Fall and Winter Management Considerations for Maritime Beekeepers

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ATTTA

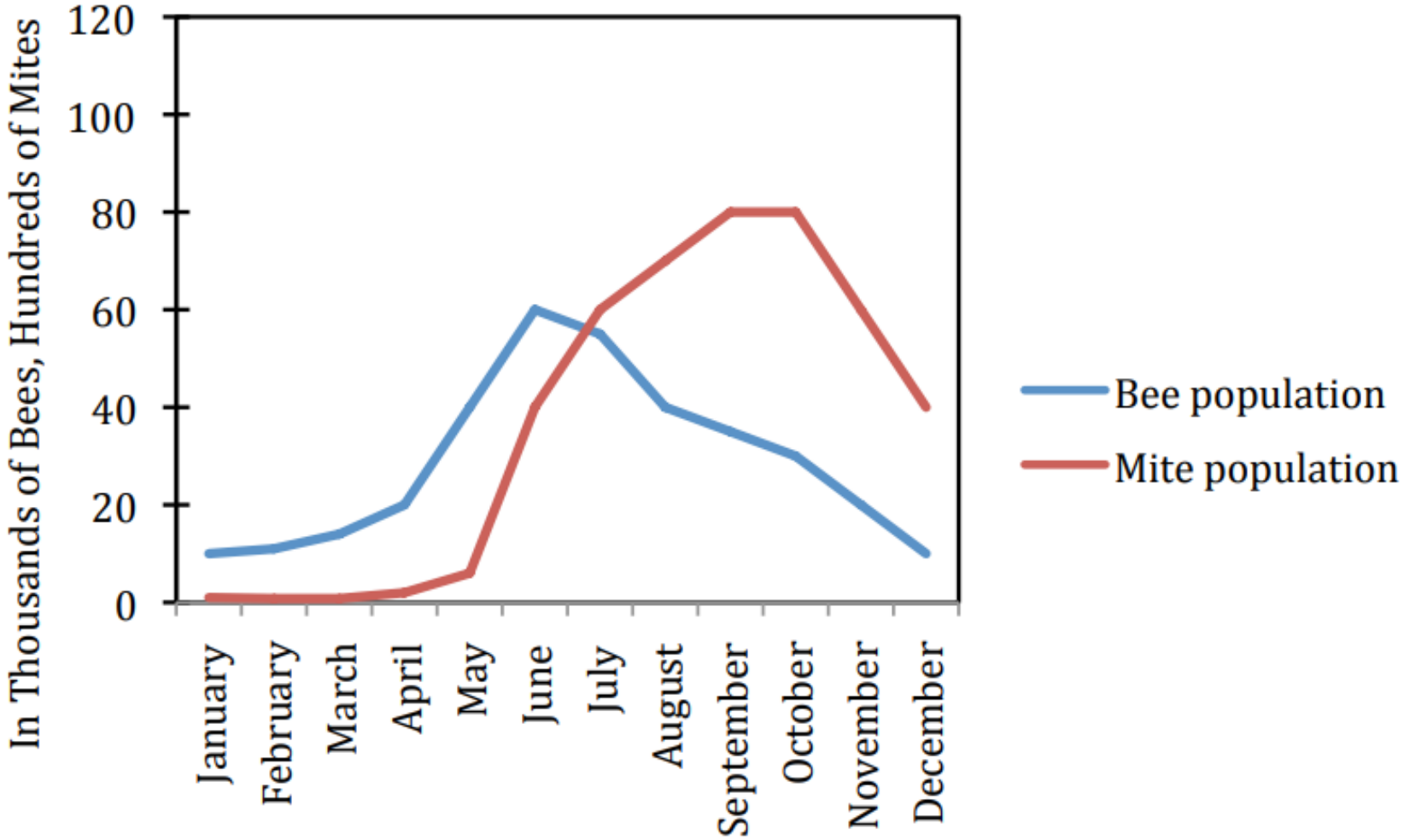
October 19, 2019

2020 beekeeping prep starts the summer and fall before!

- Keep the brood nest open
  - Winter bees are reared August – September
- Watch closely for protein deficit
  - Feed pollen sub if needed
- Watch honey stores
  - Bees will shut down with low stores
- **Keep mites under control!**

If you only take home one key point today…

Keep mites under control!



