

**Summer Preparation for Winter meeting #7**

Tiffany Ayres, Master Beekeeper  
Keys to Bees, Inc.  
www.keystobees.com

**SARE**  
Sustainable Agriculture Research & Education

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**Improving Survival Success Rates with Honeybee Colonies through Supportive Cohorts**

Meeting #7 SUMMER PREP FOR WINTER

Project Leader: Tiffany Ayres, CEO Keys to Bees, Master Beekeeper  
Project Consultant: Marty Jones, PhD  
Project Partner: Kim Patten, Manager Diakon Wilderness Greenhouse  
Project Partner: Lindsey Lyons, Director of Sustainability Learning Dickinson College

**SARE**  
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This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number PG24-021.

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**Sustainable Agriculture Research & Education**

SARE made funding possible.

SARE is a branch of the United States Department of Agriculture with funding through the National Institute of Food and Agriculture (NIFA).

The NIFA fund research and education projects to support sustainable agriculture; funding projects that help farmers, ranchers, and educators develop new ideas and strategies.

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"Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture."

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**AGENDA – SUMMER PREP TO SURVIVE THE WINTER**

US Survey Colony Losses

- Impacts of Varroa Mites – Dickinson's Apiary
- Ensure Quality Nutrition
- Establish Robust Numbers
- Confirm Strong Queen

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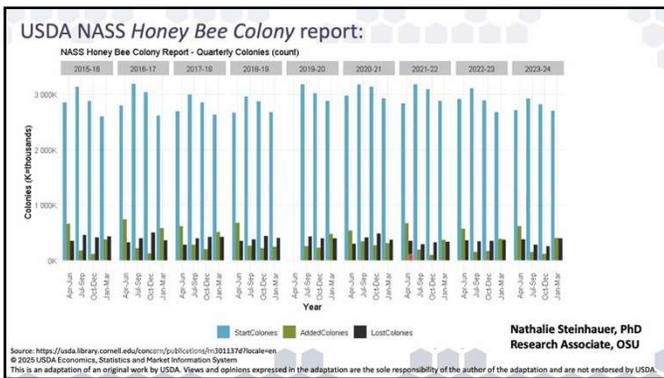
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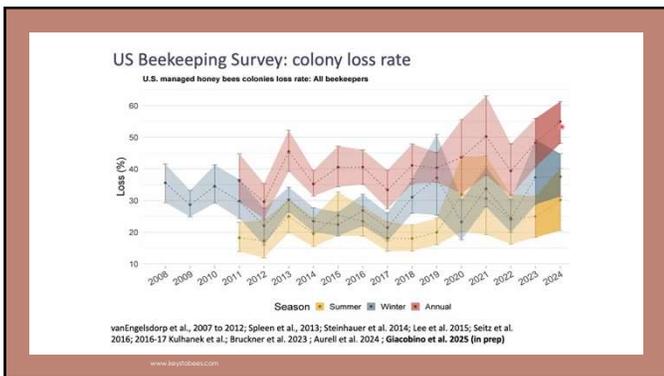
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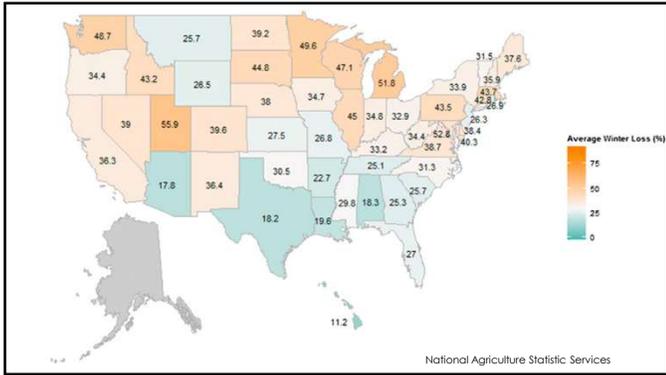
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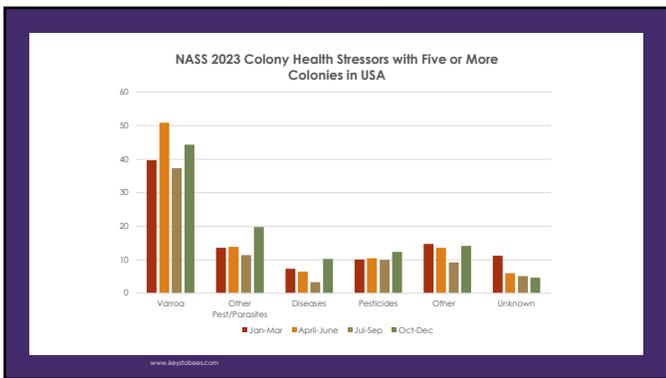
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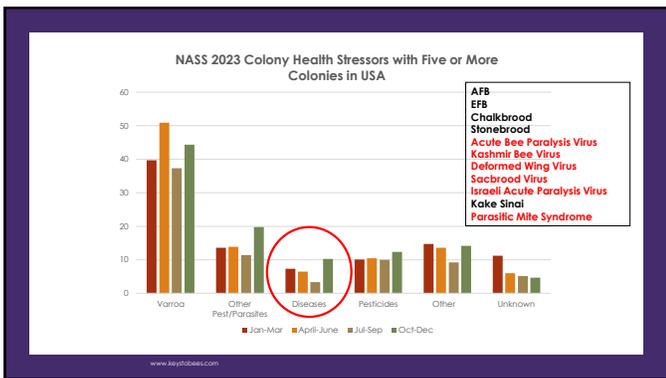
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### FIVE WAYS VARROA MITES IMPACT HONEY BEES

