

Delaware, Maryland, New Jersey, Pennsylvania, West Virginia and the USDA cooperating



# BEEaware

NOTES & NEWS ON BEES & BEEKEEPING

**April 2004**

## What's Inside:

- 100th Anniversary of PSBA
- AFB in Pennsylvania
- Bee Research & Update from Rutgers
- Alternate Pollinators
- Help Wanted

MAAREC, the Mid-Atlantic Apiculture Research and Extension Consortium, is an official activity of five state beekeeper associations, the state Departments of Agriculture, land grant universities and the U.S. Department of Agriculture. The following are cooperating members: University of Delaware / Newark, DE; University of Maryland / College Park, MD; Rutgers University / New Brunswick, NJ; Penn State University / University Park, PA; West Virginia University / Morgantown, WV; USDA/ARS Bee Research Lab / Beltsville, MD

Requests for information or publications should be sent to: MAAREC, 501 ASI Building, University Park, PA 16802 Phone: (814) 865-1896 Fax: (814) 865-3048 Web site: <http://MAAREC.cas.psu.edu>. This publication is available in alternative media on request. The mention of trade names or commercial products in this publication is for illustrative purposes only and does not constitute endorsement or recommendation by the Mid-Atlantic Apiculture Research and Extension Consortium or their employees. The U.S. Cooperative Extension Service and the U.S. Department of Agriculture provide Equal Opportunities in employment and programs.

Prepared by  
Dewey M. Caron  
Extension Entomologist  
Univ. of Delaware  
Newark, DE 19717-1303  
302-831-8883

**results!**

## MID-ATLANTIC WINTER LOSSES 2000-2002 SURVEY RESULTS

Dewey M. Caron, UDEL

How well did your bees survive our poor fall and cold winter? Do you still remember the previous winter (2002-03) before this past one? Maybe this will help refresh your memory. To better document wintering success in our region, I distributed a survey at the MD and DE meetings and included a survey form in our last (March 2003) *BeeAware* newsletter. I requested information on winter losses and also asked what you were doing regarding IPM and pesticides/antibiotics to control bee diseases and pests. I unfortunately got a small response — but appreciate all those who took the time to return the survey — I hope you at least made note of losses for your own records.

I received 75 total returns from MD, DE, NJ and PA (the majority from MD 27 & DE 16 — 57%), in the 5-state MAAREC region. The 75 MAAREC beekeepers reported losing 549 colonies over winter — a 28% loss rate. Losses were slightly lower in MD (24%) while the Delaware overwintering loss rate was a bit higher at 30.5%.

The Survey asked about control materials used for mite and diseases and I found consistency across the 5-state region. Remember returned survey numbers are low (the 75 beekeepers were managing less than 2500 colonies) but for those surveys returned, 72% of MAAREC beekeepers said they treated colonies with terramycin for foulbrood, 78% treated with fluvalinate or coumaphos (22% reported use of the latter) for Varroa mites, 32% used menthol to treat for tracheal mites, 54% used grease patties, and 26 of 75 respondents said they used Fumidil-B® for Nosema disease control.

I have been conducting the same basic survey for several years now. It documents increasing acceptance of IPM concepts to treat for Varroa mites. Forty-six of the 73 MAAREC respondents reported using at least one IPM tactic; many used several. In response to the question of monitoring for mite level, over 50% said they monitored, with sticky boards and powdered sugar being the most common techniques. Forty-three percent said they were employing screen bottom boards, 18% tried drone brood removal, and nearly one in three

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### Receive *BeeAware* Electronically!

Many *BeeAware* readers have opted to receive *BeeAware* electronically. It is convenient, easy, and saves on resources like paper and postage. If you would like to receive an electronic version of *BeeAware* please send an email to [mxt15@psu.edu](mailto:mxt15@psu.edu) asking to be put on the *BeeAware* mailing list. When a new *BeeAware* is published you will receive an email with a URL that is linked directly to the *BeeAware* document. All you'll need to do is click on the URL and the *BeeAware* Newsletter will appear as a PDF to be read or printed. In addition you will also have access to a non-PDF version of the newsletter. This will allow you to cut and paste articles from *BeeAware* into your own local newsletter without the hassle of retyping. So don't delay, email [mxt15@psu.edu](mailto:mxt15@psu.edu) and ask to be put on the *BeeAware* mailing list today!

