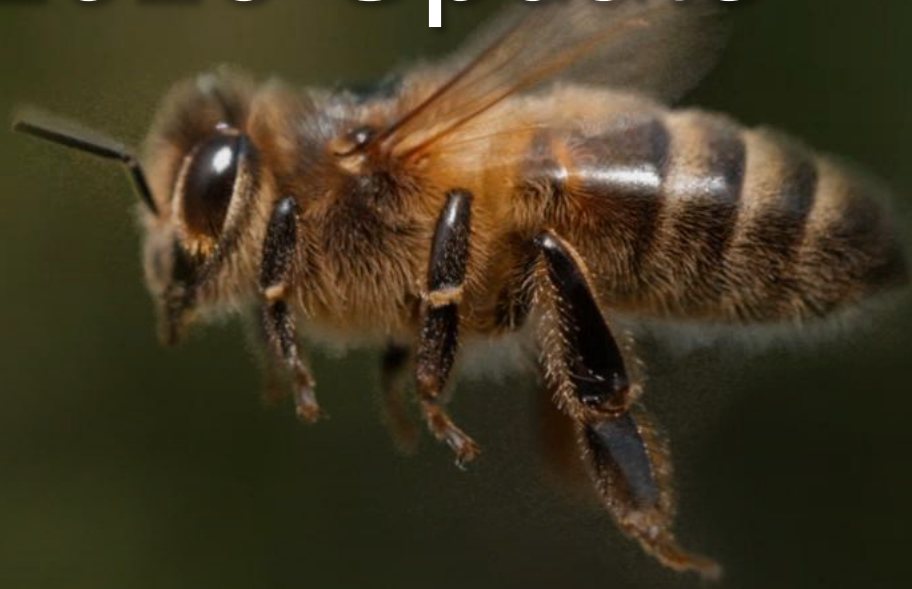


Preparing Honey Bee Colonies for Winter – 2026 Update



And basic winter management

Fred Putnam, Jr.
Andrew Munkres



Tonight's main topics

- End of season colony health.
- Have your colonies stored enough food to make it through the winter?
Weighing, feeding, choosing winter hive configuration, and more with updates.
- Robbing.
- Primer on winter hive prep – wraps, insulation, windbreaks, etc.
- Briefly cover mid- winter management.

Colony Health

Preparation for winter starts at the end of winter

Allow stores to build up (avoid over harvesting)

