

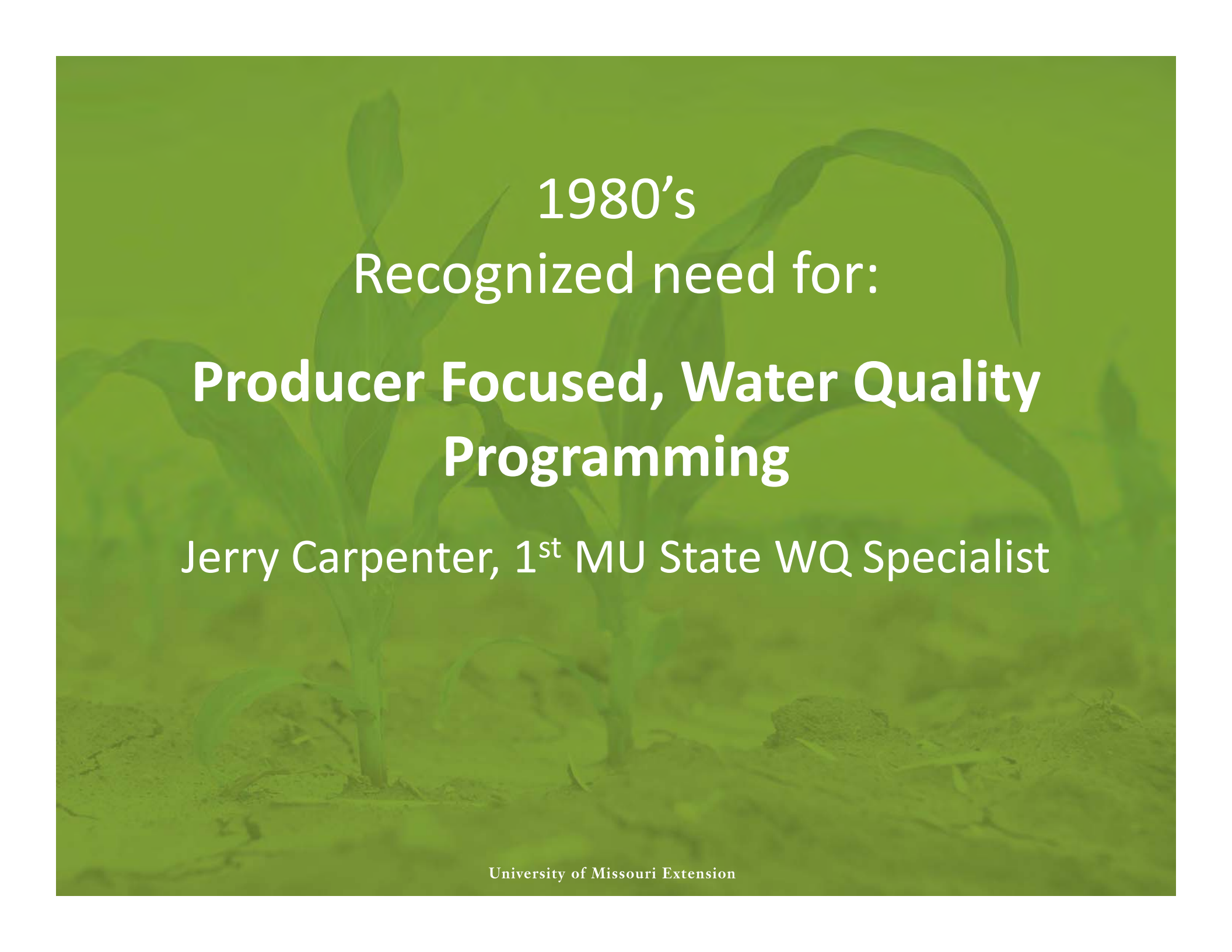


# Water Quality

## Producer Thoughts, Attitudes & Actions

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 Extension

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1980's  
Recognized need for:  
**Producer Focused, Water Quality  
Programming**

Jerry Carpenter, 1<sup>st</sup> MU State WQ Specialist



# Natural Resources Environmental Team

MU Agronomists & Ag Engineering staff  
working with MO DNR

Developed and Implemented State-wide  
Programming



- **Secondary Containment Systems**

On-farm fertilizer & pesticide storage

- **Residential Waste Management**

Home lagoons & septic systems

- **Land Application of Bio-Solids**

Municipal treatment facility waste



**1990's**

**Water Quality Focus Team**

**Bob Broz, State WQ Specialist**



- On-Farm Fuel Storage Spill Management Plans

Producer self-assessment & plan development

- Pesticide Movement

Best Management Practices Survey w/ Training



2000's

## On-Farm Research

- **Fertilizer placement in row-crops**  
Maintain yield while reducing fertilizer mobilization
- **Cover Crops**  
Nutrient sequestering & soil health

# Soil Health

## Soil Health Assessment Center

Analysis of long-term cover crop plots revealed need to supplement soil characterization lab.

MU SHAC is 1 of 2 public Soil Health Centers in the nation.



## Soil Health Assessment Center

University of Missouri

Service in the Land Grant Tradition



Quantitative—Measure indicators of Soil Functions

- Physical
- Chemical
- Biological

Soil Specific—Compare soil indicator values to  
Native benchmark soils  
Fields with similar soils