(Survey Results - con't from page 1)

said they were trying queen stock (Russian and hygienic mainly) more resistant to mite depredation. Essential oils were used by 12.5% during the year.

The number of returned surveys was unfortunately too few to be able to very accurately say what happened in our area this past winter. Despite extensive use of miticides (Apistan® or Checkmite+®), 28% bee losses means moderately heavy mortality. For comparison, MAAREC losses in 2002 were 12.3%, while in 2001 *BeeCulture* pegged overwinter losses at 43% in MD, DE & NJ (my Delaware *NEWSY BEE* survey found it to be 31.5% in DE) while PA (and the northern tier states from east to west coast) were over 50%.

So is a 28% loss rate something to cheer about – some beekeepers lost 100% while others only 5%? After losses as high as 50% 2 years earlier and during the mid-90's, have we perfected use of chemicals or IPM as the means to increased overwintering success? I think we have a way to go yet!

**WOULD YOU PLEASE CONSIDER DOING A LOSS SURVEY AGAIN?** I've included a revised survey form in this *BeeAware*. Thank you in advance for your participation.

## Celebration Time!!

Last year it was Jersey's 100<sup>th</sup>; Delaware celebrated their 50<sup>th</sup> annual meeting in March, and now it is Pennsylvania's turn to celebrate their 100<sup>th</sup> year as a bee association. On April 13<sup>th</sup> 100 years + 1 day following their founding, 100 PA beekeepers in veil and bee jackets descended on the State Capital in Harrisburg to bring the bee message to the state legislators and elected officials. As part of the celebration the State House of Representatives passed a resolution declaring the day as **Pennsylvania State Beekeepers Day**. It reads:

**Whereas, Agriculture is Pennsylvania's number one industry; and**

**Whereas, The apple, peach, pear, cherry, grape, strawberry, soybean and pumpkin industries either depend entirely on honey bees for pollination or benefit from increased yields from honey bee pollination; and**

**Whereas, The feral populations of honey bees available for pollination have been ravaged by diseases and are disappearing in Pennsylvania; and**

**Whereas, Pennsylvania beekeepers manage honey bees to provide pollination in this Commonwealth; and**

**Whereas, The Pennsylvania State Beekeepers Association disseminates information on modern practical apiary management to maintain a healthy honey bee pollination workforce; and**

**Whereas, The Pennsylvania State Beekeepers Association promotes beekeeping and encourages and assists new members with beekeeping to increase the honey bee population; and**

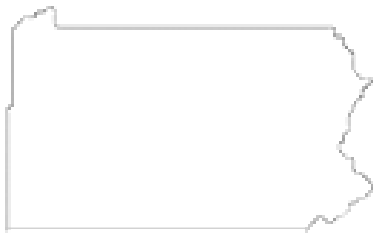
**Whereas, The Pennsylvania State Beekeepers Association was organized on April 12, 1904, in Williamsport; and**

**Whereas, The year 2004 marks the 100th anniversary of the Pennsylvania State Beekeepers Association and its service to the agricultural industry and all the residents of this Commonwealth; therefore be it**

**Resolved, That the House of Representatives designate April 12, 2004, as "Pennsylvania State Beekeepers Day".**

This summer the association will have PSBA Penn State Research Day and Summer Picnic. The 100<sup>th</sup> Anniversary Summer Picnic will be held at the Mifflin County Youth Park in Reedsville on Saturday, July 17, 2004. Reedsville is the first exit off Route 322 northwest of Lewistown, between Harrisburg and State College, only 30 minutes from Penn State. The Beekeepers Research Day at Penn State will be the day before, Friday, July 16. The Research Day will be open to all beekeepers with presentations, questions and answer periods and tours of the labs. The researchers at Penn State are working on grants from USDA, PA Department of Agriculture, EAS and other organizations. Maryann Frazier, Penn State University, is coordinating the event and will get back to us with a schedule of events. PSBA will continue the 100<sup>th</sup> year celebration by inviting the beekeepers on this side of the continent to the EAS 2004 Conference at Seven Springs, Pennsylvania scheduled for August 9-13, 2004