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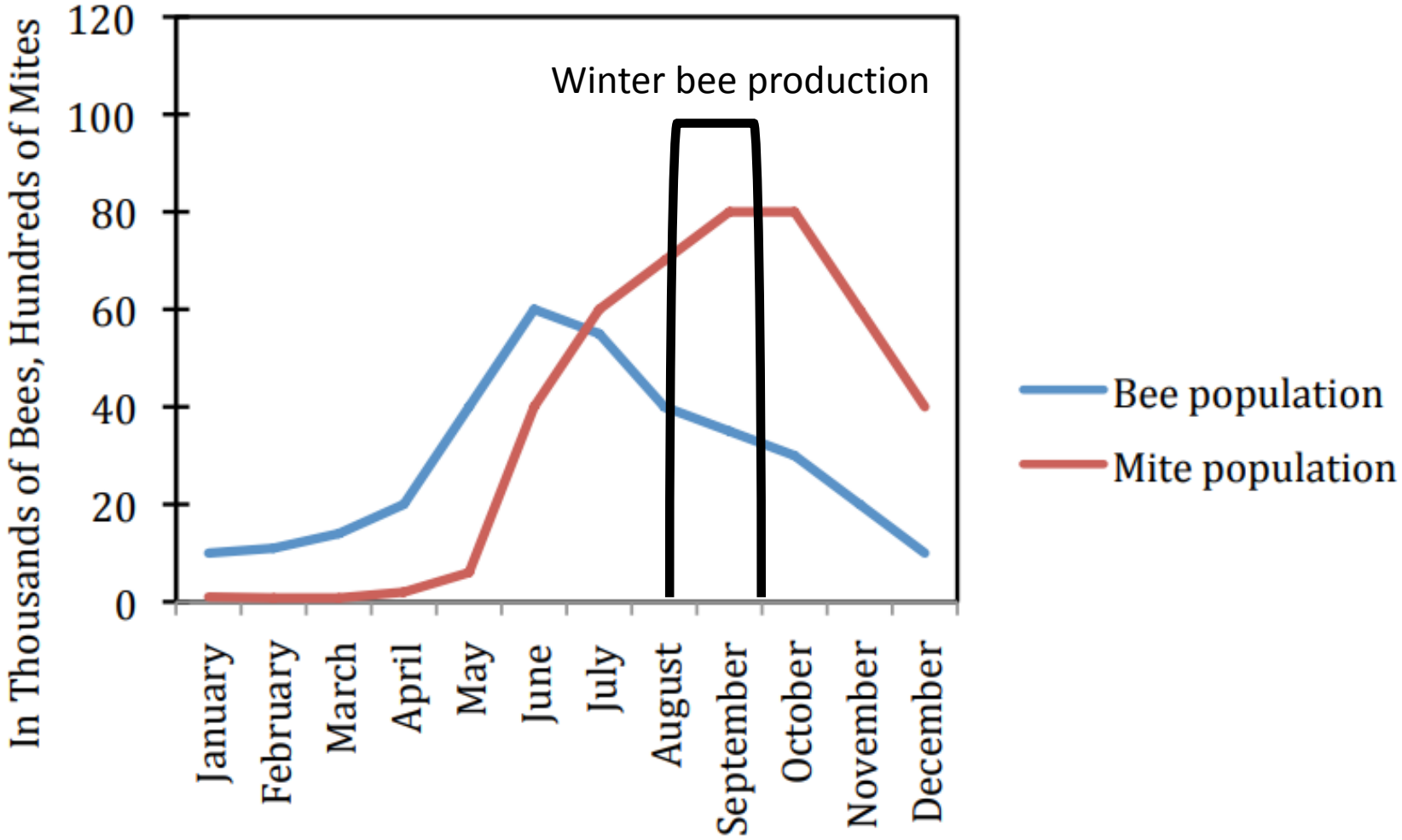
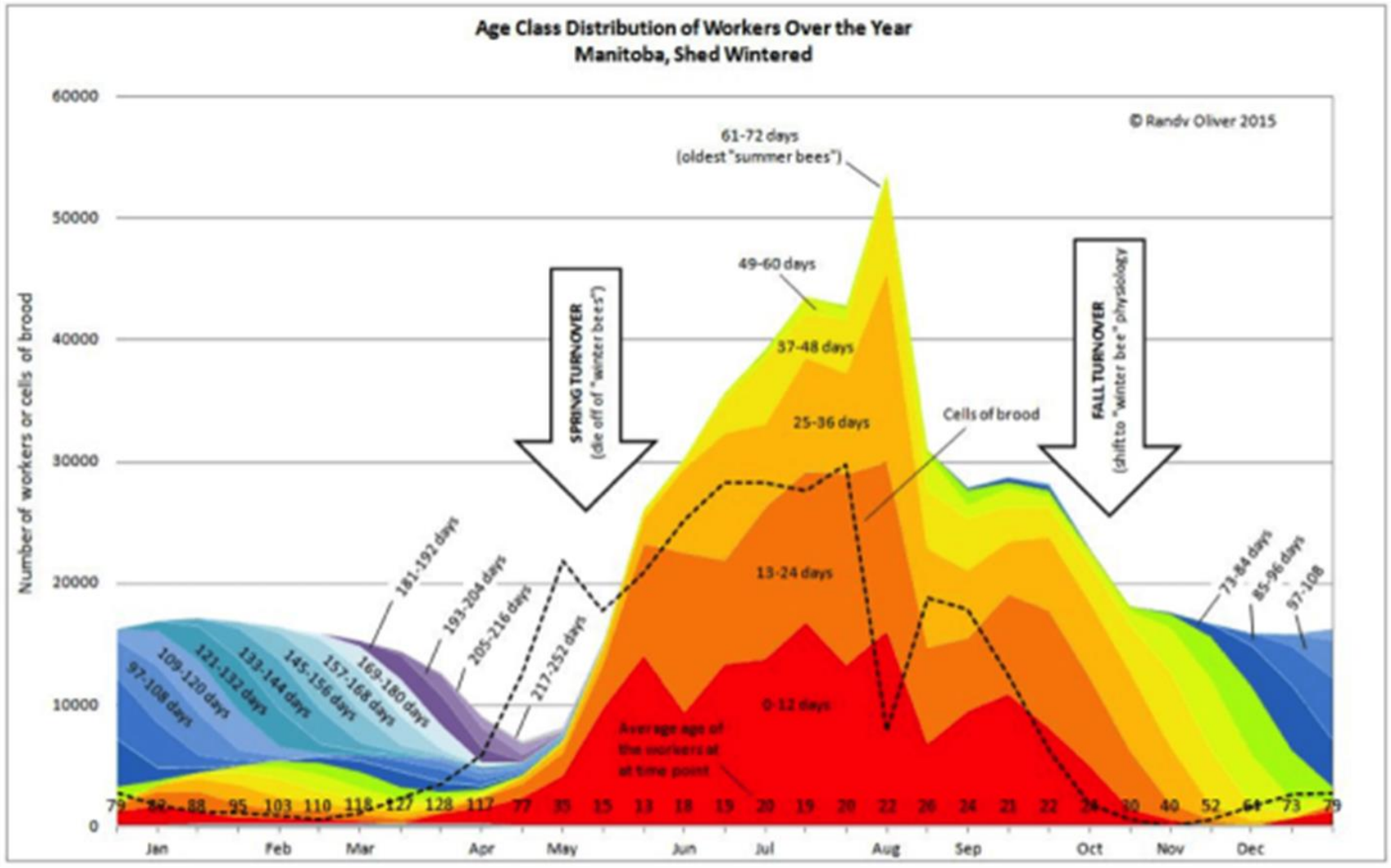