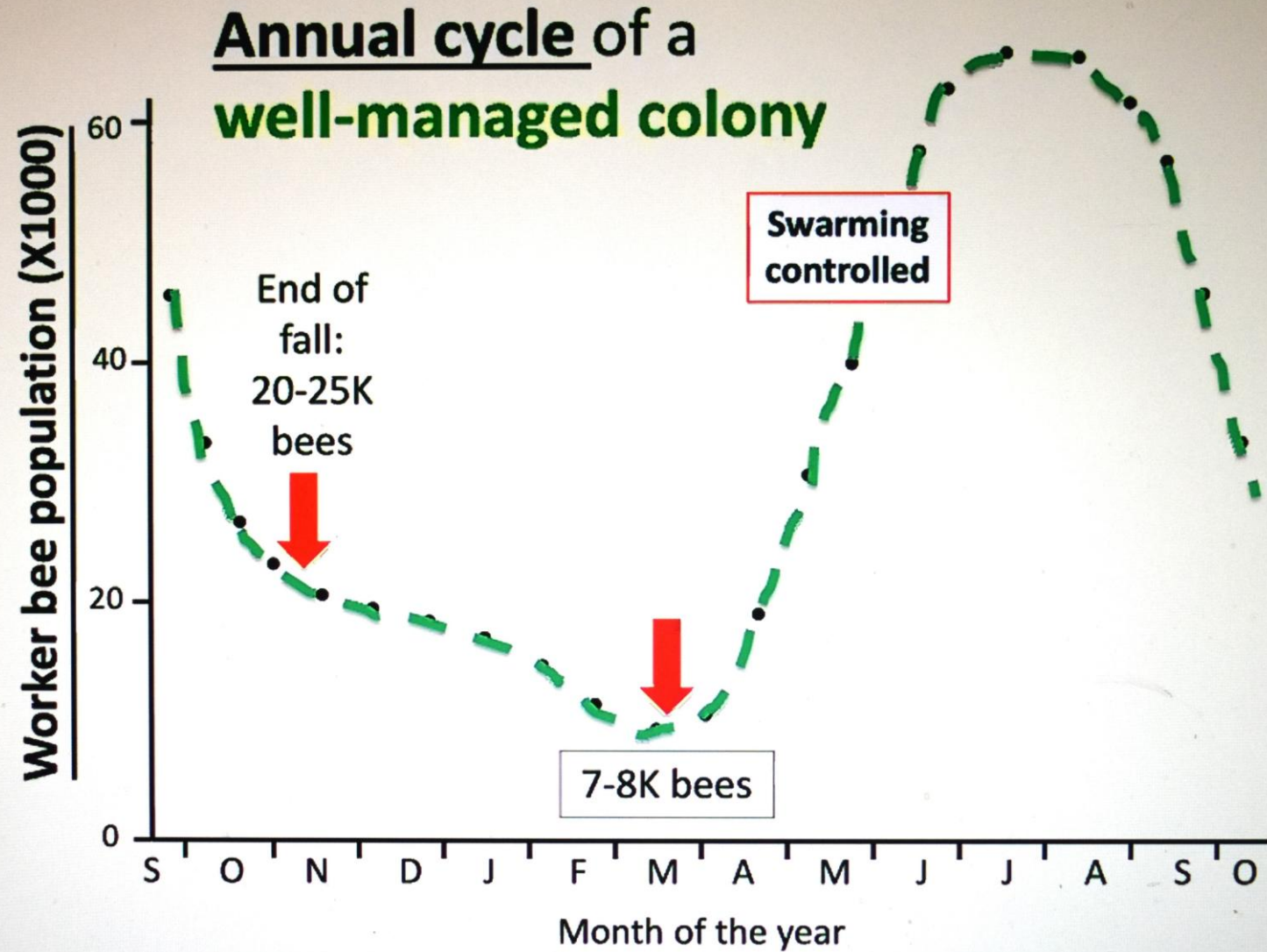
Keep population numbers up:

- Mite, disease, and pest management.
- Feed pollen sub during long and severe cold spells or summer droughts.
- Control swarming - Demaree method late in the season.

Why colony health comes first

- Varroa mite population monitoring and control starts in June.
- Colonies will be raising bees that will be “winter” bees. Winter bees need to be healthy which means the bees raising them need to be healthy.
- Start Varroa monitoring early in the summer but it's better to start now than never.

Why mite
management
matters



Viruses are Deadly to Honeybees

- Deformed wing virus (DWV)
- Black queen cell virus (BQCV)
- Israeli acute paralysis virus (IAPV)
- Acute bee paralysis virus (ABPV)
- Kashmir bee virus (KBV)
- Sacbrood virus (SBV)

**Mite/virus loading is serious stuff and almost certainly
will kill your colony if you take no action!**

Assessing winter readiness and feeding for winter prep

Weighing hives

In our region, colonies go about 6 ½ to 7 months without a nectar flow or weather warm enough for bees to fly to get it.

Colonies need substantial stores to survive that long without a nectar flow.

Weighing gives us a rough estimate of the amount of stores available for winter.

Hive weight tells us:

- If we need to feed in the Fall.
- If there might be health or other issues (such as queenlessness.)

If underweight, evaluate why.

Be careful where your advice is coming from.

We are not in:

- Texas
- Alabama
- Florida
- Georgia
- South Carolina
- Tennessee
- Hawaii
- Etc.

Determining winter readiness: Weighing hives

How do we determine hive weight?

One method:

- Put the hive into its winter configuration.
- Weigh it with a bathroom scale.
 - Strap the hive (hold it together).
 - Tip it up onto the scale.
 - 2nd person can be helpful.



Here's an easier method: **Two scales**

- Put a scale under each end or side.
- Add together the readings on both scales.
- One person can do this safely.



63 lbs.



+

76 lbs.



=

**Total
139
lbs.**

Approximate Target Total Hive Weights for our Region

Actual winter stores consumed will depend upon colony size,
genetics, type of bees, health of the colony, weather (how soon it gets cold),
flying weather in April, severe temp fluctuations, etc.

