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Vol 20 # 2

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CHC is the national organization of the beekeeping industry. It is the vital link between beekeeper associations, governments and provincial apiculturists. Beekeepers in business can claim CHC membership and travel to the annual meeting as eligible business expenses for tax purposes.

Editor..... Heather Clay
Design and Production Rudy Gelderblom

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HiveLights

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Dick Rogers, Wildwood Labs Nova Scotia, conducts detailed examination of brood and bees for an assessment of colony health.

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Canadian Honey Council Activities

Heather Clay, National Coordinator CHC

Annual Meeting

The Canadian Honey Council held its 66th Annual General Meeting in Langley, British Columbia. The event was attended by CHC members



Heather Clay and Haida fish by artist James McCue

from across the country including a number of packers, suppliers and many local British Columbia beekeepers. Thanks to the hard work of Rick Kreisch and his team from the Simon Fraser Division of the BCHPA the registrations and behind scenes organization went extremely well. Guests enjoyed a field trip during the meeting and the positive comments have been taken into consideration for planning next years meeting in Calgary, Alberta.

Honey Production

The latest Canadian Honey Statistics were presented by Farid Makki, Senior Market Development Advisor, Agriculture and Agri-food Canada. The 2006 crop was one of the highest in many years-estimated 93 million pounds. The number of

colonies and beekeepers is not greatly changed over the five year average. Although prices in 2006 were low the future is positive for marketing the superior quality of Canadian honey. Consumers today are interested in the healthy aspects of honey and Farid advised marketing the nutritional and antibiotic qualities of honey

Colony Collapse Disorder

The talk of the annual meeting was the looming crisis caused by the threat of colony collapse disorder. Jerry Hayes, State Apiculturist, Florida presented information on CCD and the status of colony health in the USA. He posed a number of potential reasons for the disorder, but there is no definitive answer yet. The most likely scenario is that the cause is a combination of factors (see CCD: Is Canada Concerned page 14). There is some concern that the disorder may be present in Canadian colonies. The CHC is urging more research dollars are spent on assessing colony health and seeking government support for a national diagnostic centre.



Farid Makki AAFC presenting at the AGM

Promotion

A presentation on branding honey (Bob Bailly, Karo Design Inc.) was especially well-attended. Bob gave an

overview of the CHC's Winnipeg-based pilot project promoting 100% Canadian honey. Featuring Pierre, the "Spokesbear" for Canadian honey, this awareness project included billboards, radio spots, and public appearances by Pierre. Attractive brochures have also been



Pierre the bear with CFIA veterinarian Maria Perrone and her daughter

created to inform consumers and raise awareness of Canadian honey; a good start to future promotion activities.

Forging a New Direction

The awareness project is part of the CHC's current major initiative, Forging a New Direction (funded in part by the Advancing Canadian Agriculture

and Agri-food Program – ACAA). For the past six months, four Working Committees have been developing options for "re-inventing" the CHC to better meet current and future challenges to the Canadian honey bee industry. The Committees are working to redefine CHC's future purpose, role and structure; membership and participation; budgets and funding; and conferences. The results of their work were reported to the AGM in Langley and will culminate when preferred options for the future are confirmed. Input from individuals and organizations has been received through meetings, round-tables and the CHC website. Consultation with provincial associations/commissions regarding the future direction of the CHC as the "national voice of the Canadian honey bee industry" will continue as planning begins to implement preferred options. The Forging a New Direction Project will go on until the spring of 2009, when the restructured and revitalized CHC will emerge.

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Working Residue Levels

Connie Zagrosh, Program Specialist, Honey Products,
Canadian Food Inspection Agency, Edmonton, AB

The Canadian Food Inspection Agency
(CFIA) operates a National Chemical

Residue Monitoring Program for food

products, including honey, as part of an overall strategy to minimize unwanted chemicals in food. The monitoring program tests domestic and imported honey for chemical residues such as antibiotics and pesticides and ensures compliance with the Food and Drugs Act and Regulations (FDAR).

Health Canada has recommended safe Working Residue Levels (WRLs) for a number of veterinary drugs approved for use in other species that may be detected in domestic or imported honey. WRLs do not represent approval of additional drugs for use in beekeeping and must not be interpreted as an encouragement of their use. They should be used only under the guidance of a veterinarian.

It is important to note that there are no WRLs for banned substances such as chloramphenicol and nitrofurans, as no detectable presence is acceptable.

The CFIA uses the WRLs as guidance in determining the appropriate level of enforcement action including whether any action is necessary, such as product recalls, detentions and seizures.

