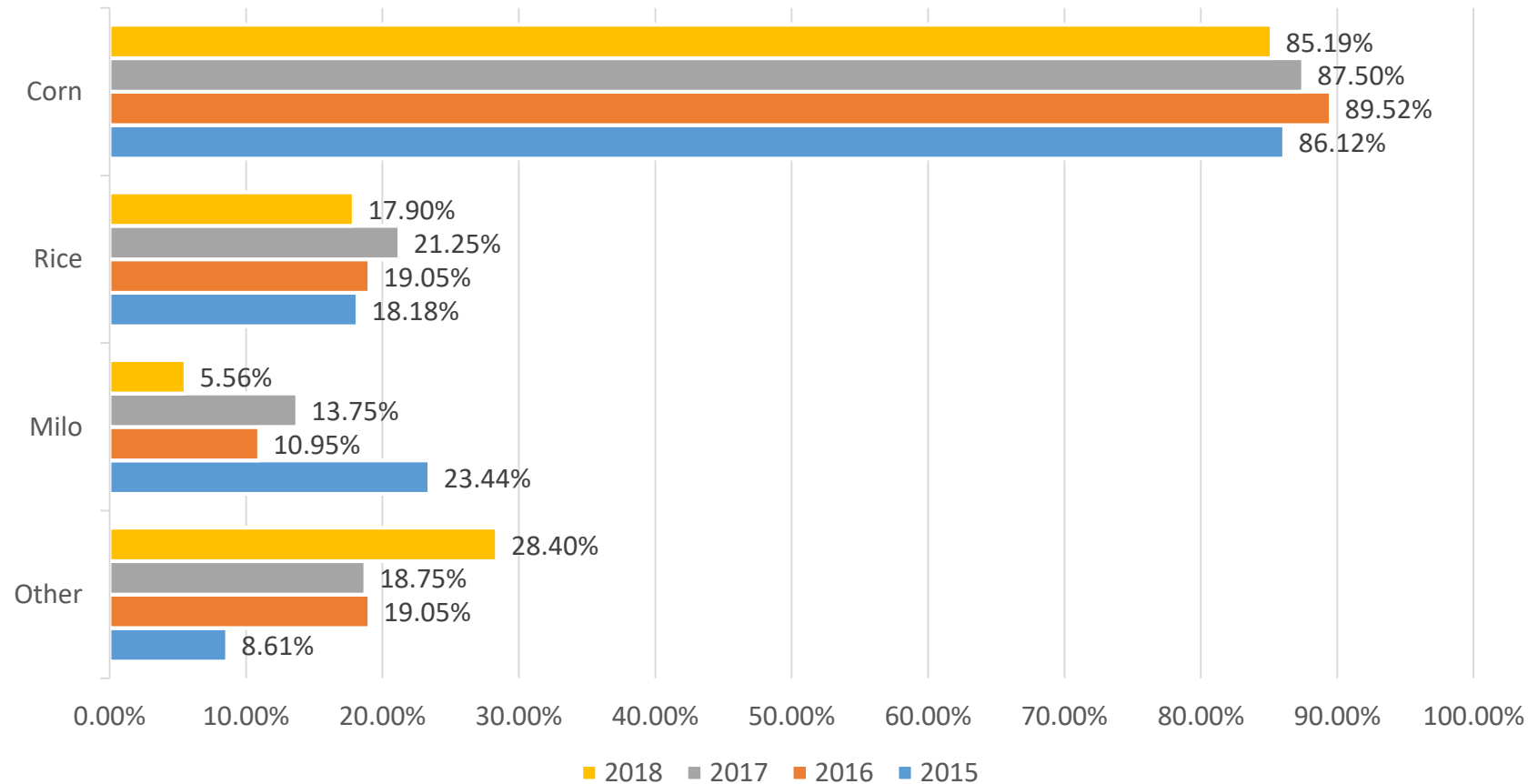
Annual Crop Rotation

Sixty percent of participants rotate crops on an annual basis.



Crops Rotated With Soybeans (n=162)

85 percent of rotating participants rotate corn with soybeans.

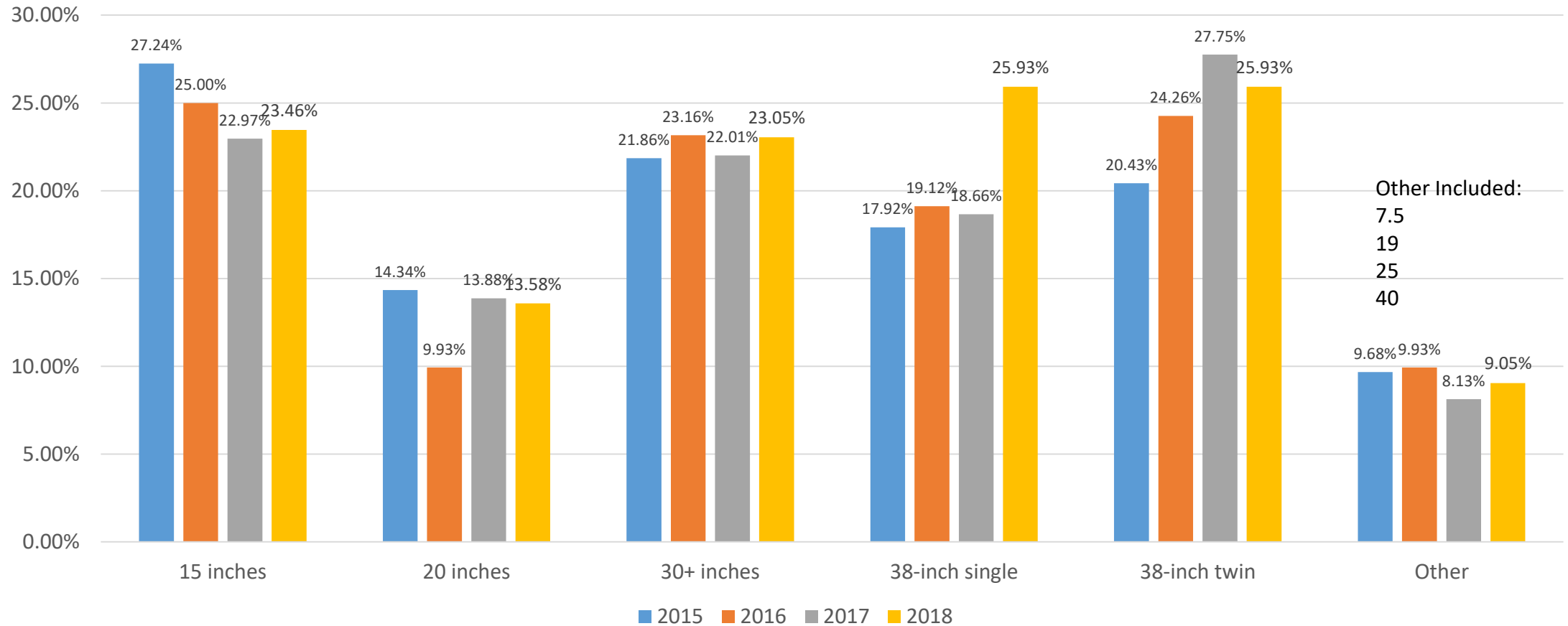


Other Crops Include:

- Cotton (primary)
- Wheat
- Sweet Potatoes

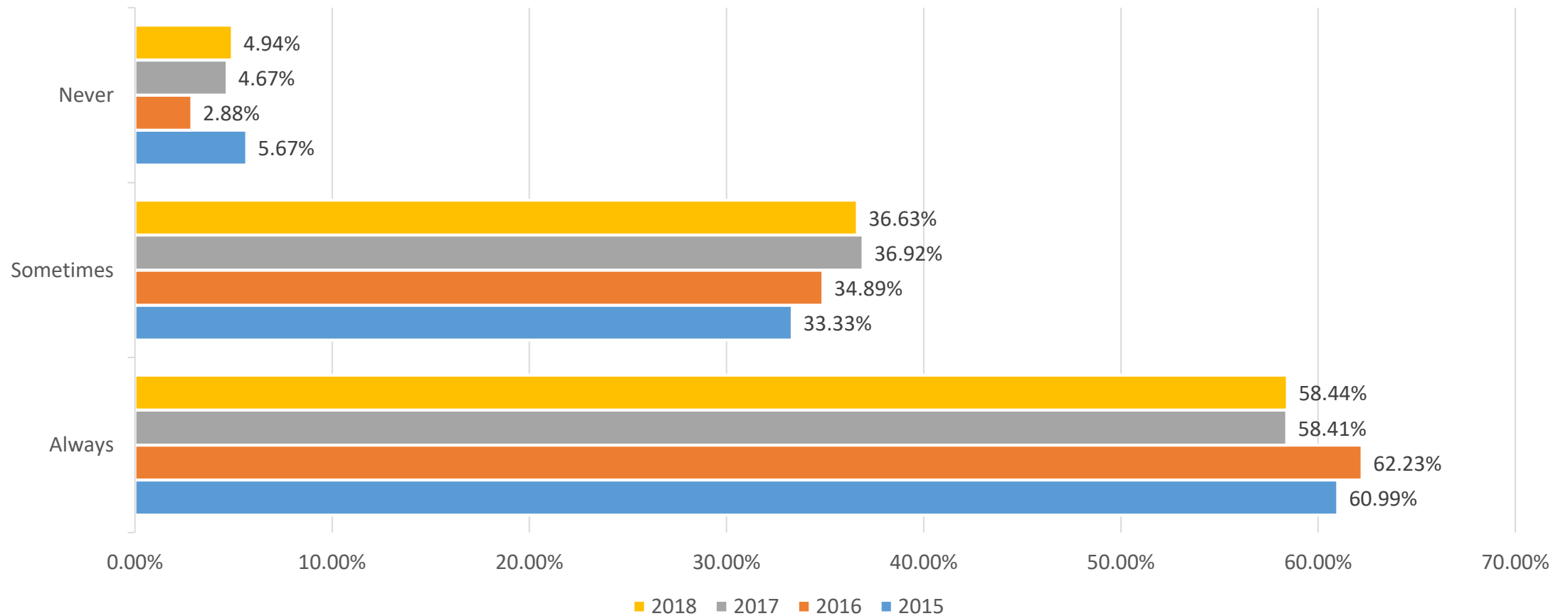
Soybean Row Width

2018 results an increase in 38-inch single rows.



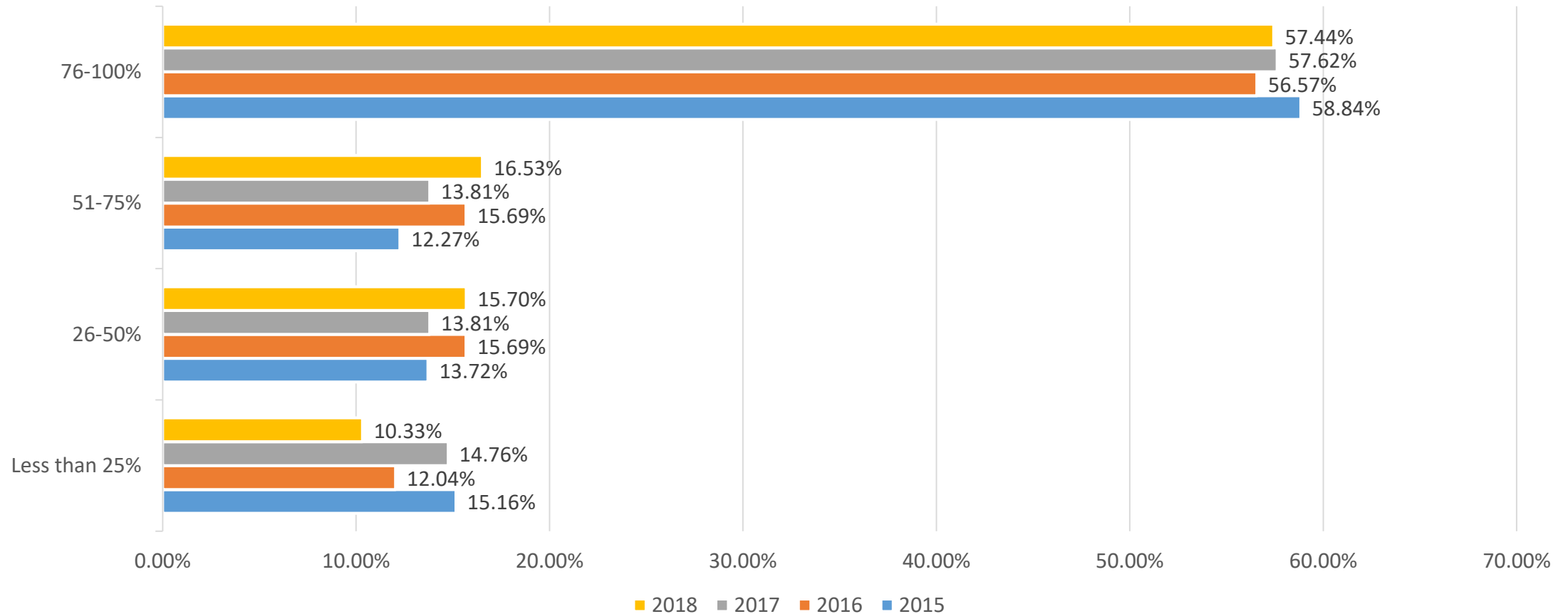
Soil Testing

2018 results are consistent with 2017 soil sample protocol.