Prescriptive—Identify limiting soil attributes

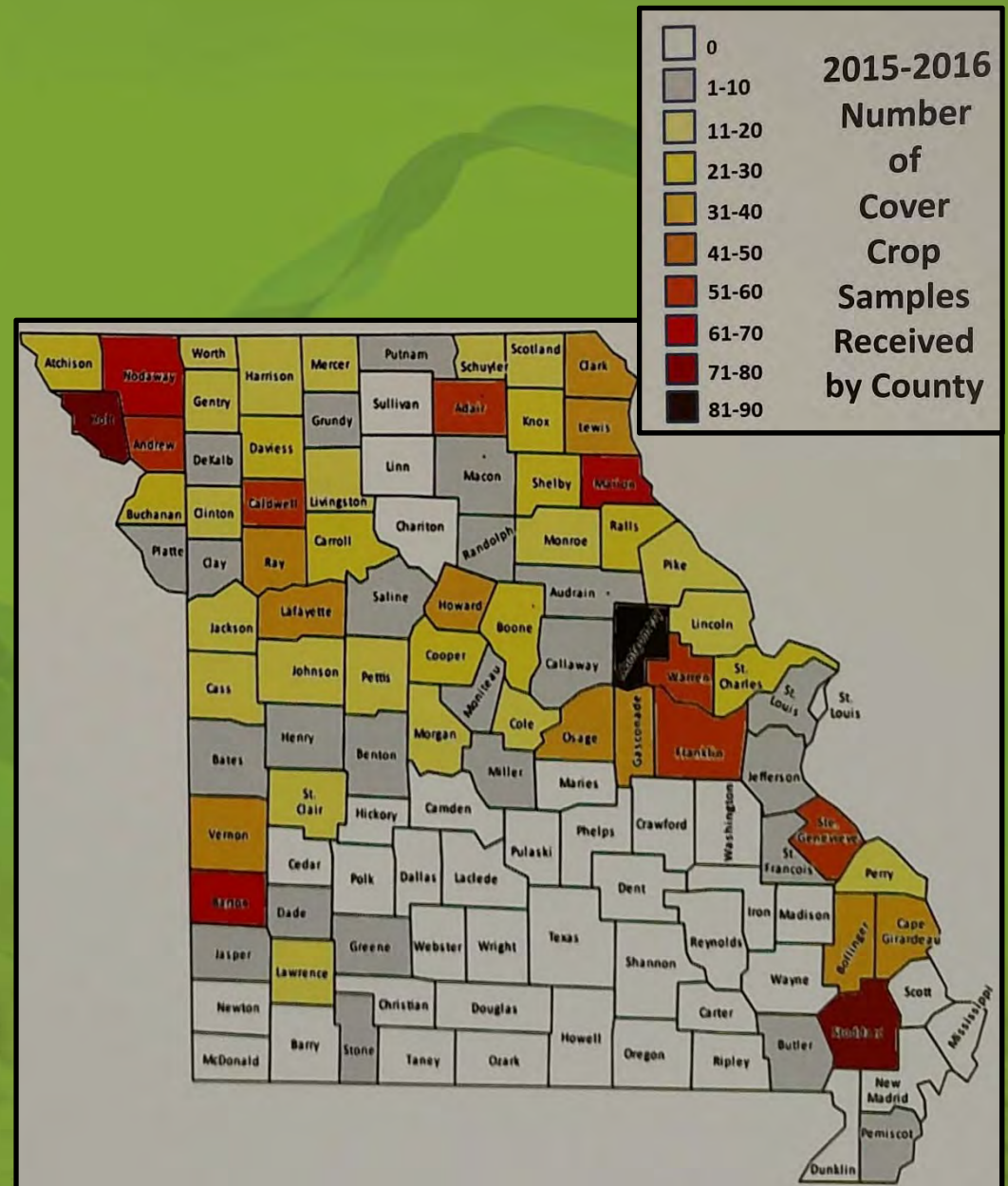
Evaluative—Compile database

- Evaluate progress
- Evaluate management effectiveness



# Soil Health Sampling

- Joint NRCS / MU Extension Effort
- Soil & Water Conservation Districts managing cover crop contracts
- MO DNR providing sample analysis cost-share
- Highest statewide sampling density in counties of Lincoln, Warren and Montgomery



# EC Region MU Extension Pesticide Use & Water Quality Survey 2014-2017

Preliminary Results Survey Study of  
Producers

Thoughts, Attitudes & Actions  
2014-2017

Rich Hoormann, MU Extension Horticulture Specialist

Matt Herring, MU Extension Agronomy-Natural Resources Specialist

Rusty Lee, MU Extension Agronomy Specialist



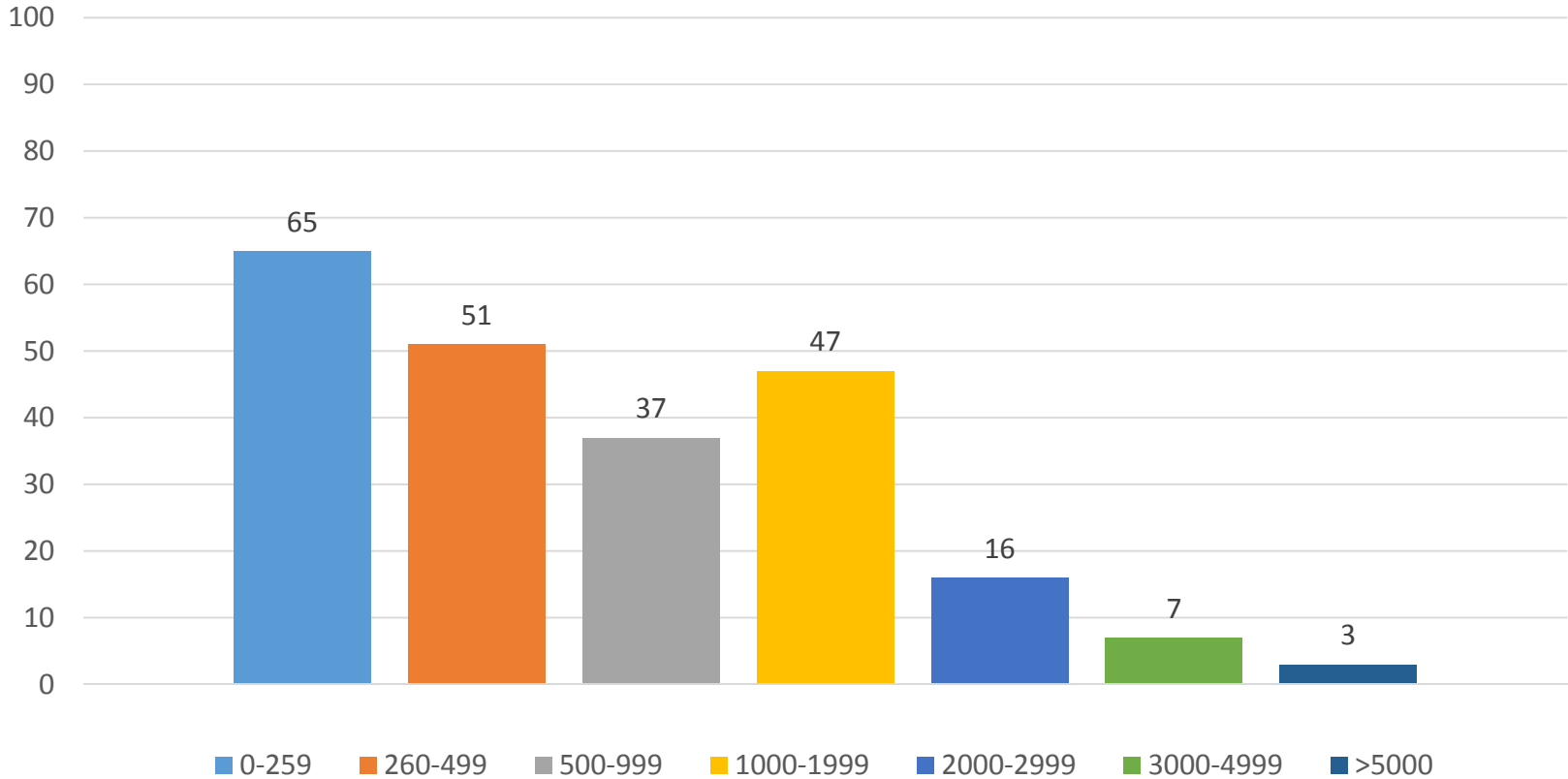
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# Distribution of Farmers Surveyed by Farm Size (2015-16)