1	FEEDS ON FAT BODIES – SHORTENING LIFE SPAN
2	REDUCTION IN HYPOPHARYNGEAL GLAND SIZE – INABILITY TO FEED YOUNG
3	TRANSMIT VIRUSES – SICKEN OR KILL BEES
4	SUPPRESS IMMUNE SYSTEM – CONTRACTING OTHER ISSUES
5	KILLING ENTIRE COLONY

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### WINTER BEES



1	<b>ENLARGED FAT BODIES</b> – these act as nutritional reserve, storing proteins and carbohydrates to sustain them through the winter when foraging is limited
2	<b>ENLARGED IN HYPOPHARYNGEAL GLAND</b> – creating more Vitellogenin – allows bees to remain nurse bees for longer periods
3	<b>SLOWER METABOLISM</b> – lower metabolic rate, which helps them conserve energy and survive the colder temperatures. Has smaller amounts of Juvenile Hormone which causes the worker to transition between roles much slower
4	<b>INCREASED AMOUNTS OF VITELLOGENIN</b> – this protein, produced by fat bodies, crucial for brood rearing – allow nurse bees to secrete brood food even in the absence of fresh pollen – enhances the bees immune system and increases their lifespan
5	<b>LIFE SPAN</b> – unlike summer bees living 6 weeks, winter bees survive several months, even up to six months, to ensure colony's survival through winter

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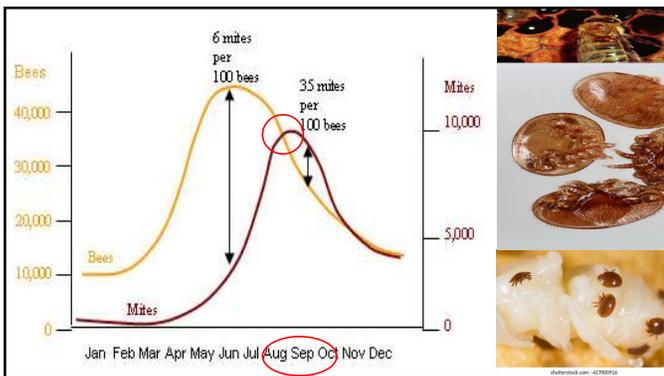
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**WINTER BEE**

Controversy on what specifically causes creation of winter bees &/or how different they truly are.....  
Hypothesis of environmental changes:  
temperatures, amount of food, amount of daylight



"Two Bees in a Podcast" is a weekly podcast hosted by Dr. Jamie Ellis and Amy Vu from the University of Florida's Honey Bee Research and Extension Laboratory  
**Episode 193**  
**Winter Bees** – Interview with Dr. Gabriela Quinlan (USDA-ARS Research Ecologist)

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**TRIP TO APIARY**

**SUGAR ROLL vs. ALCOHOL WASH** **COMPARISON**

**TECHNIQUE OBSERVATION**

**WALKING CONVERSATION:**

- What mite test do you use?
- What IPM techniques do you use?
  - Screened bottom boards, drone frames, hygienic queens, etc.
- What has been most impactful lowering mite counts for you?

