

# Research Update: OTC Adoption and Outcomes

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# Take Home Message

- ⊗ **Adoption:** OTC was adopted on 94% of acres (79% of growers).
- ⊗ **Improved Yield:** Almost 90% of growers see improved yields and decreased fruit drop.
- ⊗ **Improved Quality:** Pound solids increased by 15%-25% for most growers.
- ⊗ **Perception:** 60% of growers think OTC adoption is risky.



# Motivation

HLB is one of the acute and seemingly insurmountable challenges citrus growers face.



Source: Citrus Industry



Source: AgNet



- **October 2022:** A 24(c) special local need (SLN) label to apply OTC via trunk injection to citrus trees.
- **Fall 2023:** Citrus Industry Magazine survey indicating that more than 84% of growers (N=89) adopted trunk injections (Giles, 2024).



# Motivation

## Is trunk injection a viable option for citrus producers?

- ⊗ What is the trunk injection adoption rate and distribution?
- ⊗ What are typical trunk injection costs?
- ⊗ Where is trunk injection labor coming from?
- ⊗ Are growers seeing the results indicated in field experiments?
- ⊗ Is trunk injection profitable in the short and long term?

**To answer these questions and others, we conducted a grower trunk injection survey to examine adoption and outcomes.**

**We provide a benchmark that you can use to assess adoption and outcomes.**

# OTC Trunk Injection Survey

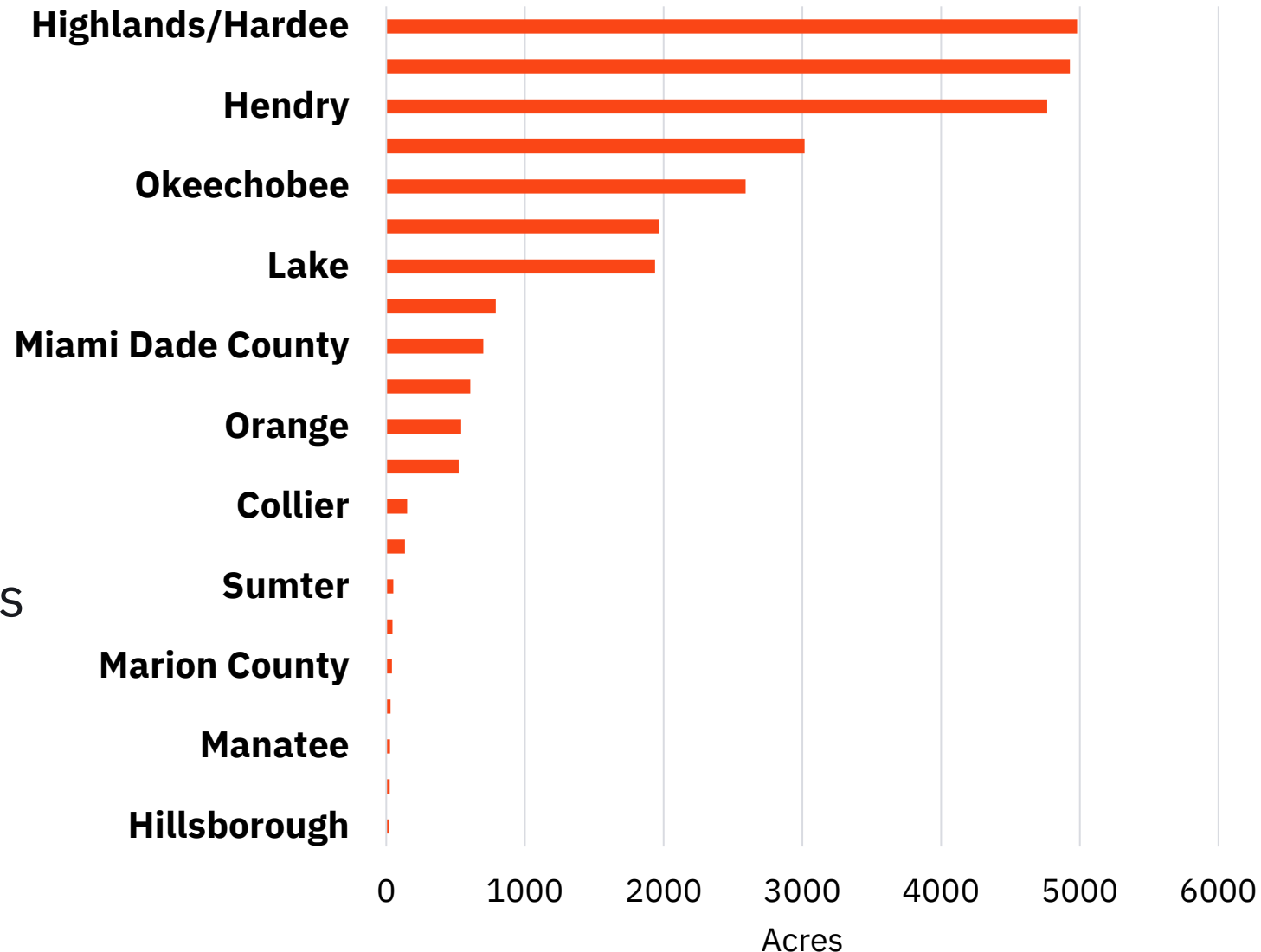
**We conducted a statewide survey to better understand trunk injection use in citrus production.**