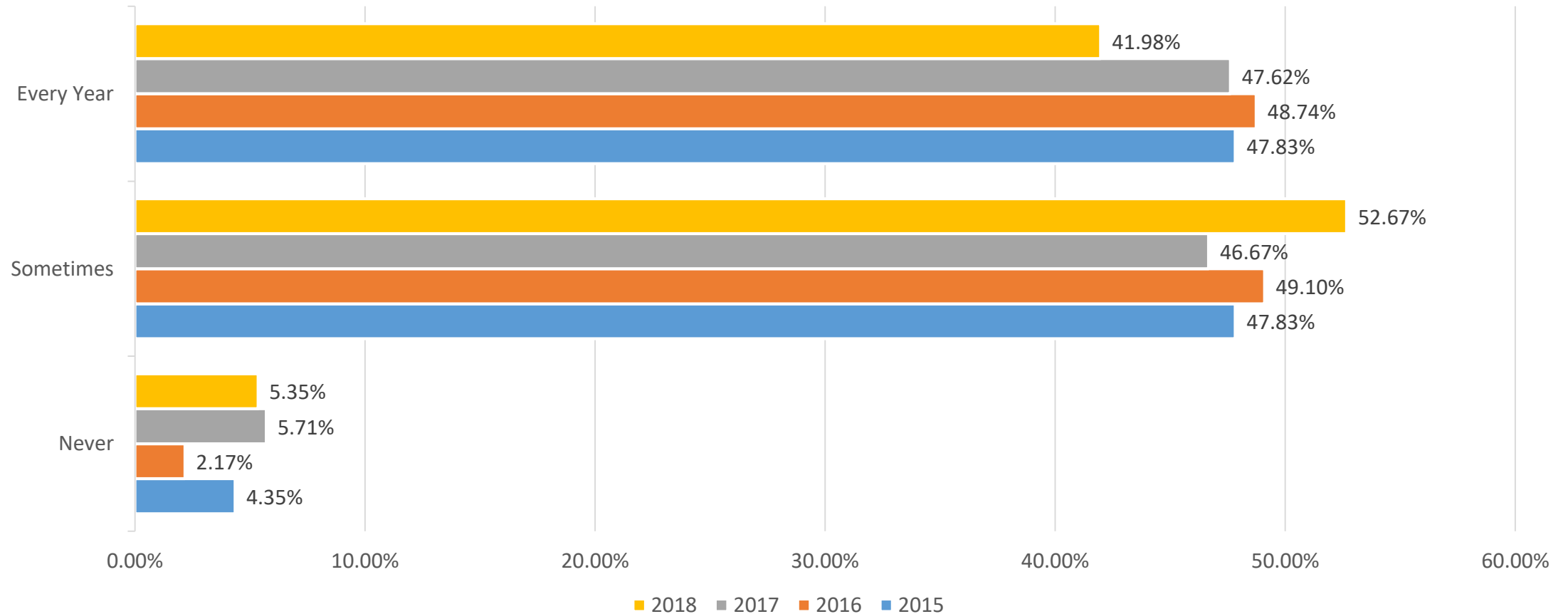
Soil Sampling Acreage (n=242)

57 percent of growers soil sample between 76-100% of soybean acres.



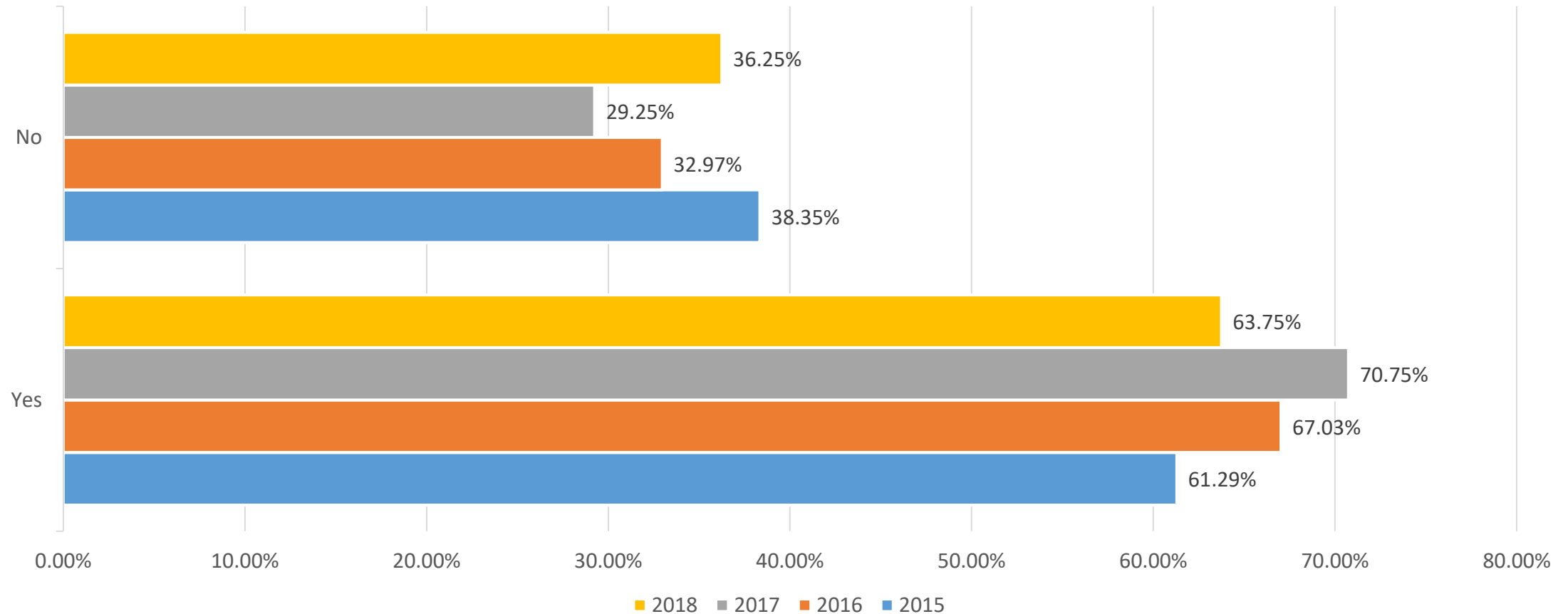
Knowledge of Soil pH

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



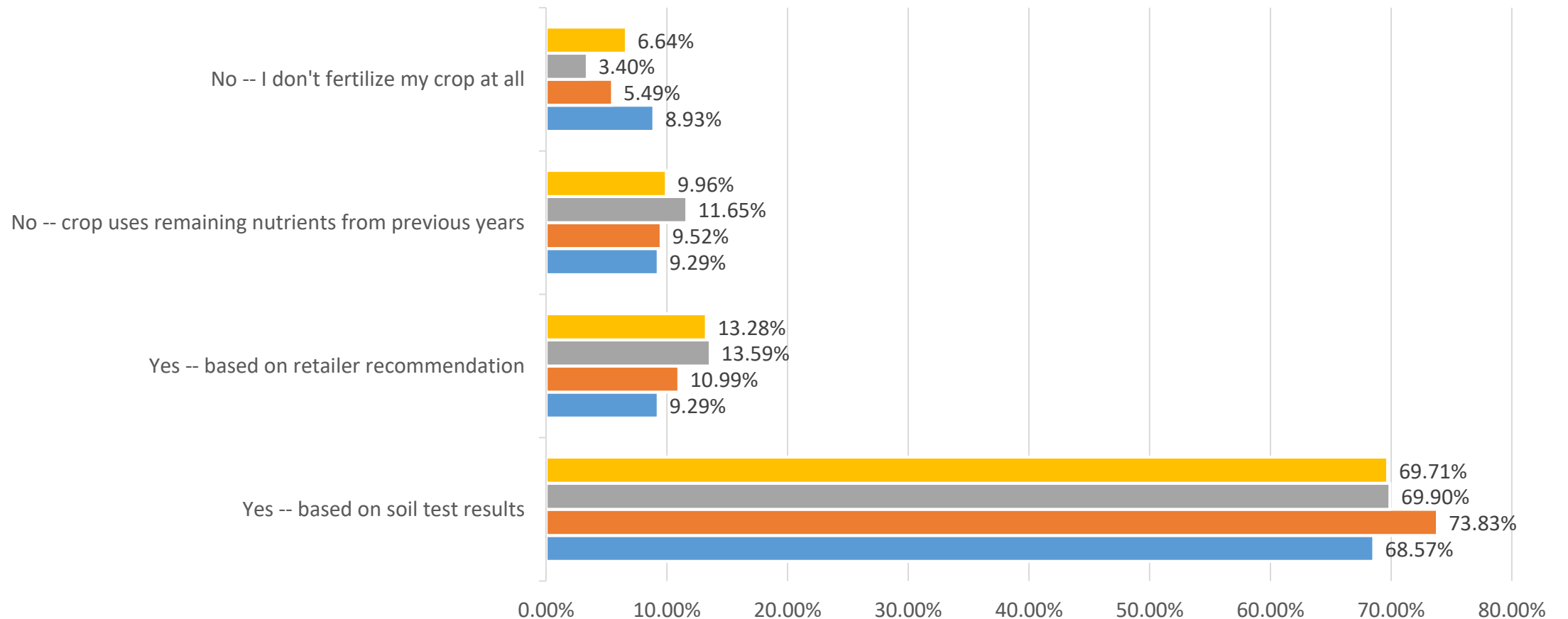
Knowledge of Nutrient Removal

Sixty-four percent of participants are aware of the amount of nutrients removed in each bushel of harvested soybean grain.



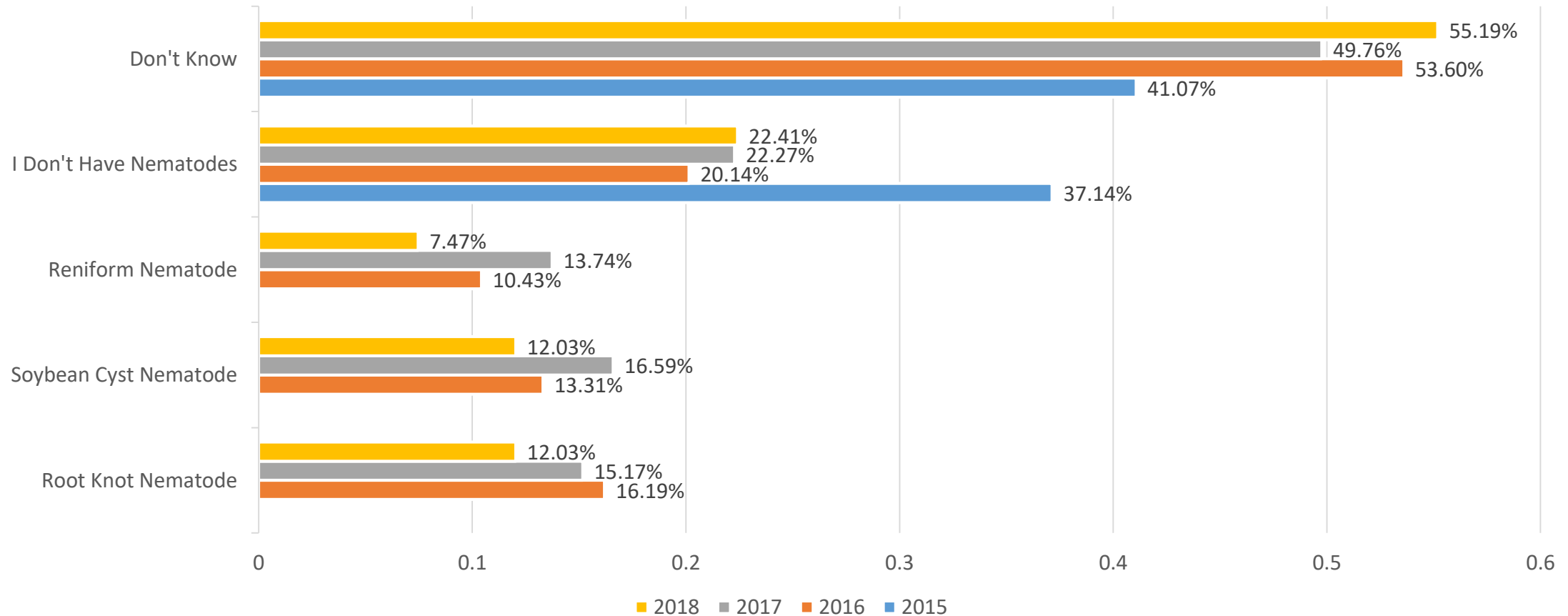
Soybean Field Fertilization

Seventy percent of participants fertilize based on soil test results.