When honey contains drug residues within the WRL, the producer/owner of the honey will receive a letter from the CFIA informing them of the residues that have been detected, but that there is no risk to human health. The notification will also state that when the use of a veterinary drug not approved for use in beekeeping is required, it should only be administered under the guidance of a professional apiculturist/veterinarian to minimize or eliminate the presence of drug residues in honey.

Packers and importers of honey are responsible for ensuring that appropriate controls are in place to minimize, and where possible eliminate, the presence of chemical residues in honey packed, imported, or sold in Canada. This includes verifying that suppliers of honey also implement appropriate control measures to prevent contamination with chemical residues.

The 'Vetch' Group

Common Name

Vetch and milkvetch: the most common of the 'vetch group' of genus for Canadian honey production.

Scientific Name

Vicia spp. and *Astragalus spp.*

'Vetch' are members of the highly adaptable pea or legume family, *Fabaceae*. The common name 'vetch' is used for a very diverse group of legumes from relatives of the clovers to the beans. *Vicia spp.* is the most common genus of the 'vetch' used for honey production. Some *Astragalus spp.* are also a good source of nectar for bees. Some other vetches such as crownvetch, *Coronilla spp.*, and sweet vetch, *Hedysarum spp.*, although found in Canada are not widely grown nor used for honey production. Crownvetch is a poor source of nectar while sweet vetch or French honeysuckle produces nectar that gives a light fine-grained honey but is not widely available.

Astragalus spp. comprise a group of nearly 2000 species of 'locoweeds' in North America. Although most are poisonous, a few are not and some such as *Astragalus cicer* L. are used for forage and honey production. The only truly problematic species is the timber milkvetch, *Astragalus miser* Dougl., which is poisonous to cattle and produces nectar with alkaloids that are poisonous to bees.

Canadian Distribution:

American or purple vetch, *Vicia americana* Muhl., is native to North America and found across Canada and throughout most of the USA. It is most common west of Quebec. Hairy vetch or winter vetch, *Vicia villosa* Roth, is native to southern Europe and has been widely naturalized in North America. The spring or common vetch, *Vicia sativa* L., is native to southern Europe and southwest Asia and has been widely naturalized in North America.

Cicer milkvetch, *Astragalus cicer*, is a native to southwest Asia to western Europe and has been widely introduced around the world. In many countries, including Canada, it is now considered a domesticated crop.

Description:

Most of the 'vetch' are perennial forbs. The *Vicia spp.* are generally prostrate with tendrils used for climbing on neighbouring upright plants.

V. americana is a rhizomatous, single-stemmed climbing perennial up to 75 cm tall. The inflorescence is a long-stalked cluster (raceme) with up to 10 flowers that are 1.25 to 3.75 cm long, each producing a pod 2.5 to 3.75 cm long and containing two to several pealike seeds.

Inset: Hairy Vetch

▶ pg 6

Plants for Bees

Doug Clay, Research Scientist,
Calgary AB



Hairy vetch is an annual/biennial that grows 1 to 2 m. The tall stems have spreading hairs – thus the name *V. villosa*, from the Latin villi meaning ‘hairs’. These hairs can give the plant a white-woolly appearance. The flowers are purplish-red to blue (sometimes white), 1.75 cm long. The inflorescence is a dense raceme with 20 to 60 stalked flowers. Seedpods are flattened, hairy, and 1.25 to 1.75 cm long containing 2 to 8 rounded seeds coloured from dark brown to greyish black. The leaves are pinnately divided into 4 to 12 pair of thin lance-shaped leaflets with branched tendrils for climbing.



Spring Vetch

Cicer milkvetch is a cool season herbaceous legume with flowers arising from leaf axils; 10 to 30 white to pale yellow florets on a compact raceme. The inflated black seedpods contain nine to fifteen seeds. *A. cicer* has succulent hollow stems, 0.6 to 1.0 m in height supporting 8 to 17 pair of lanceolate leaflets on pinnately divided leaves.

Ecology/Canadian Habitat:

Vetch are highly adaptable to a range of soil fertility and many have deep taproots making them tolerant of drought.

V. americana has a moderate to deeply branched taproot that reaches a maximum depth of about 100 cm. It can utilize acidic to moderately basic soils and can tolerate some moderate salinity. American vetch survives in a variety of habitats, moist to dry, swampy woods, mixed forests, and neighbouring clearings. *V. americana* grows on sandy, clayey, or medium-textured soils. In the mountains of

BC and Alberta it is often abundant in deep porous loams. American vetch blooms early spring, May to July depending on area. The *V. sativa* is also early but not as winter hardy as American vetch.