- ✓ Administered between July and September 2024.
- ✓ Provides a comprehensive overview of adoption.
- ✓ Provides insights into growers' costs, yields, and perspectives on management practices.
- ✓ Targets Florida citrus growers who plant at least 10 ac.

# OTC Trunk Injection Survey

## Survey Stats

- ✓ Completed surveys: N = 80
- ✓ Total acres: 27, 862 ac (n = 65)
- ✓ Average acres: 429 ac
- ✓ Mature trees: 65%
- ✓ Counties: 22
- ✓ Tree density: 75% plant 100-200 trees/ac
- ✓ Crop: >80% early and late oranges
- ✓ Male: 70%
- ✓ Experience: 25 years

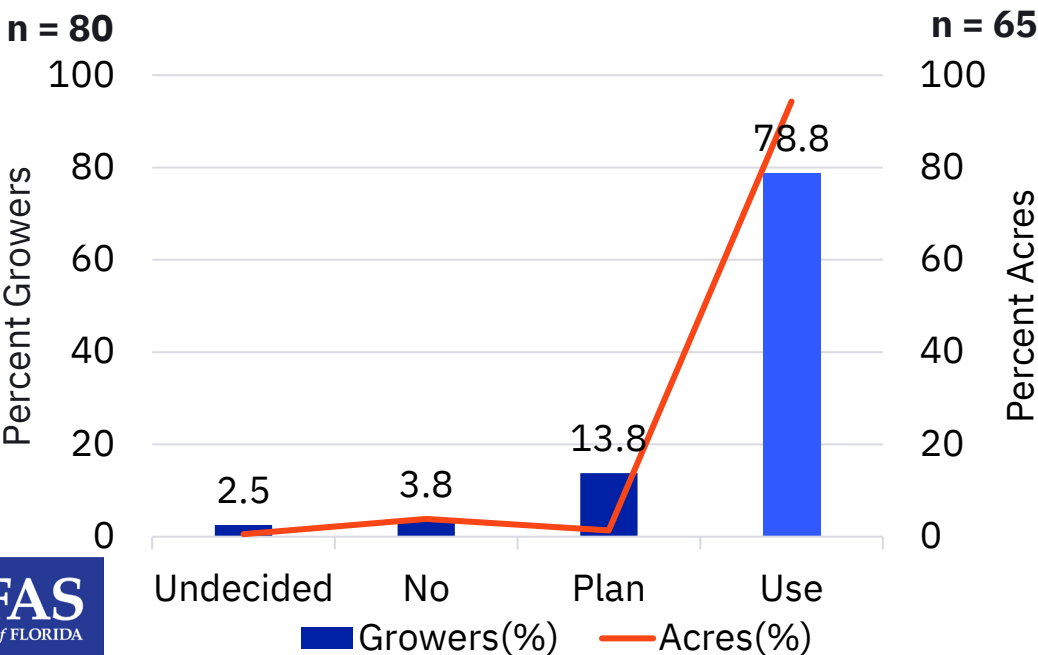


# Survey Results: OTC Use

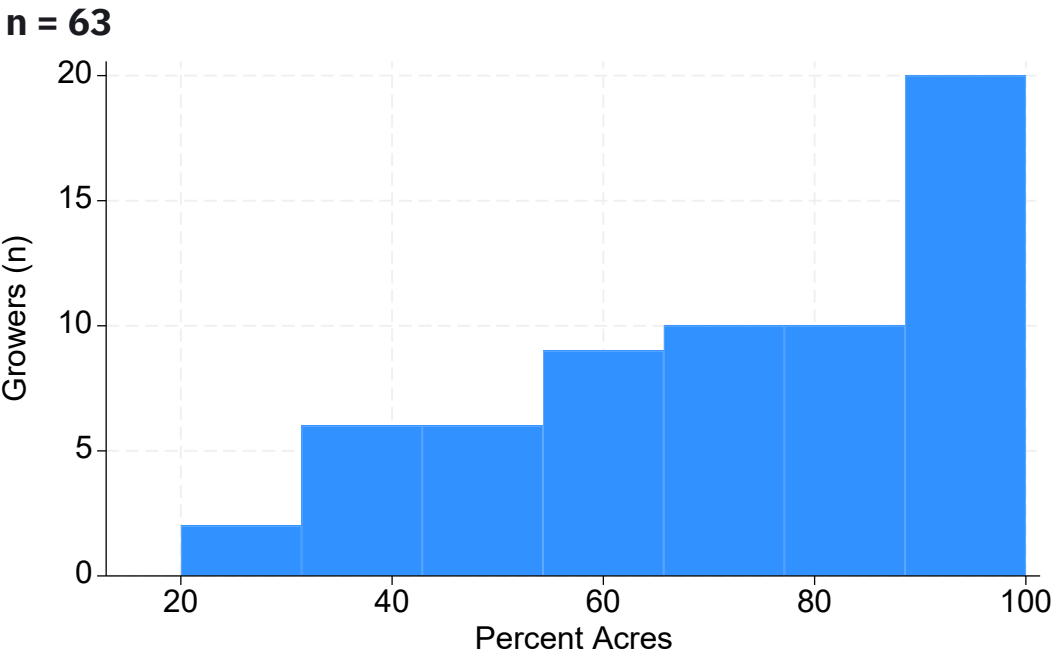
## OTC is used by 79% of growers (94% of acres):

- On average, growers use OTC on 73% of their acres.
- 82% of growers use OTC on at least 50% of their planted acres.
  - 29% of growers use OTC on all their planted acres.

### OTC Use in Your Citrus Operation



### Planted Acres where OTC is Used





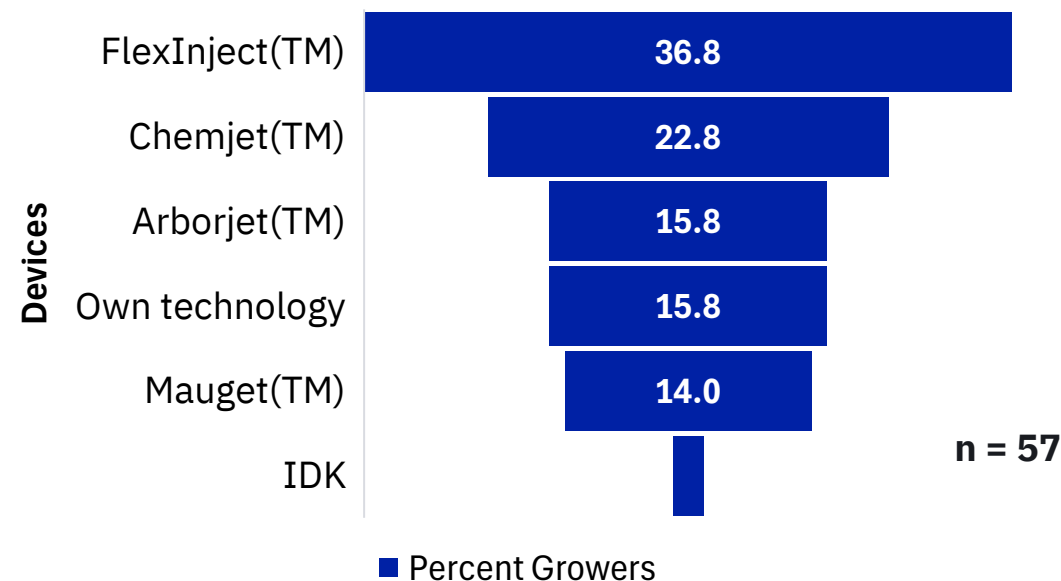
# Survey Results: Trunk Injection Device



**Most growers (91%) choose one type of device:**

- FlexInject™ is used by 37% of growers.

