



Enhancing Private Well Water Safety Through Extension Outreach

Yilin Zhuang, PhD | University of Florida, IFAS Extension Central District



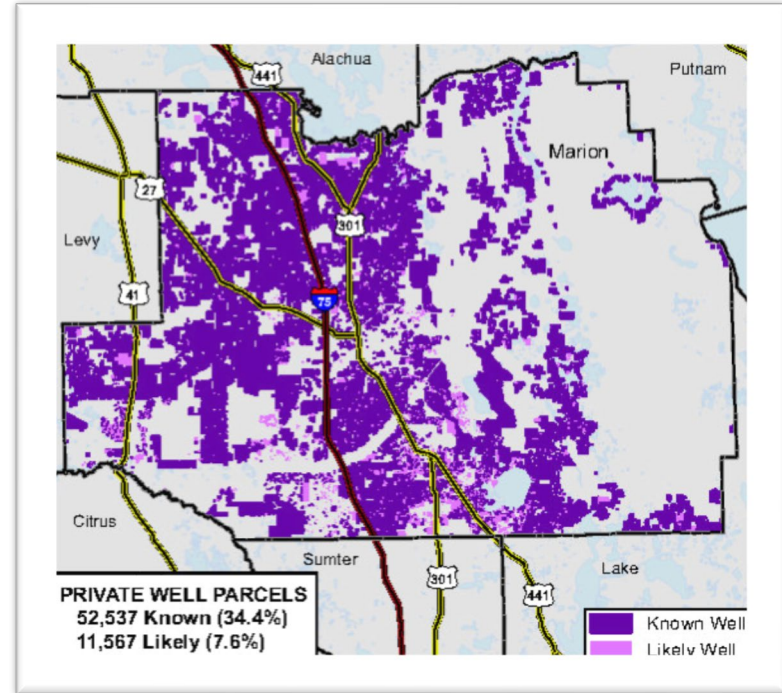
Outline

- Background
- Objective
- Methods
- Results
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Background

- At least one-third of Marion County's residents receive their drinking water from private wells.
- It is well owners' responsibility to ensure that their water is safe to drink.
 - Education rather than regulation



Source: Florida Department of Health



Objective

- Educate well owners of the possibility of contamination of their wells, the causes of and methods for prevention and treatment.

Methods



Seminar



Free water testing



Result interpretation

Results

- November 2018 – November 2019, 196 well owners attended this class and 154 surveys were collected.
- All have indicated that the class was helpful (97% very helpful and 3% somewhat helpful) and they improved their understanding of private well management, septic system maintenance, and importance of protecting Florida's water.

Results- Sampling

- 136 class attendees collected water samples and returned them back to the Extension office to test for bacteria.
- According to the Texas and Virginia Well Owner Network, the average water sample return rate is around 25%. This program has a return rate at 69%.



Results – Bacteria

- Bacteria was detected in 33 samples (2 E.coli and coliform; 31 only coliform).
- All of them took the recommendation to shock chlorinate through their wells and plumbing to kill bacteria.
 - 27 successfully disinfected the well, 2 installed continuous disinfection systems, 2 use bottled water as their drinking water source, and 2 are finding the source (they were notified the results on Nov 25, 2019).

Results – Septic Systems

- 142 class attendees (92%) committed to pumping their septic systems.
- 38 of them already pumped the tanks as a result of attending the class *Is Your Well Water Well*.
- A total of 59 people have pumped their septic tanks since the well water and septic system related classes were offered by UF/IFAS Extension Marion County.