(226 farmers reporting acreage out of 238)

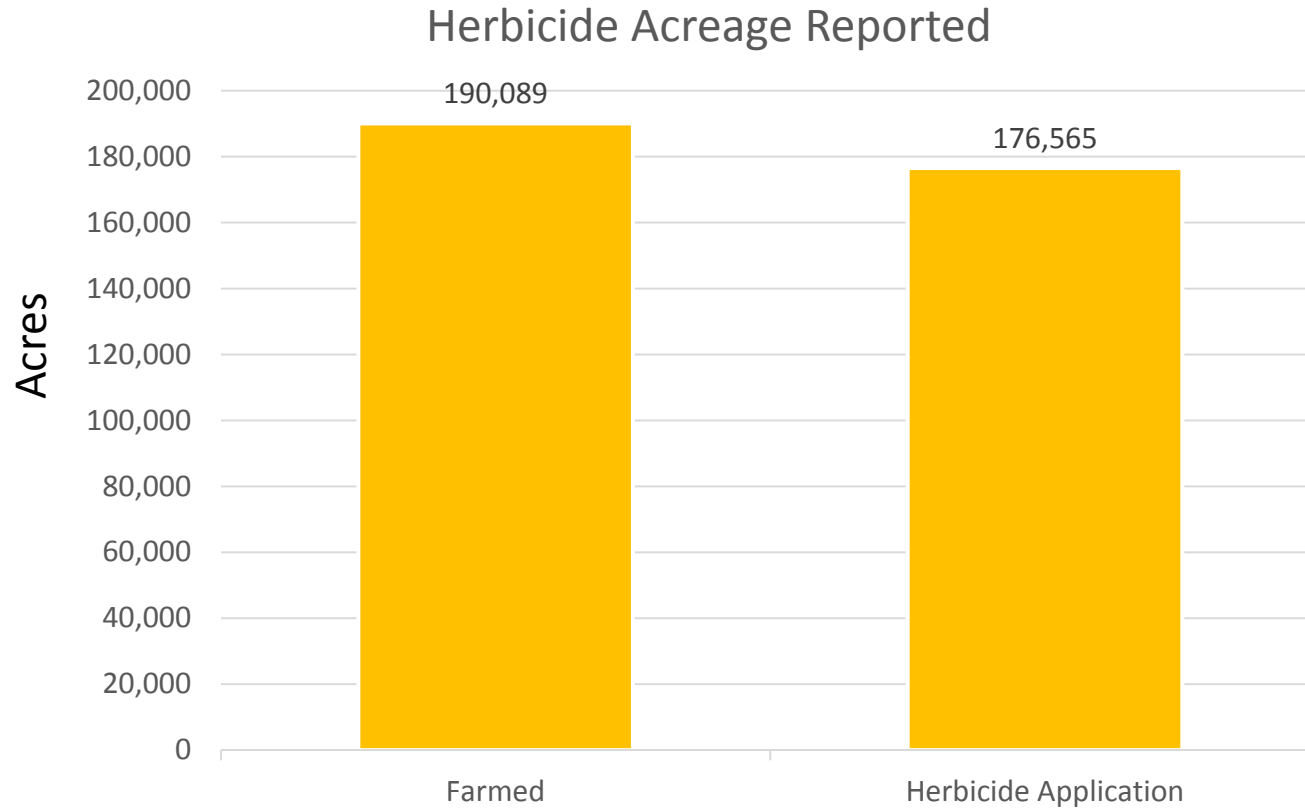


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# Land farmed by Reporting Producers 2015-16



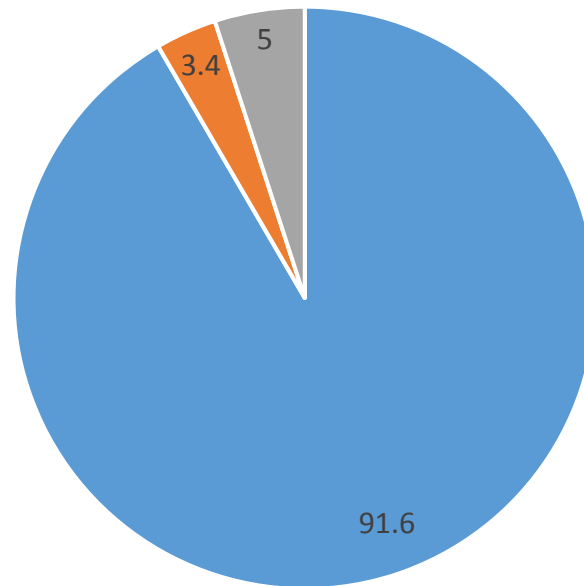
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# Percentage Farmers Reporting Herbicide Application (2015-16) (238 farmers Surveyed)