## Trunk Injection Devices Used



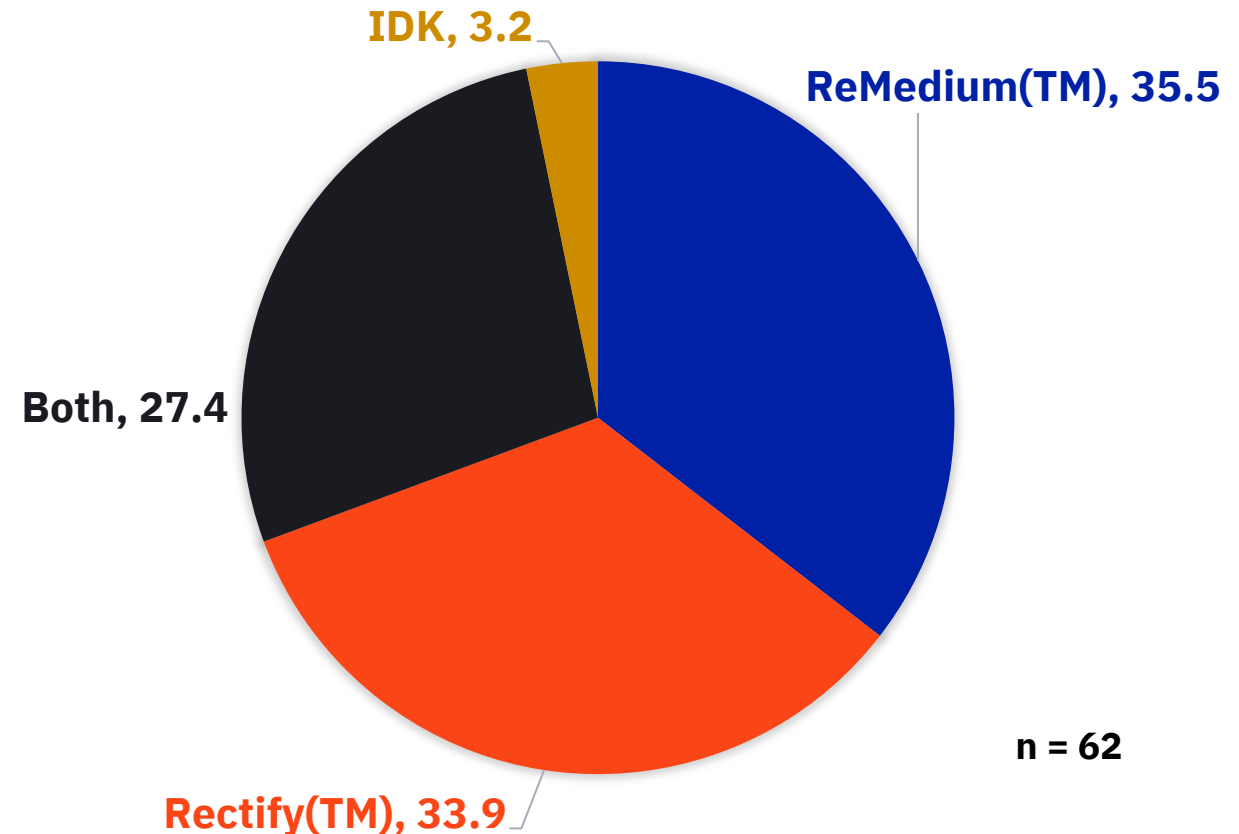


# Survey Results: OTC Formulation

## Growers use Rectify and ReMedium at similar rates:

- On average, farms that use Rectify are 219 acres larger than those that use ReMedium.

