

The background of the slide is a faded, artistic photograph of citrus fruit and foliage. It features several large, ripe oranges and a few green leaves, with a small white citrus blossom visible in the upper left. The overall tone is soft and natural, providing a thematic backdrop for the text.

# **Remedy® Ultra for Citrus Stump Sprout Control**

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# The Issue of Sprouts and the Label

- Sprouts can be a significant threat to the Florida citrus industry as sources of HLB (greening)\*
- Limited recommendations for sprout control in Florida citrus
  - Glyphosate, Pest Management Guide, 2002- present
  - Remedy® Ultra approved as Section 24(c),
    - EPA SLN NO. FL080004, August 2008
- \* Citrus Industry Magazine:
  - Sprout Control for Clipped Trees, December 2008, pgs 16-17
  - Detection of Greening in Sprouts from Citrus Tree Stumps, March 2009, pgs 28-30
- HortTechnology
  - Citrus Tree Removal Method Does Not Affect Performance of Reset Trees. 18:559-562 (2008)
- Florida State Horticultural Society
  - Influences of Methyl Bromide Soil Fumigation on Citrus Root Sucker Development and Growth of Replant Trees. 107:76-78 (1994)



# The Problem





# The Solution



The background of the slide is a faded, artistic photograph of citrus fruit, likely lemons or oranges, hanging from a tree with green leaves. The image is semi-transparent, allowing the text to be clearly visible.

# **Sprout Control Study Objectives**

- 1) To determine the effectiveness of Remedy® Ultra at various rates on the control of citrus sprouts
- 2) Provide data to support label modifications and Florida SLN label



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# Study Site

- Trial was established in April 2008 in a DeSoto County citrus grove
- Prior to tree removal, trees were diagnosed positive for HLB based upon visual symptoms in various parts of the tree canopy
- Tests were not conducted to prove HLB diagnosis
- Although symptomatic, trees were otherwise healthy
- Trees ranged from 7 to 15 years old

# Plot Design & Treatments

- Randomized complete block design was used in the study
- Trees randomly selected received one of four treatments
  - Untreated control (no herbicides)
  - 25% Remedy Ultra + 75% diesel
  - 50% Remedy Ultra + 50% diesel
  - 75% Remedy Ultra + 25% diesel
- Treatments were applied using a 1-gallon compression sprayer
- Solution was applied to the outer cambium area of the cut stump in a volume to minimize runoff
- Each stump received 1 to 2 oz of spray solution within 5 minutes of clipping the tree