Farmers Reporting Herbicide Activity by Percentage



■ Herbicide Application ■ Non Herbicide Application ■ Response

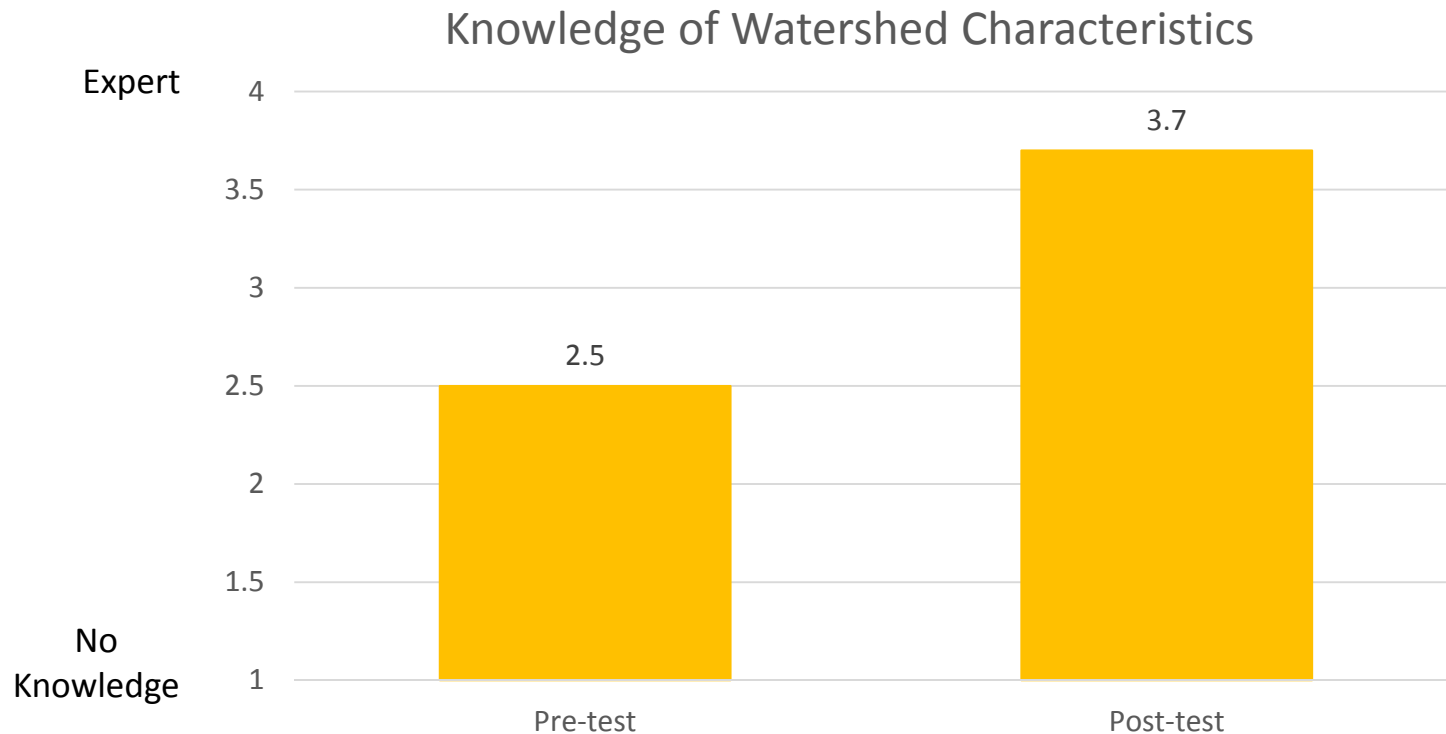


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# Knowledge about... Watershed characteristics that may make label recommendation inadequate for protecting water quality

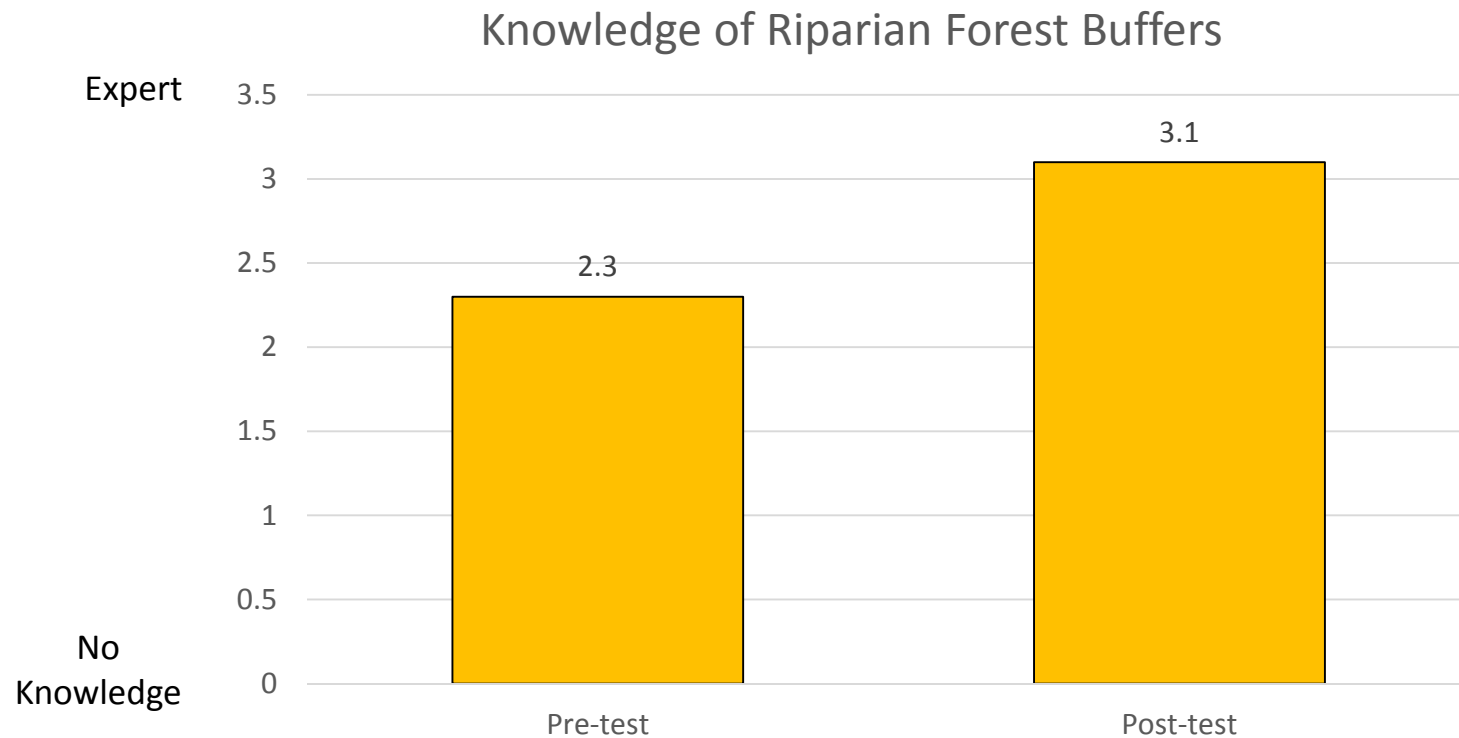


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# Knowledge about... Riparian Forest Buffers