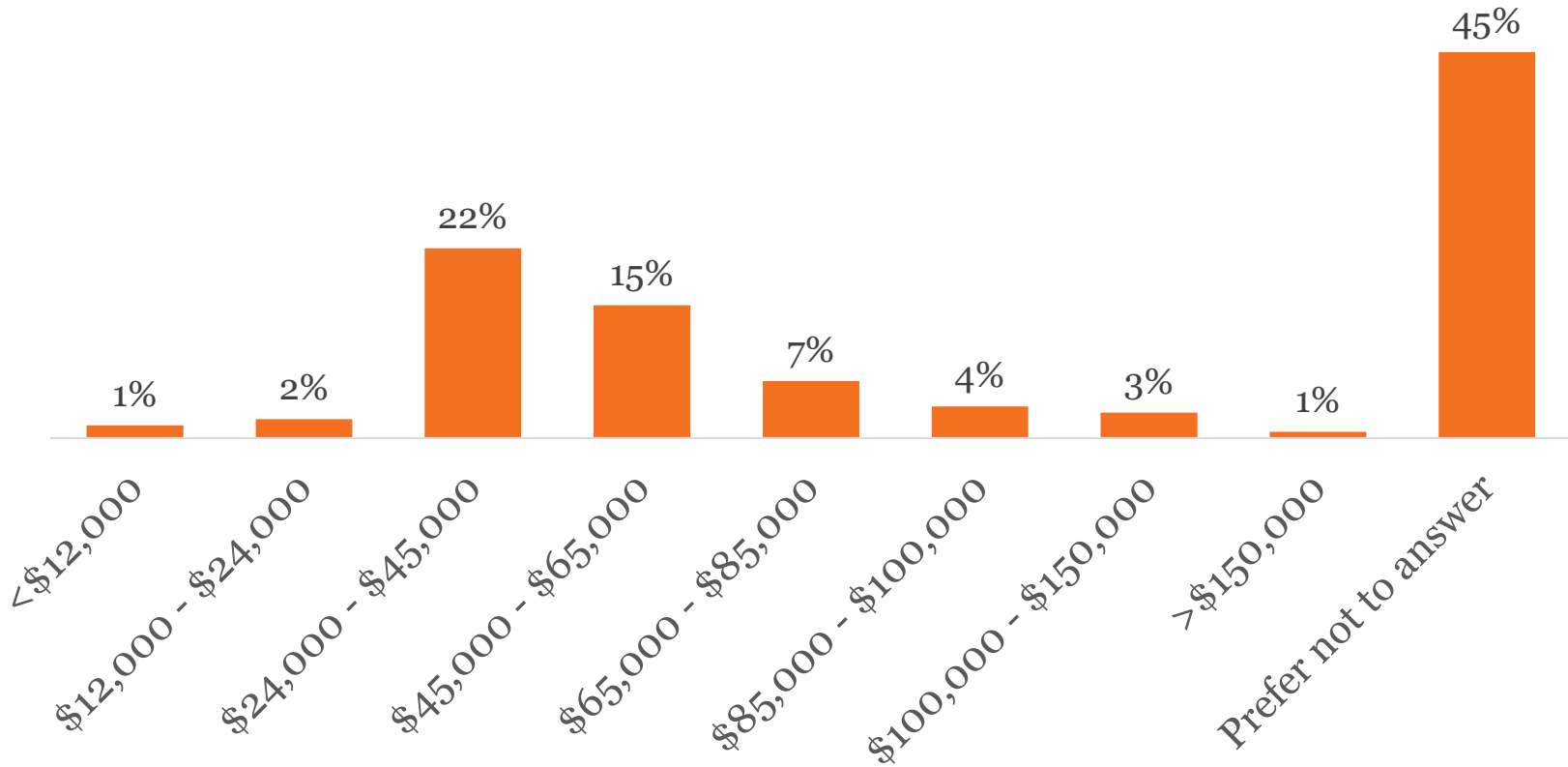
Results - Nitrogen

- According to Florida Department of Health, the estimated nitrogen input per capita leaving the septic tank varied between 7.3 and 14.7 pounds per person per year. On a per capita basis, the mass loading of nitrogen to the ground water ranged from 3.95 to 9.65 pounds per person per year. This resulted in a mid-range of about 17 pounds nitrogen per year per system. Pumping the sludge from 59 septic tanks eliminated **1,003 pounds of nitrogen** leaching into groundwater every year.
- The average cost for nitrogen removal ranges from \$0.05/pound to \$12.8/pound. Pumping the 59 tanks costs \$11,800.00 but saves nitrogen removal cost ranging from **\$50.15 to \$12,838.40**.

