

# Developing Resources to Address Measured Gaps in Basic Agriculture Research Interpretation in the North Central Region, 2017.

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## Introduction

- Research is a primary component of the University Extension network.
- Research is often presented to the public in scientific formats, making practical interpretation challenging.
- A needs assessment of the usefulness of university research publications for farmers in the North Central Region was proposed.
- A North Central Region Agriculture and Natural Resources Academy focus group conducted a survey to measure farmer understanding of research data.

## Objective

To gain a broad-spectrum understanding of agronomy extension constituents comprehension of basic statistics and valuation of different types of simple research data.

## Methods

- 1165 farmers/agriculture professionals from SD, NE, KS, MN were surveyed during winter farmer meetings (2016-2017) and pesticide applicator trainings.

**Agricultural Research Survey 2016-2017**

We appreciate your input regarding the value of information used in making decisions for your farming operation. Your input will be used to help develop and improve educational materials for use across the North Central Region.

Thank you for taking the time to complete this!

**Questions regarding value of information:**

	No value or Don't use	Low value	Moderate Value	Moderately High Value	High Value	Unfamiliar with terminology
1. How much value do you place in <b>small plot, replicated</b> research trials when making decisions on your farm?	<input type="radio"/>					
2. How much value do you place in <b>large-plot / field-scale replicated</b> research trials when making decisions on your farm?	<input type="radio"/>					
3. How much value do you place in <b>field-scale trials (demonstration - not replicated)</b> where the field is split in half?	<input type="radio"/>					

**Questions regarding use of statistics:**

4. I feel confident in my understanding of an LSD (least significant difference) and how to use it.  Yes  No  Unsure

5. If treatment A yielded 50 bu/ac and treatment B yielded 55 bu/ac and the LSD = 7 bu/ac:  
 Based on this experiment, I would favor B over A  
 Based on this experiment, I don't know if B is better than A  
 I'm not sure what LSD means

**Please check the category(s) that best fit your occupation (you may select more than one):**

Farmer / Rancher  Ag Professional  Government Agency  
 University/Extension  Other (write in): \_\_\_\_\_

**Please check which age category you are in:**

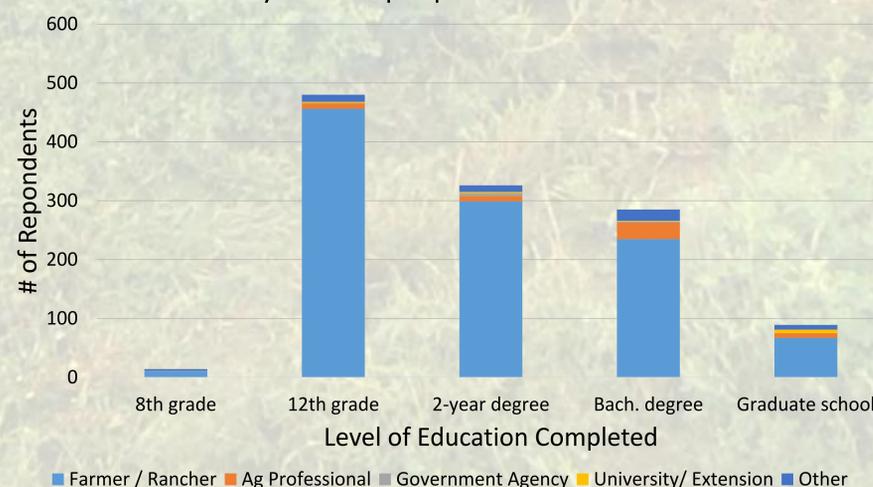
20 years and under  41 – 50 years of age  71 + years of age  
 21 – 30 years of age  51 – 60 years of age  
 31 – 40 years of age  61 – 70 years of age

**Please check the highest level of education you completed:**

8<sup>th</sup> grade  2-year degree  Graduate school  
 12<sup>th</sup> grade  Bachelor's degree

Thank you for completing this survey! ☺

Figure 1. Survey respondent education and occupation from a survey of 1156 people in 2016-2017.



## Results

Figure 2. Survey respondent value rating of agronomy research from a survey of 1165 people in 2016-2017.

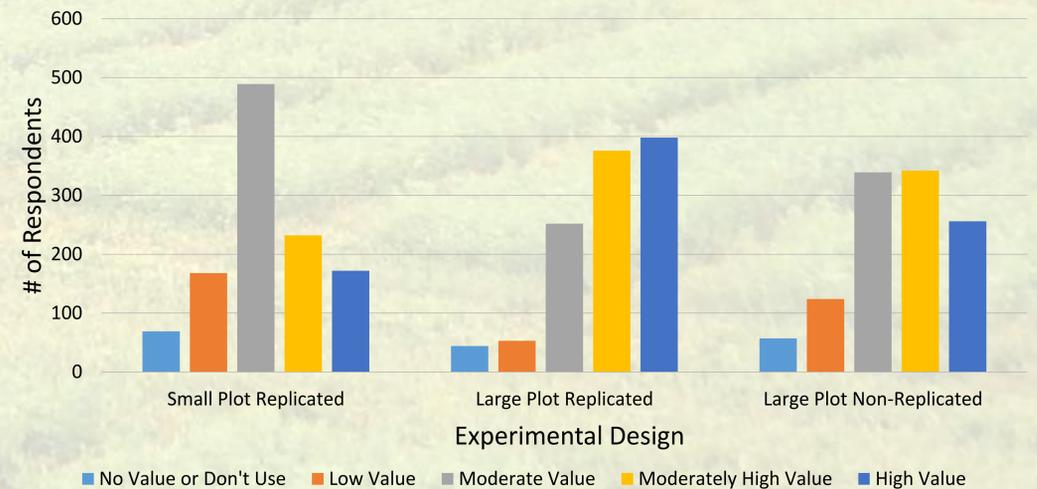


Table 1. Percent of responses of people who answered 2 questions based upon their understanding of 'Least Significant Difference' and how to use it in a survey of 1165 people in 2016-2017.

		I feel confident in my understanding of an LSD (least significant difference) and how to use it.			
		Yes	No	Unsure	Total
<b>If treatment A yielded 50 bu/ac and treatment B yielded 55 bu/ac and the LSD = 7 bu/ac:</b>	Based on this experiment, I would favor B over A	11.8%	2.6%	8.5%	23.0%
	Based on this experiment, I don't know if B is better than A	30.0%	4.3%	9.8%	44.1%
	I'm not sure what LSD means	2.3%	8.0%	22.6%	32.9%
	<b>Total</b>	<b>44.2%</b>	<b>14.9%</b>	<b>40.9%</b>	<b>100.0%</b>

## Conclusions

- There is a gap in interpretation between university publications and the public.
- Extension needs to address this issue with educational opportunities.
- Research results need to be 'user-friendly'.
- A 'Research Understanding' package is being developed and will be published by the spring of 2018. It will address:
  - Randomization/Replication, Setting up a Field Trial, Understanding LSD, and Recognizing False Marketing Claims
  - An article series, PowerPoint slides, fact sheets, how-to video clips, and resource lists will be created for educator and farmer use

## Acknowledgements

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