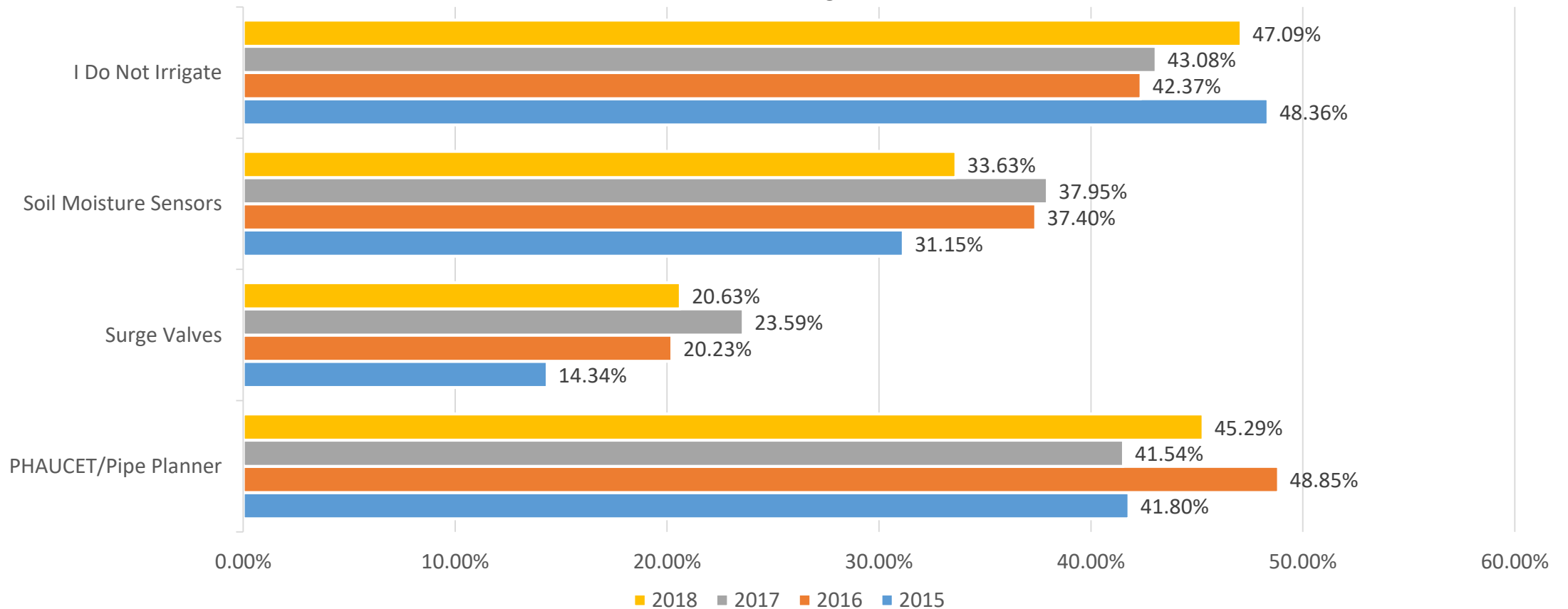
Nematode Presence

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



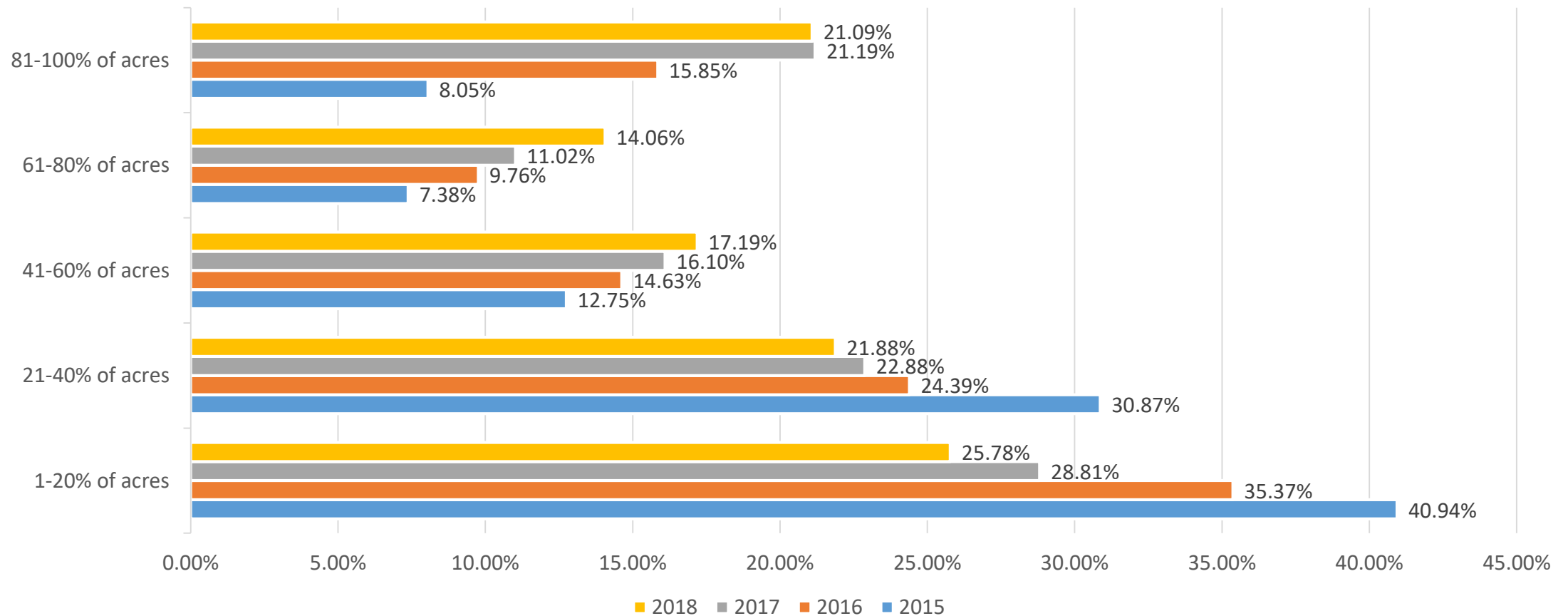
Irrigation

Forty-seven percent of participants use PHAUCET/Pipe Planner while another 45 percent do not irrigate.



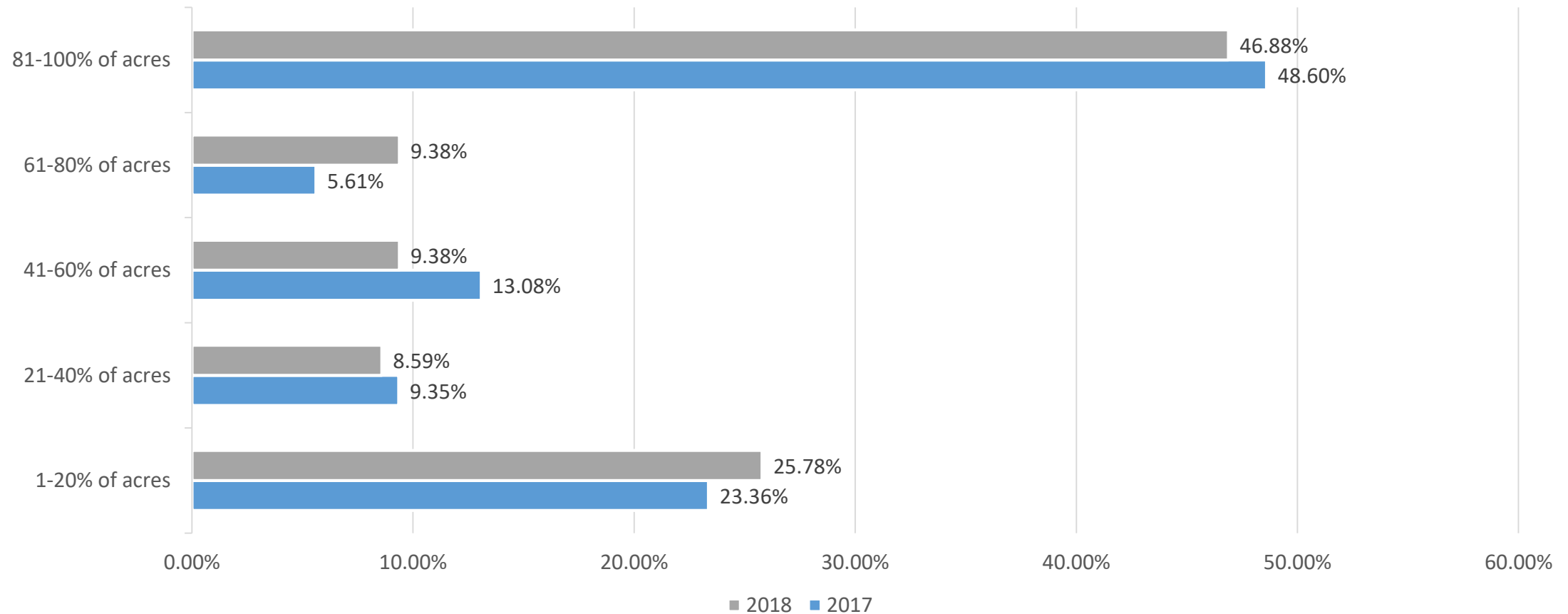
Irrigation Monitoring (n=128)

Water monitoring varies among participants.



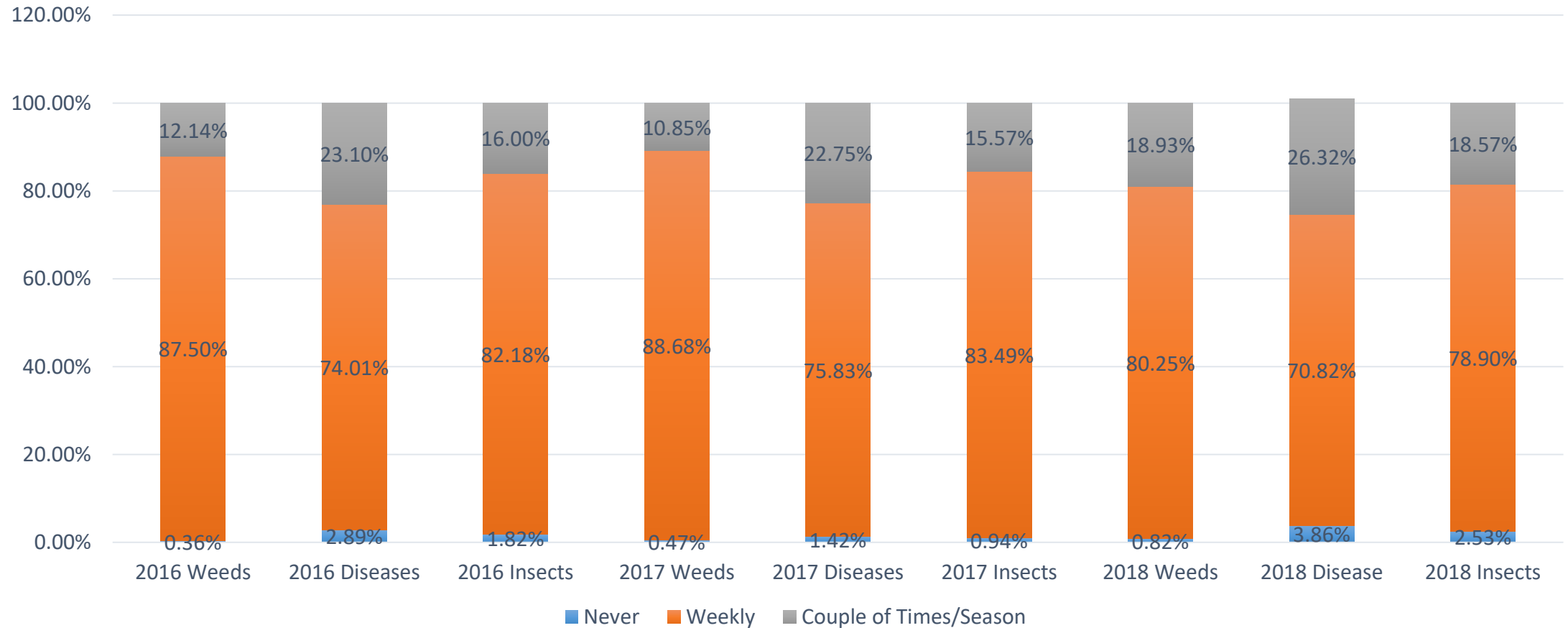
Use of PipePlanner (n=126)

PipePlanner is utilized on 81-100 percent of acres by nearly 47 percent of participants.



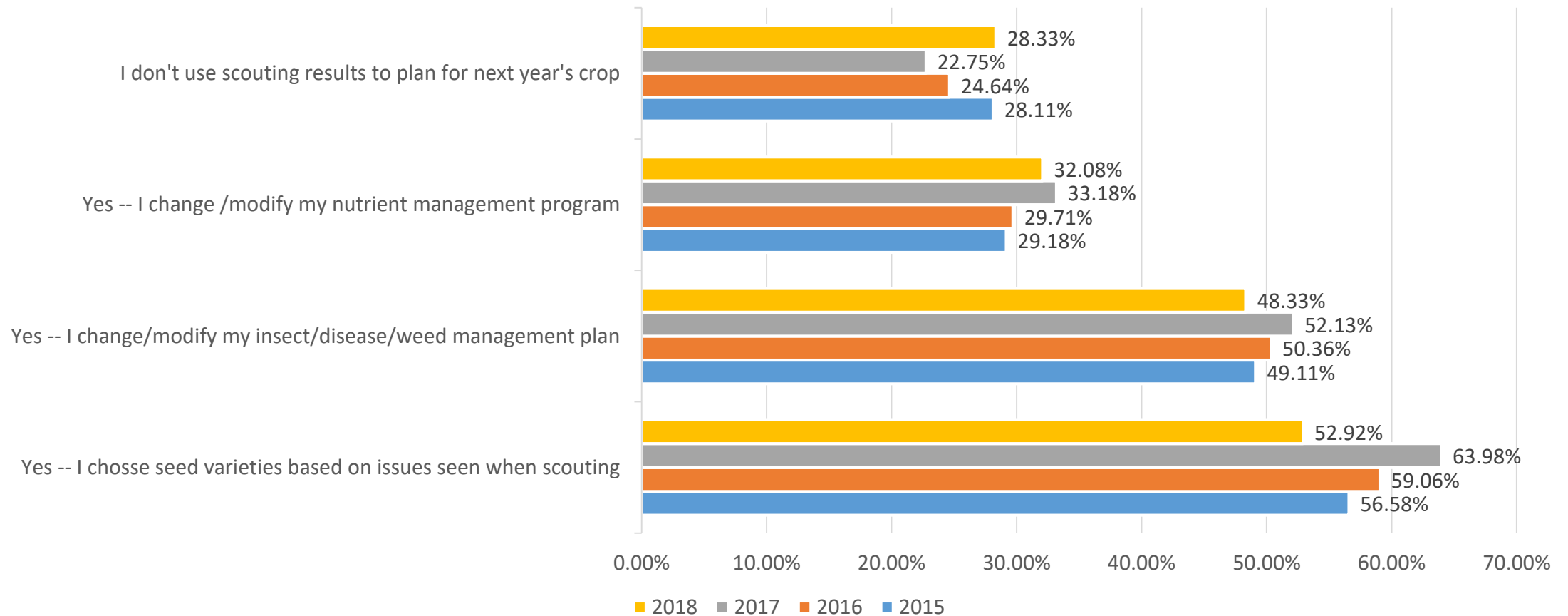
Frequency of Field Scouting

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



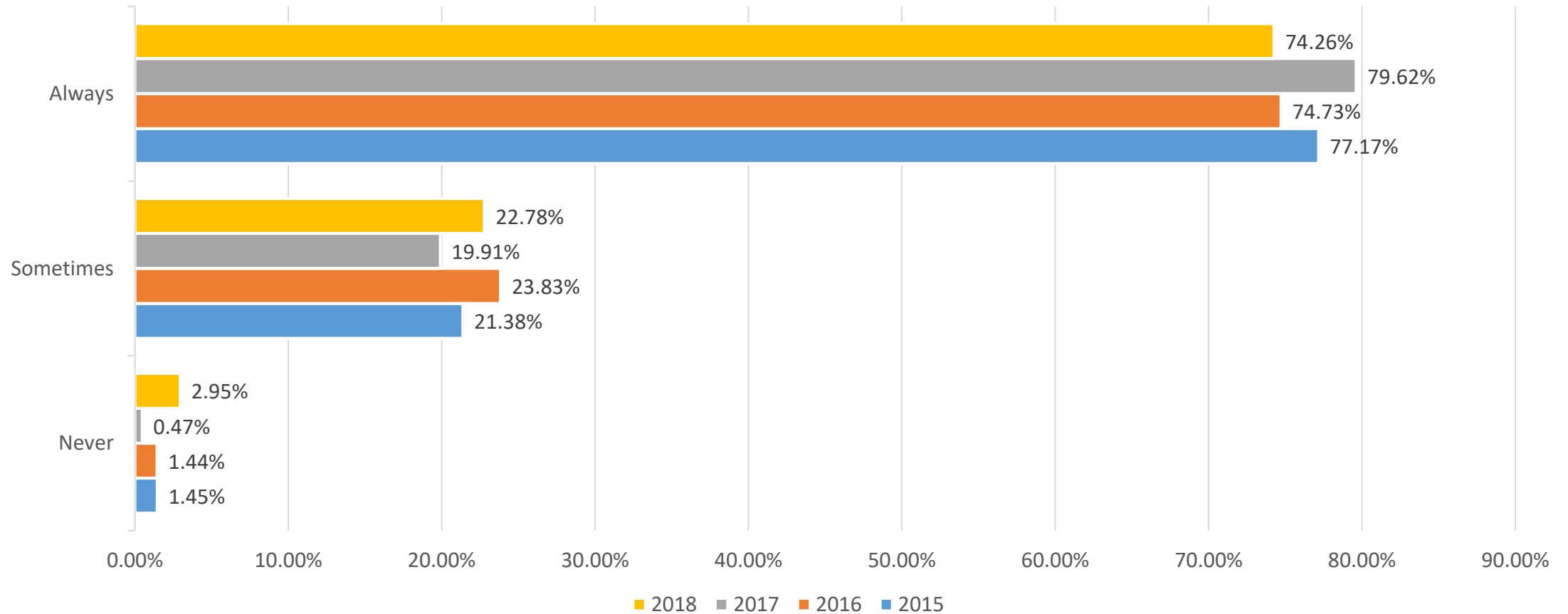
Usage of Field Scouting for Crop Planning

