

## Introduction

The United States has more than 370,000 military veteran farmers<sup>1</sup>. Military veteran farmers constitute a niche group who encounter unique barriers in obtaining food safety education<sup>2</sup>. Previous research has shown that food safety training can achieve better outcomes when materials are tailored to the intended audience<sup>3</sup>.

## Objectives

This two-part study was conducted to identify the on-farm food safety practices and resource needs of U.S. military veterans who are farmers.

## Materials and Methods

In study 1, an online survey was administered in March 2023, and was divided into demographics, farming background, food safety knowledge, attitudes, practices, perceived behavioral control, and food safety education needs of participants. The survey was distributed nationwide using a list of military veteran farmers through the Farmer Veteran Coalition. Study 2 consisted of in-person interviews conducted on a multi-state level in 2022–2023 at regional and national agricultural conferences.

## Results

In total, 557 U.S. military veteran farms participated in this study, including 550 survey participants, and 27 interview participants.

## Characteristics



<sup>a</sup> All survey participants n=550

<sup>b</sup> Including those not currently farming n=64

<sup>c</sup> Including only those currently farming n=485

<sup>d</sup> Produce growing survey participants only n=254

## Produce growers risky on-farm food safety practices n=245

No sanitation & hygiene training



n= 95 (48%)

No agriculture water testing



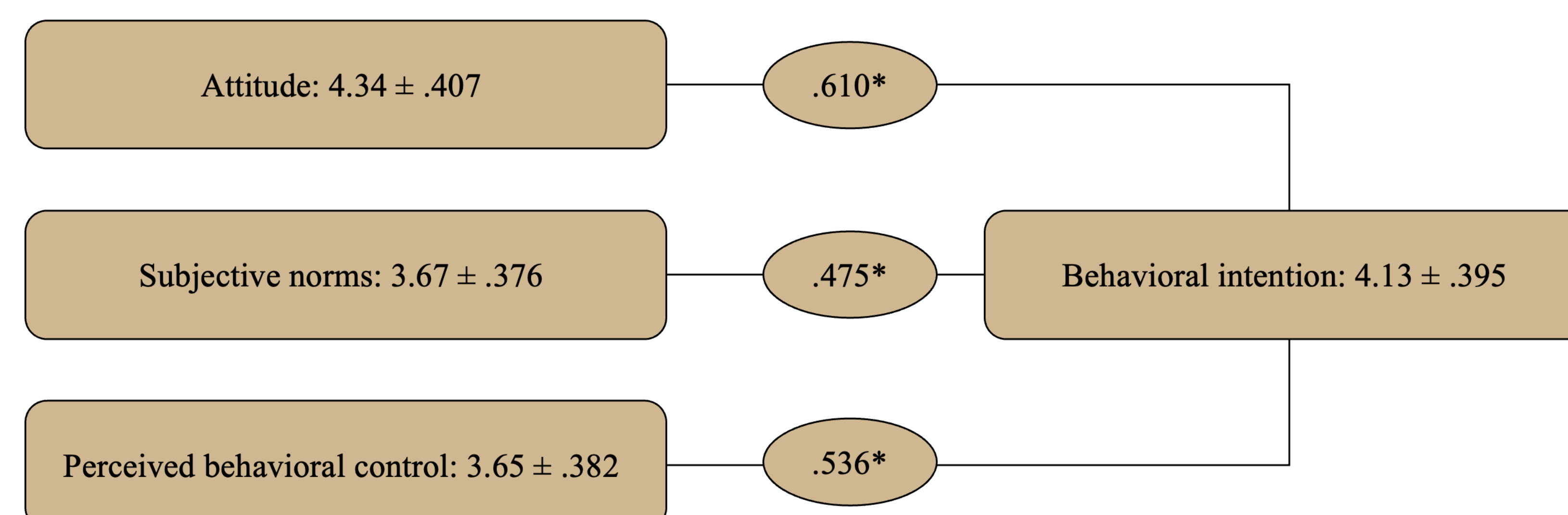
n= 110 (43%)

Livestock next to produce field



n= 76 (30%)

## On-farm Food Safety Motivators and Barriers



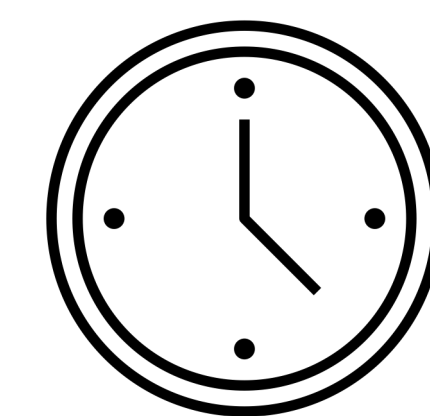
**Figure 1.** Military veteran farmers mean scores for each theory of planned behavior construct towards on-farm food safety behavior and Spearman's correlation between constructs and behavioral intention  
\*p <0.05