Winter Configuration	8-Frame Equipment	10-Frame Equipment	5-frame nuc assumes deep frames
Two Deep Hive Bodies and One medium	125-130 lbs.	155-170 lbs.	N/A
Two Deep Hive Bodies	105-110 lbs.	125-135 lbs.	N/A
Variable • Match hive size to colony population, i.e. 2 high, 3 high, etc. • Examine each colony separately	N/A	N/A	2 high 55 lbs. 3 high 80 lbs.

Four frame (double fours) and Horizontal Hives

Alternative hive type	Frames of honey
Four frame (double fours) ➤ New nuc – two deeps tall ➤ Medium-size colony 3 deeps (8 frames) bees on all frames ➤ Large colony 4 deeps tall (16 frames) bees on all frames	➤ Two frames of honey per box ➤ Two frames of honey per box and see note below. ➤ Two frames of honey per box and see note below.
Horizontal Hives	Use follower board to reduce to 8-12 frames depending on colony size. Fill empty space with insulation. Frames should be mostly but not totally filled with honey (7/8 full) to allow space for the cluster to move through comb instead of forcing them to move to the outsides of the comb.
	Note on double fours: With medium and large colonies in 4-frame boxes, check on food stores by mid-February or sooner.

Caveat to target weights!!

Important to note!

Colonies in hives that reach target weight can still starve.

Large colonies may need more stores (heavier hive weight.)

If you have a large colony in 4 or 5 frame boxes or are wintering in a single deep, be ready to do mid-winter inspections and add food then if needed!

If a colony doesn't reach target weight by mid-October, or if the colony is especially large, add a candy board (pictures below) or inspect and feed during the winter.

Choose the winter configuration based upon the size or health of the colony

Usually two deeps.

Two deeps might not be enough for a very large colony or one that just hasn't been able to build up stores (think drought/dearths).

4 or 5 frame or nuc target weight can vary considerably depending on the size of the colony, and the size of the box(es).

Fall Feeding

Fall Feeding

- **Feed based upon need.**
- **Prevent robbing – internal feeders only!**
- Get the weight on **fast!**
- 2:1 syrup – 2 lbs. sugar : 1 lb. water (or 2 cups sugar to 1 cup water.)
- Add the number of gallons of syrup to achieve target weight.
- Start feeding for weight gain mid-September.
- Feed directly on frame top bars **BELOW** inner cover.
- Be done feeding by ~Oct. 15 to allow time for the colony to dry the syrup before cold weather.

Anticipated Weight Gain with 2:1 Syrup

- **1st round - One gallon 2:1 syrup will increase hive weight by about 5-10 lbs.**
- **2nd round (if needed) - One gallon 2:1 syrup will increase hive weight by nearly 10 lbs.**

**Weigh after feeding to be sure
the hive is at your target weight.**

There are different methods for feeding for winter weight gain

Frame feeder



Top feeder



Can or jar feeder



Feed inside the hive to avoid robbing.

Seal any obvious seams or cracks in hive with duct tape.

Mike Palmer Feeding Technique



- Inverted new paint cans or jars
- Remove inner and telescoping covers
- Place feeders on ~3/8" thick shims directly onto frame top bars



Can and Jar Feeder Covers

- Can and jar covers with 6d nail holes punched inward.



Enclose Feeders

- Set deep box over feeders.
- Set telescoping cover over that - feeders are part of the hive.
- **Leave inner cover off while top feeding if it has a notch.**
- No burr comb at this time of the year.



How much at one time?

