

# Short-term fumigation of honey bee colonies with formic acid for the control of varroa mites

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# Formic Acid

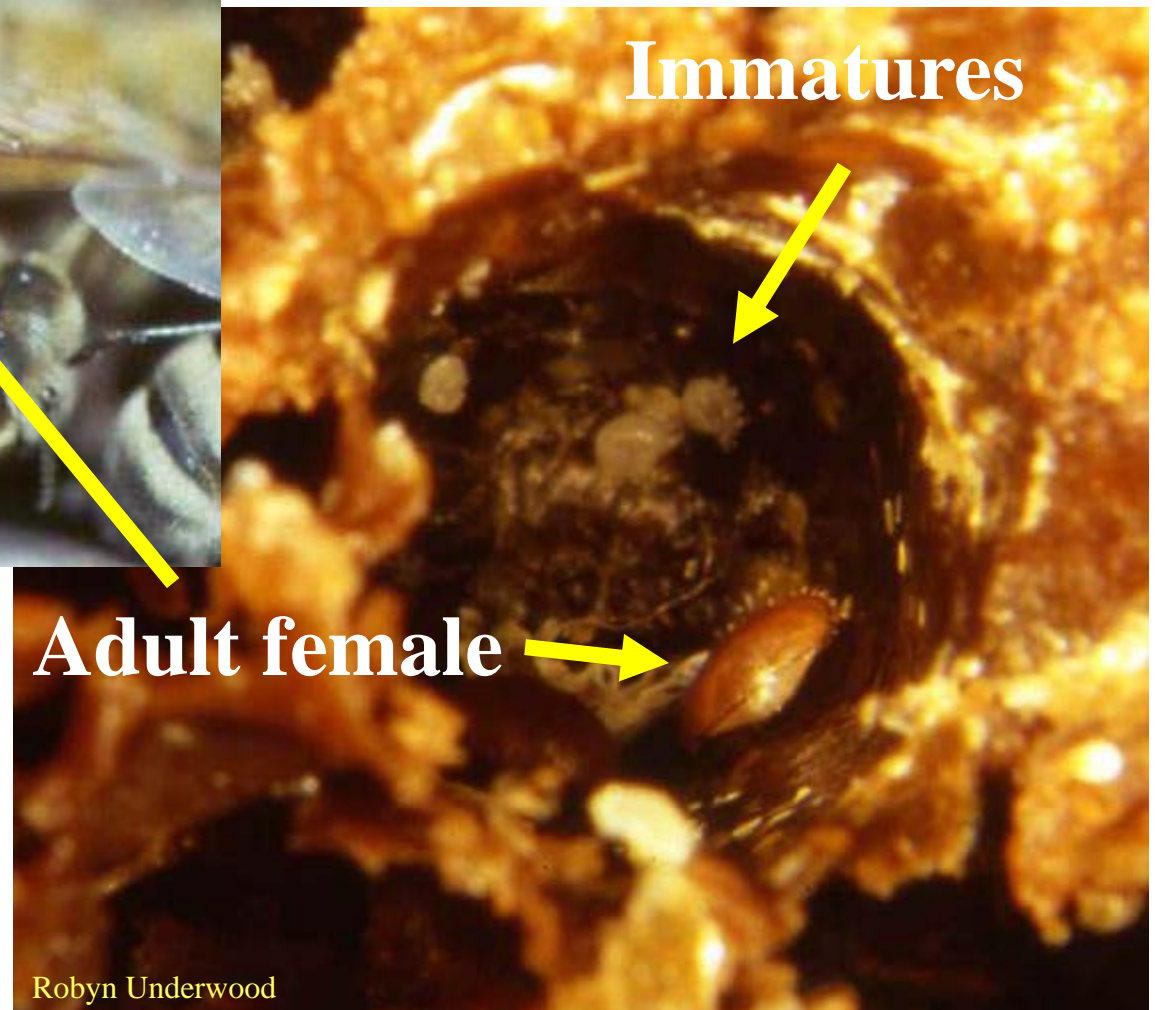


- ⌘ Controls varroa mites and tracheal mites
- ⌘ No resistance
- ⌘ No residues
  
- ⌘ Depends on temperature
- ⌘ No application during honey flow

# Honey flow



# Varroa mites



# Treatment



⌘ Late September

⌘ No treatment

⌘ Low dose gel pack

☑ (with or without oxalic acid in January)