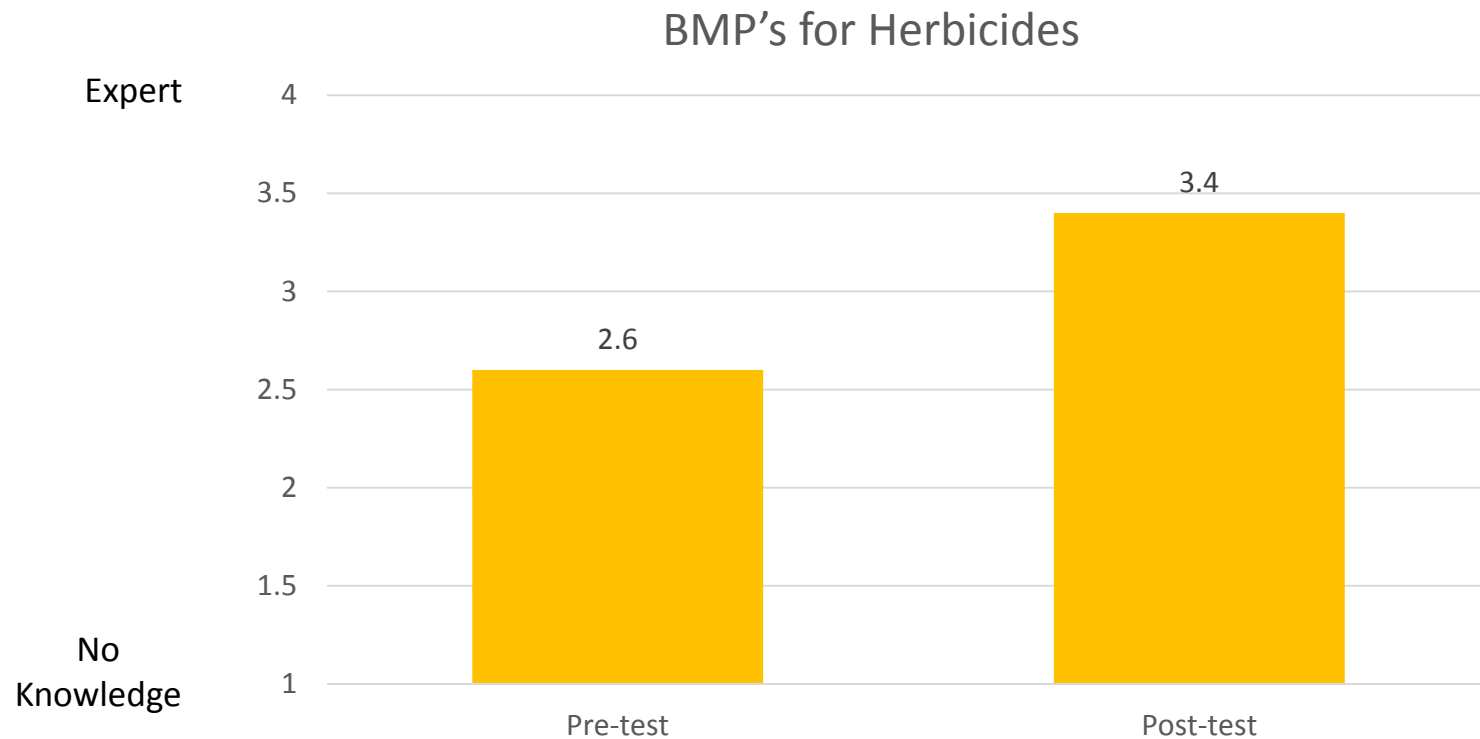


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# Knowledge about...Properties of herbicides for protecting water quality.



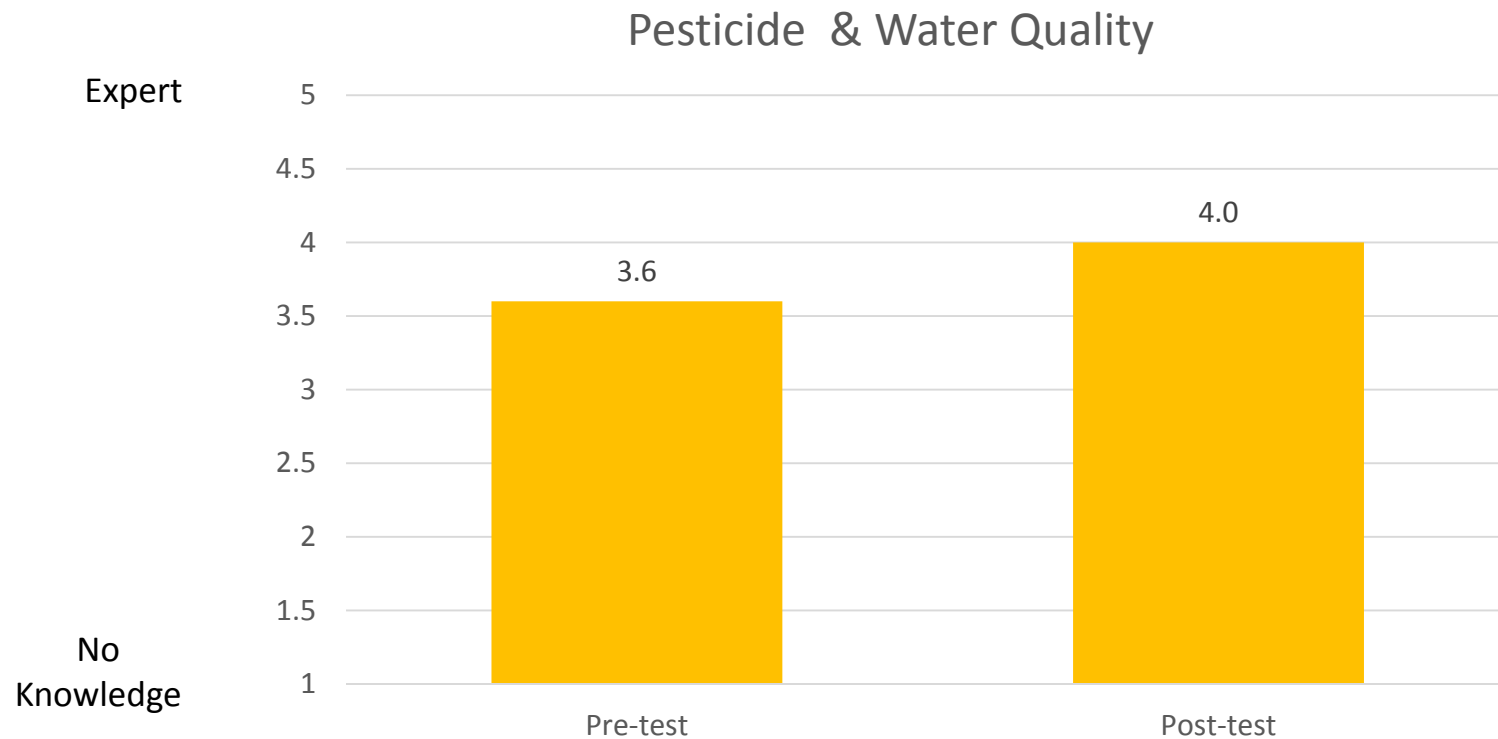
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# Knowledge about... Importance to keep pesticides out of streams and lakes.