## OTC Products Used

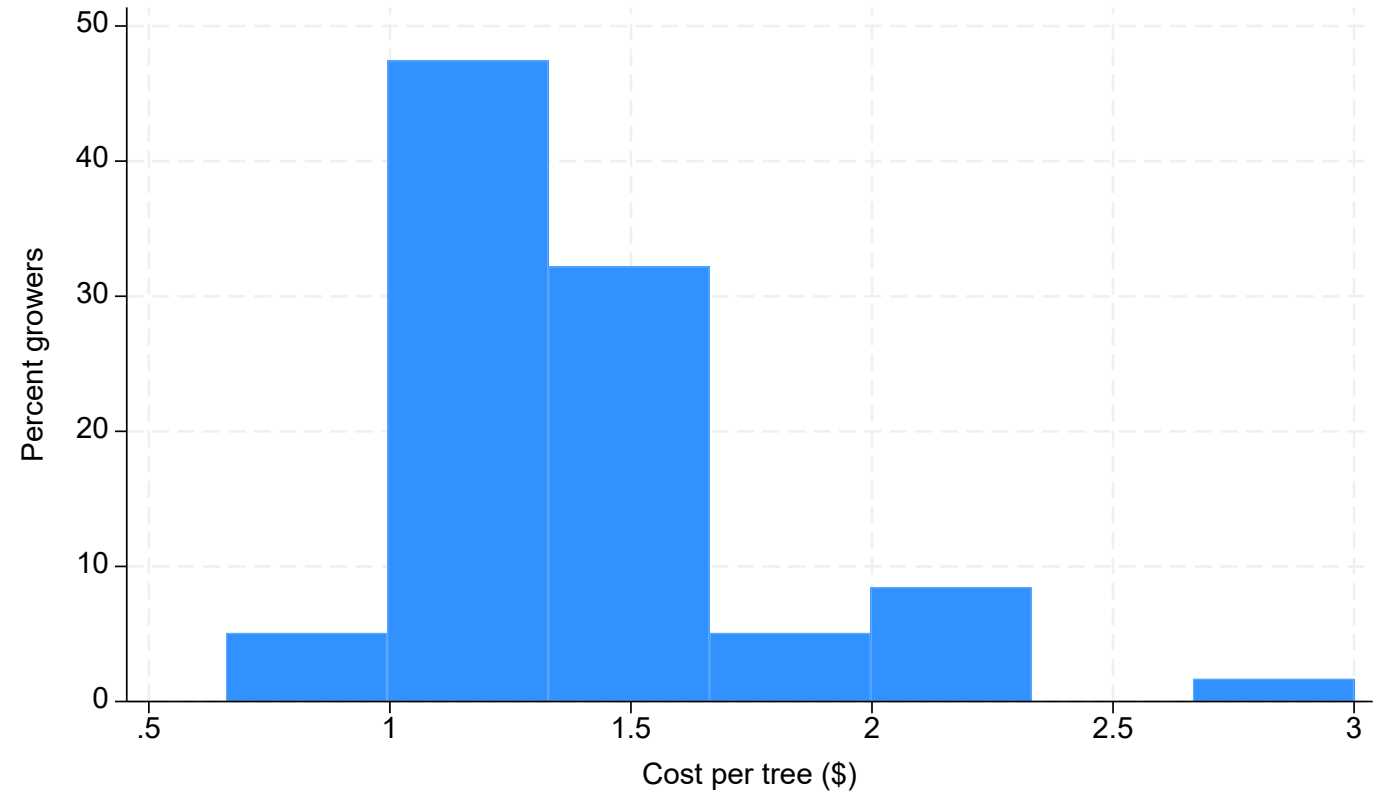


# Survey Results: Trunk Injection Cost

**On average, growers pay \$1.32/tree to implement OTC:**

- 76% of growers pay from \$1.00/tree to \$1.50/tree.
- 84% of growers use contracted labor for OTC applications (n=73).