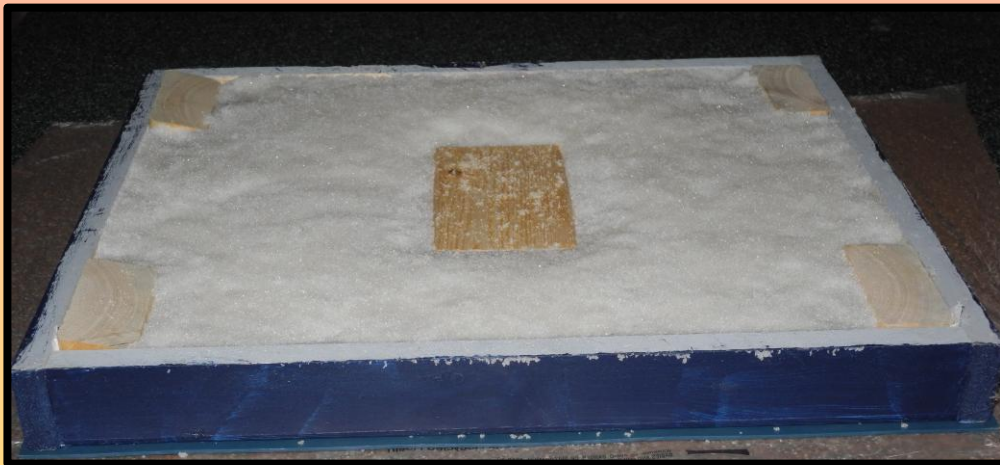
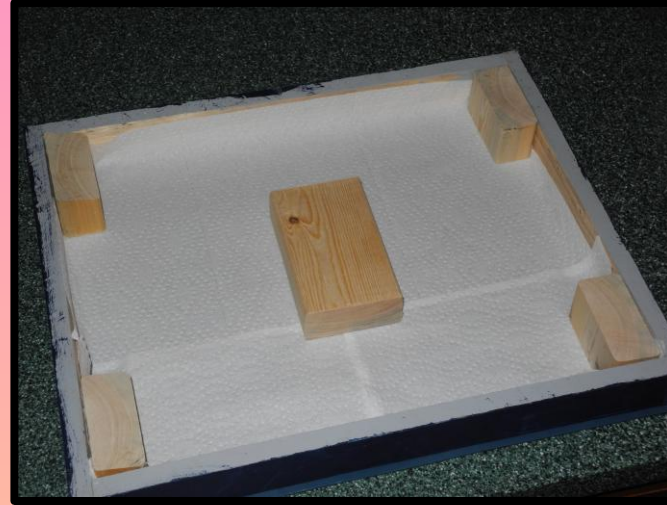
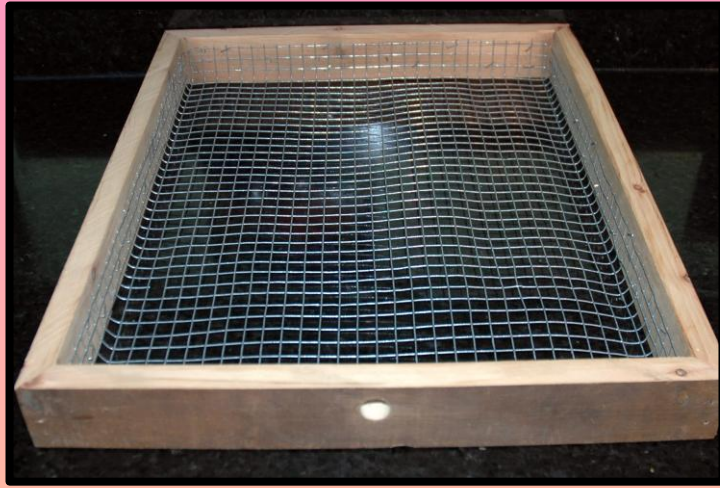
- 10 frame equipment – up to 5 one-gallon cans at once.
- 8 frame equipment – up to 4 one-gallon cans at once.
- 5-frame nucs – up to 2 one-gallon cans or 5 two-quart canning jars at once.
- Double 4 nucs – Up to 4 two-quart canning jars at once on each side.
- Feeders are often emptied in days.

Feeding 4 & 5 frame colonies for Winter Weight Gain

- Same method as 8 & 10 frame production hives.
- Use feeder that will fit the smaller box.



If all else fails, candy board



Candy Board Recipe and Mixing the Sugar Dough (Candy)

- Mix 3 cups of water, 1 tablespoon of white vinegar into 16 pounds of sugar per 20-pound batch.
- Mix by hand, form into the board, and let dry for a day or two.
- It takes a little elbow grease to work the liquids into the sugar.