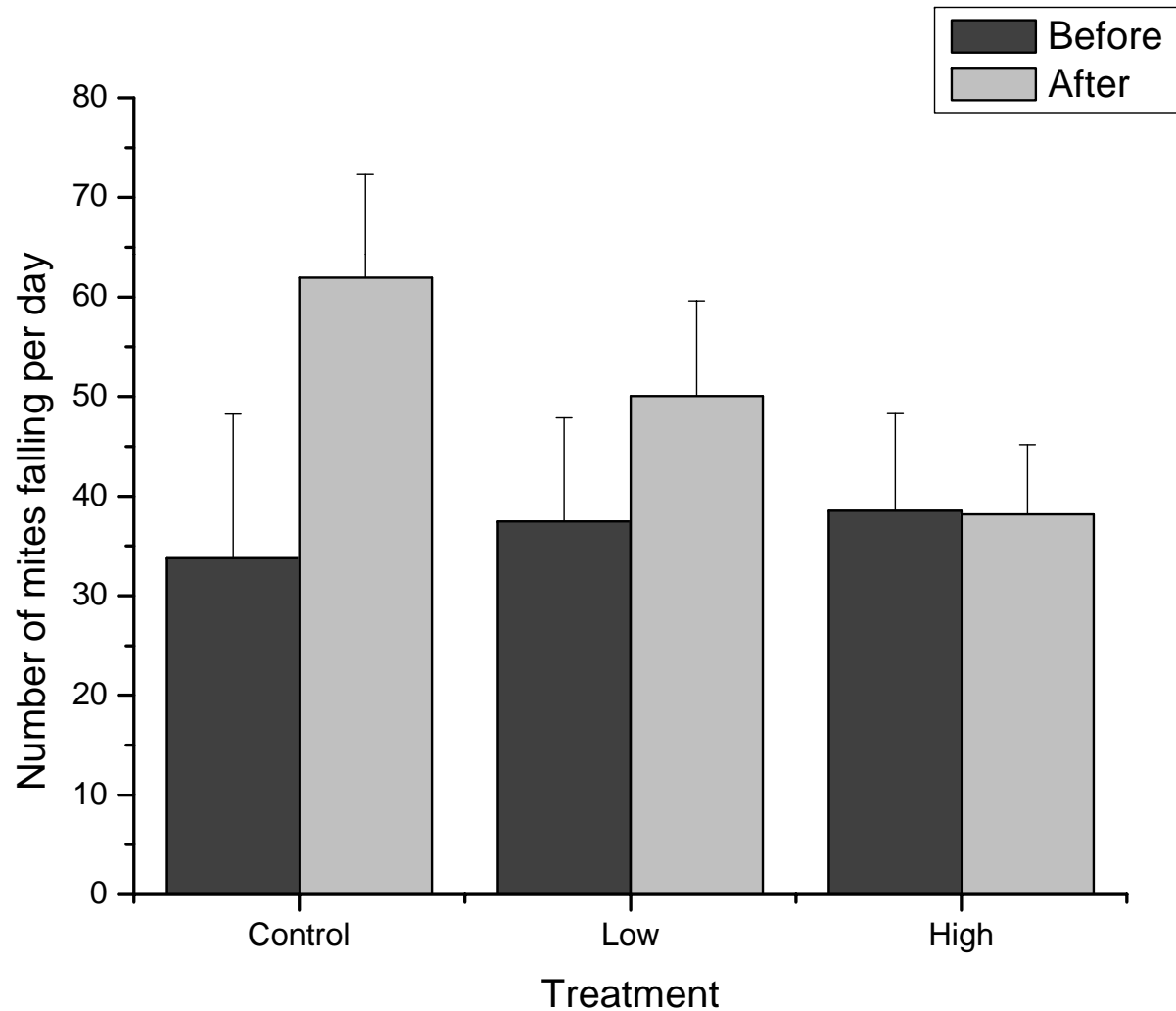
⌘ High dose gel pack

☑ (with or without oxalic acid in January)