## Total Cost per Tree (\$)



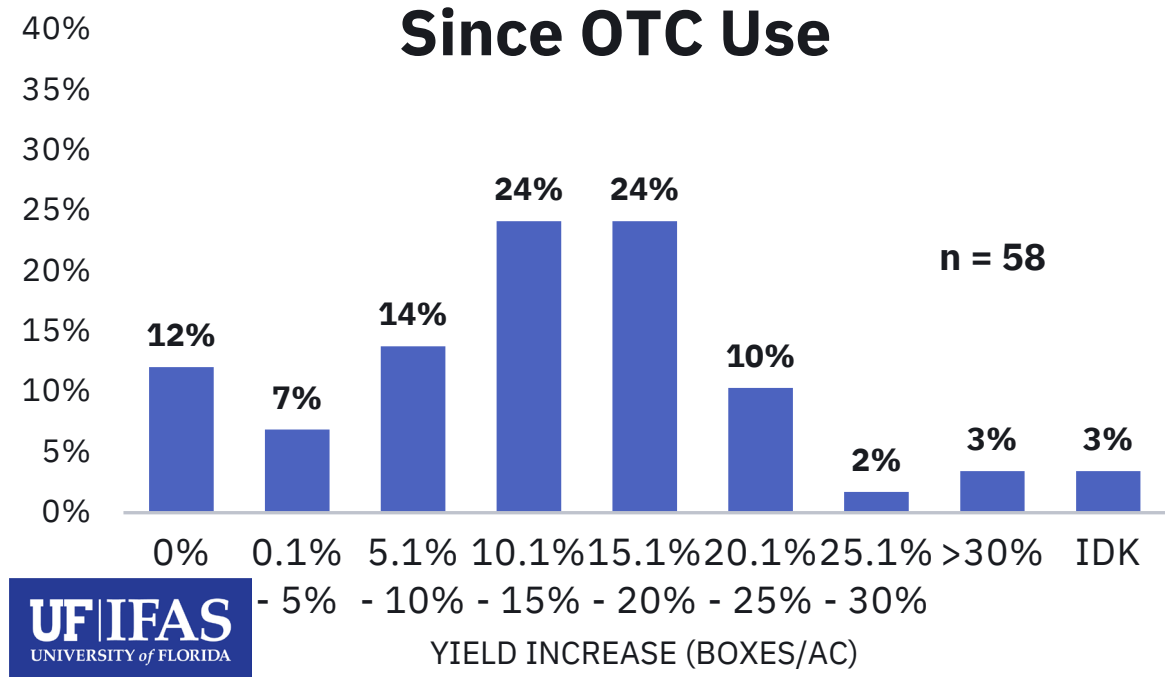
n=59

# Survey Results: Fruit Yield Changes

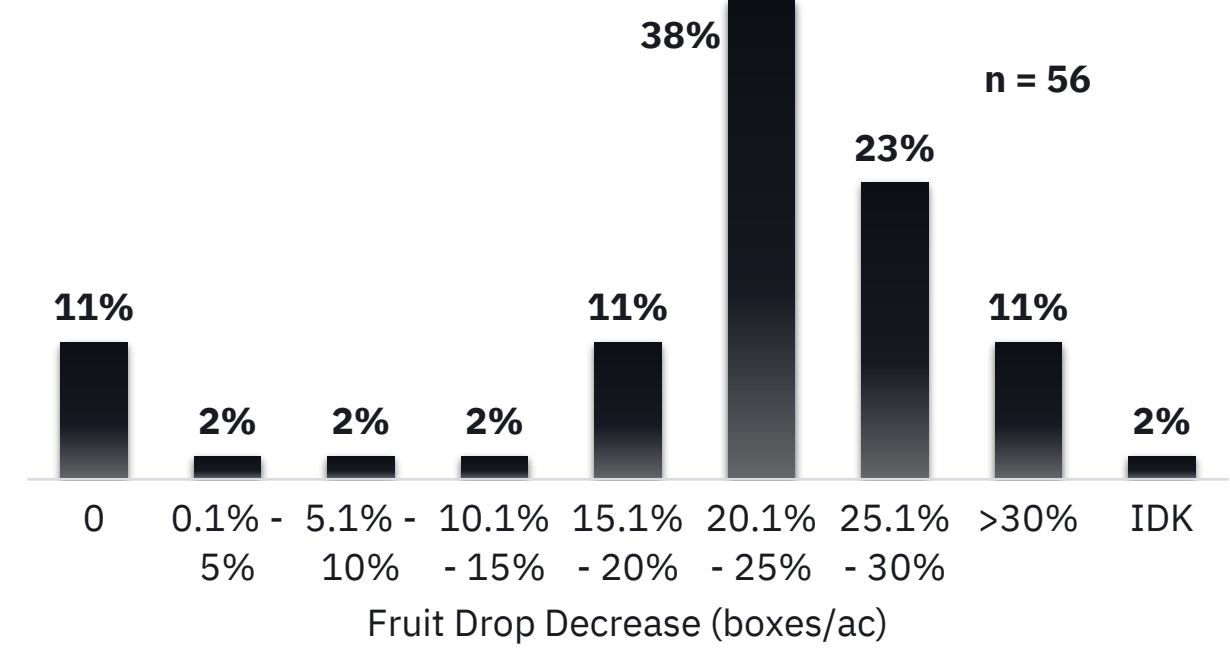
## Growers see improvements in yield and fruit drop:

- 84% of growers see some improvement in yield.
- 48% of growers see a 10%-20% increase in yield.
- 71% of growers see over 20% decrease in fruit drop.