Spring management begins in the fall!

- What you do in August – November will influence the strength of your colonies next spring

- Pest and disease management
- Honey harvest schedule
- Colony size
- Fall feeding
- Proper wintering techniques

All management considerations should be based on biology!



Pests and disease management

- Important to monitor for pests and diseases all season
- Late summer (August – September) is especially important
  - Timing of winter bee production
- You should be monitoring hives for brood diseases and varroa mites
- Varroa mites are especially important!

Source: Andony Melathopoulos

Varroa destructor – emphasis on ***destructor***

https://txbeeinspection.tamu.edu/deformed-wing-virus/

Varroa mite monitoring – alcohol wash is best, sticky boards are ok

We follow the Ontario Treatment Recommendations

Monitoring Method	Number of Varroa Mites in May	Number of Varroa Mites in August
Alcohol Wash	6 mites / 300 bees **(2%)**	9 mites / 300 bees **(3%)**
Sticky Board	9 mites / 24 hr drop	12 mites / 24 hr drop

- Treatment is warranted only when varroa mite levels reach or exceeded the economic threshold.
- Sample multiple times per year, before and after each applied treatment

Fall varroa management options

- Full list of products available at: https://www.perennia.ca/wp-content/uploads/2018/03/varroa-mite-management-options.pdf

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- Formic Pro
- Formic acid (65%)
- Thymovar

→ Work well in the fall based on temperature guidelines (10-29.5 C) and in rotation with synthetic miticides

- Synthetic strips
  - Apivar
  - Bayvarol
  - Apistan?

→ Use only once in a 12 month period. Work well in spring

- **Oxalic Acid**
  - Dribble
  - Vaporization

→ Use once late fall / early spring during broodless period

Honey harvest schedule

- Harvest honey on time
  - 10th -15th of September is a good guide
- Your harvest timeline will change based on a variety of factors
  - Mite levels
  - Mite treatment preferences
    - Follow label directions
  - Fall flow availability
    - Depends on location and weather
  - Beekeeping experience
    - Know your area and know your bees!

Hive strength for wintering

- Hives should be a **minimum** of 7-8 frames for overwintering
  - Bigger is better!
- Smaller hives can survive, but generally take the most time and resources in the spring
- One exception are overwintered nucs

Late summer requeening

- It is a gamble wintering hives with under performing queens
- Usually lots of local queens available late summer
- Hives can be requeened in September with success, but July and August is better
  - Before rearing winter bees

Combining weak hives

- After pulling honey supers is a good time for combining hives
- Hives can be combined using the newspaper method (AKA paper marry – Alex Crouse) or shaken out
- When combining, make sure you remove the most inferior queen
- **Never combine hives that are weak due to disease!**

Fall feeding

- Hives are fed 2:1 sugar syrup in the fall
  - Easier to “ripen”
  - No stimulative effects
- Fall is an easy time of year to get feed into hives
  - Huge work force of summer bees with the drive to work
  - Weather conditions favor quick storage and curing
- Aim to be done before October 15th

Feeders

- Hive top or pail feeders most appropriate
- Frame feeders and others will work, but are cumbersome
- Open feeding is frowned upon and not recommended
  - Disease transfer issues
  - Uneven feeding of hives
  - Feeding other beekeepers bees
    - Possibility of adulterated honey if honey removal is delayed due to a late flow

Fall flow – A catch 22

- Fall honey is made from primarily golden rod and asters
- Flow can be good some years, but bees should not winter exclusively on fall honey
- Golden rod and aster honey granulates quickly and has a high ash content
- Bees can’t digest ash, and require water to access granulated honey
  - Hives can starve
  - Dysentery issues

How much to feed?

- Depends a variety of factors:
  - Timing of super removal
  - Colony stores before feeding
  - Intensity of fall flow
  - Hive wintering configuration
    - Singles vs doubles
  - If you want to feed in the spring or not
- Generally hives are fed 4 - 6 gallons of sugar syrup (30 - 45 lbs of sugar)
- Doubles should weigh 100-120 lbs, singles 80-90lbs (60-80 lbs of feed).
- Be careful not to over feed

Watch fall pollen flow and pollen reserves in hives!

- Pollen in the fall is something that is often forgotten about
- Well fed larvae = healthy bees
  - Important for bees with a long life span
  - Start watching August – September
- Pollen reserves = protein storage = more brood rearing next spring!

Watch fall pollen flow and pollen reserves in hives!

Post Dorian pollen collection

September 9 2019.
24h collection

Is there a benefit to fall feeding pollen sub?