Food safety: Top priority

*"Absolutely food safety is a top priority at the organizational level... for a number of reasons."*

Barriers to food safety

Limited time



n= 115 (21%)

Limited information



n= 152 (27%)

- Interviews identified food safety as a top priority
- Survey identified lack of time and lack of educational material perceived barriers to access on-farm food safety information

## Food Safety Education

Death by PowerPoint

*"PowerPoints tend to get old. ... I'm kind of touchy feely."*

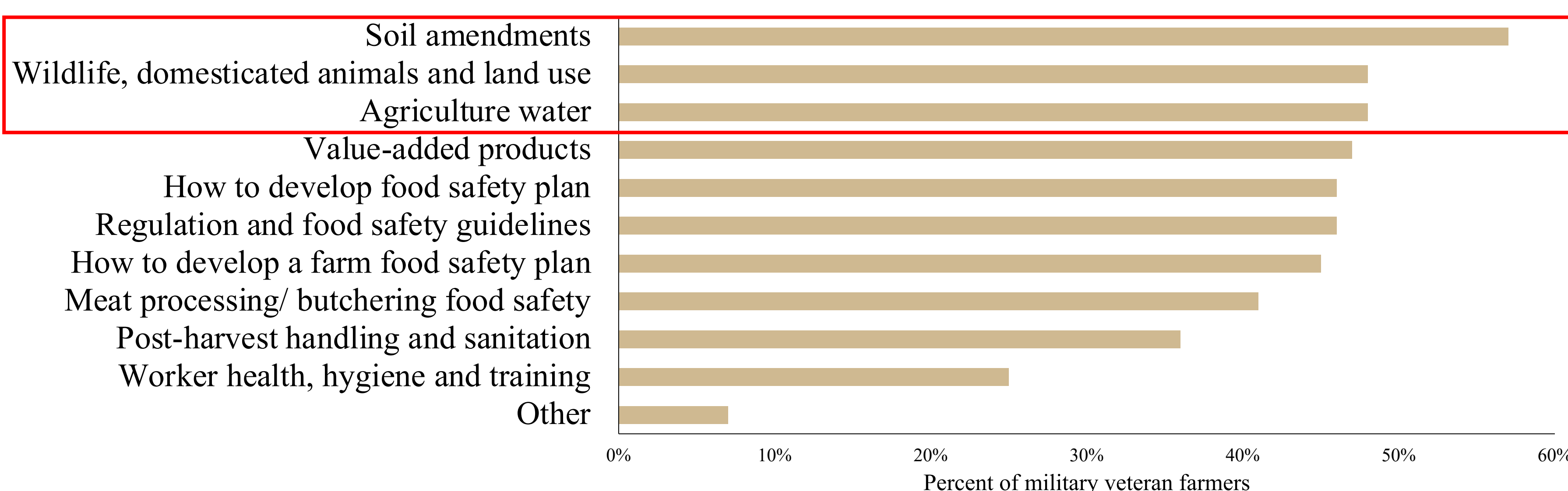
Hands-on and Interactive

*"[I prefer] classes and workshops. I'm a tactile person. I have a traumatic brain injury, yeah... I have to touch it to do it."*

