

A person wearing a full-body white protective suit and a mesh face veil is sitting on a dark, cylindrical object in a field of tall, dry grass. They are holding a pen and writing in a notebook. The background is a dense field of tall grass and some bushes. The overall tone of the image is sepia or aged.

Monitoring and Record Keeping

Monitoring

Why monitor?

- know if you **need** to treat
- know **when** to treat
- know **WHAT** to treat for
- know if treatments were **effective**

Monitoring

Visible symptoms of disease:

- dysentery - feces on front of hive, on top bars
- dead or dying bees in front of hive
- weakened colony does not seem to increase in population
- deformed bees - in colony, dead in front of hive

Monitoring



dysentery



deformed wings

Monitoring

Check carefully for brood diseases:

- chalkbrood
- sacbrood
- European Foulbrood
- American Foulbrood

These all have symptoms visible to the naked eye. Also look for irregular, perforated cappings. Uncapping these cells may show diseased larvae or pupae.

Monitoring

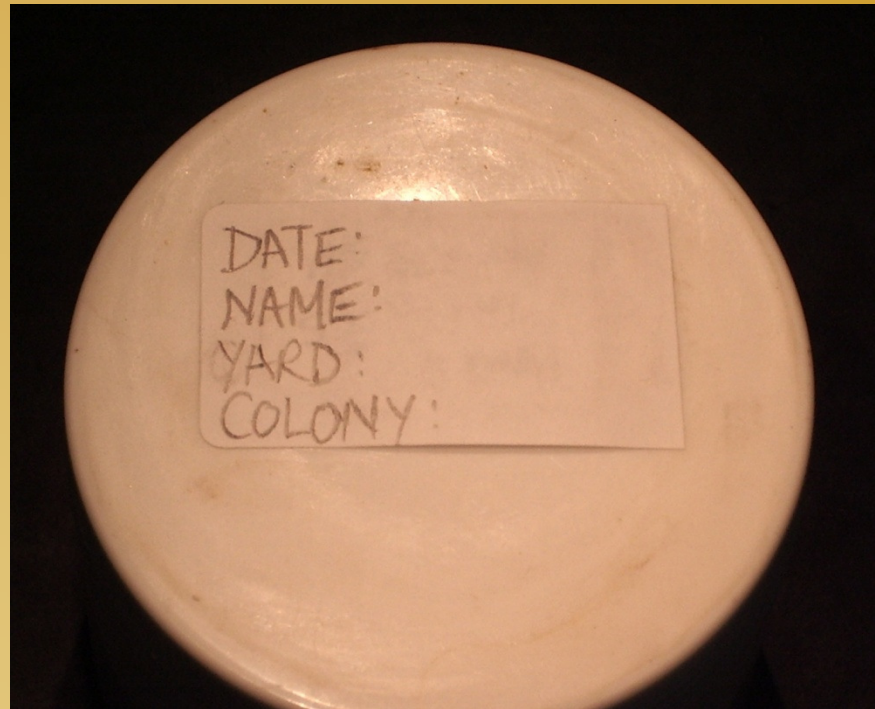
Sampling for nosema disease, varroa and tracheal mites:

- sample adult bees
- ethyl alcohol (ethanol), methyl alcohol (methanol or rubbing alcohol), methyl hydrate
- colony samples vs. yard samples
- one sample, taken in alcohol, can be used to test for **all three**

Monitoring

Sampling Adult Bees:

- 70% alcohol



Ensure that samples are well labeled!

Monitoring

Send samples to honey bee diagnostic labs:

Jim Anderson, Tanglewood Bee Lab

Brenda Perrin, Perrin Bee Lab

(see the current *Ontario Recommendations for Honey Bee Disease Control* for contact information)

Testing for **tracheal mites** and **nosema** requires dissection and microscopic examination.

Monitoring

Monitoring methods for varroa mites:

- sticky board
- uncapping drone brood
- alcohol wash
- ether roll
- sugar dusting

Monitoring

Sticky board:

- sticky sheet placed under colony to catch naturally dropping mites
- protected from bees by hardware cloth, or a screened bottom board