Feeding in other types of hives

- Multiple cans or jars inside hive or,
- Frame feeders



Rate of winter food consumption

Honey bee colonies use 2.5 times more food at 56°F than they do at 37°F.

If the Fall and early winter months are warmer than usual, a colony can burn through its food resources much sooner than expected; it can starve even if the hive weight started at the target weight.

Winter hive access

Winter inspections are important.

Whatever hive prep you do (wraps and insulation), be able to open the hive to check on food status during the winter.

Alternatives to Fall feeding

- Leave a super.
- Leave the heaviest frames when pulling supers.
- Move honey frames between [healthy] colonies.
- You still have options if they don't reach the target weight: Candy boards and mid-late winter feeding.

Preparing hives for winter

Other Basic Winter Prep Actions

- Varroa mite population monitoring control starting in June continuing approx. monthly.
- Mouse guards on Sept 1-10 or so (earlier at higher latitudes and elevations).
- **Remove all queen excluders.**
- Wraps or windbreak in windswept locations.
- Insulation under telescoping cover.
- Entrance reducers (optional depending upon colony size and apiary exposure).
- **Ventilation (unless using a “condensing” hive).**

“Condensing” configuration

- Insulate sides and top.
- Wrap or otherwise seal all seams.
- Minimize ventilation.
 - **No upper openings.**
 - **Reduce main entrance.**
 - **Cover screened bottoms.**
- No quilt boxes or moisture absorbing top material.

The thermodynamic principles....

“Condensing” configuration caution

Not a good choice for taller hive configurations (more than two deeps).

Bees do not travel well down the long distance in tall hives through cold frames to do cleansing flights resulting in dysentery in the upper part of the hive. They need access to an entrance not far from the winter cluster.

Leave an upper entrance (inner cover notch or equivalent) in hives that are three or more boxes tall.

Preparing hives for winter

Robbing

This is potential robbing season.

Robber screens make it hard for some foragers to get back into their own hives.

Data: Average 24% of bees leaving a hive with a robber screen will drift to a nearby or distant hive with no robber screen (range 15-33%.)

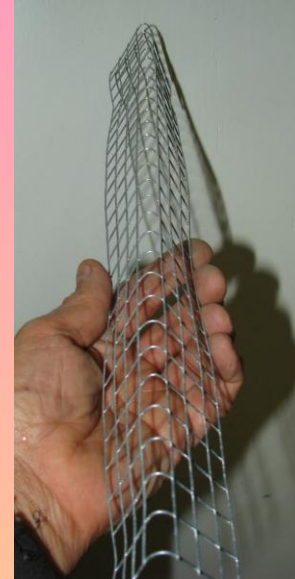
Data from <https://scientificbeekeeping.com/can-robbing-screens-reduce-mite-immigration-part-5-they-dont-just-affect-robbers/>

Be pre-emptive. Install entrance reducers on smaller colonies.

Mouse guards

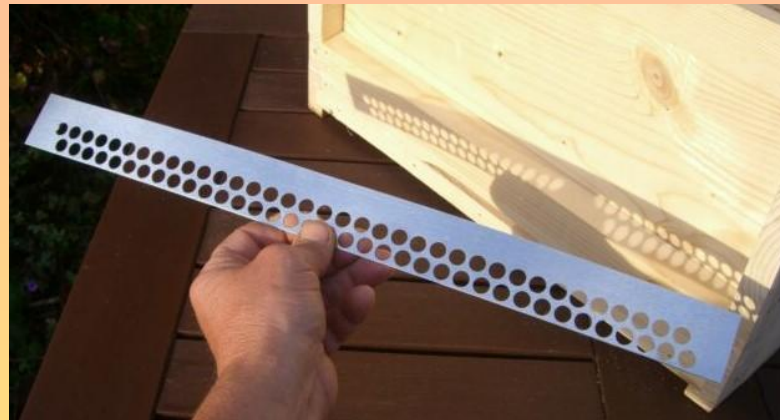
Mouse guards
on Sept 1 or so.

