

PREPARE HIVE FOR FALL FEEDING:

- remove queen excluder if used
- remove frames that are not drawn out
- move some pollen comb from bottom box up early

FEEDING

- feed early start by mid September or as soon as the honey supers are off
- Heavy syrup **2:1 White cane sugar: water** (I do not recommend feeding high fructose corn syrup)
- supplement if needed or leave sugar candy in top feeder

Preparing and Feeding Sugar Candy

To prepare sugar candy, mix one part granulated sugar with one part water and heat this mixture until it becomes the thickness of fudge. Pour the candy mix on waxed paper and allow it to cool and harden. Feed the candy to bees by placing it on the frame top bars.

TYPES OF FEEDERS

- **Inverted gallon Jar, Mason jar. Pros-** Cheap, close to the frames, Readily available, low cost **Cons-** prone to leaking, reduce ventilation
- **Hive top feeder- Pros-** Lots of syrup volume, fast if feeding many colonies, **Cons-** costly, long way for the bees to get syrup, drowning of bees, lots of waste
- **Zip lock baggie Pros-** Low cost, sit on frames close to bees **Cons-** prone to leaking, Hard to handle

MEDICATING

Therapeutic drugs may be incorporated in syrup for treatment and control of bee disease; however, never feed any therapeutic drugs in candy or syrup to a colony during a honey flow or 5 weeks prior to the start of a major honey flow.

Teramycin – Used to control American Foulbrood.

Treatment per colony: **1 level teaspoon to 1 ounce of icing sugar**

The dry mixture should be placed along the top of the frames of the brood chamber. This should be repeated in 4 or 5 days in Fall and Spring

Fumagillin – Used to treat nosema

Treatment per colony: **1 teaspoon to 1 gallon heavy syrup**

This should be fed early in the Fall. If the bees tend to not take the syrup then the drench method can be applied.

WINTER STORES

- **quantity** -100 to 130 lbs per hive
- **quality** - indigestible matter (dark honey, fermented honey) will cause dysentery
 - feed only proven mixtures e.g.
 - white sugar : water = 2 : 1 (or **3 : 2**) by weight

WINTER CLUSTER a winter cluster is a well-defined cluster of honey bees that forms inside a beehive when the air temperature dips below 54 to 57 °F (12 to 14 °C).

CLUSTER SIZE

- **large:** smaller surface relative to volume (favorable to withstand extreme weather conditions) – colony may eat all the stores and die of starvation
- **small:** may not be able to generate the heat to move to the honey stores – colony may die of starvation with honey left
- Weaker colony - sometimes better chances to survive long winter but less likely to produce honey.

CLEANSING FLIGHT

- late winter, sunny days
- ashes or shavings may be spread on snow to reduce bee losses
- With no disturbance and cool temperatures bees may go over 5 months without a cleansing flight.
- If fecal material in rectum reaches about 1/2 weight of the bee - it will defecate inside the hive.

STARVATION

- One of the 2 major causes of winter losses
- dead bees with heads inside the cells

HUMIDITY:

- condensation and ice formation
- heat loss (increased conductivity of air)

Prevention:

- Ventilation full width of lower entrance(clean if plugged with ice, dead bees) and upper entrance (notch in the rim of inner cover)
- dark color of the hive
- insulation (reduces condensation)
- Do not use a metal cover
- protection from ground moisture
- absorbent materials (shavings, straw in top feeder, newspaper)

WIND

- heat loss
- increased condensation

Protection:

- protected location
- wind fence

QUEEN

- Strain: Some strains of queens quit brood rearing earlier in the fall having a smaller cluster, consuming less honey.
- age: young queen – less risk of winter loss (new queen or from last year)

WINTERING OUTSIDE

- In most circumstances you will winter a 2 brood box hive. There may be times that a weaker colony may be reduced to 1 brood box and is too strong to combine but not quite strong enough to successfully winter. You can place this colony on a strong colony with a double screen board. This will help the weaker colony meet its heating requirements.
- Placing more than one colony together helps each with its heating requirements.

Examples of Wrapping Methods:

WINTERING CASE

- traditionally wood (or particle board), plywood platform and cover
- filled with straw, shavings, fiberglass etc.
- pipe for top ventilation or not insulated front side
- mouse screen
- lightweight case may be constructed from an insulation board and used in a similar way as slip-over carton
- good results
- ***STYROFOAM INSULATION WRAP***
- Similar to the Wintering case
- Fairly easy to construct with a knife and duct tape.
- Styrofoam breaks down after time.

TAR PAPER WRAP

- by itself may not be sufficient
- may be used over fiberglass or straw insulation
- benefits of over-insulating are questionable
- may accumulate moisture
- southern side may be left uninsulated (only wrapped)
- may not provide for easy access to the hive

Other forms of wintering include, unheated building, cellar, green house, garage attic and indoor climate controlled. Several of these methods are used in Thunder Bay and if you are interested in one method I can provide you with some names.

QUESTIONS and ANSWERS:

- When to wrap the hives for winter?

Not too early. Cool hive will cease rearing brood and decrease consumption.

- Is the upper entrance essential in winter?

Yes, in my practice upper ventilation is essential.

- Is it necessary to reduce the bottom entrance?

No. The primary reason for entrance reduction is the defense against robbing. Reduction of the bottom entrance may help to reduce the heat loss if the upper entrance is used.

- How to protect the hive in winter against rodents?

Several methods exist. For example the height of the bottom entrance may be lowered to the size of the bee space using a metal strip. Metal screen (1/4") can be used. Care must be taken that the entrance will not get blocked by dead bees / ice

- When to remove the winter packing?

The hive protection is more important in spring than in winter. A cold spell will chill the brood and set the hive back. In our climate wait till the middle of May or later - not before the tomatoes are planted out.