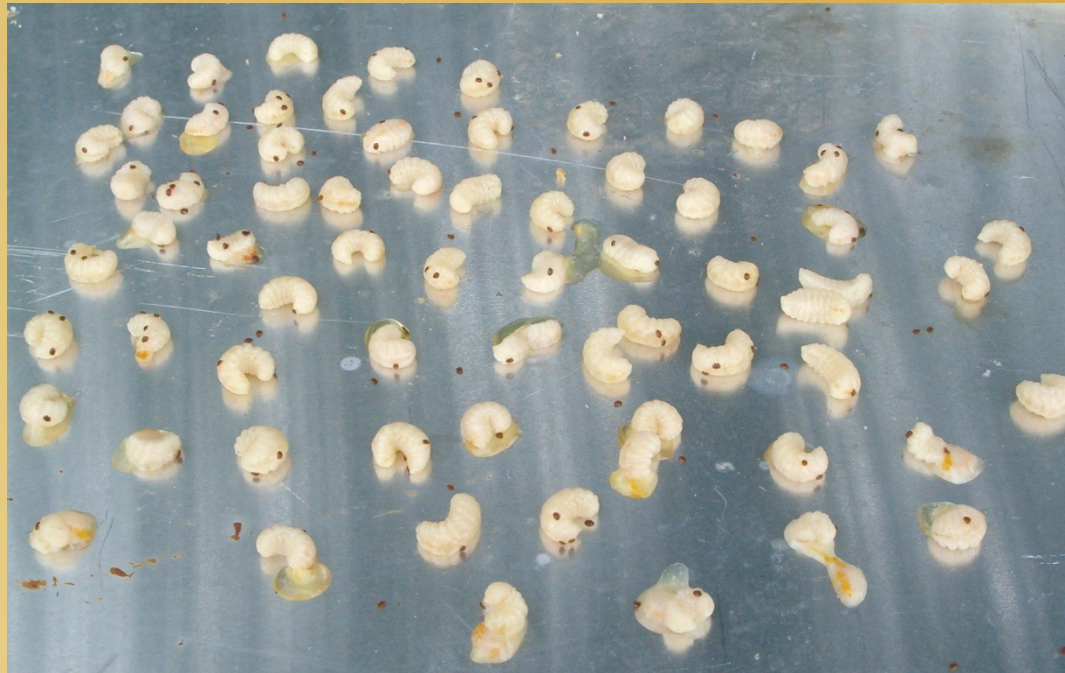
STICKY BOARD



Monitoring

Uncapping Drone Brood:

- record amount of drone brood per colony
- uncap 100 drone cells per colony
- record number of infested cells
- compare to amount of drone brood in colony



Monitoring



SAMPLING FROM BROOD CHAMBER

$\frac{1}{2}$ CUP SAMPLE OF BEES



Monitoring

Alcohol wash:

- ½ cup of bees in 70% alcohol
- shake vigorously for ½ hour
- wash bees on a screen over a tub
- count varroa mites in tub below



Monitoring

Ether roll:

- 1/2 cup of bees in a **glass jar**
- 2 squirts of **ether** (starter fluid)
- shake for **30 seconds**
- roll jar slowly on side
- count varroa mites
- don't forget to check **under the lid!**

Monitoring

ETHER ROLL



Monitoring

Sugar dusting:

- 1/2 cup of bees in a jar
- 1-2 tablespoons of powdered sugar
- shake gently to coat the bees
- empty bees and all of the sugar onto a surface out of the wind
- count varroa mites left in the sugar as the bees walk away

Monitoring

SUGAR DUSTING



Monitoring

Make monitoring worth your while:

- consistency
- thoroughness
- record numbers
- act promptly and accordingly

Record Keeping

Why keep records?

- know if you **need** to treat
- know **when** to treat
- know **WHAT** to treat for
- know if treatments were **effective**

....and you will know in which colonies or yards.

Record Keeping

- allows for **colony** comparison
- allows for **yard** comparison

With reference to colony health:

- diseases
- mites levels
- treatments

And also for evaluation of economic characteristics:

- overwintering
- spring population increase
- honey production
- swarming
- gentleness

Record Keeping

If you write it down, you will **remember!!!**

Use **pencil** - it doesn't smudge or bleed in the rain or with honey on it.

A **notebook** (or binder or clipboard) keeps your records all in one place - loose papers fly away in the wind!

Something with a water-resistant, wipe-able **cover** will protect your records from rain, honey and dirt.

Record Keeping

Date: June 25, 2011			Yard: Hobo	
Colony	Queen Status	Size (BC/HS)	Strength	Comments: (diseases, mites, treatments, splits, re-location, etc.)
1	present	2 / 2	Very good, (8/10)	swarm cells, needs HS, some CB
2				
3				
4				
5				
6				

Record Keeping

Ether roll counts ~ Yard: _____

Colony	May __	June __	July __	Aug __	Sept __
1					
2					
3					
4					
5					
6					