Half of participants use scouting for selecting varieties or to modify management plans.



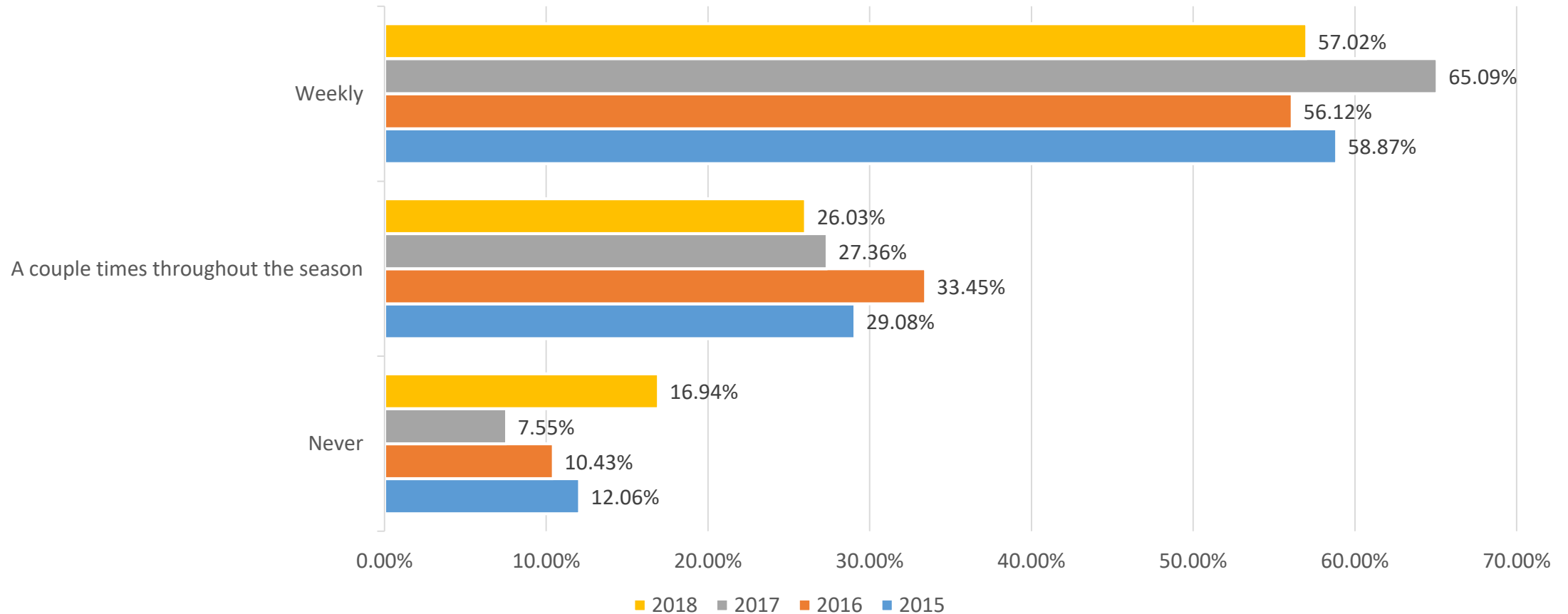
Scouting Protocol

Seventy-four percent of participants always walk the fields when scouting.



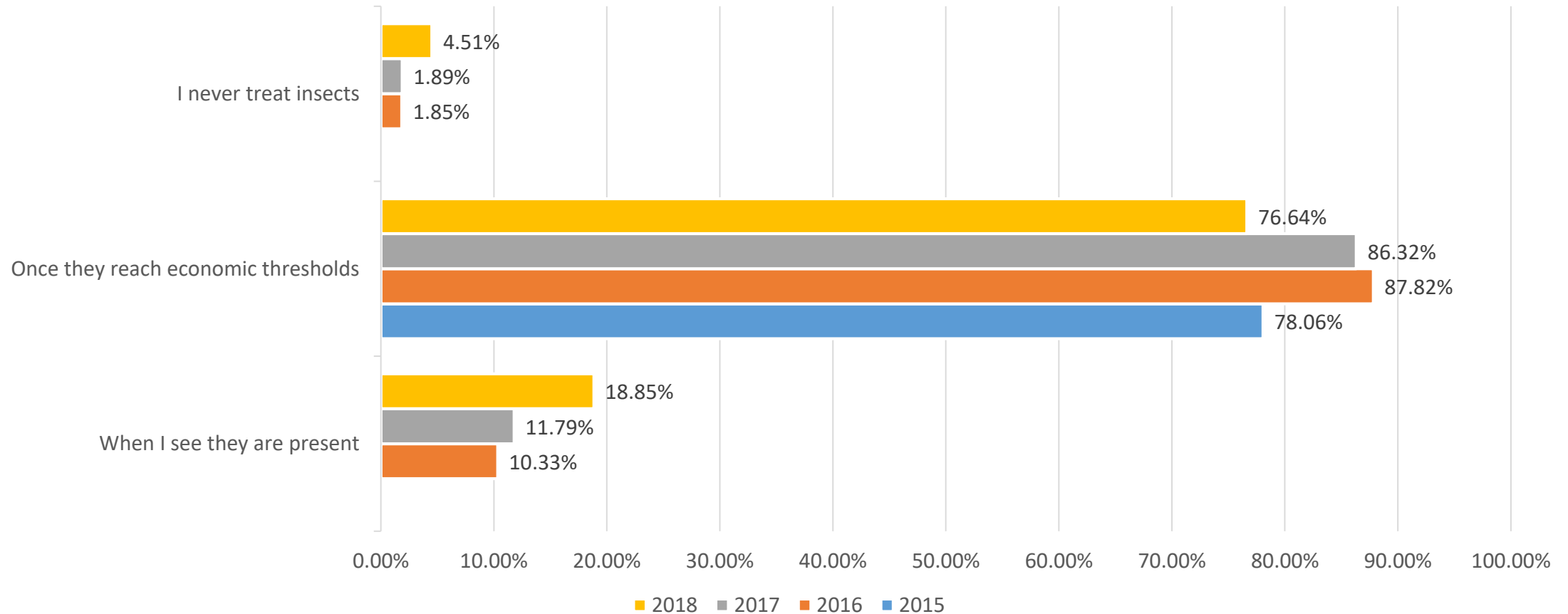
Use of Sweep Net/Drop Cloth for Insect Measurement

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



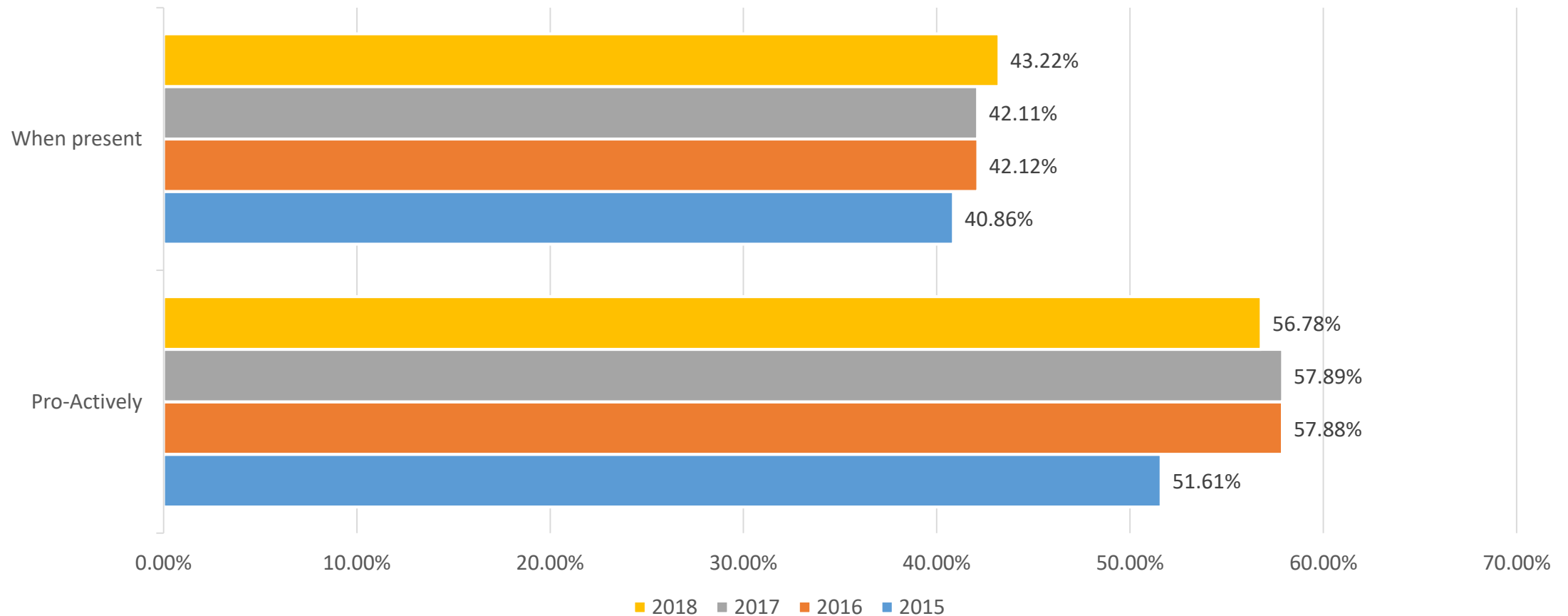
Insect Treatment Scheduling

Seventy-seven percent of participants treat for insects when they reach economic thresholds.



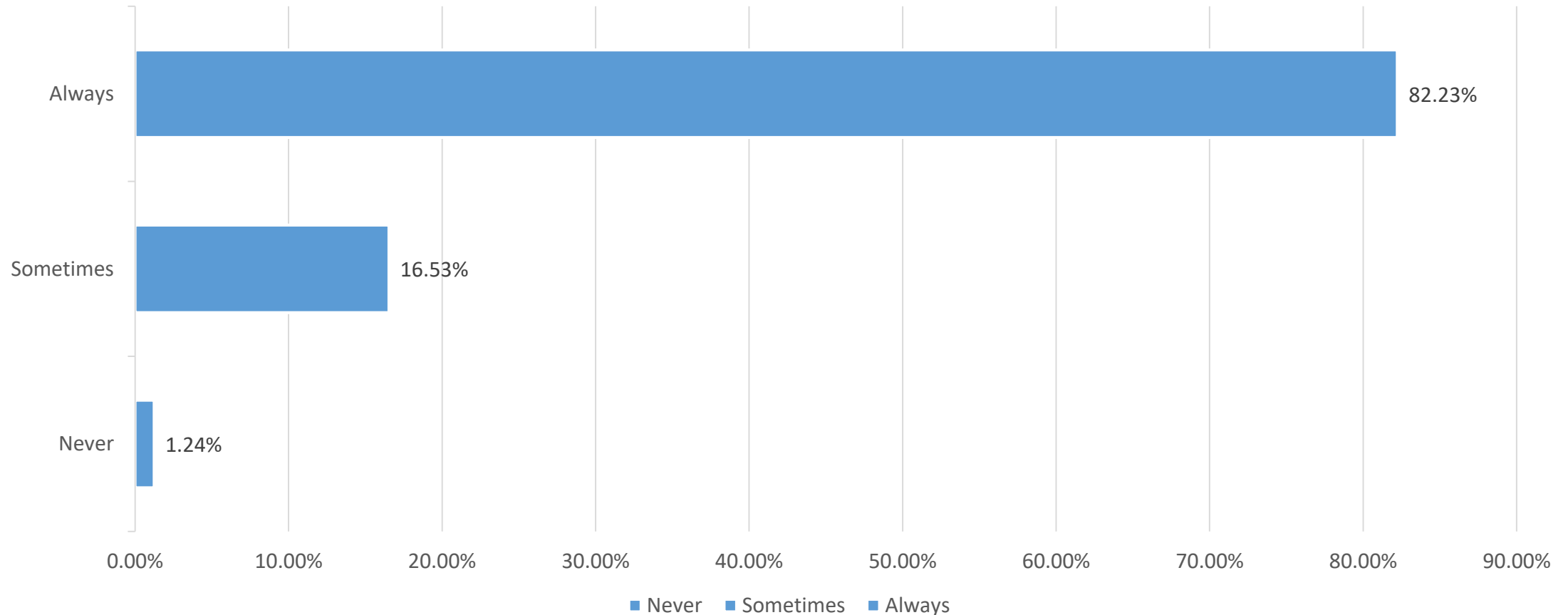
Fungicide Application

Fifty-seven percent of participants are applying fungicides pro-actively.