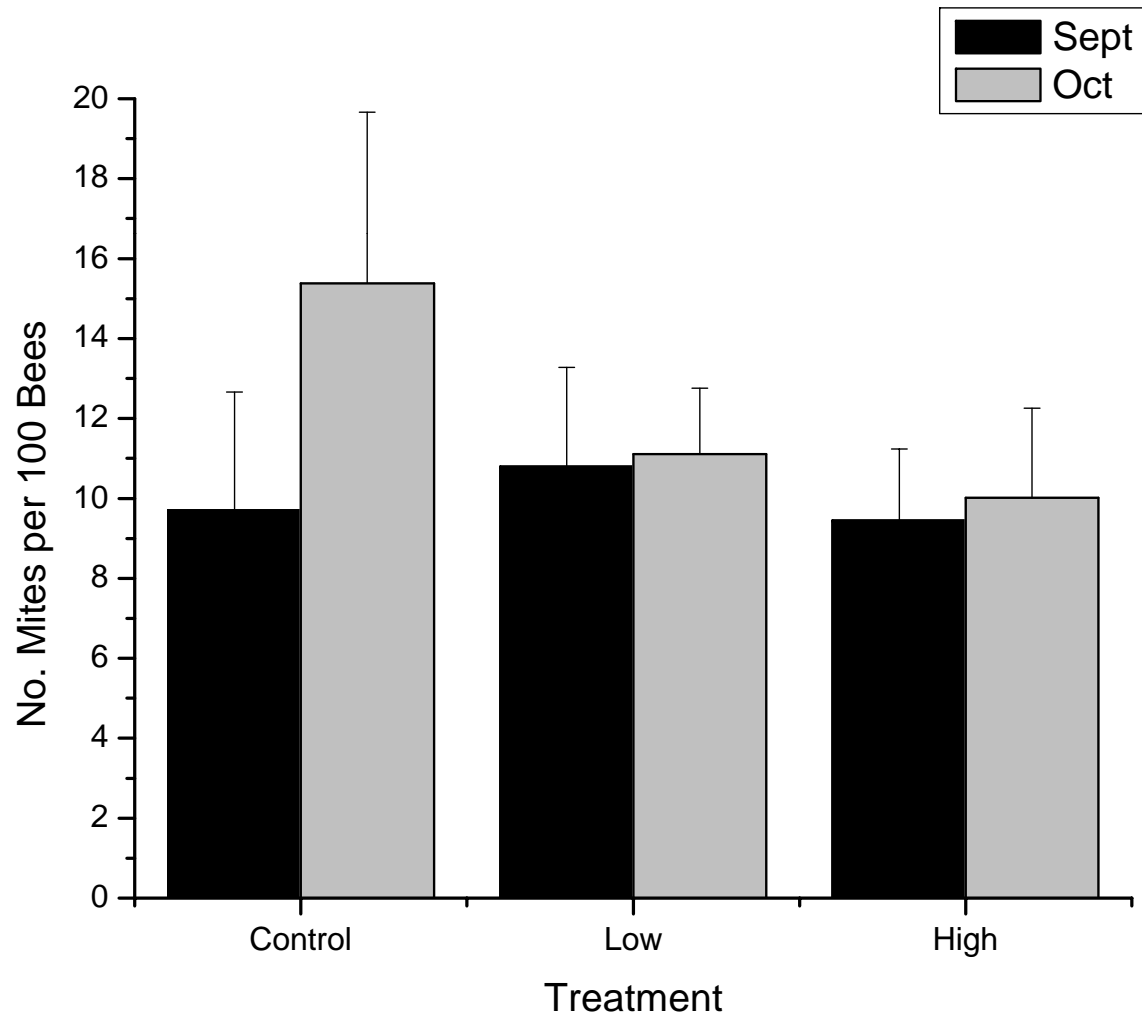
# Formic acid gel pack



# Mite Drop (Sep. vs. Oct.)