- Trees were removed with a standard tree shear



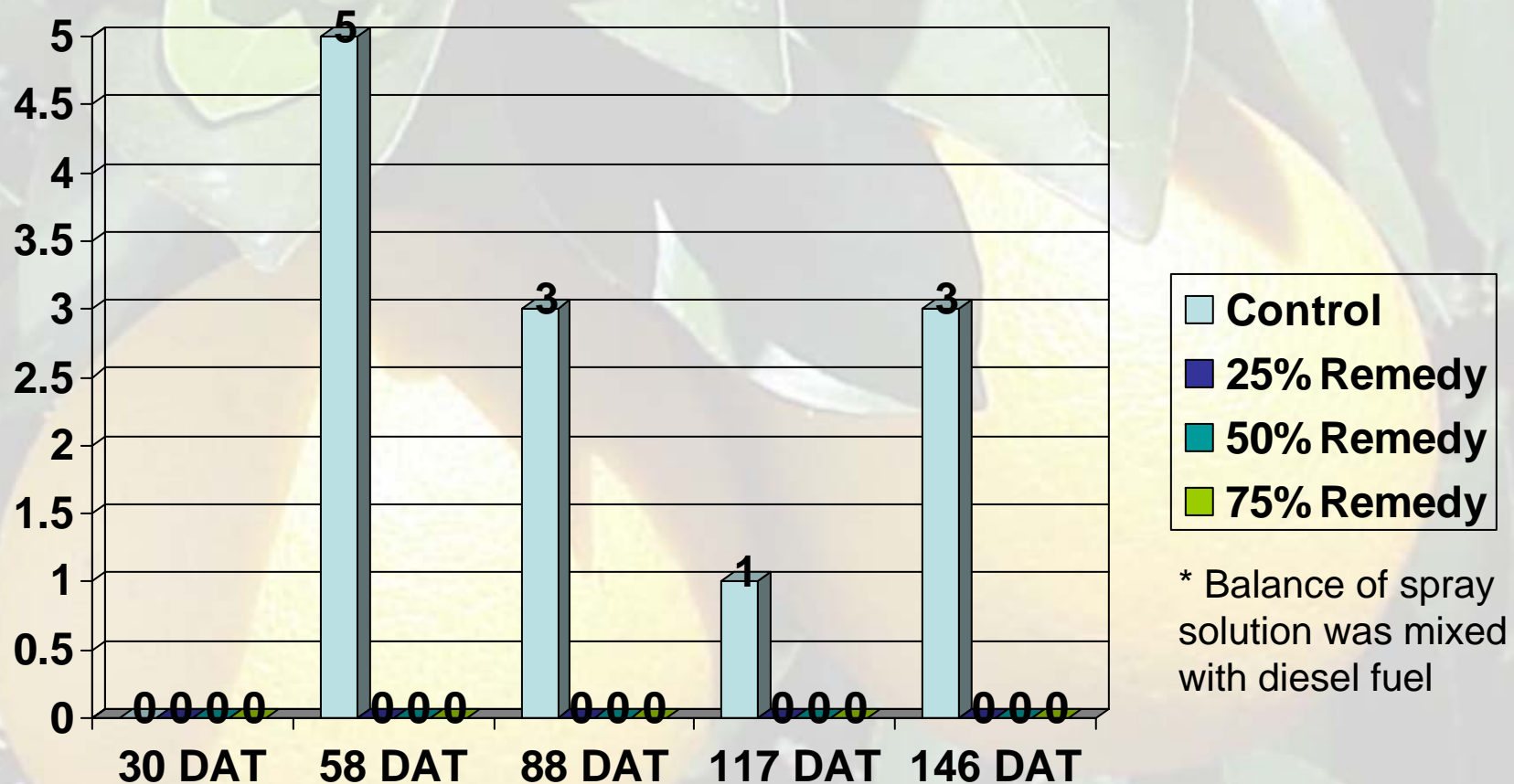


# Study Period

- Stumps were rated every 30 days to determine regrowth
- As soon as any vegetative growth was observed, trees were enclosed within a screen enclosure to prohibit psyllid feeding on stump regrowth
- Screen material is approved for green house structures