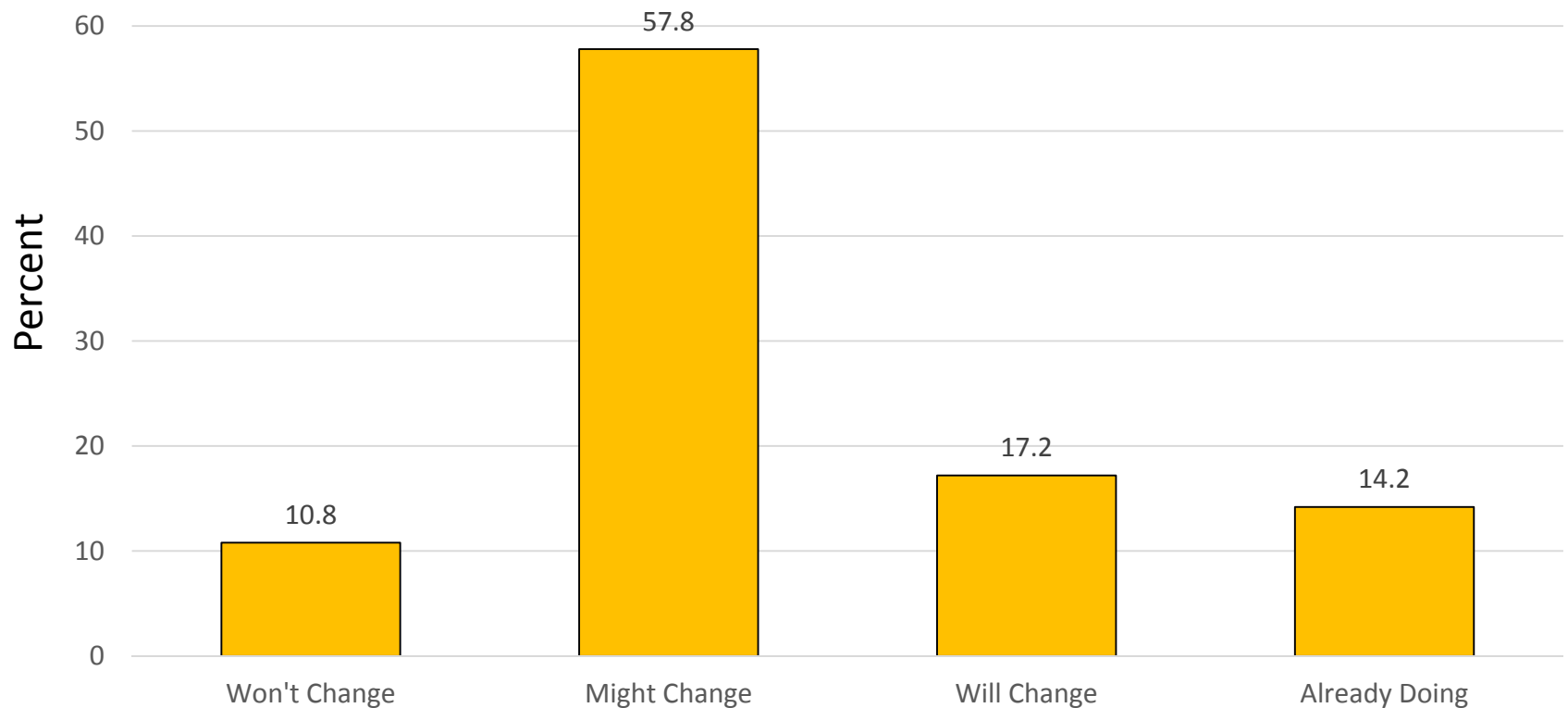
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# Farmers Reporting Intent to Increase Pesticide Runoff BMPs within the Next 12 Months (2015-16)

(204 responding out of 238 Surveyed)



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# Farmers Reporting Intent to Consider Pesticide Alternatives to Atrazine within the Next 12 Months (2015-16)

(204 responding out of 238 Surveyed)