## A Look at AFB in Pennsylvania

### Dennis vanEngelsdorp

Last year Pennsylvania apiary inspectors inspected about 8,500 colonies. That is a lot of colonies; as one would expect we found disease – American foulbrood (245 cases), European foulbrood (16 cases), Chalkbrood (334 cases) and sac brood (132 cases). American foulbrood (AFB) is the most serious of these diseases and numerous articles have been written on this disease's life history and how beekeepers should prevent its spread. A book on the subject I strongly recommend is Mark Goodwin's and Cliff Van Eaton's "Elimination of American Foulbrood Without the Use of Drugs". One of this book's most insightful parts is a discussion on AFB spread. Listed below are several possible ways AFB spreads with a summary of Drs Goodwin and Van Enaton's assessment, based on their research and experience, of the probability these methods spread AFB.

**Extracted Honey Supers:** A great way to spread disease - - if you extract honey from an infected colony and put that super on an uninfected colony you'll likely spread disease.

**Transfer of Brood Combs:** Frames with scale introduced into uninfected colonies are a sure way to spread disease.

**Empty comb** (meaning drawn comb, which has only been used for honey storage and is dry –absent of even a little honey): Since accessible AFB spores are found in honey, dry comb is not a likely source of AFB infection.

**Other contaminated hive parts** (Inner covers, lids, hive bodies): If all wax and propolis is removed (i.e. scorching and scrapping), the use of other hive parts is not likely to spread disease.

**Robbing:** Bees from uninfected colonies robbing the honey stores from infected colonies are more than likely to carry and spread disease.

**Drifting:** Even when bee researchers have tried to spread AFB by drifting bees, no cases have been documented.

**Queens:** While queens from infected colonies can carry spores, they have never been shown to transmit the disease.

**Packages and Swarms:** Bees from infected colonies - placed in a package or caught as swarms - quickly consume the contents of their stomach - therefore, hived package bees and swarms are not likely to come down with AFB infection.

**Foundation:** While wax foundation may contain spores, no cases of AFB have been traced to the use of contaminated foundation.

**Beekeeping equipment:** With just common sense hygiene (cleaning and sterilizing your hive tool between apiaries and after inspecting an infected colony) hive tools and beekeeper's hands pose little threat as a way of transferring disease.

**Flowers and the ground in front of infected hives:** Not a likely cause of concern.

**Feeding contaminated honey:** A great way of spreading disease.

Last year in Pennsylvania the inspection program decided to survey all beekeepers who had AFB to see if we could determine the likely cause of their infection. The results, and some thoughts on the implications of these results on AFB management follow.

**Previous History:** By far, most cases of AFB that we could assign a likely origin to were cases in operations that had had a previous history of the disease - a whopping 57% of cases. Some of this is likely because beekeepers did not treat infected colonies properly (killing or shaking the bees and burning the equipment/antibiotic treatment). But some beekeepers did. So how did they get AFB again? Likely their management of honey supers is partly to blame. Beekeepers, especially those who have had AFB, need to have a method to manage honey super placement. One way to do this is to number every honey super and every colony, that way it's easy to make sure each super is only placed on the colony to which they are assigned.

While all beekeepers need to inspect brood frames regularly (five times – two complete inspections of every brood frame before spring supering and after fall harvest, and three spot checks of two to three frames of brood in the summer), beekeepers with an AFB history should be extra sure to implement an inspection protocol.

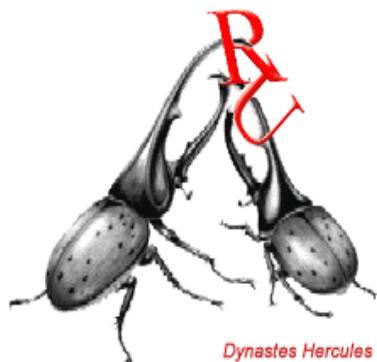
**Purchasing used Equipment:** Twenty two percent of beekeepers who had colonies with AFB had bought used equipment in the previous year. Take home message: Don't buy used brood combs unless you are sure the comb is free of AFB scale!