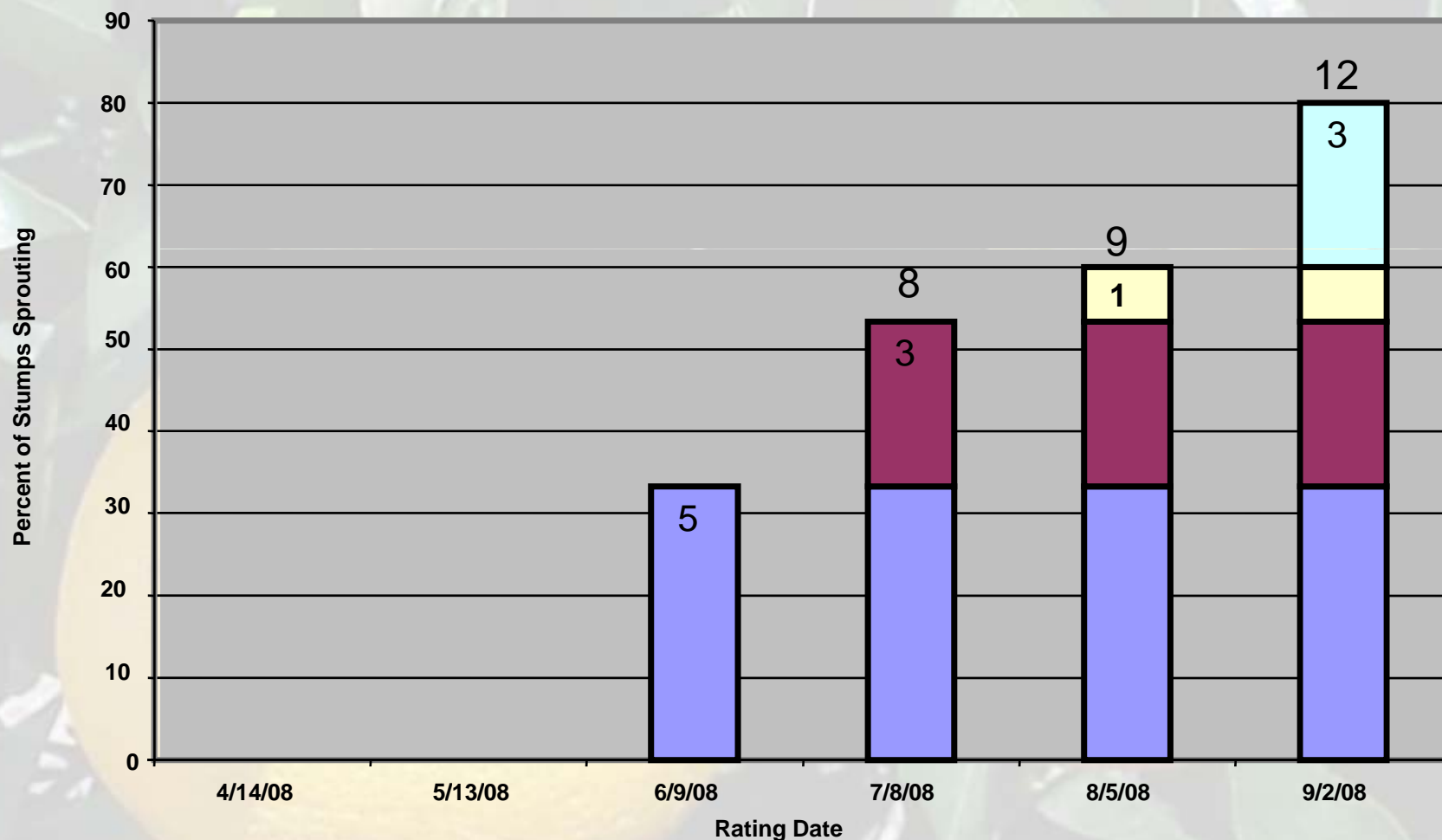
# Sprout Formation at Each 30 Day Rating Intervals



12 of 15 (80%) of the untreated stumps sprouted, as compared to zero of the 45 treated stumps