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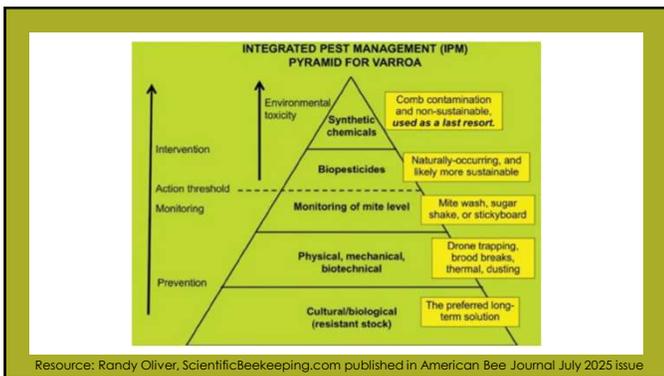
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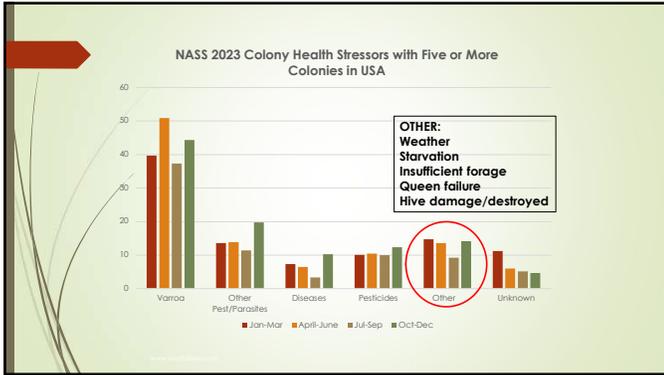
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**THERE IS NO TREATMENT FOR THESE VIRUSES BUT STRONG MANAGEMENT TECHNIQUES HELP REDUCE INFECTIONS**

- 1 GOOD NUTRITION – HELPS BUILD STRONG IMMUNITY
- 2 STRONG POPULATION – WITH FERTILE QUEEN
- 3 FEW EXTERNAL STRESSORS – PESTICIDES, MOISTURE, PROLONGED CONFINEMENT, VARROA MITE #'S
- 4 STERILE EQUIPMENT BETWEEN INFECTED INSPECTIONS

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**NEXT MEETING 7/9/25**  
**Virtual Meeting**  
**"Honey Extraction"**  
**with David Papke (PA 2025**  
**Beekeeper of the year)**  
**6:30pm-7:30pm**

**7/23/25 Virtual Meeting**  
**Full Q & A session also**  
**reviewing initial test questions**



**SOUTH CENTRAL PA LOCAL CLUBS**

**YCBA** – meets 4<sup>th</sup> Tuesday 7:00pm-9:00pm at Aldersgate Church, 397 Tyler Run Rd., York

**CABA** – meets 3<sup>rd</sup> Friday 7:00pm-9:00pm at HACC, 1 HACC Dr., Harrisburg

**LCBS** – meets 3<sup>rd</sup> Tuesday 6:30pm-8:30pm at Millersville University, Roddy Hall Room 261

**PCBC** – meets 3<sup>rd</sup> Sunday 2:00pm at Penn State Ext. Office, 8 S. Carlisle St., New Bloomfield

**FCBA** – meets 3<sup>rd</sup> Thursday 6:00pm-8:30pm at locations vary check on website fcbapa.com

**PSBA** – watch for summer picnic

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**THANK YOU**

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- [saybees.apriary@gmail.com](mailto:saybees.apriary@gmail.com)



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