**Robbing:** Bees robbing infected hives likely caused about 15% of the cases of AFB found last year. In all of these cases, bee inspectors found other infected colonies within two miles of the diseased colony. This is why inspecting your bees and treating disease promptly is so important, AFB infected colonies pose a threat not only to the beekeeper with diseased colonies, but also to his or her neighbors.

**Buying nucs:** Only 4 % of infections last year were traced to the purchase of nucs. It's important to note that hundreds if not thousands of nucs were sold in the state last year - but only 5 developed AFB. Also, none of these cases were caused by strains of AFB that were resistant to Tetracycline (14% of all cases of AFB had this strain). While this does mean beekeepers need to exercise some caution when buying nucs, they can be assured that there are many reputable nuc producers from whom they can buy "clean" nucs.

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## Bee Research and Extension Update from Rutgers

### Mike Stangellini

I started as the Apiculturist at Rutgers University in July 2003. So far, I have had the chance to meet many beekeepers in the MAAREC region and look forward to meeting more in the coming seasons. My appointment is a 50% research and 50% extension split. I am starting a large-scale research program to address, by priority, the following aspects of beekeeping: (1) alternative control strategies for tracheal and varroa mites, (2) control and trapping of small hive beetles, (3) tactics to reduce stress on bee colonies used for crop pollination, and (4) pollination dynamics of bee-pollinated crops, particularly blueberry, cranberry, and watermelon. My extension duties include the development and delivery of beekeeping information and extension materials (e.g., conduct workshops, create information bulletins, etc.). Both my research and extension activities will be integrated into the overall mission of MAAREC.

In September, Jeff Pettis (USDA), Paul Paybold (NJDA), Walter Wilson (Freehold, NJ beekeeper), and I evaluated the effect of different feeding regimes on the health of bee colonies set for cucumber pollination in Cumberland County using Bob and Dottie Harvey's hives. Commercial pollination of certain crops (e.g., vine crops) takes its toll on the colony, often resulting in a cessation of brood rearing, cannibalism of young brood by adult workers, and/or queen loss and supersedure because single crops grown in large monocultures are often deficient in nectar, pollen, or both. The objective of this study was to determine if supplemental feeding during pollination could stimulate foraging behavior, thereby increasing colony health. Each of 10 colonies (50 total) were fed (1) nothing, (2) sugar syrup, (3) pollen cakes, (4) sugar syrup and pollen cakes, or (5) an experimental liquid protein diet. We found that supplemental feeding increases the health of pollination colonies on some level, and that feeding a syrup-pollen combination had the greatest benefit (almost twice as much brood as colonies fed nothing). We plan to replicate the study on cranberry in 2004.

In late-fall 2003, Paul Raybold and I evaluated different "soft chemicals" (a.k.a. biopesticides) for the control of varroa mites in both single-deep and double-deep hive body colonies. The treatments were: (1) ApiLife-VAR (essential oil, predominantly thymol), (2) Mite-Gone™ formic acid delivery pads (organic acid), (3) an oxalic acid trickle method (organic acid), (4) sucrose octanoate (now called Sucrocide™), (5) Apistan (stan-

dard control), and (6) no treatment. Varroa mortality in single-deep colonies was 97% for Apistan®, 96% for Sucrocide, 92% for oxalic acid, 91% for ApiLife VAR®, 79% for formic acid, and 23% in untreated control colonies. Varroa mortality in double-deep colonies was 95% for Apistan®, 93% for oxalic acid, 69% for ApiLife VAR®, 66% for formic acid, and 15% in untreated control colonies. Data show all of these natural-based products have potential for reducing the use of conventional pesticides (Apistan and CheckMite+) in bee colonies to control varroa. This is important as we face varroa that are resistant to chemicals and the possibility of contaminating honey and beeswax with pesticide residues. A research article was prepared on this study and submitted in February 2004 for publication in American Bee Journal.

For extension, I received numerous calls and emails for information on bees and beekeeping, particularly from homeowners who have stinging insects on their property. About half of the homeowners described their problem as "honey bees that live in the ground", meaning that yellowjackets continue to give honey bees a bad name. At various meetings with the New Jersey Beekeepers, I delineated the concept of a four-level Master Beekeeper Program. This program created in NC, is very popular there (over 2,500 participants), and was modified in various ways by university counterparts in South Carolina, Georgia, Tennessee, and New York.