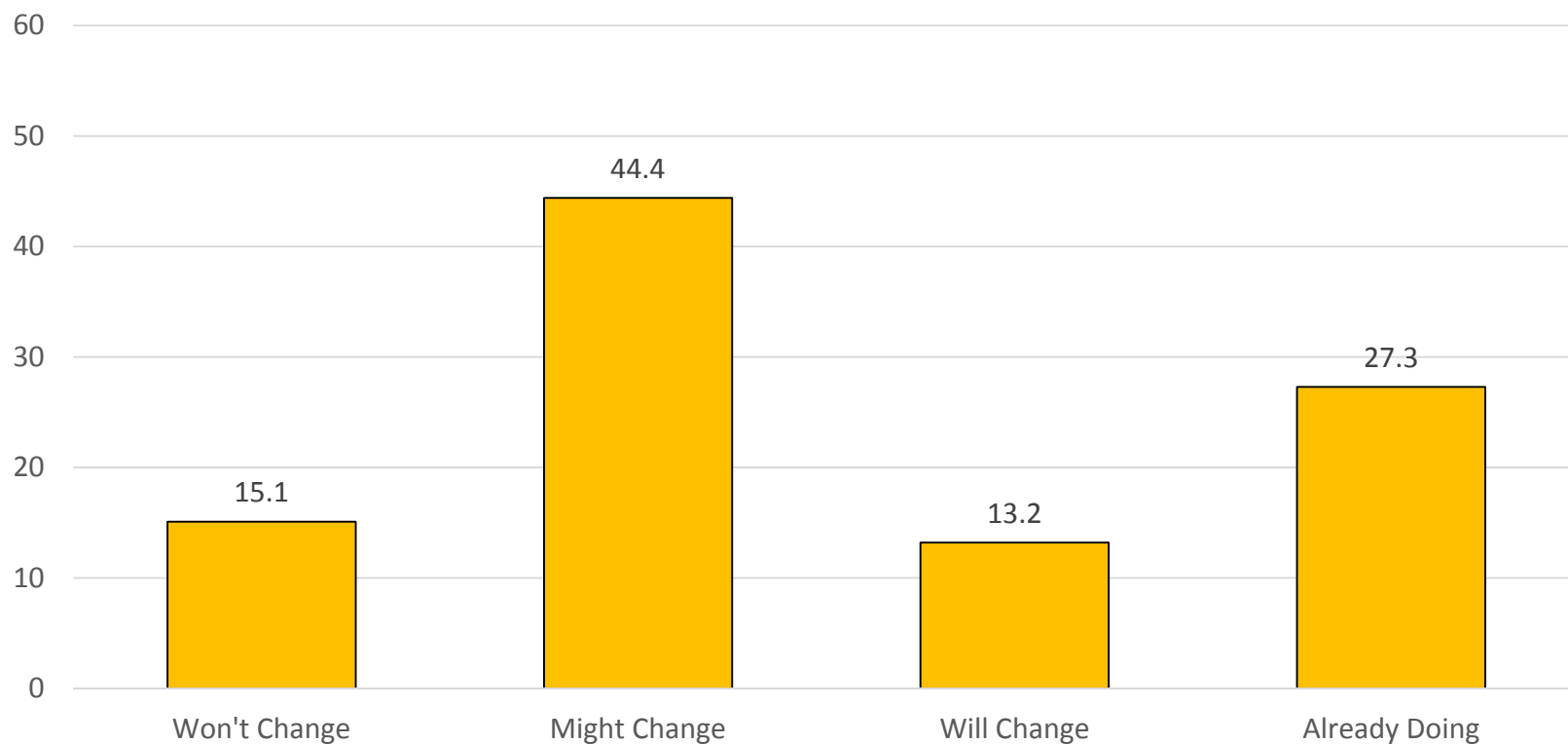
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# Farmers Reporting Intent to Use Field Borders/Filter Strips to Control Runoff in the Next 12 Months (2015-16)

(205 responding out of 238 Surveyed)



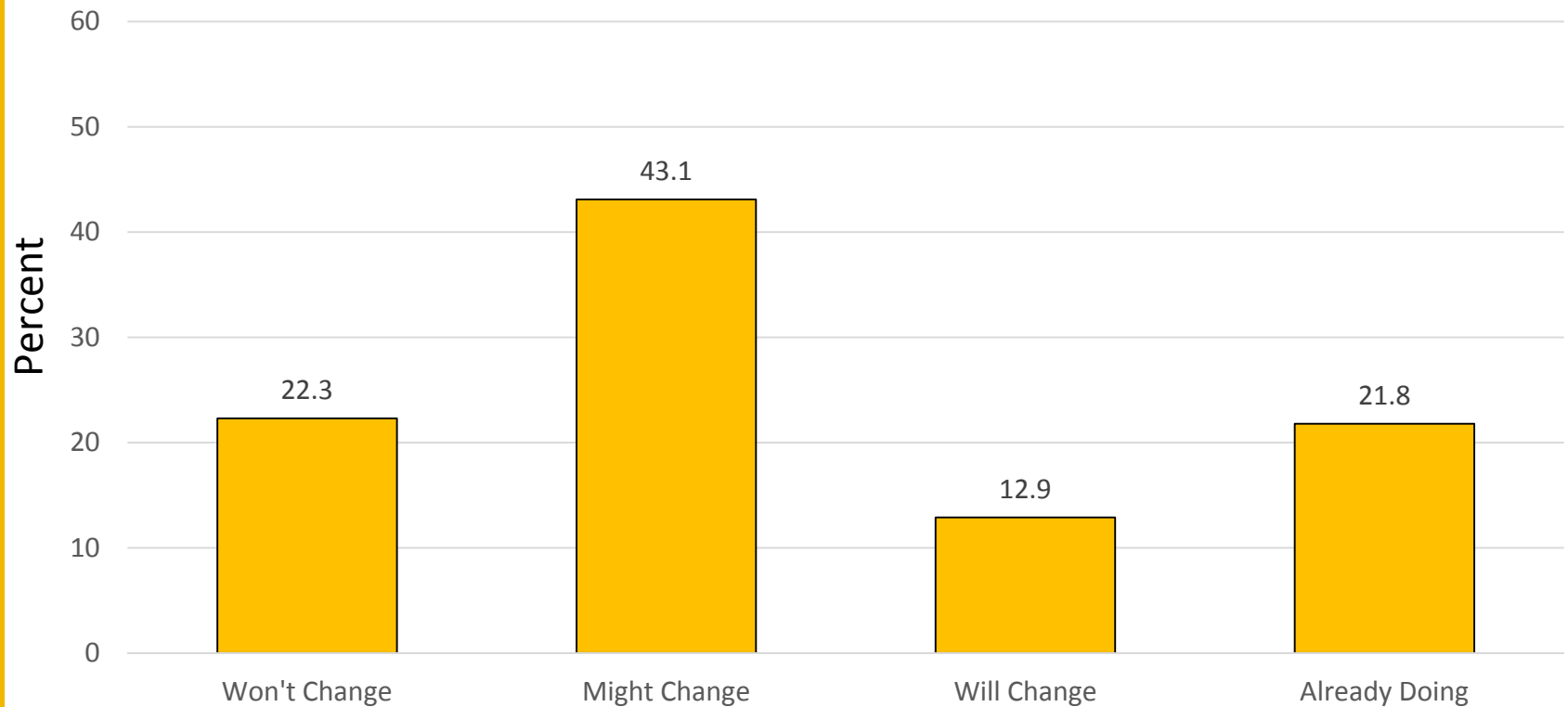
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# Farmers Reporting Intent to Install Riparian Areas in the Next 12 Months (2015-16)

(202 responding out of 238 Surveyed)