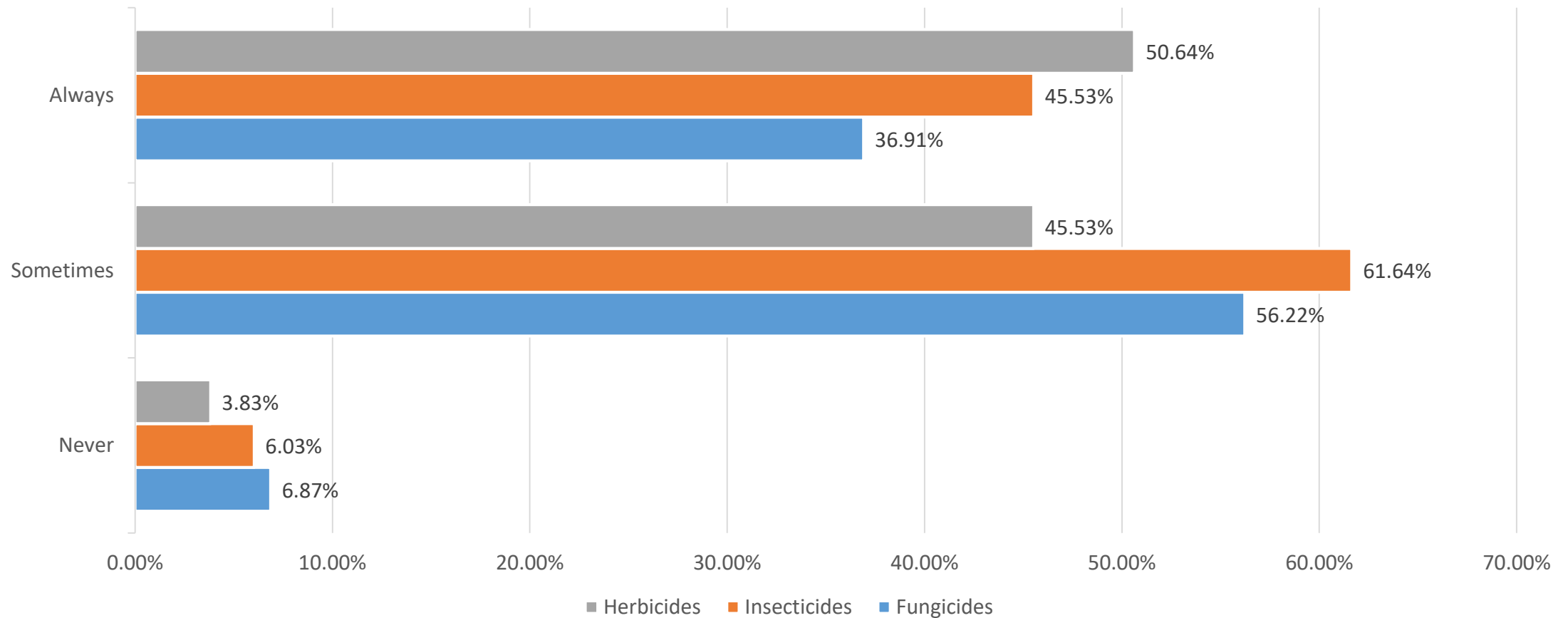
Fungicide/Insecticide/Herbicide Application Rates (2018)

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



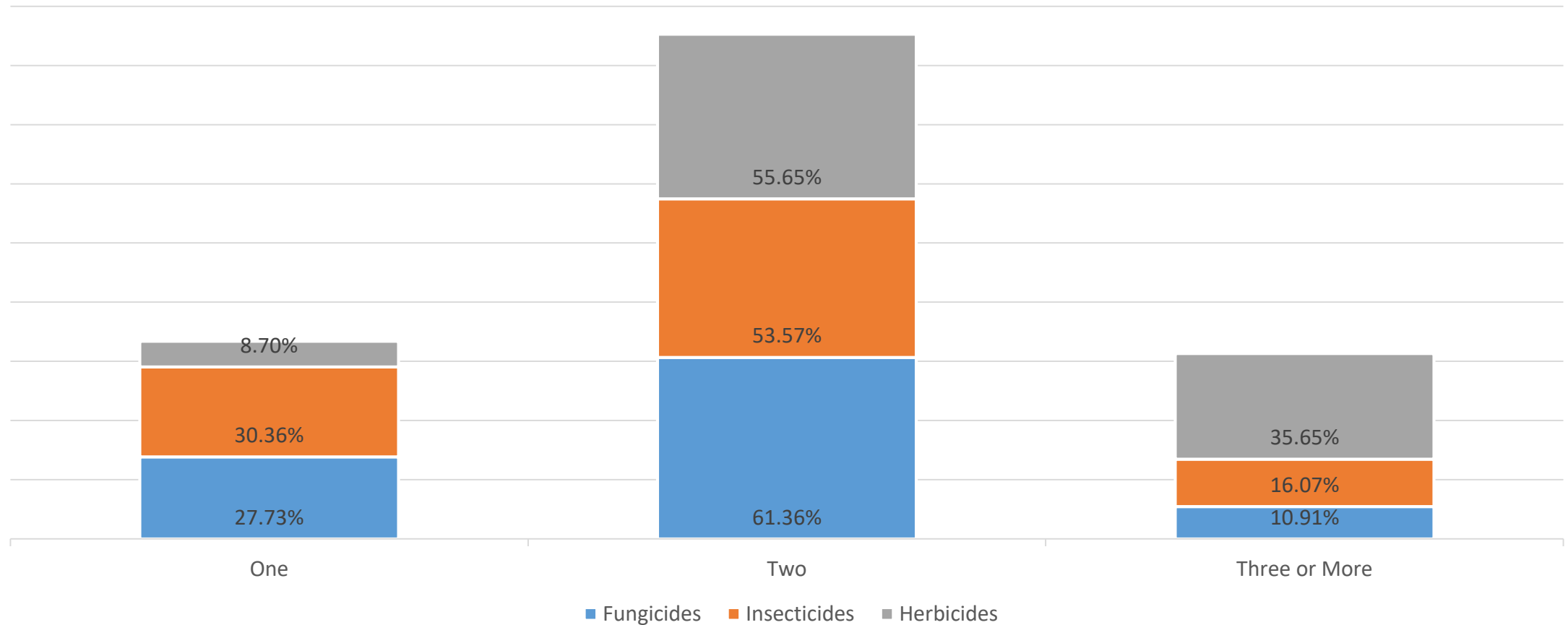
Fungicide/Insecticide/Herbicide Modes of Action By Category

Participants use multiple modes of action most with herbicides.



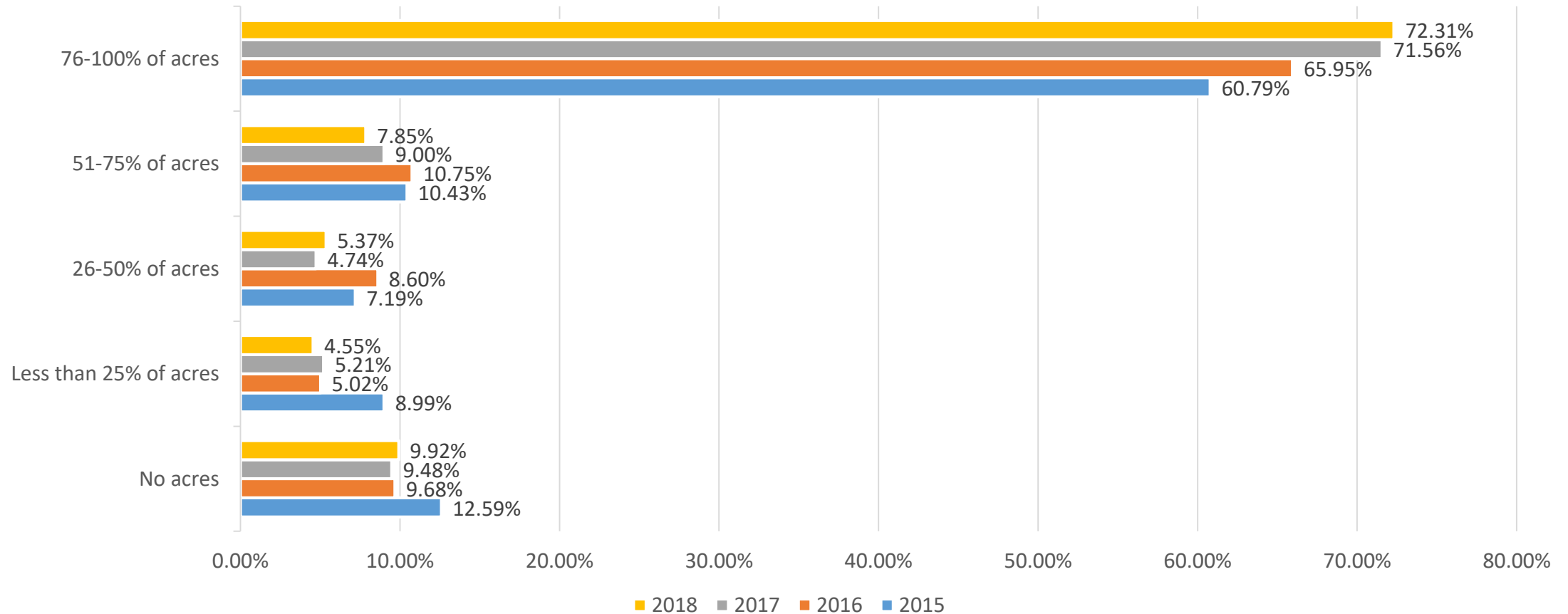
Multiple Modes of Action (2018)

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



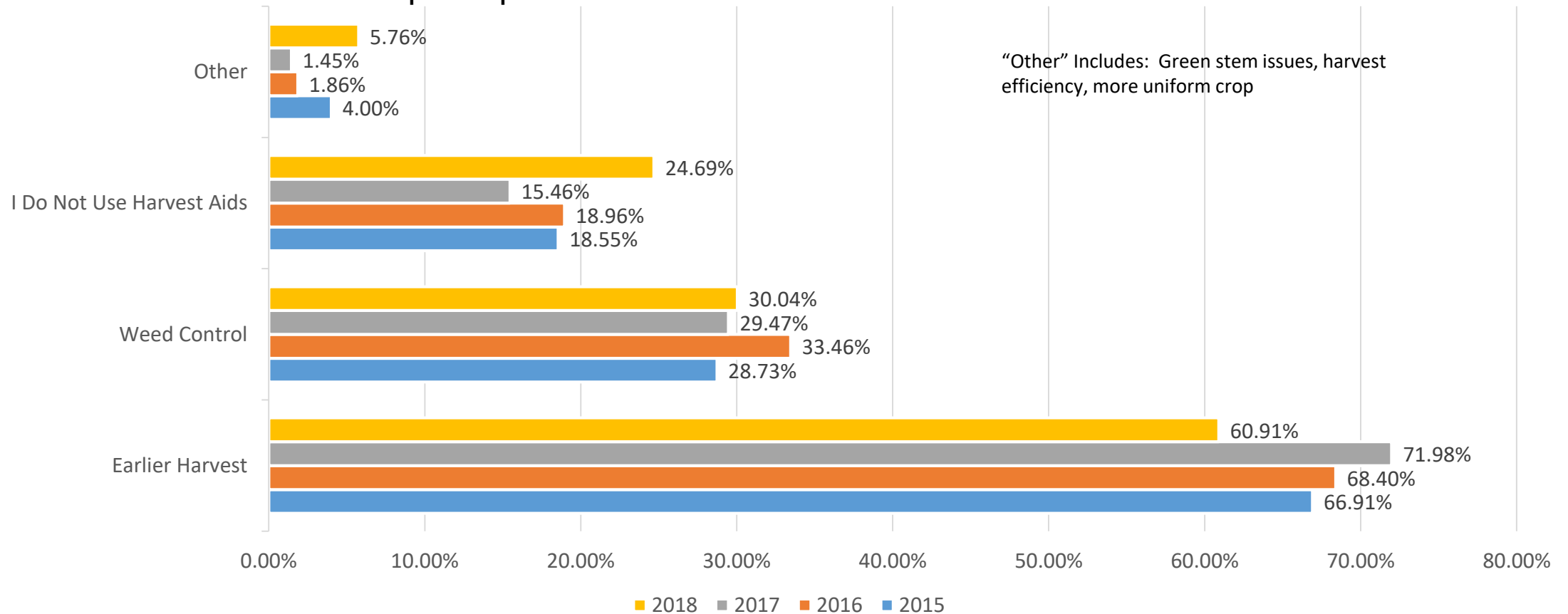
Pre-plant/Pre-emergence Herbicide Usage

Seventy-two percent of participants apply a pre-plant/pre-emergence herbicide to at least 76% of acres.