After conversations with other MAAREC members, we have decided to expand this project into a regional (Mid-Atlantic) program. In summer 2004, our MAAREC working group will convene to lay the foundation for a region-wide Master Beekeeper Program. There are a number of details to be worked out concerning the structure, implementation, and training materials to be used. The primary objectives of the Program will be to provide education and training to new and experienced beekeepers on a diverse array of topics, ranging from basic bee biology to advanced management skills such as designing your own honey bee breeding program. Superimposed on the training aspects are opportunities for beekeepers to demonstrate their knowledge and expertise, and to engage in teaching other beekeepers the specialties they have mastered. We will fully integrate this new effort with existing organization programs including the EAS Master Beekeeper Program.



#### On the MAAREC web site:

Be sure to visit the MAAREC web site regularly as we are constantly making additions and updating information.

Recent additions that can be viewed on-line and/or printed out include these new beekeeping topics:

- *Honey*
- *Basic Biology*
- *Bears*

*Basic Biology and Management of the Japanese Hornfaced Bee* has been revised.

#### New Power Point Presentations:

**Honey Bee Biology & Beekeeping** - Powerpoint presentation to accompany the 21 chapters of introductory textbook of same title. Includes illustrations of book plus additional pictures and major points. \$20. Available from author Dewey M. Caron, Dept. of Entomology, 250 Townsend Hall, University of Delaware 19716 Phone 302-831-8883.

You can see a demo on of introductory and first chapters on line by visiting this listing on the MAAREC.

**Wild Resources for Honey Bees** - This is an updated version of Floral Sources.

#### Information on several new and existing "For Sale" publications have also been added to the site.

**Honey Bee Biology & Beekeeping** - Text book of honey bee biology and beekeeping (355 pgs, 21 chapters w/ excellent illustrations) appropriate for college-level course or for short courses on beekeeping. \$30. Available from author Dewey M. Caron, Dept of Entomology, 250 Townsend Hall, U of Delaware, Newark, DE 19716 Phone 302-831-8883.

**Africanized Honey Bee in the Americas** - \$10 Available from author Dewey M. Caron, Dept of Entomology, 250 Townsend Hall, U of Delaware, Newark, DE 19716 Phone 302-831-8883.

**Observation Bee Hives** - \$20 Available from author Dewey M. Caron, Dept of Entomology, 250 Townsend Hall, University of Delaware, Newark, DE 19716 Phone: 302-831-8883.

**Beekeeping Basics** (Formerly *Fundamentals of Beekeeping*) - Text covers the basics of beginning beekeeping. \$7.50. Includes information on managing parasites, pests and diseases; honey production and processing; pollination; handling beeswax; pollen trapping; and a guide to important floral sources. Available from Penn State Publication Distribution Center, 112 Ag Admin Bldg., University Park, PA 16802 Phone: 814-865-6713

**Please visit us often!**



# Alternate Pollinators

By Dewey M. Caron, UDEL & Mike Embrey, UMD

In addition to honey bees, pollination of native/introduced flora is accomplished by over 4000 native bees and many other pollinating insects such as butterflies, flies, beetles, and wasps. These “forgotten” insect pollinators include over 30 species of seasonally social bumble bees and many more species of solitary bees like mason bees, leafcutter bees, carpenter bees (one species similar to and often confused with bumble bees and a large host of burrowing, mining and digger bees that nest in the soil or twig hollows.

The honey bee, although versatile, can not supply all our flower pollination needs. Desert plants that flower after dusk need night-time flower visitors such as moths and bats. Orchids, the largest plant family, have a wide host of uniquely shaped flowers, some offering only essential oils, that attract stingless bees and other non-honey bee pollinators. Large acreage alfalfa seed fields and greenhouse-grown tomatoes and cucumbers yield better when visited by pollinators other than honey bees. Pollinators perform an estimated \$65-70 billion worth of pollination yearly in the U.S. alone.