**Percent Growers by Yield Increase Since OTC Use**



**Percent Growers by Fruit Drop Decrease Since OTC Use**



# Survey Results: Fruit Quality Changes

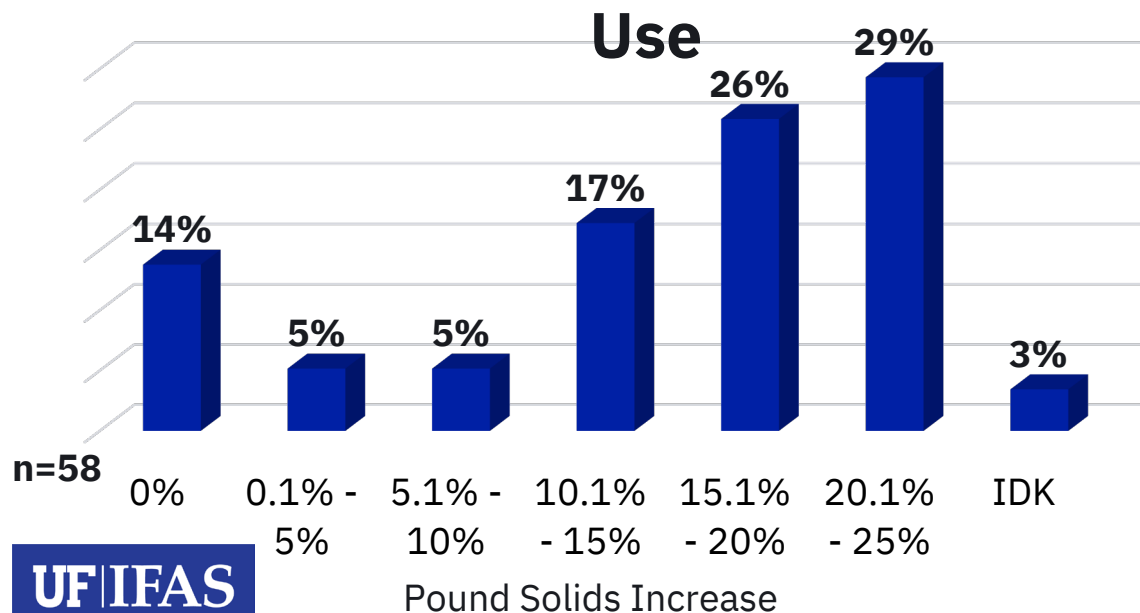
**Most growers saw increases in pound solids:**

- 55% saw increases from 15%-25%.

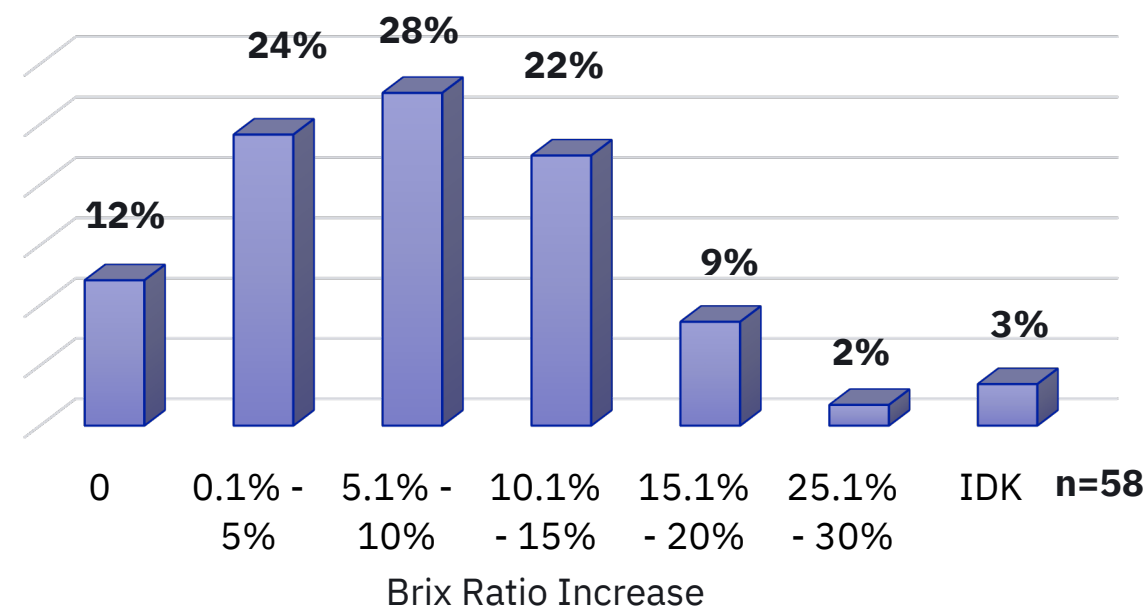
**Most growers saw less than a 15% increase in Brix ratio:**

- 74% of growers saw a 0.1%-15% increase.