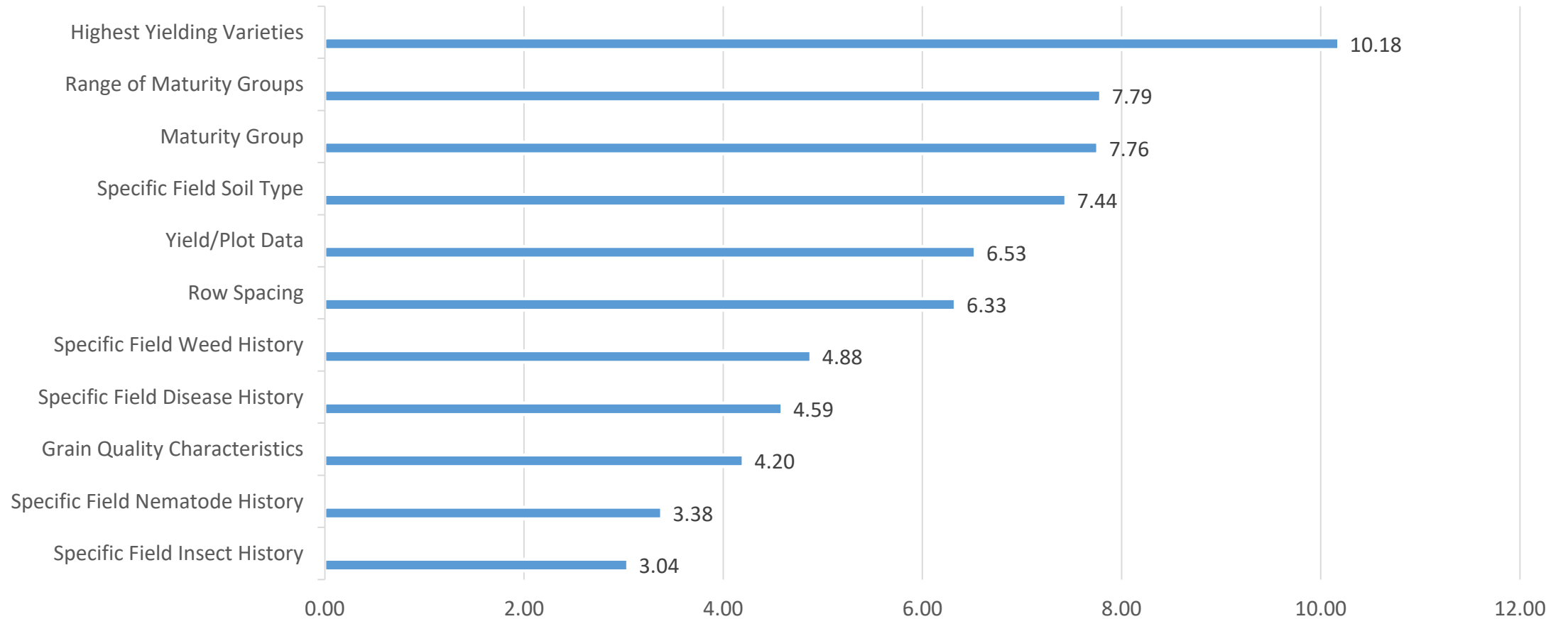
Factors for Using Harvest Aids/Desiccants

There is a decrease in the use of harvest aids as compared to other years, but the majority of participants see the benefit as “earlier harvest”.



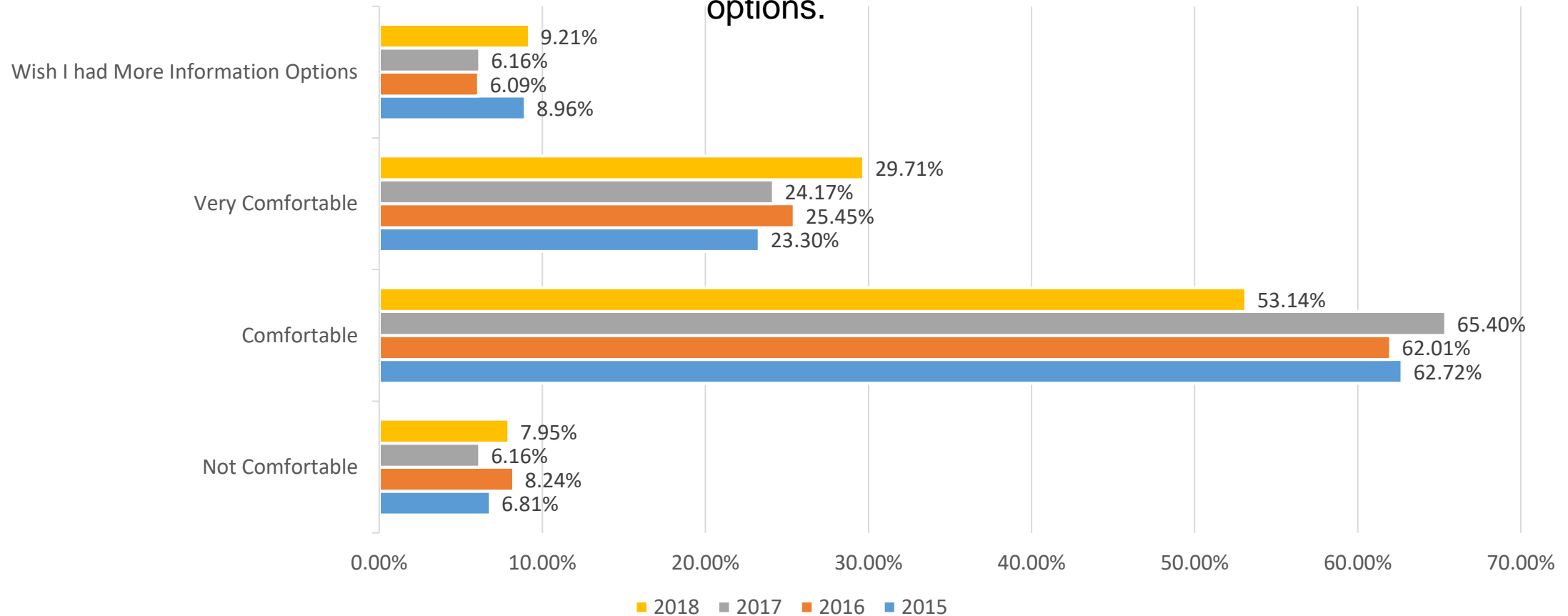
Attributes Important in Selection of Soybean Variety

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



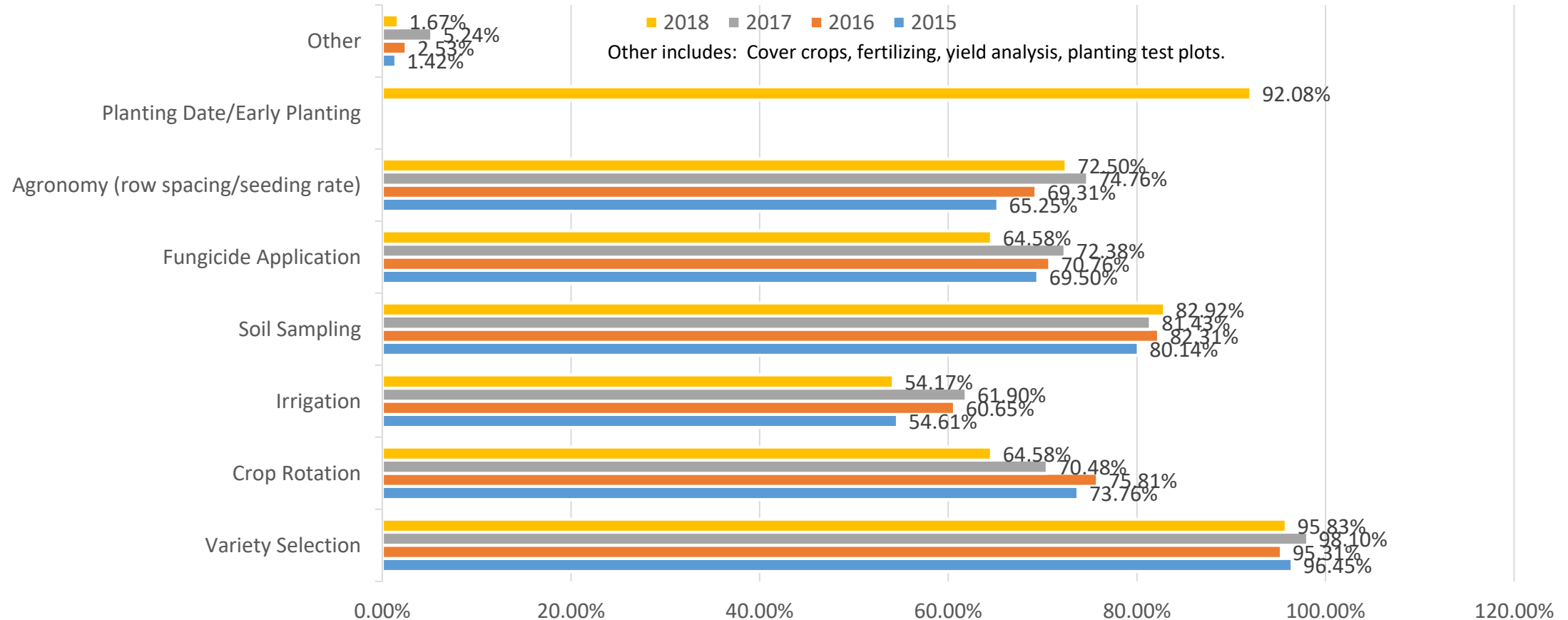
Comfort Level With Retailer Recommendations

While 82 percent of participants are either “Very Comfortable” or “Comfortable with their retailer recommendations, 17 percent are either “Not Comfortable” or wish they had more information options.



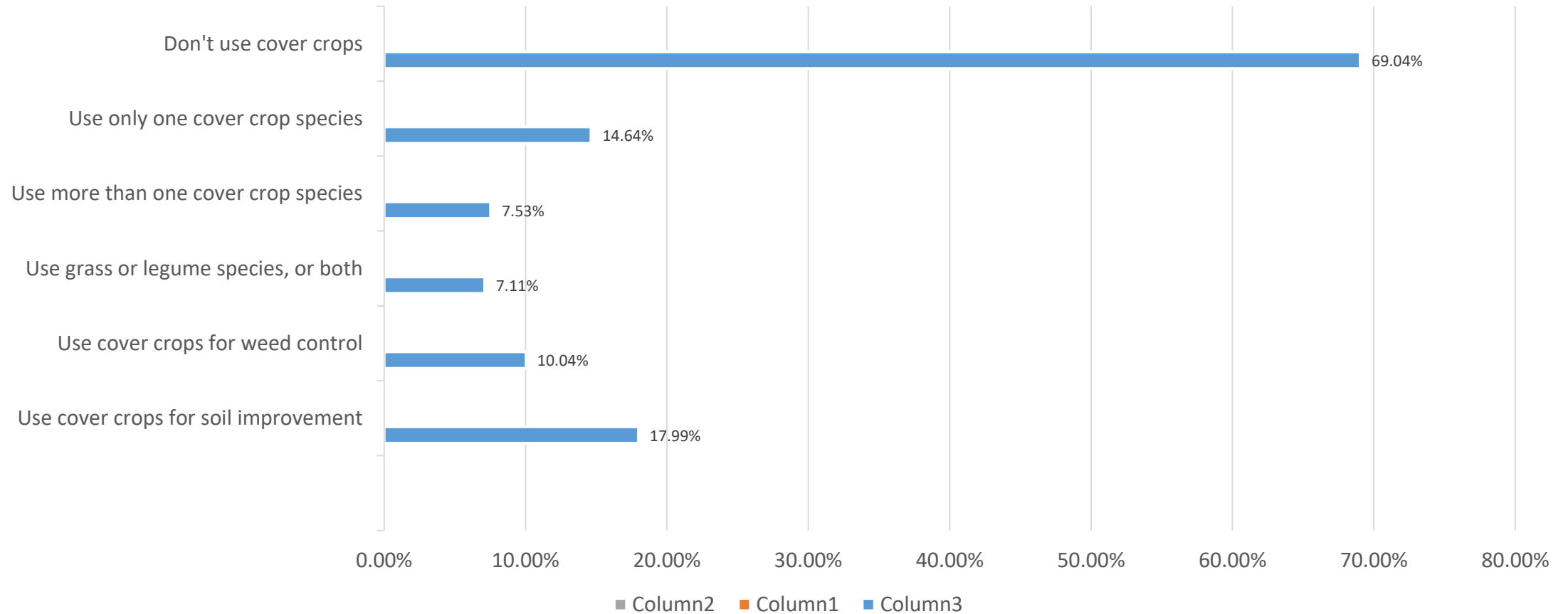
Methods Used to Increase Soybean Yields

Variety Selection and Planting Date/Early Planting are most used by participants to increase soybean yields. (Note: Planting Date added in 2018 survey)



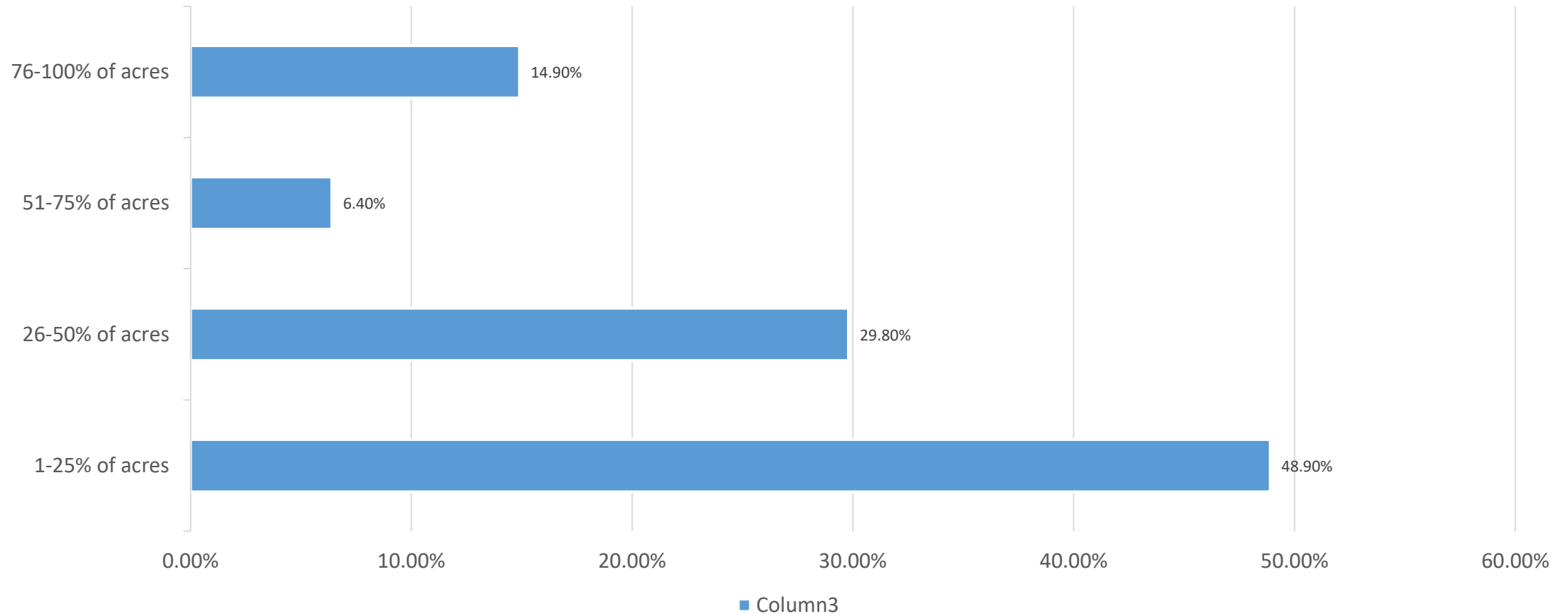
Cover Crop Usage (2018 only)

Sixty-nine percent of participants do not use cover crops.