We greatly depend on managed and feral colonies of honey bees to do most of our agriculture, garden and landscape pollination. Unfortunately, feral honey bee colonies have been greatly reduced by mites. Pesticides take a fearful toll of managed/wild pollinators. Also, a number of municipalities have ordinances or zoning law that limit or severely restrict beekeeping. In addition, movement of bee colonies to pollination sites becomes a greater liability each year. Native bees have no such restrictions, and although they have pests/ diseases, and habitat destruction/alteration has greatly decimated their numbers, the varroa mite is not one of their problems.

Although most beekeepers understand pollination basics we find growers, public land managers and homeowners do not. In 2003 we offered an all day short course on Alternate Pollinators for an audience of extension and Master garden professionals. Funding was provided by a SARE (Sustainable Agriculture) grant. The course was conducted at the University of Maryland, Wye Research and Education Center. Our short course concentrated on pollination needs of Mid-Atlantic crops of fruit, berries and cucurbits (cucumber, watermelon, pumpkin, squash) and on the two alternate pollinators *Osmia cornifrons* (the Japanese horn-faced bee) and *Osmia lignaria* (the blue orchard bee, BOB, also referred to as the orchard mason bee).

Bob Cory, a Maryland beekeeper, spoke of his involvement with the horn-faced bee. He grows Japanese bamboo (a good nectar plant for honey bees) and harvests the hollow reeds to use as nesting sites. Bob groups about a dozen 4 to 8 inch long hollow reeds together and places bunches of these hollow reeds in a 5 gallon honey bucket which he stocks with a few completed reeds made the previous year by the bees. Female bees nest in the tubes, using mud or a mud/plant mixture to make partitions (cells) to hold developing young provisioned with a pollen ball. Bob says horn-faced bee populations can double or triple in a single growing season.

David Myers, a Maryland fruit extension specialist, finds horn-faced bees ideal for pollination of fruit and berries. He has established a 1 acre mixed apple variety planting on M-9 dwarfing rootstock at a former Maryland tobacco experiment station. He uses the planting to demonstrate to farmers which varieties are appropriate and how to properly manage the trees as an alternative to growing tobacco. He finds that 600-800 tubes of horn-faced bees (two buckets) will supply all his needs. Unlike honey bees, horn-faced bees work apple blossoms in the rain, fly in cooler weather and they tend to better pollinate the



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blossoms within the trees. Honey bees in his exposed, windy site, in contrast, work apple flowers only on sunny days, preferring to forage on weedy ground vegetation of dandelion and mustard.

Mike Embrey, spoke about his experiences managing BOB, the blue orchard bee. Although not as common in the East as in their native western distribution, Mike finds they are useful for early blooming fruit and berries. Control of predators, parasites, and chalkbrood disease are keys to successful management. Dewey Caron reviewed useful pollinating bees in the Mid-Atlantic including bumble bees, digger bees, such as native squash bees (needed for commercial yields of pumpkins and squash), solitary pollen bees such as mining/burrowing bees, native large and small-bodied carpenter bees and leaf cutting/mason bees. With rudimentary knowledge of their biology, management of each species is possible.

The BOB and horn-faced bees illustrate life histories typical of many native solitary bees. Mason bees need dry holes for their nest; many other native bees tunnel nests into soil. They can use wood, masonry or even adapt man-made openings such as the gap between cedar shingles (both siding and roof), around window framing, cracks and holes in old brick and mortared buildings and even door key holes and nail holes in buildings.

Adult male and female mason bees will emerge anywhere from February to May depending upon the species and season. Males emerge earlier than females and are often smaller bodied. They stay around the nesting holes, mating with females as they emerge. Mated females search for suitable nesting sites and then seek flowers to collect nectar and pollen. These two materials are mixed together into a ball-like shape at the end of the tunnel or in soil dwellers in a side pocket. The female lays her egg on it and closes a completed "cell" with mud or a mixture of mud and plant material (leaf-cutters use cut plant material for cell partitions). Females repeat this behavior to create another cell of food ball and egg until the tube is completely filled.

The larva that hatches from the egg feeds on the mass of provisioned food within its cell. It eventually spins a cocoon of silk and then spends the rest of the year and subsequent winter as a pupa. Male cocoons are slightly smaller and are towards the front of the nesting opening. Females control offspring sex by laying fertilized (female) and unfertilized (male) eggs, same as in honey bee queens. There is but one generation per year. Mason bees, such as BOB and the horn-faced bee, emerge early in the spring.