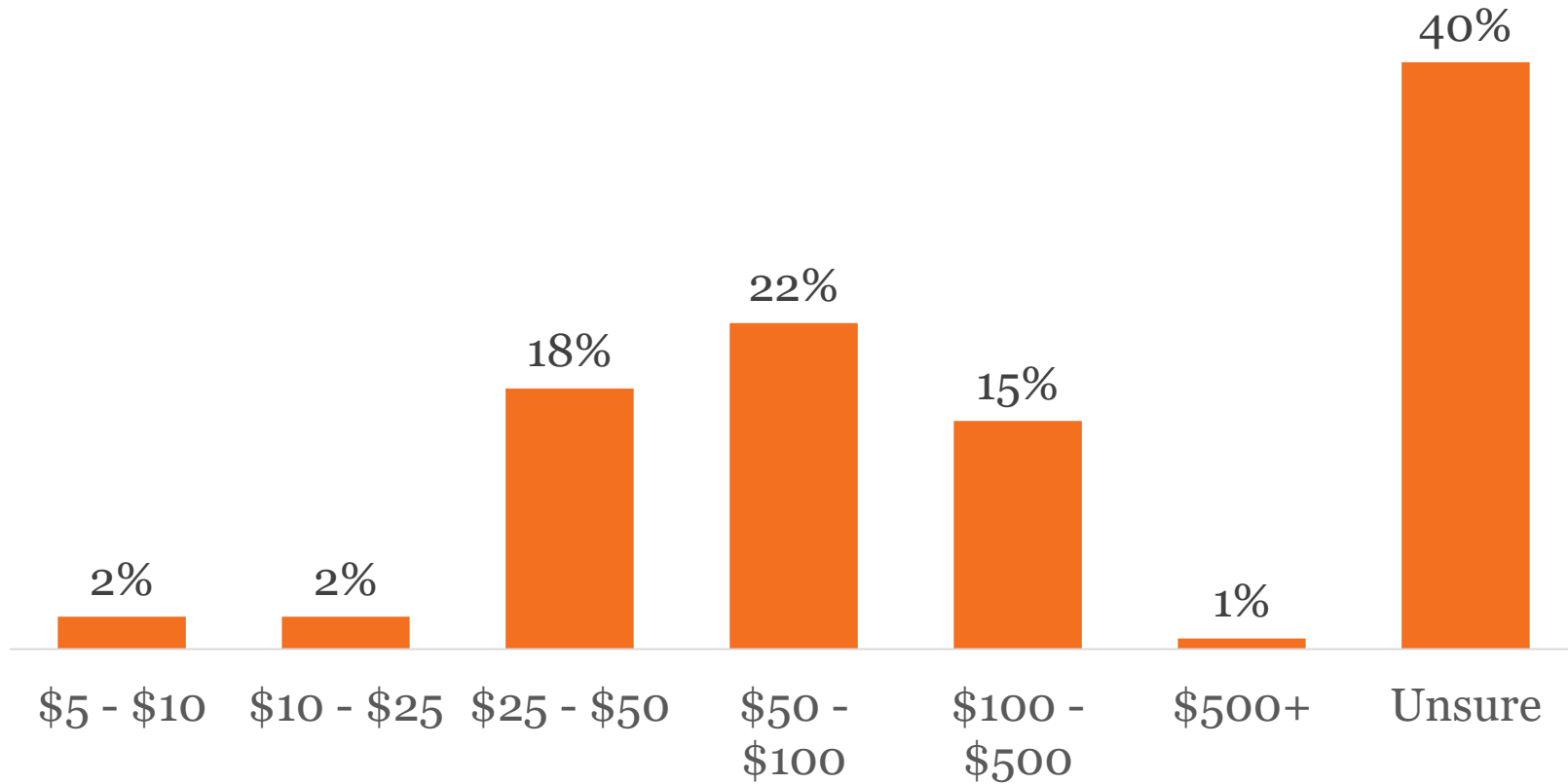
Results – Well Information

- 54% (n=136) don't know their well system information (e.g., type, depth, year the well was constructed).
- 40% well owners have never tested their well water.
- 44% have never pumped their septic tanks and 3% only pump the tank when there is a problem.

Annual Household Income (n=136)

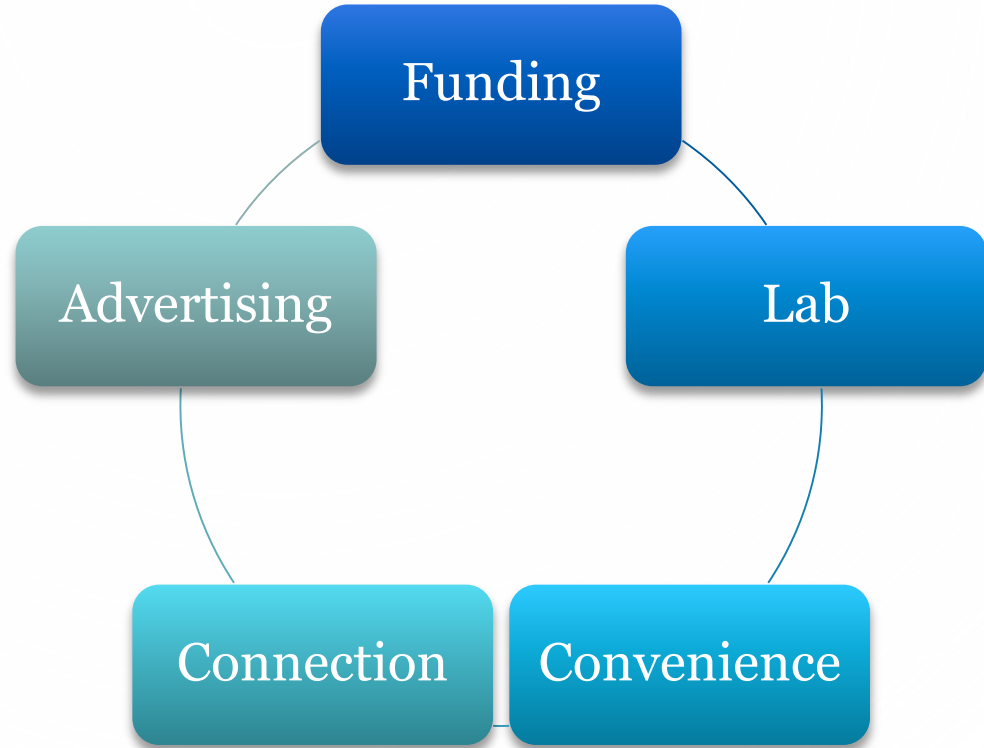


Monetary Value on This Program (n=136)





Key Components





Questions or Comments?

Yilin Zhuang, yilinz@ufl.edu

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