



**Atlantic Tech Transfer Team**  
*for Apiculture*

# ATTTA Update for NSBA

Truro, NS  
February 2019

Robyn McCallum, PhD, PAg

# Objectives

- **Optimizing** hive placement, timing, density, and strength for wild blueberry pollination
- **Improving**
  - overwintering success and addressing spring dwindle
  - honey bee health and nutrition
  - disease and pest monitoring and management
  - biosecurity techniques





# Faces of ATTTA



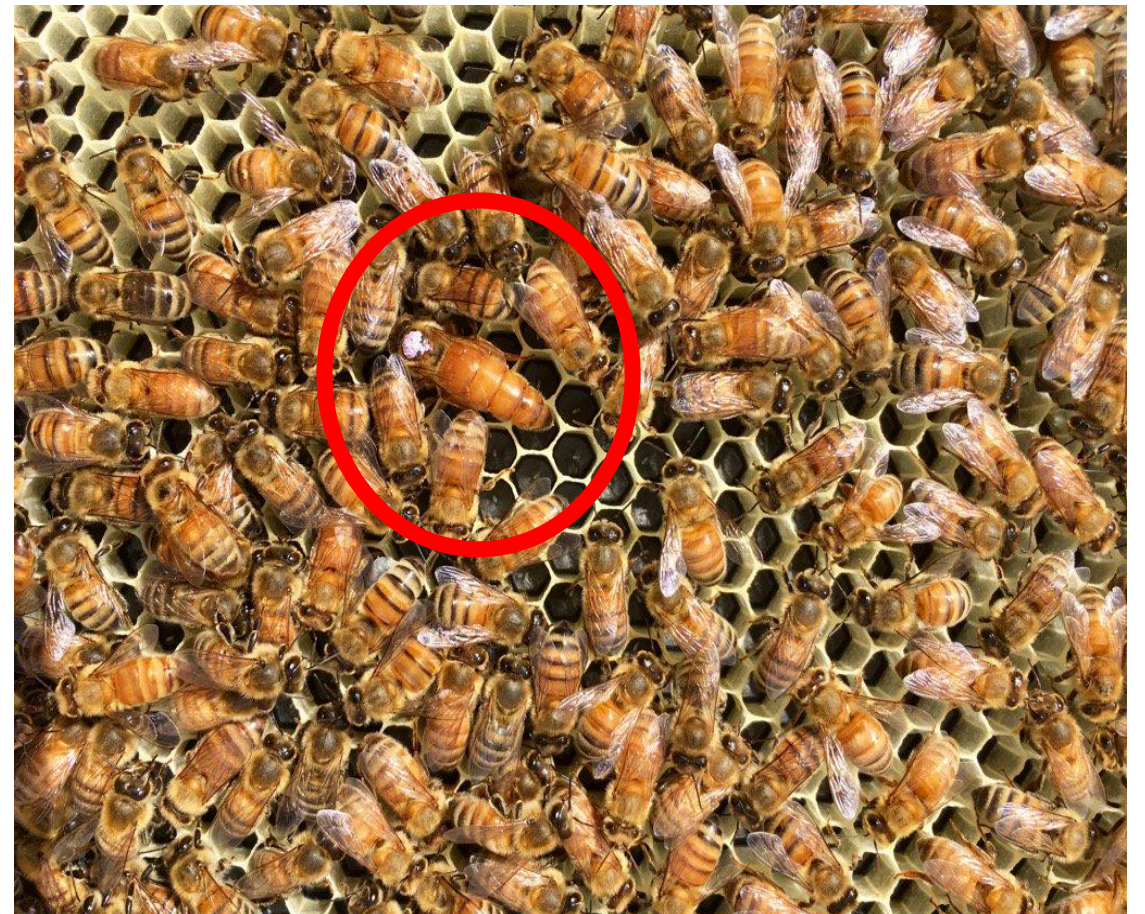
# Research

- Queens
- Pollination
- Miticide Efficacy and Resistance
- Pollen Substitute
- Nosema





# Queen Rearing Case Study: Overwintering and Spring Buildup = Priority One

























# Queen Research Highlights

- Produced 400 queens for commercial operation in 1<sup>st</sup> year
- Selected high quality hives
- Conducted cost analysis of rearing queens on-farm
- Trained beekeepers on rearing queens



# Pollination





A photograph of a dense field of blueberry bushes. The bushes are covered in clusters of small, light-colored flowers or buds, which appear to be in the early stages of blooming. The leaves are green, and the overall scene is a lush, natural setting. The text "Frost June 4th" is overlaid in the top right corner in a blue, outlined font.