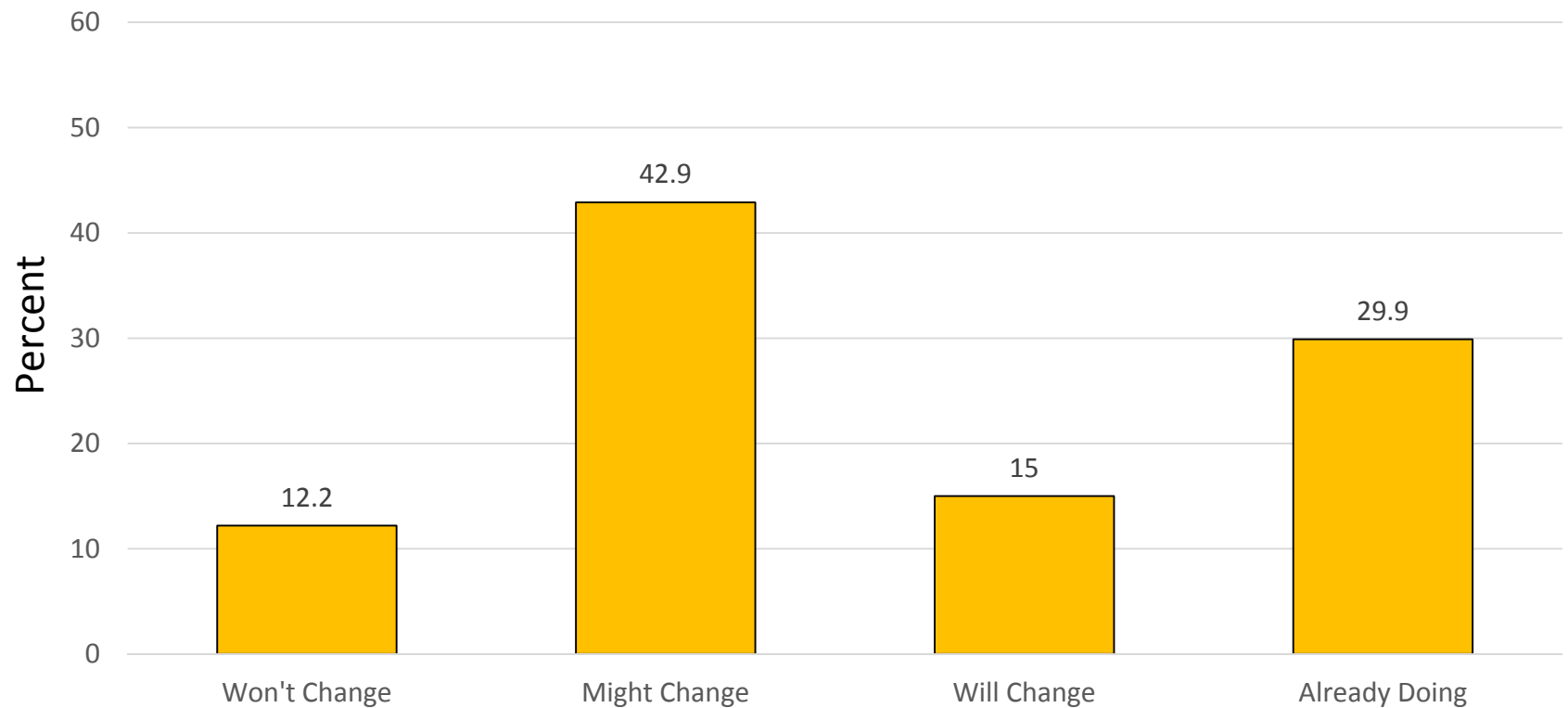
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# Farmers Reporting Intent to Plant Cover Crops in the Next 12 Months (2015-16)

(147 responding out of 192 Surveyed in 2016) \*



\*Only 2016 survey data used, as cover crop question introduced to survey in 2016 (192 farmers surveyed)



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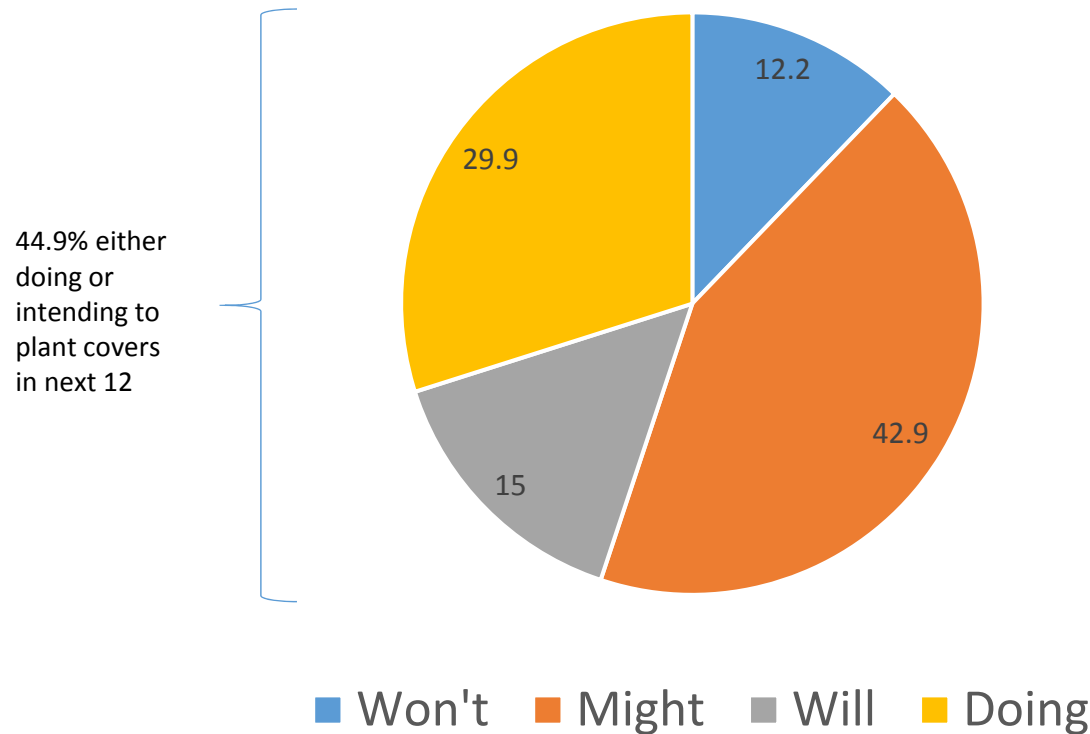
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# Farmers Reporting Intent to Plant Cover Crops in the Next 12 Months (2015-16)

(147 responding out of 192 Surveyed in 2016)\*

Covers



\*Only 2016 survey data used, as cover crop question introduced to survey in 2016 (192 farmers surveyed)



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