- **Make your own -
1/2" wire mesh.
3/8" is ideal**



Or

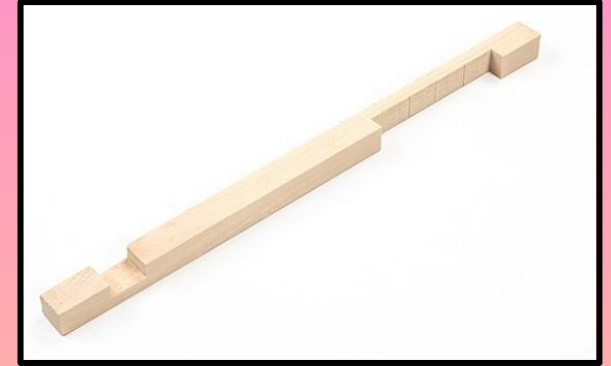
- **Commercial
sources**



Entrance Reducers (Optional)

Helpful in windy locations or on colonies with health issues. Also, for condensing hives.

- Install early on small colonies to reduce the likelihood of robbing.
- Use the smallest opening size that doesn't cause a "traffic jam" (bees piling up at the entrance trying to go in and out.)
- Inner cover notch down or up doesn't matter – Remove by mid to late April in our region.

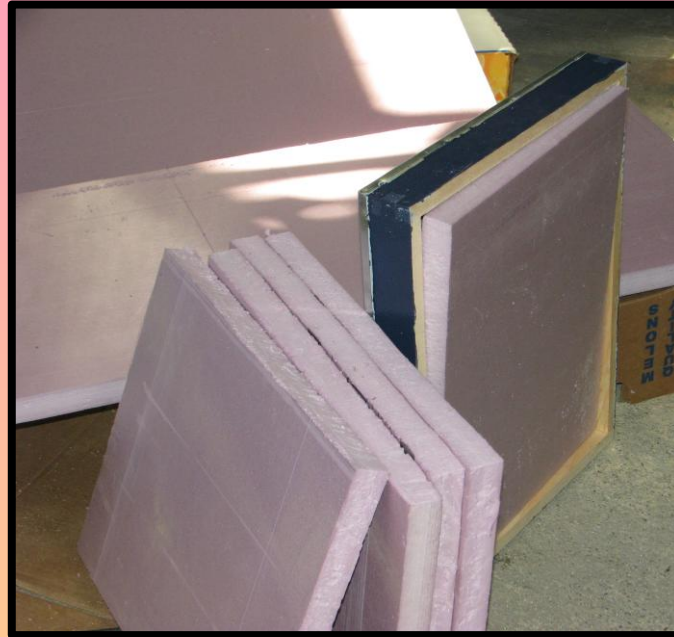


Upcoming workshop on wraps and insulation

- Be sure to attend the winter wrapping and insulating session on October 9, 2026, via Zoom.
- Updated local info from Andrew Munkres.

Top insulation and ventilation

- Insulation under telescoping cover – **R-10 (2"/5 cm)** preferable.
- Bottom entrance reduced.
- Cover bottom board screens.



Wraps and Windbreaks

**Insulating wraps and windbreaks
improve winter survival.**

**Windbreak 40-60% “porosity to
limit snowdrifts.**



Allow room for winter
inspection.
Windbreaks may also
cause snowdrifts.

Effectiveness of Wraps

- Colony survival increases by 22.5% when hive is wrapped/covered.
- Colony also consumes less food.

NIH National Library of Medicine – National Center for Biotechnology Information - PubMed April 4, 2022

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8979464/>



Insulating Wraps and Windbreaks

Use windbreaks:

- In windswept locations.
- In cold pockets (where you have temperature inversions).
- On smaller colonies.
- On colonies with high mite load or evidence of viruses in Fall.