Frost June 4th



# Percent Loss from Frost

- NB field sites- **damage ranged from 68.4%-84.2% loss**
  - *Calculated from May 30 flower counts to June 7 flower counts*





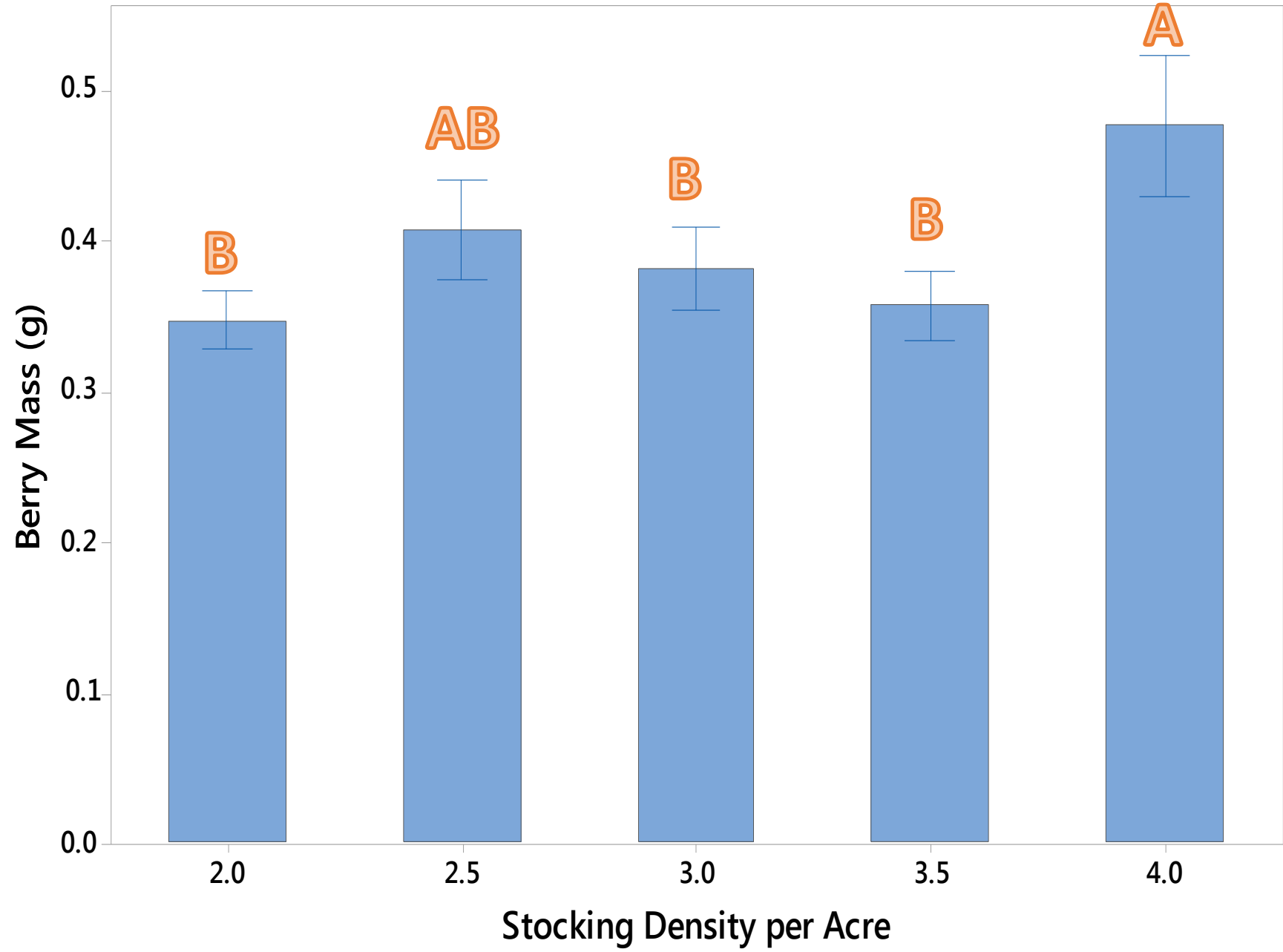
# Pollination Study 2018

- Varying stocking densities of honey bee hives (2, 2.5, 3, 3.5, 4)
- Examined fruit set, fruit retention, berry mass and hive growth
- Tried to zoom in on study from 2017
- Carried out in NB and NS