Beekeepers, homeowners and growers need to think beyond honey bees to fill all the pollination needs of modern agriculture and the backyard garden. We believe beekeepers should consider incorporating the procedures and tools needed to raise, conserve and use alternative pollinators to effectively provide adequate pollination service to farmers, greenhouse owners and fruit growers. By working with native pollinators we can learn what areas we need to expand our knowledge of pollinators and, in time, these "forgotten" pollinators, we can become, in fact, even more useful pollinators.

NOTE: Mike will offer a workshop on Alternate Pollinators at National Master Gardeners Annual Conference

#### Listing of useful resources

Books: Bosch/Kemp, 2001. How to Manage the BOB. Sustainable Agric. Network Handbook 5. (contact [sanspub@uvm.edu](mailto:sanspub@uvm.edu)); Dogterom, 2002. Pollination with Mason Bees. Beediverse books (contact: [beediverse.com](http://beediverse.com)). Sheppard, et al. 2003 Pollinator Conservation Handbook. Xerces Soc. ([www.xerces.org](http://www.xerces.org))

Articles: Batra, 1998. Hornfaced bees for apple pollination. Am Bee J. 138:364-365; Washington State University Bulletin No. 922: Univ. Arkansas App. Tech for rural Areas Hort. Tech. Note: Alternate Pollinators. Kevan & Viana. 2003. The global decline of pollination services. Biodiversity 4(4):3-8.

Websites: Logan USDA, ([www.loganbeelab.usu.edu](http://www.loganbeelab.usu.edu)), Washington State University, ([gardening.wsu.edu](http://gardening.wsu.edu)), MAAREC, ([MAAREC.cas.psu.edu](http://MAAREC.cas.psu.edu)), AAPA, ([ent.agri.umn.edu](http://ent.agri.umn.edu)), University of Idaho, ([www.uidaho.edu](http://www.uidaho.edu)), United Nations FAO ([www.fao.org/biodiversity/docs/pdf/Pollination.PDF](http://www.fao.org/biodiversity/docs/pdf/Pollination.PDF))

## ✧ Volunteers needed ✧

As part of our IPM program MAAREC is **LOOKING FOR VOLUNTEERS** to

- **MONITOR MITE NUMBERS** (any number of colonies)

- **CONDUCT AN IPM EXPERIMENT** (minimum of 10 colonies)

### MONITORS

We will send specific instructions for all volunteers enrolled in monitoring. No minimum number of colonies required. We will send materials (such as monitor sticky boards) but you might need to purchase some materials yourself (expenses can be reimbursed). We will ask you to monitor mite populations 6 times/year (and if you use a miticide 3 times post use). We will also ask that you perform a simple evaluation of colony strength. You will otherwise manage your colonies normally; we will only ask that you keep a record of what you do over the season. You will need to do the mite count yourself. We will also request that you complete a survey of what you are doing and your management with respect to diseases/mites and IPM.

### IPM EXPERIMENT

We also seek a limited number of beekeepers who could help with an experiment of a combination of IPM mite control techniques. A minimum of 10 colonies in one location will be necessary. We will send all instructions and materials for the experiment; a minimum amount of record keeping and monitoring of mite numbers will be necessary. Some of the experiment volunteers will be asked to talk to other beekeepers at IPM workshops to be conducted this winter.

If interested contact Dewey Caron at the University of Delaware – Tel 302-831-8883 or [dmcaron@udel.edu](mailto:dmcaron@udel.edu) or Mike Stangellini at Rutgers [mikes@aesop.rutgers.edu](mailto:mikes@aesop.rutgers.edu), or Nancy Ostiguy at Penn State University tel 814-863-2872 [nxo3@psu.edu](mailto:nxo3@psu.edu), or Maryann Frazier 814-8634621 [mxt15@psu.edu](mailto:mxt15@psu.edu)



June 19 - Maryland and Delaware Beekeepers' Associations Joint Meeting, Eastern Shore  
David Smith at [beekeeper@closecall.com](mailto:beekeeper@closecall.com), 410-490-8446.