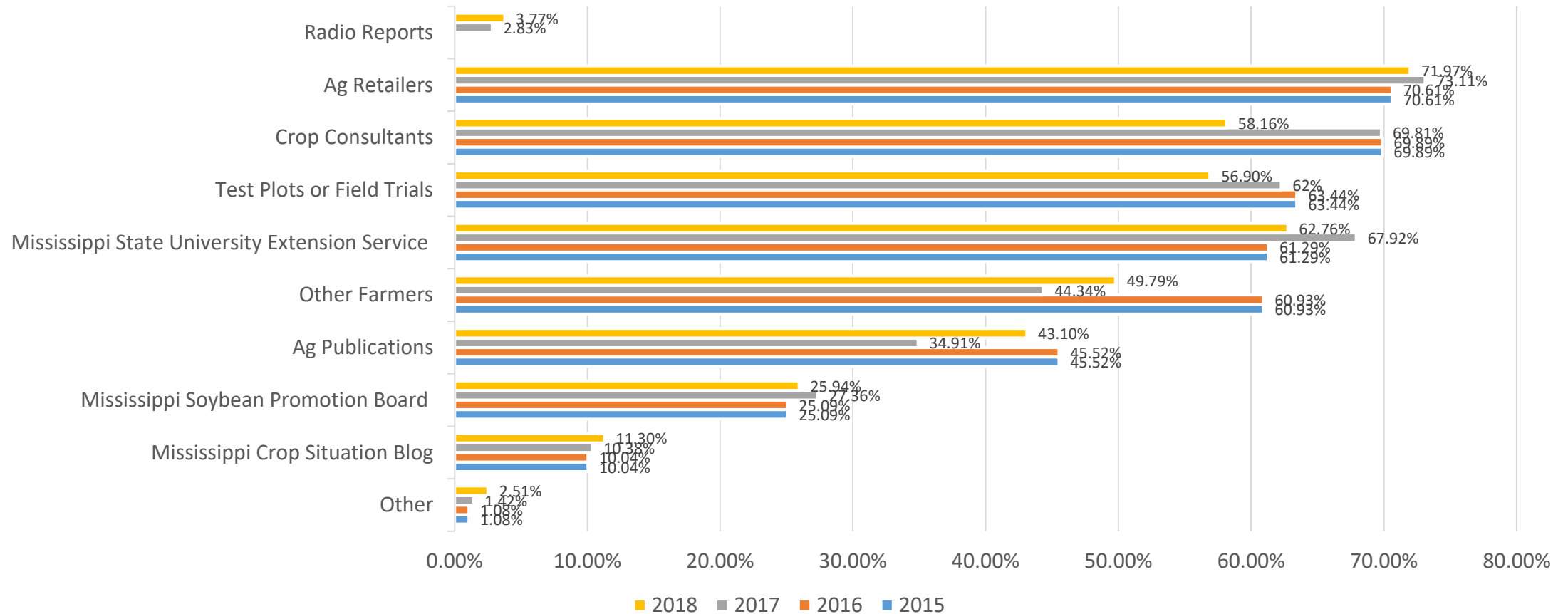
Cover Crop Acres (N=47)

Nearly half of cover crop participants use cover crops on 25 percent or less of their acres.



Sources for Soybean Production Information

Ag Retailers and the Extension Service remain the top sources for production information.



Top Soybean Production Issues

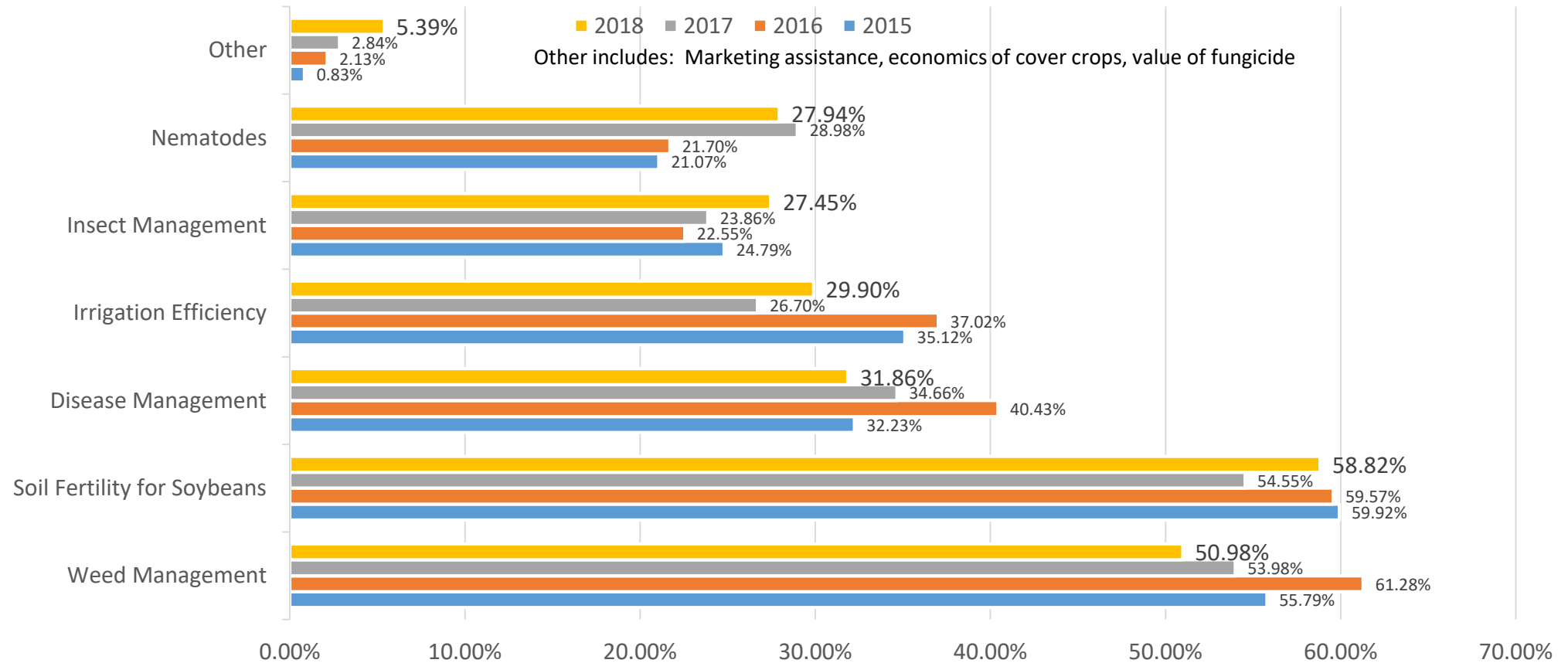
Weed control, particularly herbicide resistance is participants' top production issue.

Top Mentions – In Ranking Order:

1. Weed Control/Resistance/Management (*Dominant Mention*)
2. Weather
3. Yield
4. Market Prices
5. Insects
6. Disease
7. Drainage
8. Selecting Varieties
9. Deer/Wildlife Damage
10. Soil Fertility

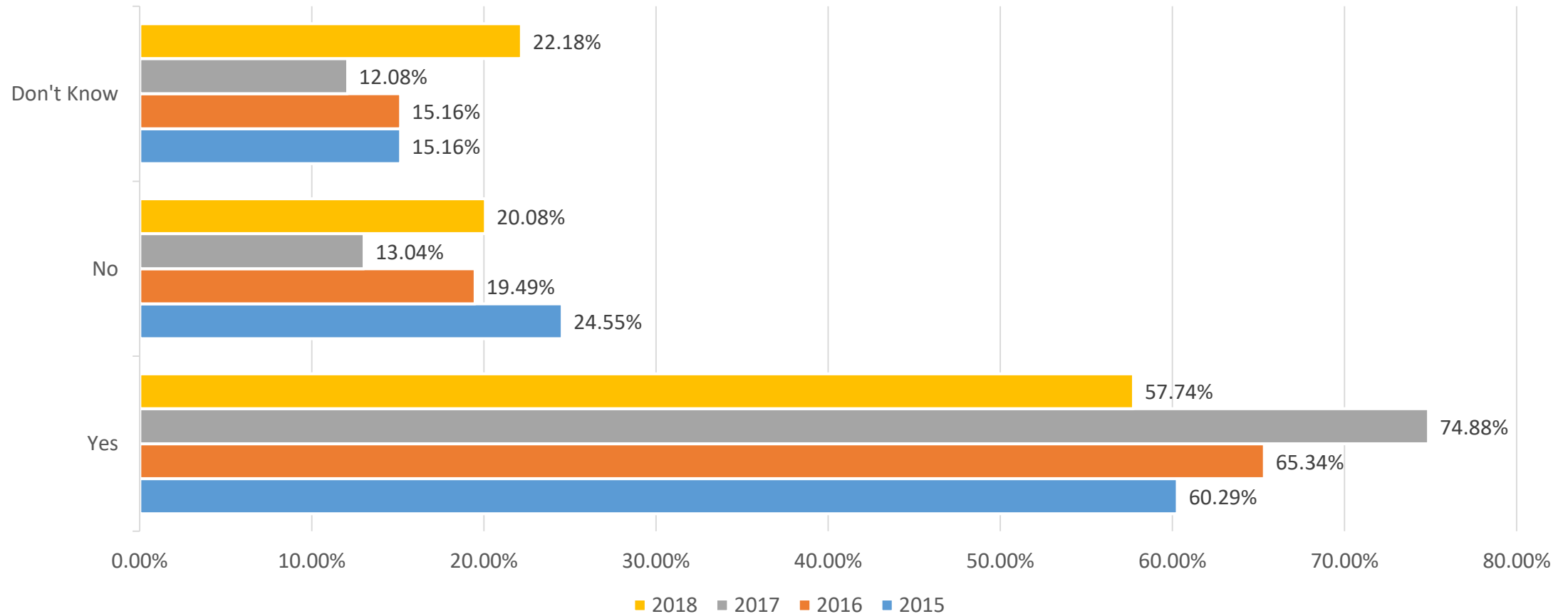
More Information Topics

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



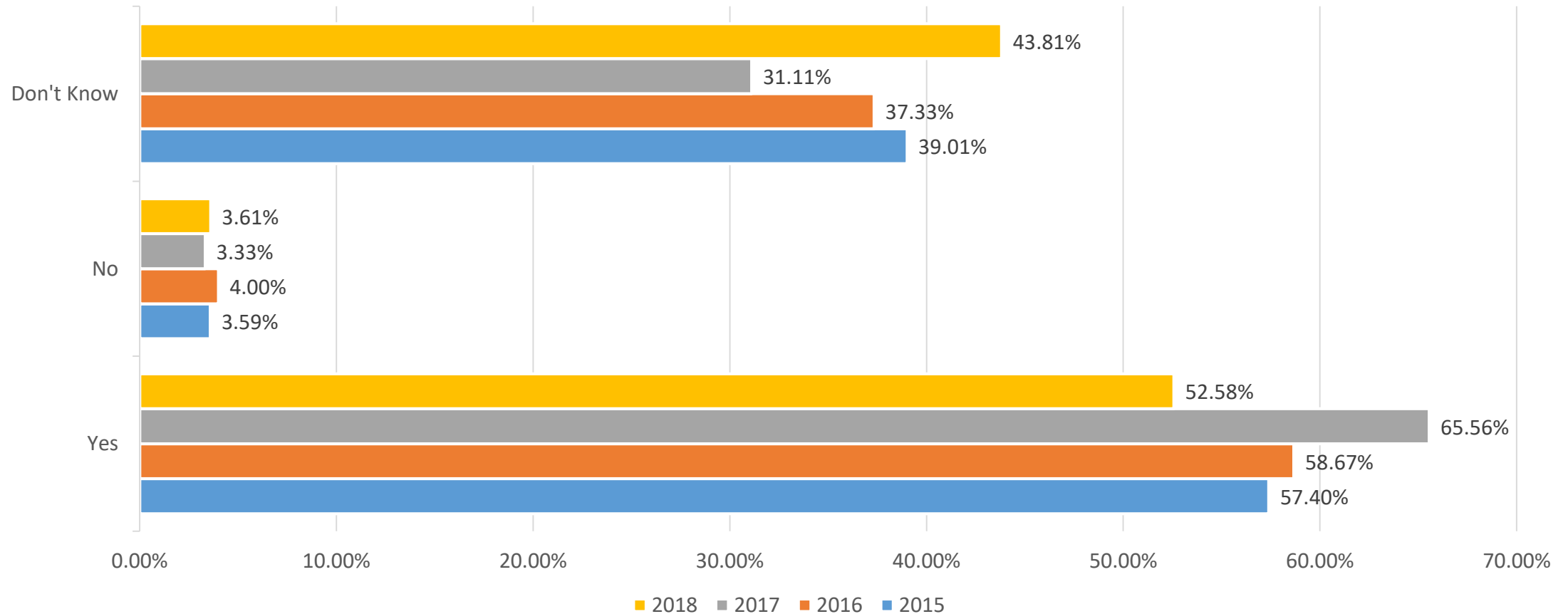
Recall of MSPB Information

There is a substantial decrease (only 58%) of participants recall receiving MSPB information.