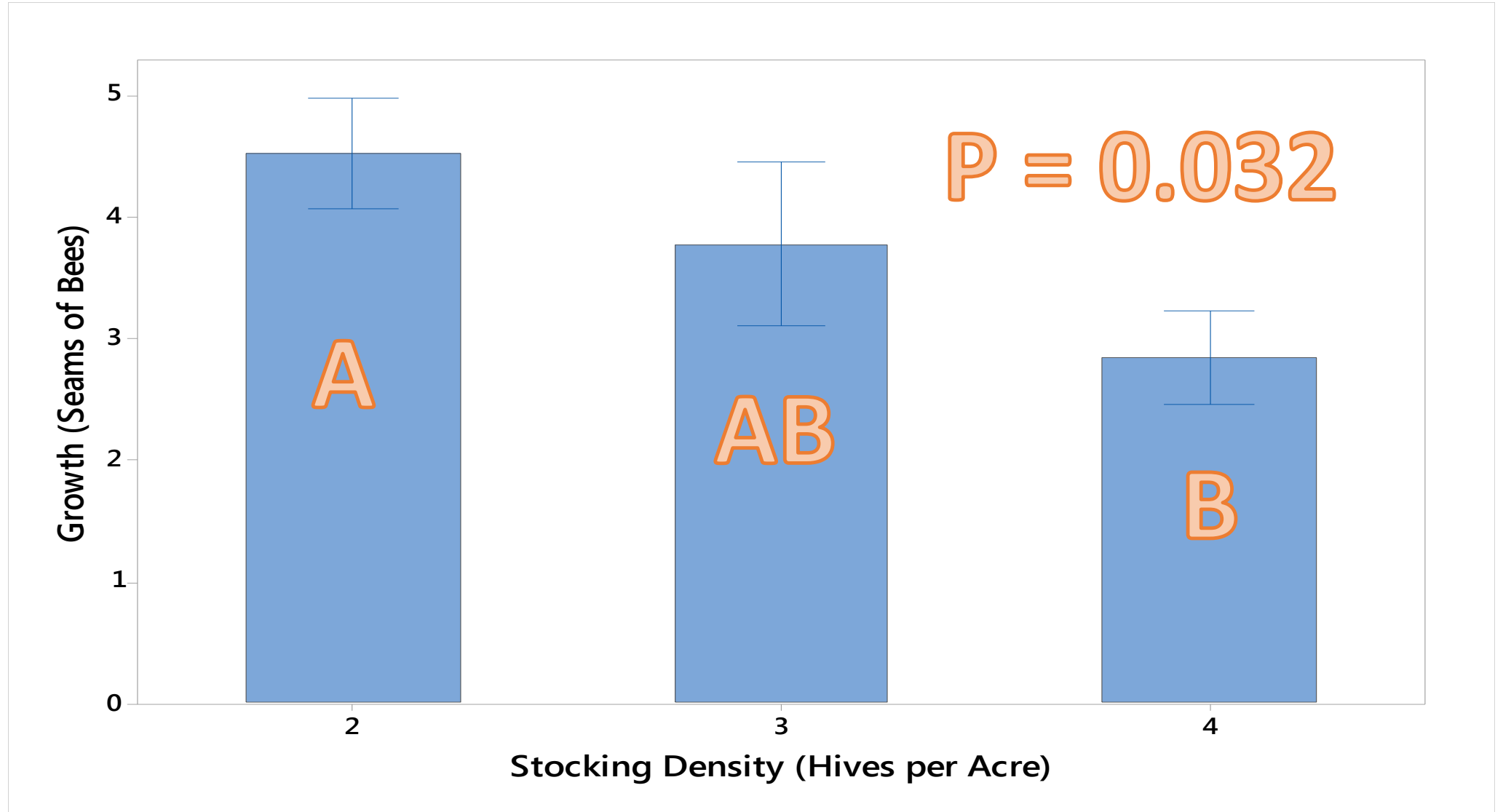
# Berry Mass

P = 0.044





# Hive Growth





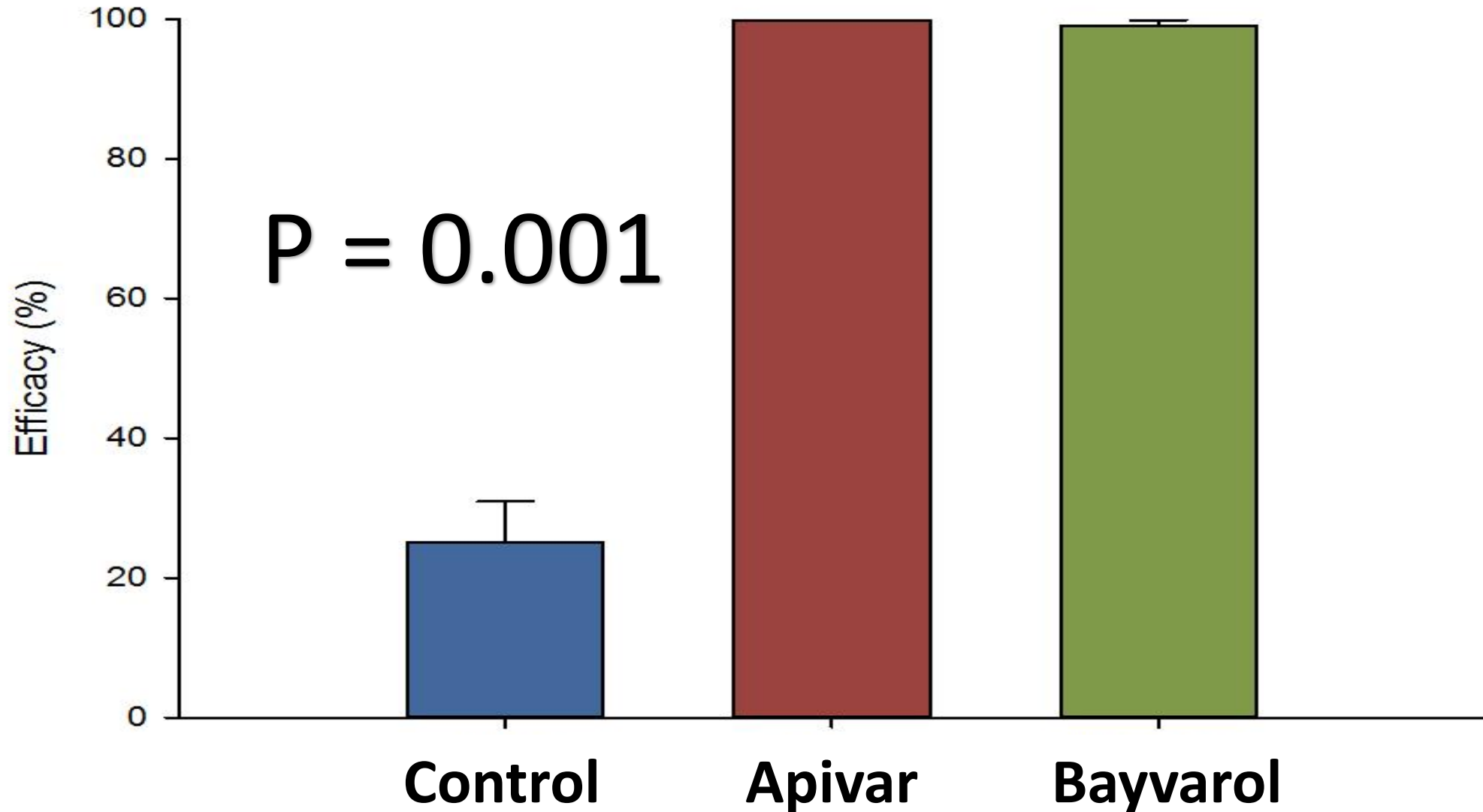
# Miticide Efficacy & Resistance





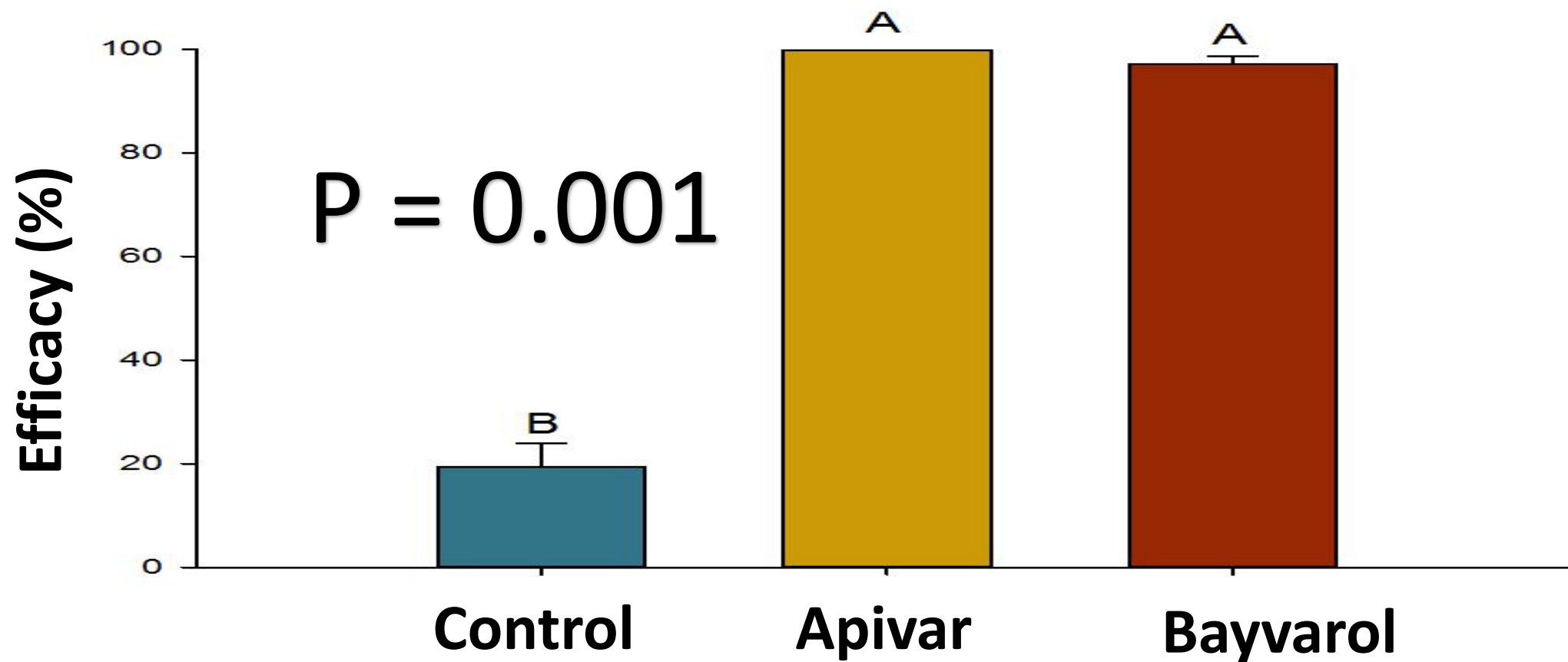
# Miticide Results 2018

Late March, NS



# Miticide Results 2018

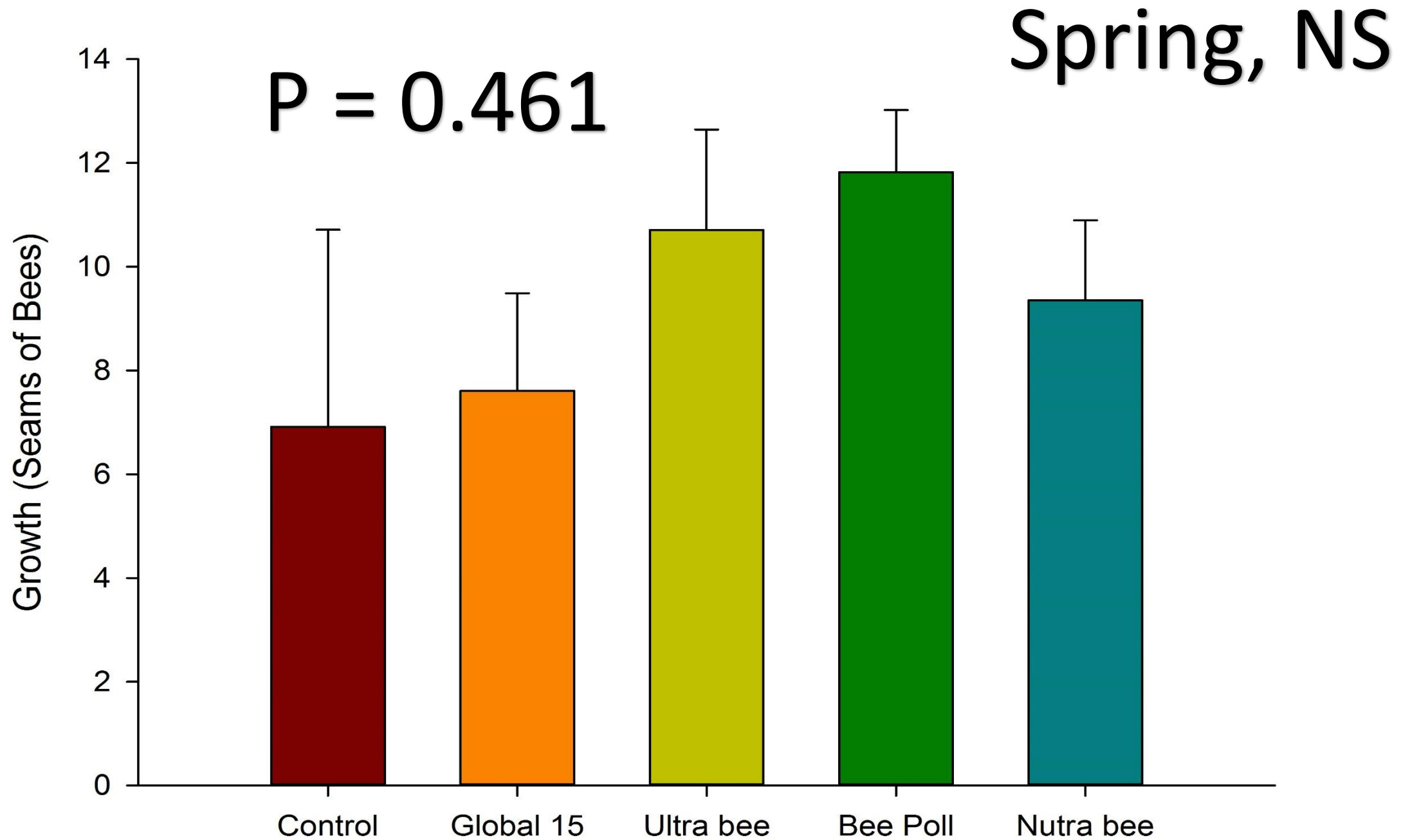
Late Summer, PE





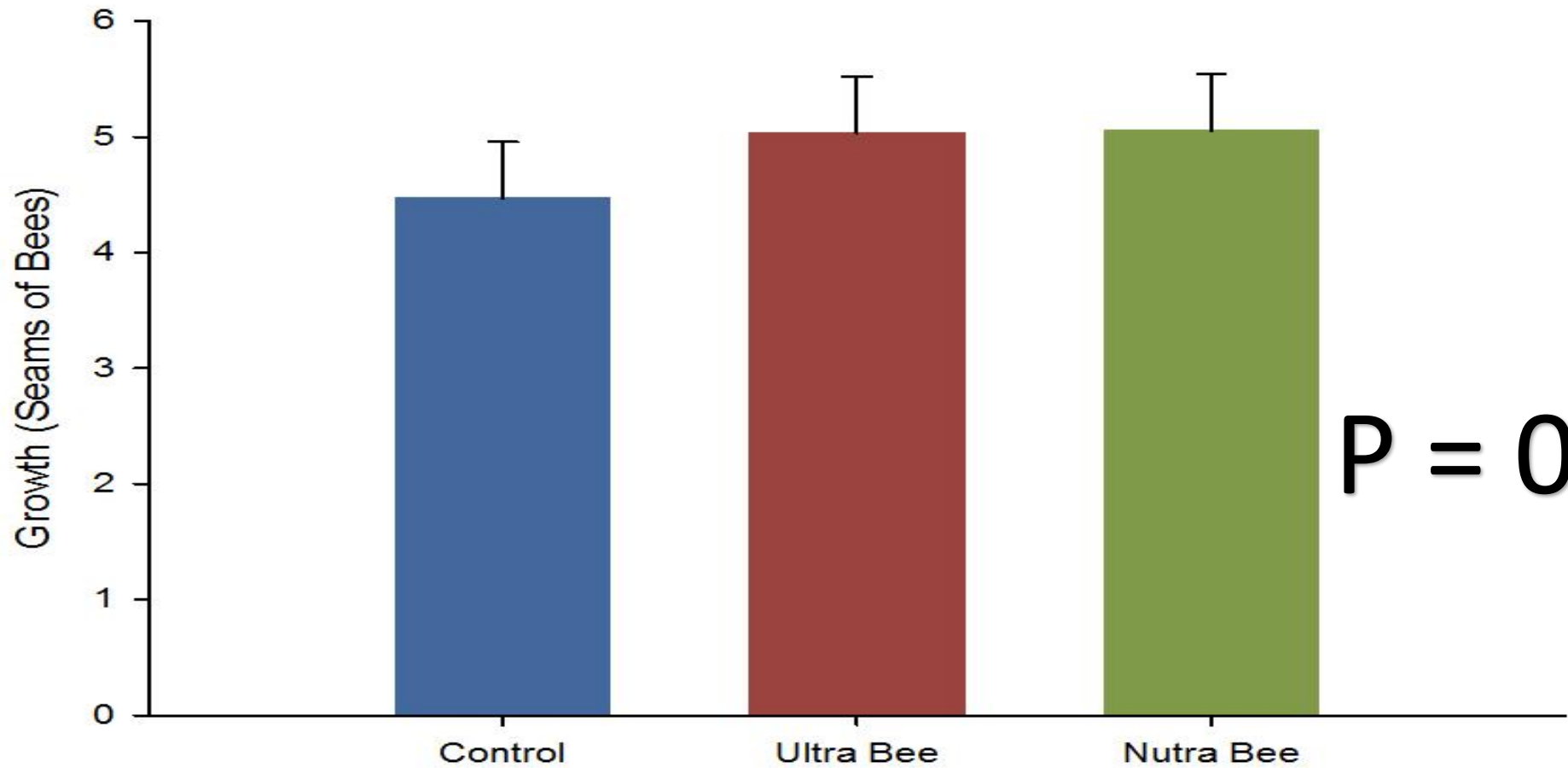
# Pollen Trial







# Late summer pollen trial



$P = 0.605$



# Nosema Study 2018- determining a baseline







# Extension









# Teaching

- Northeastern workshops