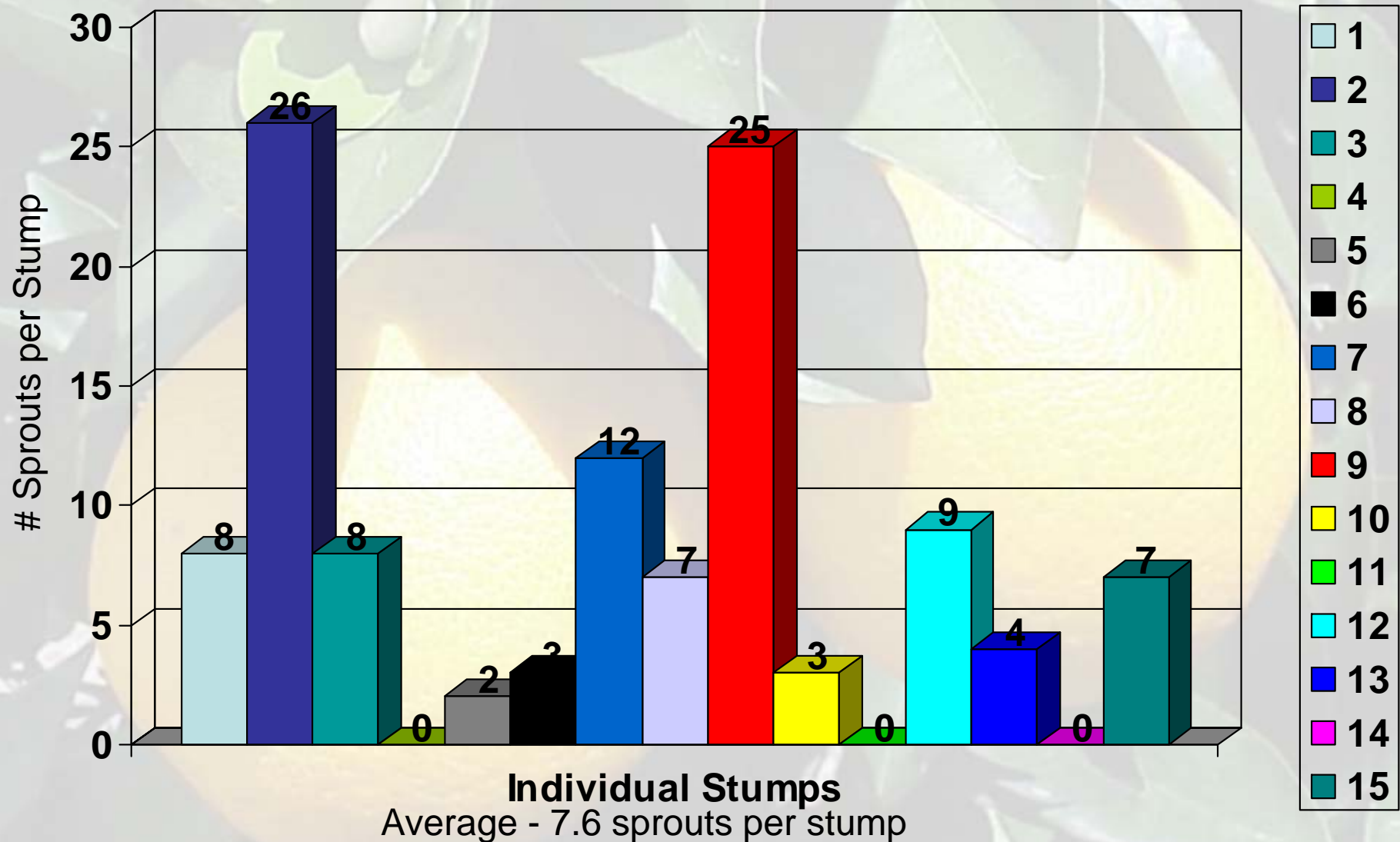


# Percentage of Stumps Sprouting From the Untreated Control



15 stumps were untreated in this study

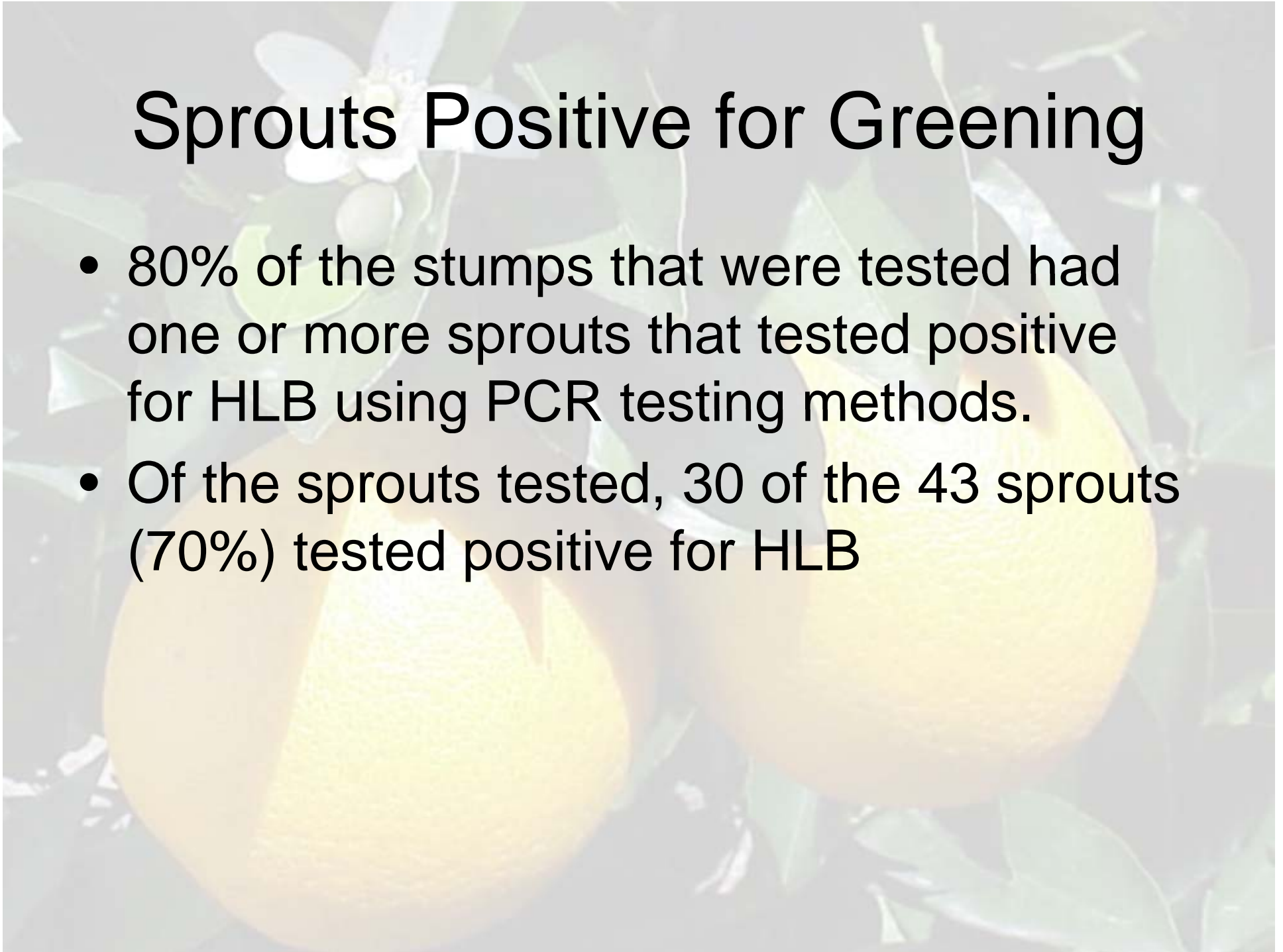
# Number of Sprouts per Stump





# Sprouts Positive for Greening

- 80% of the stumps that were tested had one or more sprouts that tested positive for HLB using PCR testing methods.
- Of the sprouts tested, 30 of the 43 sprouts (70%) tested positive for HLB



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# Conclusions

- Remedy Ultra is very effective in controlling sprouts at a rate of 25% Remedy when mixed with diesel fuel
- Sprouts from stumps of trees removed due to HLB can serve as a source of the HLB bacterium
- Stump sprouts are highly attractive for psyllids
- The control of sprouts is essential in combating HLB
- Be sure to have a SLN label at time of application and read and follow labeled directions



# Acknowledgements

- Orange Co for supplying test site with special thanks to:
  - Jerry Newlin, Shawron Weingarten, Buddy Strickland
- Dr. Ron Brlansky for PCR testing of sprouts

# UNIVERSITY OF FLORIDA