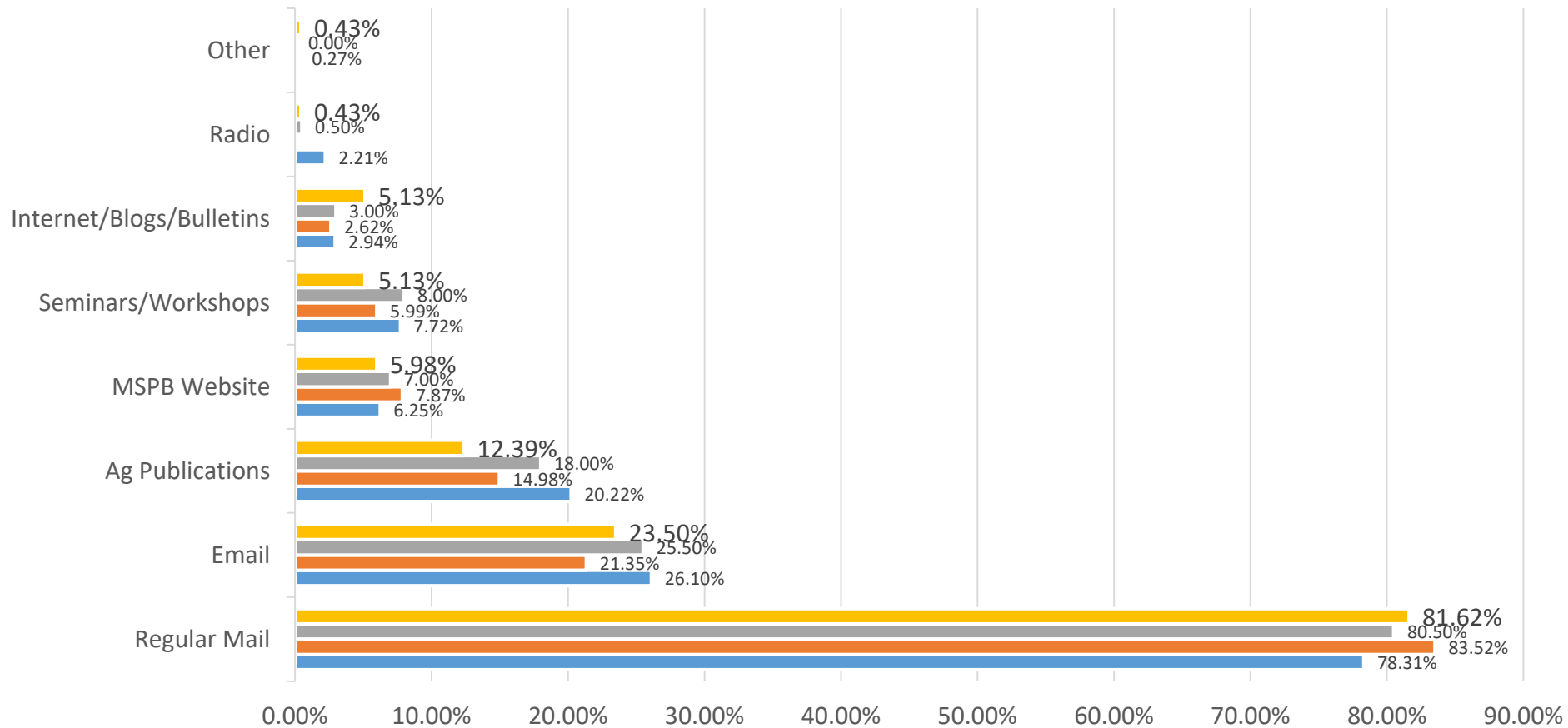
Helpfulness of MSPB Information Received (n=194)

There is a substantial decrease in the number of participants who found MSPB information helpful and a substantial increase in the number who “Don’t Know”.



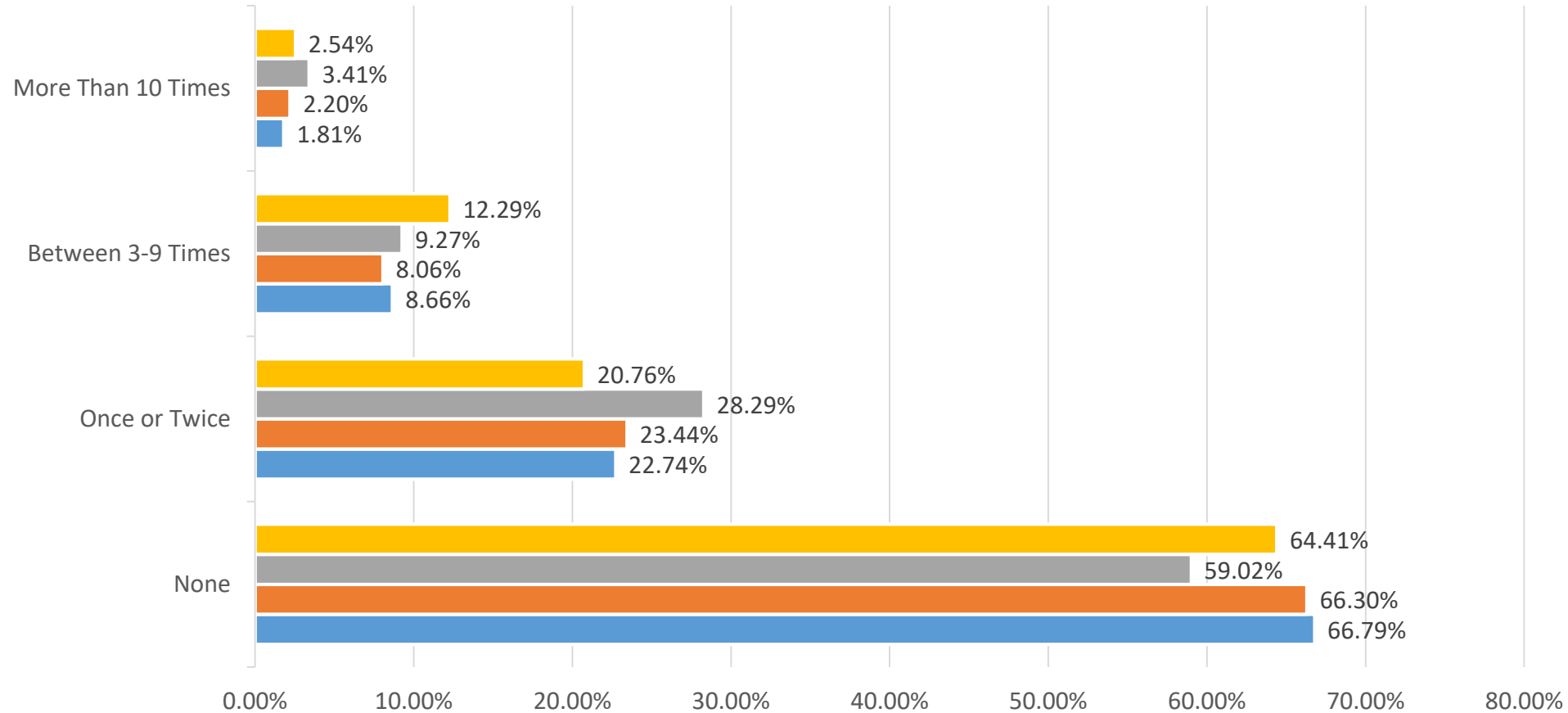
Communication Preference

Regular mail remains the preference for soybean production information from MSPB.



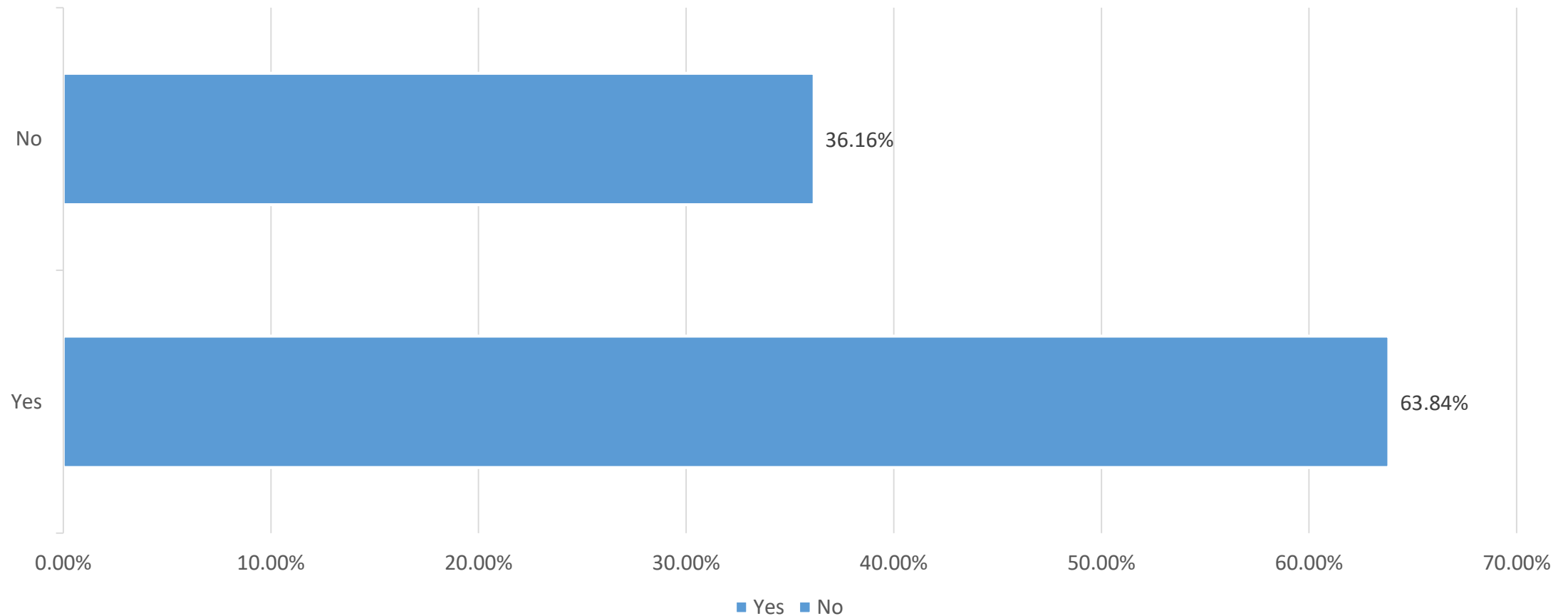
MSPB Website Use

Fewer participants have visited the website in the past year.

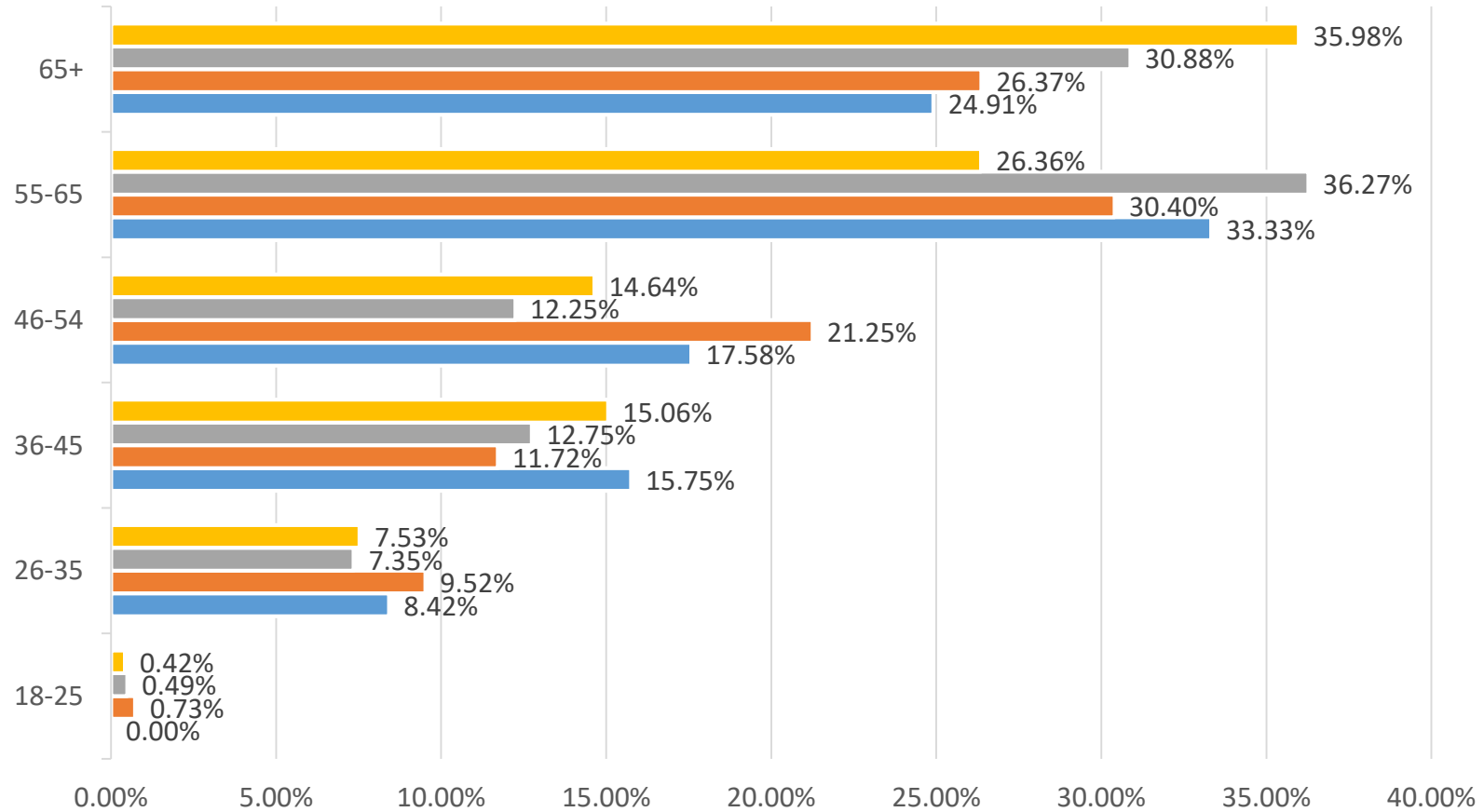


Interest in Mobile App Scouting Guide Booklet

Two-thirds of participants would be interested in the mobile app.



Age of Participants



Total Acres/Soybean Acres Farmed (2018)

Average Number of Total Acres = 1,495; Average Number of Soybean Acres = 756.