- Modern Beekeeper
- Veterinarian training
- Queen rearing









# THE MODERN BEEKEEPER





## PROGRAM

Module 1 - The Busyness of Bees: 1) Applying bee biology to bee behavior, colony organization, and productivity. 2) Recognizing operational safety, security, and health regulations surrounding beekeeping. 3) Exploring costs associated with bee production.

Module 2 - Working Bees and Hive Health: 1) Identifying different castes of bees. 2) Assessing colony strength towards meeting minimum pollination grade, splitting, and installing a queen. 3) Identifying symptoms and managing bee diseases.

Module 3 - 3Ps of Bees: 1) Propagation. 2) Pollination. 3) Products.

Module 4 - Bee Maintenance and Business Growth: 1) Key elements of a beekeeping operation. 2) Estimating capital, financing, and cash-flow requirements. 3) Preparing a colony for winter.

## SCHEDULE

Module 1 - The Busyness of Bees: April 13<sup>th</sup> and 14<sup>th</sup>, 2019

Module 2 - Working Bee and Hive Health: May 11<sup>th</sup> and 12<sup>th</sup>, 2019

Module 3 - 3Ps of Bees: June 29<sup>th</sup> and 30<sup>th</sup>, 2019

Module 4 - Bee Maintenance and Business Growth: August 31<sup>st</sup> and September 1<sup>st</sup>, 2019

## TUITION

\$400 +HST per module

Registration Open Now!

# Honey Bees and Pollination



## ATTTA Publications & Fact Sheets

Report – Initial Findings on Miticide Efficacy in the Maritimes

Small Hive Beetle Poster

Creating a Bee Yard

La création d'un rucher

Feeding Honey Bees

Le nourrissage des abeilles

Summer Disease and Pest Monitoring in Honey Bees  
maladies et ravageurs chez l'abeille mellifère

Dépistage estival des

A Comparison of Honey Bee Swarm Prevention Techniques

Fall Honey Bee Management Guide  
mellifère

Guide de gestion automnale de l'abeille

Condensed Report on Miticide Resistance in Atlantic Canada

Comb Rotation

Spring Management Guide



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# Contact Info

- Robyn McCallum & Sawyer Olmstead
- Email: [rmccallum@perennia.ca](mailto:rmccallum@perennia.ca) or [solmstead@perennia.ca](mailto:solmstead@perennia.ca)
- @mccallumrobyn 