Virtual Reality

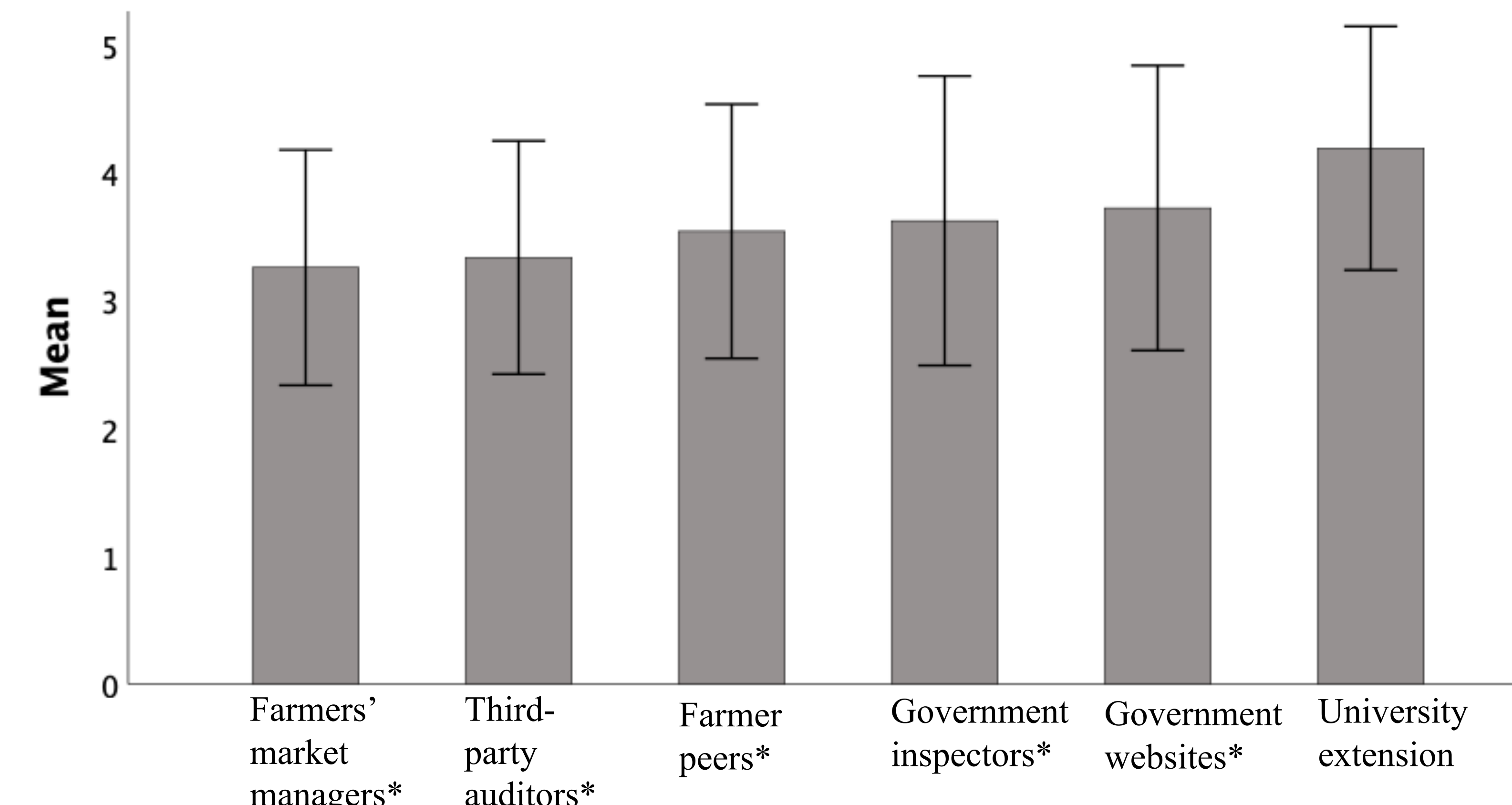
*"VR training would be fun, new and exciting, whereas with PowerPoint you're sitting for too long."*

- Interviews identified an aversion towards PowerPoint presentations, preferring hands-on and interactive programs



**Figure 2.** The top reported topics survey participating military veteran farmers reported soil amendments, wildlife, domesticated animals and lands use, and agriculture water

## Most Reliable Source: University Extension



**Figure 3.** Military veteran farmers ranked sources on reliability for on-farm food safety information on a 5-point Likert scale (1=Extremely unreliable, 2=Somewhat unreliable, 3=Neither unreliable nor reliable, 4= Somewhat reliable, 5= Extremely reliable)  
\*Sources are significantly different from University Extension p <.05

## Conclusions

This is the first study to address the on-farm food safety needs of military veteran farmers in the United States. Risky on-farm food safety practices were identified amongst produce growing military veteran farmers. Additionally, barriers and motivators to participate in on-farm food safety behaviors were identified for military veteran farmers. These findings indicate future programs should emphasize the topics soil amendments, agriculture water, and wildlife, domesticated animals and land use; and the programs should be delivered via the trusted sources of military veteran farmers.

## Significance

The findings identify a need for tailored on-farm food safety programs for military veteran farmers in the United States. Further studies assessing the food safety education needs of niche players in the food supply chain is recommended.

## Acknowledgements

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## References

1. U.S. Department of Agriculture. (2017). Census of Agriculture. Retrieved June 4 from [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1\\_Chapter\\_1\\_US/usv1.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1_Chapter_1_US/usv1.pdf)
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