Background

• Between April 2015 and March 2016, United States beekeepers lost 44.1% of their colonies
• Commercial beekeepers in the US averages 7.7 mites per hundred bees
• Commercial beekeepers in Texas average 1.77 mites per 100 bees
Varroa mite assessment

- I got 23 hives from 8 volunteers.

- Used the sugar shake method.

- Most (especially older hives) were above the 3% recommended threshold.
Prepare jars...

Open brood box

Collect bees from brood comb

Shake to cover with sugar

Pictures taken by C. McSween
Shake mites onto plate

Count and return bees

Spray sugar with water & count mites

\[
\frac{\text{# of mites}}{\text{# of bees}} \times 100 = \text{mites per 100 bees}
\]
Hives with Different Levels of Varroa Infestation
(23 hives)

Mean = 8.66 mites per 100 bees
Range 0 – 44 mites per 100 bees

* Treatment is recommended for hives with more than 3 mites per hundred bees.
Assessment of powdered sugar as a treatment

• 12 hives from 5 beekeepers.

• Used the Varroa Dstructor (bellows) to cover the bees in the hive.
“The Destructector”
Weekly Group Means
Powdered Sugar Treatment vs. Control

![Graph showing the comparison between Treatment and Control groups over weeks, with a notable difference in mites per 100 bees after the powdered sugar treatment begins.](image-url)
Pre/Post Data on Hives Treated with Powdered Sugar

Mites per 100 bees

Hives

Pre
Post
Conclusions – Year 1

• Most of us have Varroa mites at problem levels
  – Implication is that we need to monitor Varroa levels and develop control strategies

• Powdered sugar is not an effective means of control
This Year …

• A number of sources are working on new delivery methods for Oxalic acid
  – Easier to administer
  – Safe for beekeepers and bee
• Randy Oliver and others working on EPA approval
  – Plan to provide data to assist with his application process
  – Received Tx Dept of Ag approval for study
Research Plan

• Recruit beekeepers (tonight)
• Hives randomly assigned:
  – Control group
  – 12 gr. Oxalic acid & glycerin saturated paper towels
  – 50 gr. Oxalic acid & glycerin saturated cardboard strips
• Initial assessment & treatment in early Sept
• Single post assessment 8 weeks later