**Pound Solids Increase Since OTC Use**



**Brix Ratio Increase Since OTC Use**





# Survey Results: Benefits and Challenges

- ⊗ **67% of growers believe that OTC benefits outweigh the costs.**
- ⊗ **60% of growers think that OTC adoption is risky.**

**Adopting OTC trunk injection is risky.**

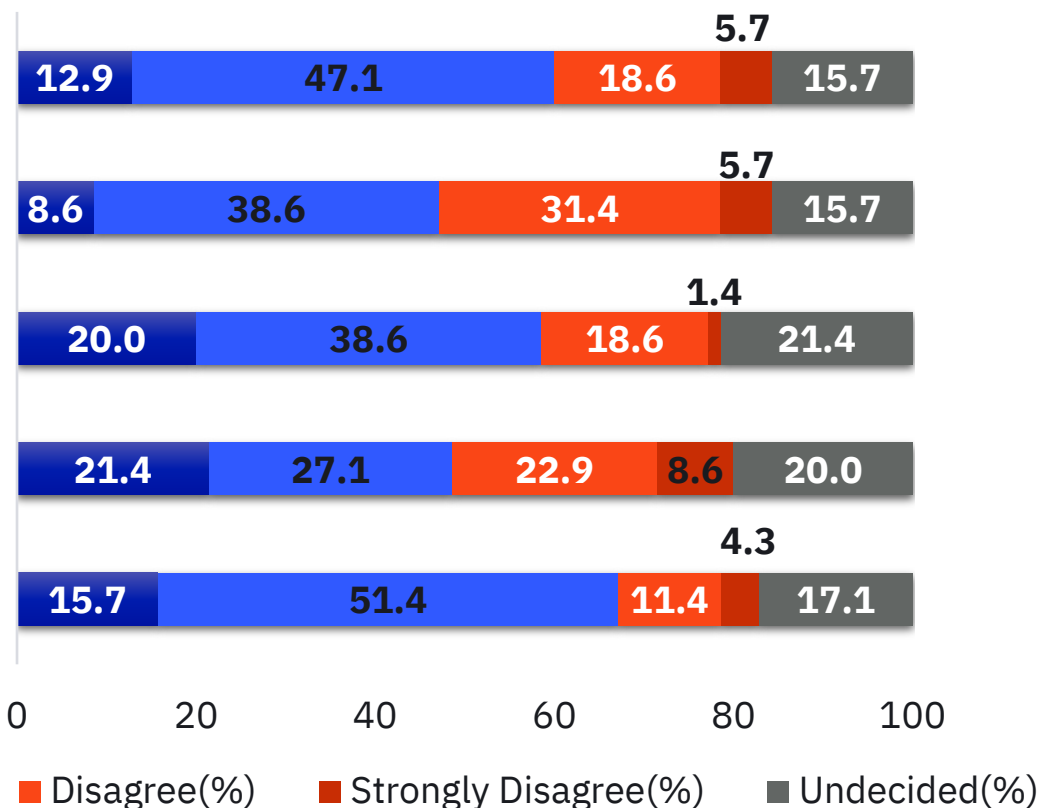
**There is a lack of information on costs and benefits of OTC trunk injection.**

**The cost of implementing OTC trunk injection is high.**

**There are challenges in marketability of fruits from OTC treated trees.**

**I believe that the benefits of using OTC trunk injections outweigh the costs.**

n = 70



# Summary

- ⊗ We conducted a statewide survey to understand trunk injection use in citrus production better.
- ⊗ OTC was adopted on 94% of acres (79% of growers).
- ⊗ Almost 90% of growers see improved yields and decreased fruit drop.
- ⊗ Pound solids increased by 15%-25% for most growers.
- ⊗ 60% of growers think OTC adoption is risky.



**Note: There are limitations in assessing profitability.**

1. We don't collect production cost data.
2. The survey is not crop-specific.



# Thank You!



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