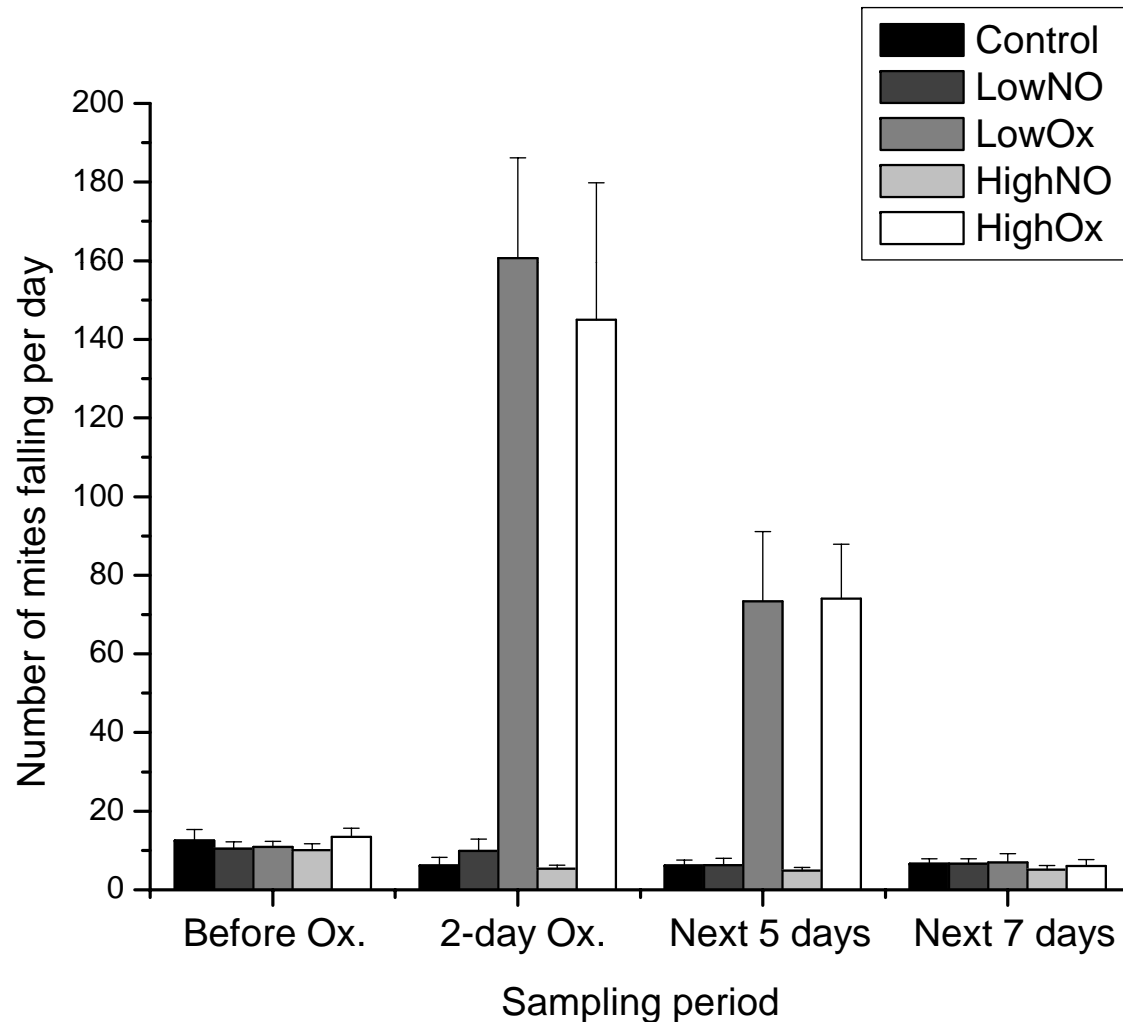
# Mean Abundance (Sep. vs. Oct.)