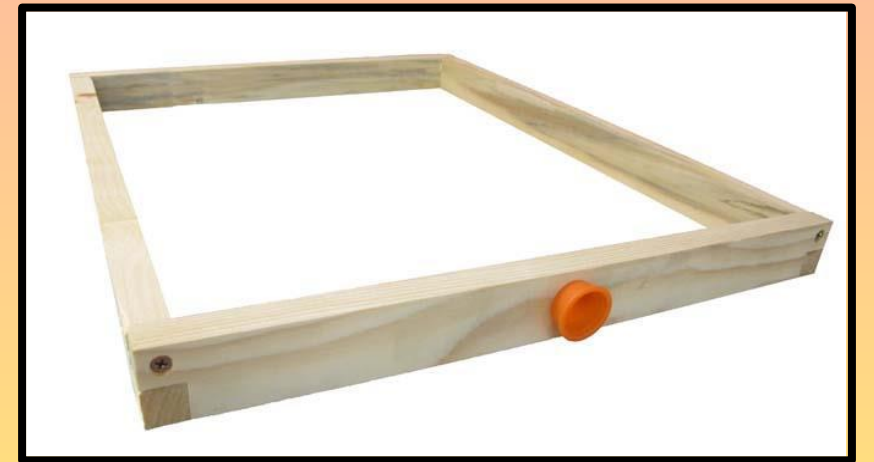


Wrap in late October or early November.

Add spacers/shims to create space for winter feeding

Make your own or buy from
beekeeping suppliers.

About 1" (2.5 cm) tall.



Mid-winter actions

Winter follow-up hive checks

- If colonies were at target weight at start of winter, start winter food checks by mid-late Feb. when temps are in the 20s F or higher and calm winds.

Start food checks sooner if they were light going into winter, if the colony is large, if the colony is in small boxes, or if the Fall and early winter were warmer than usual.

- Do a tip test.
- Remove telescoping cover, peer through inner cover hole.
 1. **Is there still honey? Poke comb gently with a hive tool if you can't see. If no honey, start feeding.**

Or,

2. **Are they at the top of the hive? If so, start feeding.**

What kind of winter food?

Winter food: drier/solid food

- Fondant
- Winter patties
- Sugar i.e., candy boards, sugar patties, or Mountain Camp in emergency

No syrup.

**Add food under the inner cover
so it is part of the hive like their honey.**

Winter feeding

- Place plenty of food directly on frame top bars so it is located inside the hive.

Don't scrimp.

- Use spacer/shim if needed to give room for food below the inner cover.
- If temps in 20sF or above (2-3°C) and not super windy, you can remove covers briefly to install spacer and add food. Do not pull frames out.
- Check every 10-14 days **until April nectar flow & flying weather arrive.**

Questions?

Fred Putnam, Jr.
Andrew Munkres

Vermont Beekeepers Association



Demaree Method

Swarm Control

Demaree Method : Especially Useful for Late Season Swarms

Use if:

- **You don't want more colonies.**
- **It's too late in the year to do splits.**

Demaree method keeps a colony intact. Retains foragers so maintains honey production.

Initially labor-intensive; requires moving frames and boxes.

Must have empty drawn deep comb available.

Demaree Method – The Simple Version

“Vertical split” – colony remains together

This is a re-arrangement/relocation of brood frames in relation to the queen's location.

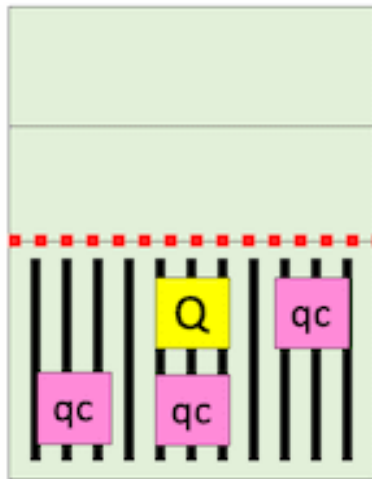
- **Pros:**
 - Usually prevents swarming
 - Maintains colony population and thus honey production
- **Cons:**
 - More work handling every brood frame in the first step – but not that bad!
 - Requires at least two deep inspections to remove all queen cells and charged cups on day 7 & 14. Must shake bees off frames so as not to miss any queen cells or charged cups.
 - A 3rd inspection on day 21 is safer.
 - A 4th visit then needed on day 28 to move brood boxes back together.

The inspection schedule is rigid – inspect on day 6 or 7 cycle but NOT on day 8 or later.