- Ongoing large scale two year ATTTA trial
- 2018: Ultra bee, Nutra bee, control
- 2019: Ultra bee, control
- 192 hives in two years (96 hives per year)
- Processing results. Stay tuned!

Selection of overwintering location

- Southern exposure
- Wind protection
- Not in a low spot
  - Cold air
  - Water accumulation
- “Easily” accessible in the spring!

“Easily” accessible in the spring!

Wrapping

- Wrap hives when the temp is consistently below freezing at night
  - Around Remembrance day
- Provide upper insulation
- Entrance reducers and mouse guards
- Wrapping helps wintering colonies, but has a tremendous benefit next spring promoting early brood rearing

Common wrapping materials

- Black plastic wrap
  - Sometimes used in combination with bubble wrap or bubble foil
- Tar paper
- Bee Cozy
- Bee Dry Foil Insulation Wrap

- Black or dark colored material helps with solar gain
  - Movement of the cluster on a cold day
  - Achieve brood rearing temp earlier in spring

Benefits of wrapping

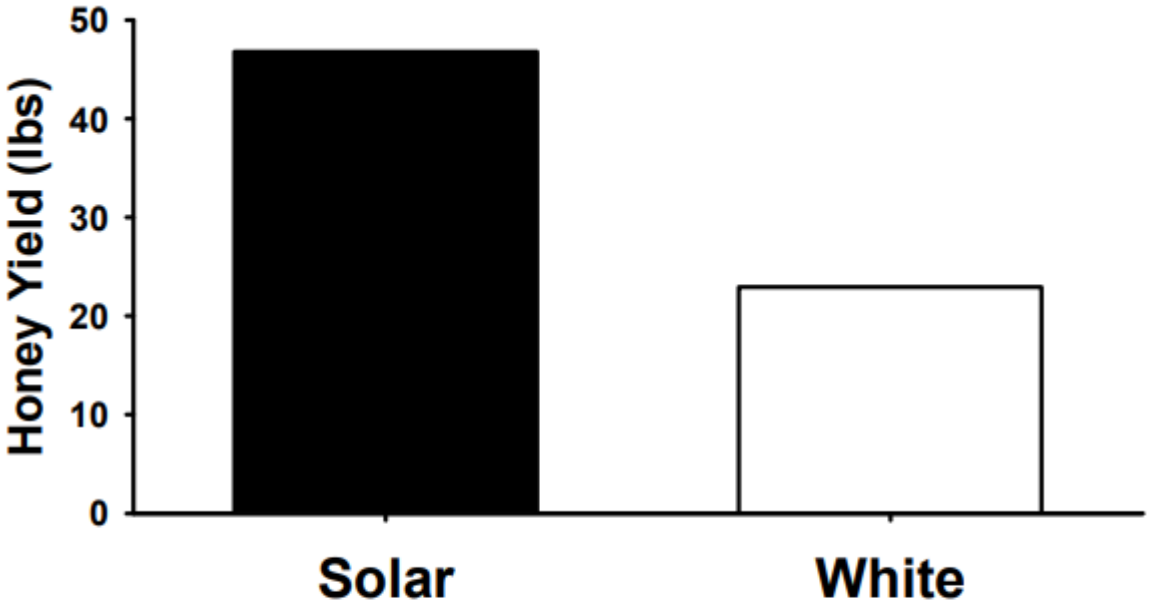

Figure 8. The amount of honey collected from colonies in Israel during the earliest honey flow (March) if they were painted white or enveloped in a black plastic tent (solar) (Wineman et al 2003).

Wineman et al. 2003 as cited in Melathopoulos 2007

"A study from Israel, for example, demonstrated that colonies that were enclosed in a black plastic tent achieved brood rearing temperatures a month earlier than colonies painted white, and as a consequence, were able to double their honey production during the first honey flow"

- (Melathopoulos 2007)

Wrapping

Insulation

Mouse guards & entrance reducers

Maybe shrew guards?

Fletcher Colpitts Chief Apiary Inspector - New Brunswick

http://www.nbba.ca/wp-content/uploads/2014/03/shrew_screen.pdf

Stacking & bundling hives for warmth

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Upper entrance – ventilation is important!