# Oxalic Acid - January



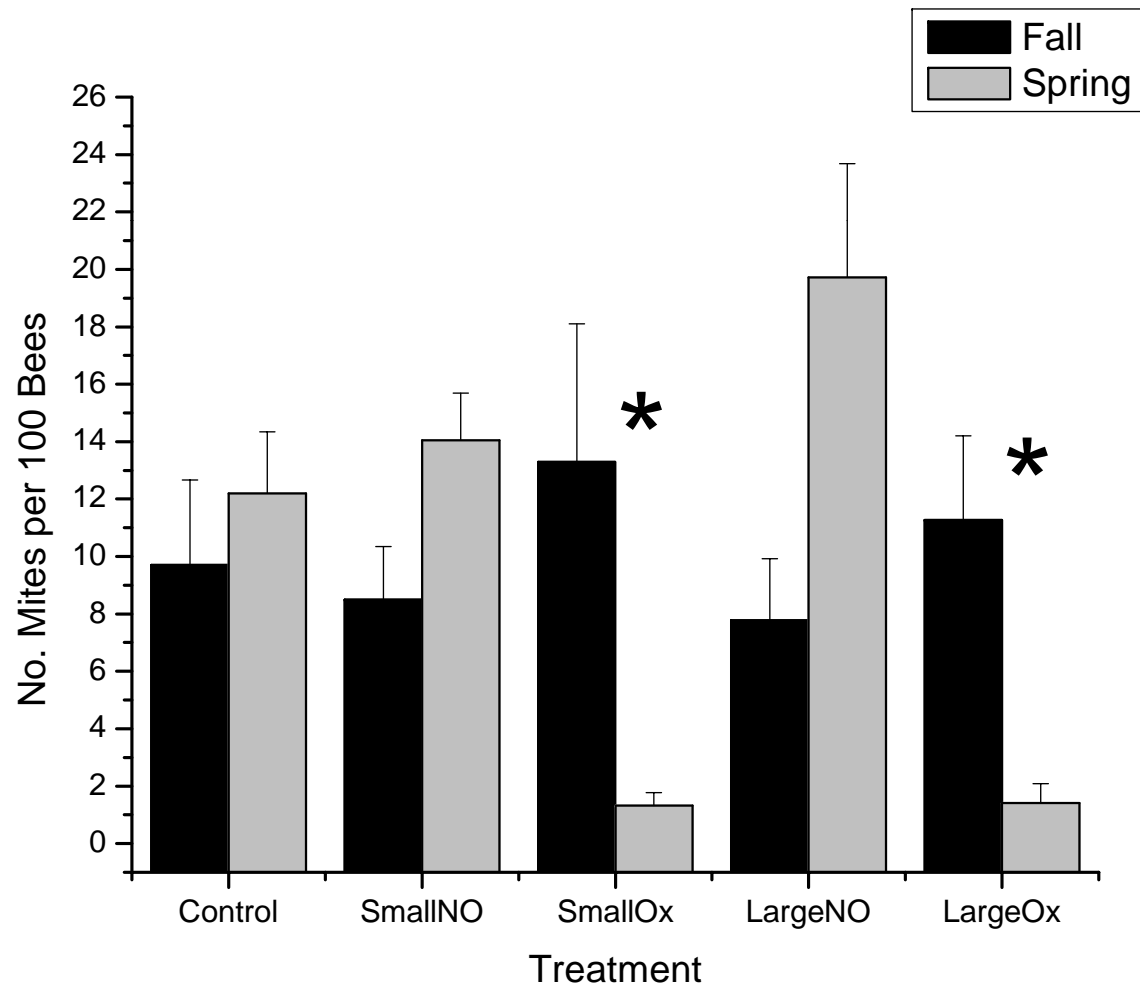
# Mite Drop (OA treatment)