Demaree Method

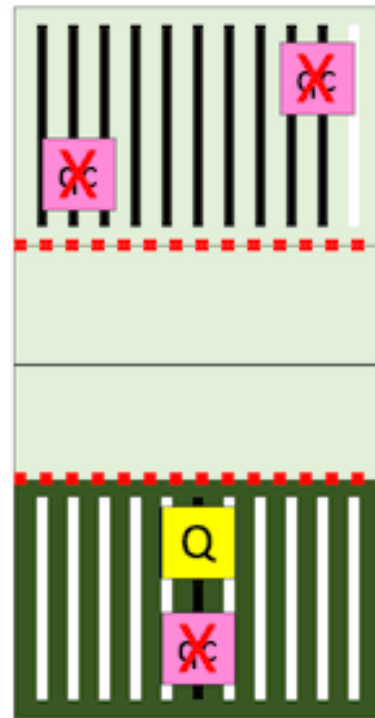
Demaree swarm control

- Original supers and brood box
- New brood box
- Queen excluder
- Q Queen
- qc Queen cell (X indicates destroyed)



Inspection

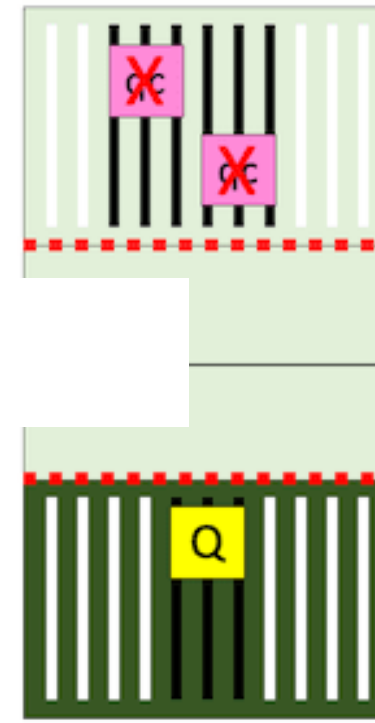
Day 7 or 8



Hive rearrangement

+7 days

Day 14-15
Check bottom
box



One week later

To be
safe,
repeat
on
Day
21-22



What happens inside?

The nurse bees stay with the brood and care for it.

The foragers continue to forage for honey and pollen.

The queen continues to lay eggs and has lots of space to do so.

And they don't swarm... Ideally!

About 28 days after conducting the first inspection, you can move the upper brood box back down. All brood will have emerged by day 25.

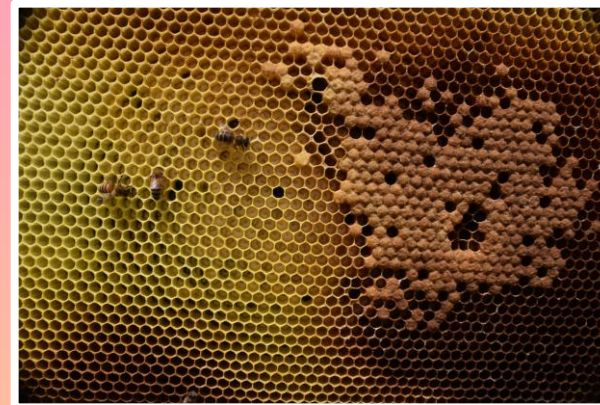
The Modified Doolittle Split

Modified Doolittle Split

**A surefire way to ensure your queen is not
in your mite wash sample**

**How to get your ½ cup sample of bees
(about 300 bees) for a mite wash
without getting your queen**

1. Find two frames with open brood. Shake most of the bees off those frames so you can see for certain there is no queen left on those frames.



2. Set those frames aside temporarily.



3. Set brood boxes back onto the hive.
Leave the space open where your
two frames came from.



4. Place a queen excluder **above any boxes where the queen can roam.**
This includes supers if you normally don't use an excluder.



5. Set an empty deep above the
queen excluder and set the two
queen-free brood frames into that
box.



6. Set the inner and telescoping covers on top.
7. Overnight, nurse bees will migrate up to cover the open brood. **These are the bees you want for your mite wash.**
8. The next day, shake the bees off these frames into a plastic tub from which you can collect your ½ cup (300 bees).
9. Place the two frames back exactly where you got them along with the rest of the bees you didn't use.



Why nurse bees?

A Varroa mite wash requires nurse bees because they spend the most time inside the brood nest, making them the primary gathering point for phoretic (traveling) mites that are emerging from cells as bees emerge.