

Bill Turner's Observations from Integrated Pest Management Workshop/Feb 9-10, 2010

Pest Surveillance/Alberta/Dr. John Berezowski

- gov't. has developed an animal health information network which now includes bees and brings additional funding
- protocols have been developed; the use of which will allow early disease detection and the opportunity to be proactive
- having a system in place eases access to foreign markets
- a sample number of honey producers are being surveyed

Varroa Mite Controls/Dr. Jamie Ellis

- stressed sampling looking at EIL – economic injury limit = colony will die
ET – economic threshold = colony treatment level
- IPM can work with these thresholds, but will never remove all mites, just contain their number
- Sampling: sticky boards/overnight to 3 days after that too much debris
: drone sampling **not** recommended as needed for mating
: use ether(alcohol) roll / sugar roll

Test	Hive losses after 2 yrs.	Hives Reaching ET	Hives Needing Requeening*	
			1 Year	2 Year
Unselected Queens/Untreated	72%	52 %	50%	55%
Unselected Queens/Checkmate	54%	10%	50%	45.9%
Russian Queens /Screened Bottom Boards	28%	48% Mites decreased in fall naturally	50%	38.9%

*Queens came from sources using chemicals before included in study.

Concluded: Screened bottom boards and resistant stock can help.

Too hot most of the year to use formic acid.

Time spent for each test about the same(IMP a little less).

Resistant stock open mated will loss some genetic material over time.

**Some Points of Interest : VSH (varroa sensitive hygiene) bees sense reproducing mites and remove them.

: feels queens average life is only 17 months at present.

: Queens mate over several days with 17 males on average.

Pesticides Impact on Bees/Dr. Jamie Ellis

- has developed method to raise larva in plastic cells to adult stage
- feeds larva pesticide to establish level that kill 50% of them
- establishing curves for many pesticides, also looking at mixed pesticide cocktails
- some pesticides of little concern by themselves, but become highly toxic mixed with others
- feels toxicity not as important as the dosage(**read labels**)
- looking to drug co. having to do this testing in the future

Small Hive Beetle/Dr. Jamie Ellis

Good News: **Not** likely to be a problem here.

Bad News: Could arrive during a season by various means, so requires surveillance on the part of beekeepers.

You should be able to recognize it - clubbed antenna/head shield pointed/uniform color(no pattern).

Saskatchewan IPM/Geoff Wilson

Over last 4 years losses running 10 – 80% with a 25% average. Action plan involves being proactive. They are doing this by extension services, development of resistant stock and beekeepers doing their own surveillance and testing.

Pest Surveillance Program/Medhat

- sees beekeepers developing their own IPM program that works for the individual.
- Gov't surveillance out there, but basically we must do our own sampling – varroa

- feels shaker containers a good sampling device with windshield antifreeze better than icing sugar roll
 - has seen an improvement in the number of healthy hives going into winter over the last few years
- *noted reports of African bees in S.A. experiencing problems with varroa

Nosema ceranae/Spain/Dr. Raquel Hernandez

- Spain has 2.7 million colonies/20% of EU's hives
- Gov't. runs bee centre with services for beekeepers
- feel ceranae arrived in 2001 becoming an issue in 2004
- Deadouts known as "Depopulation Syndrome" with testing pointing to ceranae as the cause
- found a long incubation period of about 18 months before colony dies
- in wintering colonies queen infected; summer queens uninfected
- treatment ensures fewer losses and healthy hives

Sampling Ideas/Medhat

- Nosema attacks midgut as soft tissues there and it penetrates the lining cells
- initially damaged bees eat more sugar and begin to age more quickly than they can be replaced
- their own hypopharyngeal gland not receiving enough nutrients to produce food for feeding brood
- Signs: bees seem 'sluggish'
 - : poor spring buildup
 - : defecate on combs
 - : absence of stinging reflex
 - : flying is curtailed

*Sample bees on honeycomb as these are older bees with more Nosema spores / mic x400

Insights to Controls of Nosema/Dr. Raquel Hernandez

- sampling showed steady increasing numbers of spores 1999 – 2005
- most spores found in external bees to hive at noon(foragers, guards)
- large hives have lower spores counts
- spores found in pollen so must be irradiated / **Don't** use pollen for human – horse use as **Not** irradiated
- finding hive equipment(tools coveralls), even bumble bees carry ceranae
- treated hives 100% survived after 1 yr./untreated only 10% survived(both hives infected at 6 months)
- syrup give 100% survival
- proper concentration of medication to syrup important as too much syrup gives too little medication
- fumagilin's effectiveness can be lowered by hard water, UV light and temperatures(too high)
- distilled water will help dissolve drug before adding to syrup ensuring proper amount of medication to each bee
- **Read Label**
- Drenching the best method to ensure all bees get and receive it quickly before product begins to degrade

Nucs and Single Bee Colony Management/Christensen

- winters single supers or 6 frame nucs using a indoor wintering facility
- finds 6 frame nucs use less food overwintering

Winterkill Management

- stressed importance of young bees and queens in makeup of nucs
- found one frame of brood for spring hive yielded a fall hive with honey and room to raise winter bees
- using two frames yielded a fall hive with too much honey and too little room to raise winter bees

Bee Health Management in Spain/Dr. Raquel Hernandez

- Gov't involvement includes grants for treatment and for doing pollination
- Gov't does sampling using PCR lab work/conducts questionnaires
- have 5 treatments for varroa, but sales indicate beekeepers under treating so assume some illegal treatments being done
- in general: seeing higher levels of viruses
 - : find pollen samples contains many pesticides
 - : notes liquid drug treatments leave less residue in wax and pollen than drugs applied on strips

hemocytometer www.capabees.com