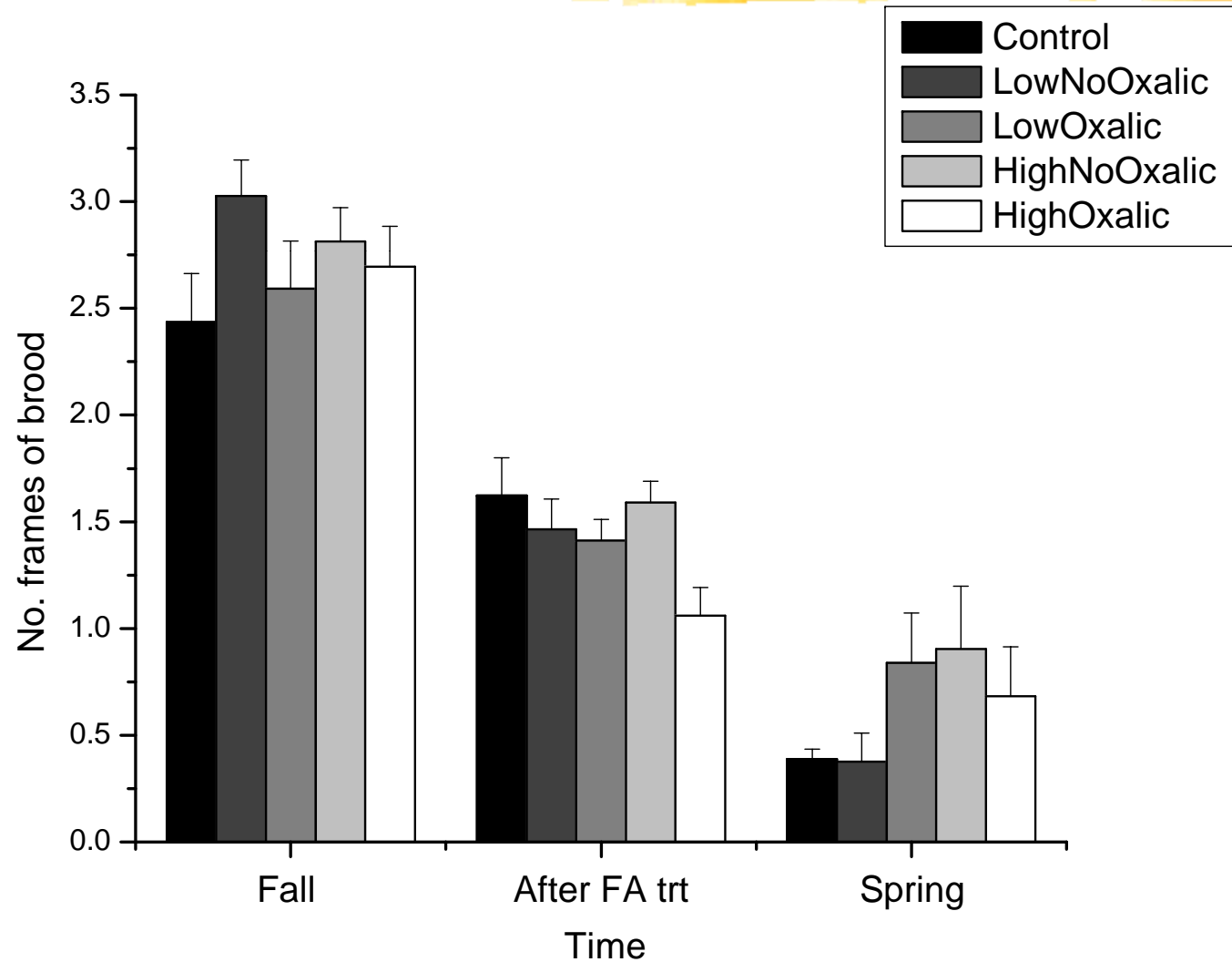
# Spring



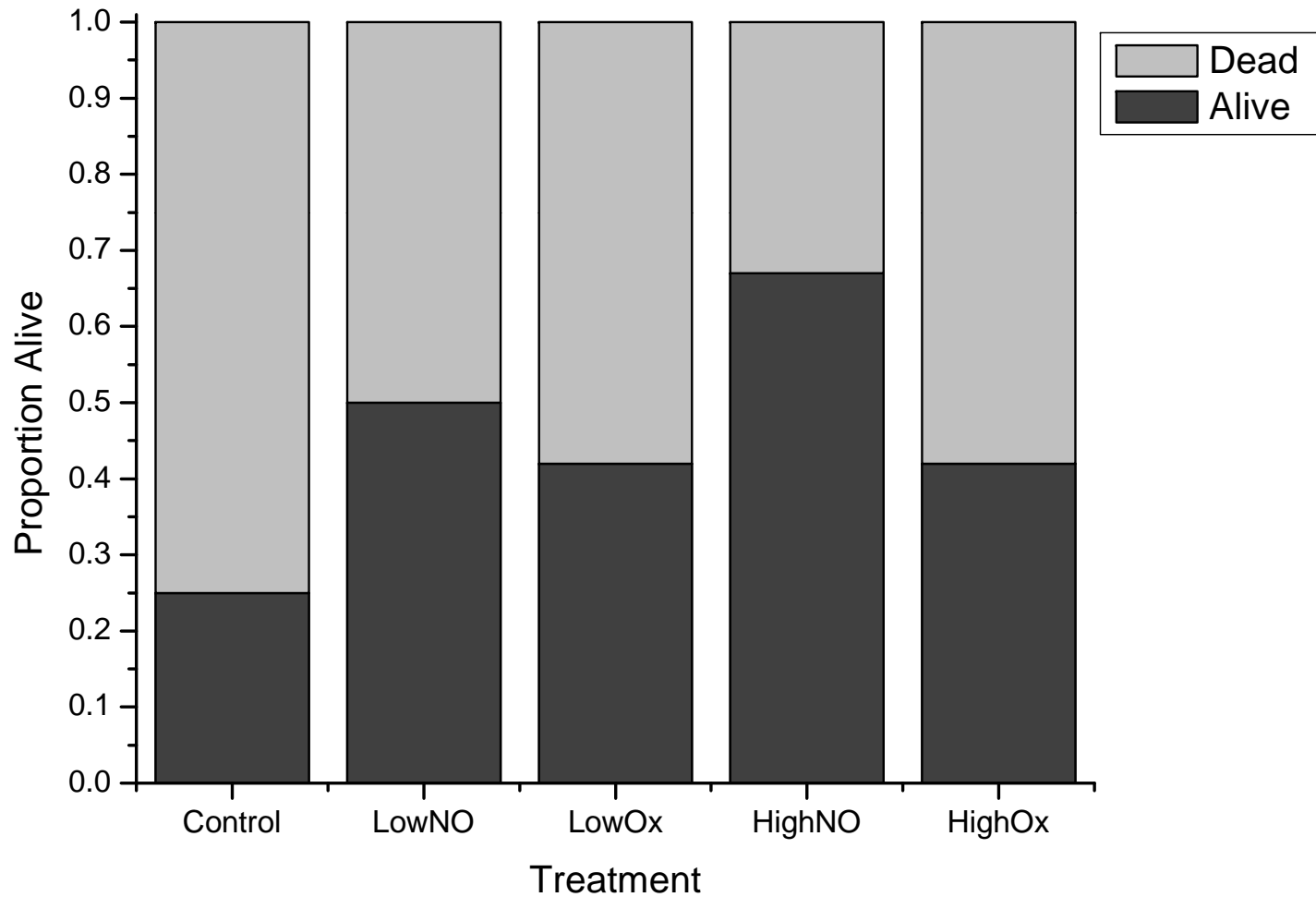
# Mean Abundance



# Brood Area



# Colony Survival



# Conclusions



- ⌘ FA treatment did not affect mean abundance
- ⌘ Oxalic acid decreased mean abundance
- ⌘ Brood area not affected
- ⌘ Colony survival poor overall

# Acknowledgments



- ⌘ Jim Steinhauer, Tiffany Crum, Marcus Dennis, Glenn Crimbring, Mary Snow, Craig Cella, Henry Street, Paul Krepicz, Mike Thomas, Rene Troutman, Dennis Keeney, Sharon McDonald, Linda Wertz, Karen Roccasecca, Amber Lamons, Mike Andree
- ⌘ Nancy Ostiguy, James Stimmel
- ⌘ National Honey Board
- ⌘ Zane Helsel, Rutgers University