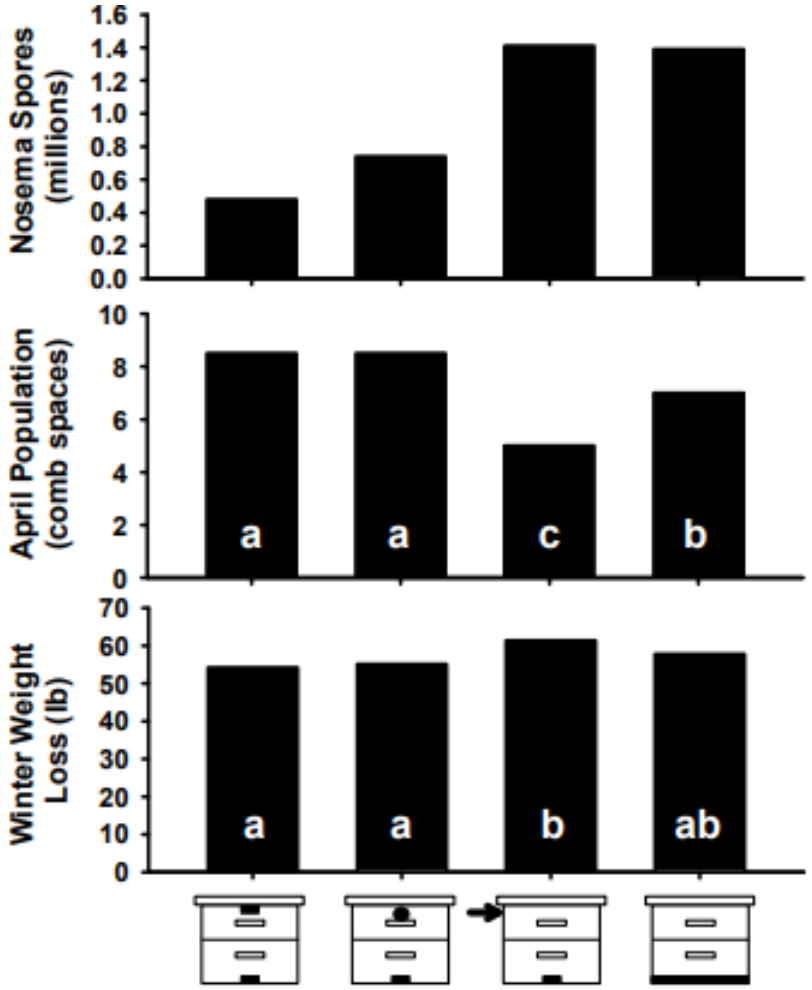


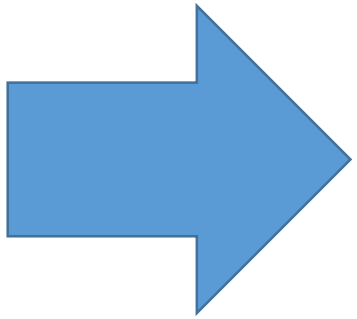
Figure 7. The amount of honey consumed (winter weight loss), spring adult populations and nosema levels among colonies with different types of entrances: 1) bottom and top entrances 1 x 1.5 cm each, 2) bottom (1 x 1.5 cm) and top (2.5 cm dia in middle of 2nd chamber), 3) bottom and side (1 x 1.5 cm each) and 4) fully open bottom entrance and no top (from Szabo 1982). Different letters mean averages were significantly different.

Szabo, T. I. (1982). The thermology of wintering honeybee colonies in 4-colony packs as affected by various hive entrances. *Journal of Apicultural Research*, *24*(1), 27-37.

As cited in Melathopoulos 2007

For more info:
The Biology and Management of Colonies in Winter
Andony Melathopoulos
http://www.capabees.com/shared/2013/02/winteringpdf.pdf

Oxalic acid works great in November!



Keep an eye out for pests - skunks and raccoons!

Winter months: leave them alone! Wait until March to satisfy your curiosity. YouTube helps!

https://childcarebumblebee.com/questions/

If you would like a copy of this presentation, please email Sawyer or Robyn, or check the NSBA website!

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rmccallum@perennia.ca

http://www.nsbeekeepers.ca/industry_news.php