July 16 - Beekeepers Research Day, Penn State University  
Yvonne Crimbring 570-673-8201 or Maryann Frazier 814-865-4621 [mxt15@psu.edu](mailto:mxt15@psu.edu)

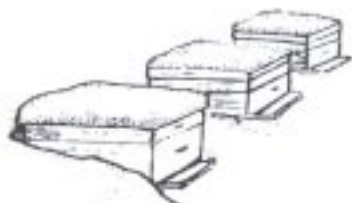
July 17 - PSBA Summer Picnic, Mifflin County Youth Park, Reedsville, PA  
Yvonne Crimbring 570-673-8201

August 9-13 - EAS Short Course and Conference, Seven Springs, PA  
[www.easternapiculture.org](http://www.easternapiculture.org)





# Honey Bee Colony Loss Survey 2003-2004



This redesigned survey is a request to help us document honey bee colony losses both overwinter and during the production season. It is entirely anonymous. We will report results in **BeeAware**, the **MAAREC website (MAAREC.cas.psu.edu)** and at future regional meetings. Thank you.

Once you have determined your 2003-2004 winter losses (this past winter), please answer all of the questions then return this survey to:

Dewey Caron, Dept. of Entomology, Univ. of Delaware, Newark, DE 19717

1. In what state are your apiaries located (check)? PA\_\_ MD\_\_ NJ\_\_ DE\_\_ other\_\_
2. How many years have you been a beekeeper? \_\_\_\_\_
3. Number colonies going into winter this past fall (Oct 2003)? \_\_\_\_\_
4. How many colonies died over the winter? \_\_\_\_\_  
To what do you attribute these losses? (approx %): unknown \_\_\_\_\_  
starvation \_\_\_\_\_, varroa mites \_\_\_\_\_, pesticides \_\_\_\_\_, bears \_\_\_\_\_, other \_\_\_\_\_  
**Do you intend to replace losses? Y or N How? Pkgs\_\_ Nucs\_\_ Splits \_\_ Other \_\_**
5. **How many colonies died during the 2003 production season (Mar-Oct)? = \_\_\_\_\_**  
**Of the colonies that died during the season, to what do you attribute losses (approx % )?**  
pesticides \_\_\_\_\_, starvation \_\_\_\_\_, bears \_\_\_\_\_, management \_\_\_\_\_  
unknown, \_\_\_\_\_ other \_\_\_\_\_
6. Did you apply any medications to your colonies last year?  
Please indicate ALL treatments you applied during 2003, what month(s) used and how many (approx %) colonies you treated

<b>Powdered sugar &amp; Terramycin (for foulbrood)</b>	month _____ % treated _____
<b>Apistan (for Varroa mite)</b>	month _____ % treated _____
<b>Coumaphos (for Varroa mite)</b>	month _____ % treated _____
<b>Menthol (for tracheal mite)</b>	month _____ % treated _____
<b><u>Plain</u> grease patties (for tracheal mite)</b>	month _____ % treated _____
<b>grease patties with Terramycin</b>	month _____ % treated _____
<b>Fumidil-B (for Nosema disease)</b>	month _____ % treated _____
<b>other? _____</b>	month _____ % treated _____

**Integrated Pest Management**

**7. Did you practice any IPM tactics for mite control during 2003? YES or NO \_\_\_\_\_**

If yes, which of the following methods did you use and when?

**Monitored varroa mite levels Y or N % colonies**

If yes how \_\_\_\_\_ & when \_\_\_\_\_

**Used screen bottom boards Y or N If yes, when? \_\_\_\_\_**

**Drone brood removal Y or N If yes, when? \_\_\_\_\_**

**Resistant queens Y or N % colonies \_\_\_\_\_**

What queen line? \_\_\_\_\_ when introduced \_\_\_\_\_

**Essential oil Which one \_\_\_\_\_ % colonies \_\_\_\_\_**

How was the material applied \_\_\_\_\_

**other treatment(s) \_\_\_\_\_**

**8. Please include any comments here.**

WE appreciate your help! THANKS for taking the time to COMPLETE THE SURVEY.

**After completing survey, fold on dotted line, affix postage, and return or mail in envelope.**

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<b>Postage Here</b>
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Dewey Caron  
Department of Entomology  
University of Delaware  
Newark, DE 19716-2160