The hairy vetch is often found in disturbed sites or fields with sandy soils. *V. villosa* has a shallow taproot system with strong lateral branches that provides some drought tolerance. It blooms June through August.

A. cicer is a long-lived perennial, sometimes persisting for over 35 years. It is often found on disturbed

sites such as the margins of trails, fields, and along right-of-ways. It is intolerant of shade. Cicer milkvetch has a vigorous branched creeping taproot system, giving it good drought tolerance, although less than alfalfa. *A. cicer* is adapted to a wide range of soils, tolerating low fertility, low pH, and some salinity. It can establish on basic soils (pH 7.0 to 8.3) with some tolerance of acidic soils (pH of 5.2 to 7.0), but growth and yield are best in calcareous neutral soils. It is often found on loamy soils, but seldom on deep sandy soils. In the prairies *A. cicer* is found in areas with more than 400 mm of annual precipitation and blooms in mid summer. It is winter hardy and has become naturalized in southern Manitoba.

Methods of Reproduction and Spread:

The ‘vetch group’ are prolific seed producers and this is the main source of new plants in the *Vicia spp.* They tend to persist after cropping because of their hard dormant seeds.

A. cicer also spreads by rhizomatous growth after initial establishment.

Honey/Pollen Potential:

‘Vetch’ all produce nectar and pollen. Many have secondary nectaries at the base of the leaves (producing stipular nectar), which compensates for the sometimes inaccessible long corollas. This is a major source of ‘vetch’ nectar gathered by honeybees.

The *V. sativa* yields up to 50 kg/ha of dark amber stipular honey but is not considered a dependable producer. *V. villosa* yields up to 50 kg/ha and sometimes up to 45 kg/colony/season. It does not have extra-floral nectaries and honey yields increase in the presence of other insects (carpenter bees) that puncture the base of the blossoms. The honey is white and mild flavoured and may be prone to rapid granulation.

Cicer milkvetch is attractive to honey bees. Little is documented regarding its yield due to its limited availability for honey production. The related Chinese milkvetch (*Astragalus sinicus* L.) is recorded as producing 30 kg/colony/season.

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Provincial Reports

Maritimes

Beekeepers in the Maritimes are anxiously awaiting the arrival of spring. Winter in the Maritimes was late starting but made up for its late arrival with intense cold and no “thaws.”

Alison Skinner and Heather Clay were guest speakers at the Nova Scotia Beekeepers Association Annual Meeting held at the end of February. Alison spoke on some of her work with the Ontario Technology Transfer Team. Heather spoke on the Canadian Honey Council and all the work that has been accomplished and is ongoing. Nova Scotia Beekeepers later voted to maintain the current pilot project where every member of the NSBA is automatically a member of CHC. The NS beekeepers Association Executive was also asked to investigate the possibility of obtaining an eastern twin to Pierre the Bear for promotion of Honey.

A committee of Nova Scotia Beekeepers has been formed to work with the provinces Natural Resources Department to help

coordinate bear damage reporting.

The New Brunswick Annual General Meeting was held in Moncton. Peter Hardie and Kathleen Cooper spoke on their CUSO work in the Solomon Islands. Their adventure was reported in Hivelights February 2005. It sounds as if they were able to do some excellent work and help the people establish some good beekeeping practices.

The supply of honey bees for blueberry pollination in Nova Scotia is expected to be tight this spring. The current high price for blueberries is encouraging blueberry growers to use more bees on their fields.



Paul Kittilsen

Wishing you all the best through the

Spring!

Québec

Starting a new season with poor prices is not what I would call stimulating, but I guess, like always, we shall tell ourselves that the prices will get better. But when?

Last fall Quebec Beekeepers in general were getting nervous about losses. With all the talk of Coumaphos resistance plus hearing what is happening in the United States, you have to wonder what we are going to face next. Just when you think you have the answers, someone changes the question on you!

Winter came late this year, with practically no snow until mid January. The real cold and snow came in February. Hopefully this will have permitted the bees to fly before clustering for two months. Will this be the new norm? In a sense it may be good for fall treatments and feeding. Maybe one day, I'll be making up nucs in March!

Québec held a one-day seminar with about 200 beekeepers from across the province to exchange ideas with two beekeepers from France who were invited to talk about the beekeeping situation in France. Varroa is still the number one preoccupation. A lot of emphasis seems to be on genetics for raising your own stock through artificial insemination. One of the French beekeepers even abandoned its retail outlet to concentrate on bees, pollination, production of honey and by-products.

So I wish you a good season and pray with you for better prices

Ontario

With winter in its final stages, amid reports of CCD in the U.S., we anxiously await the arrival of spring like conditions in Ontario so that we can pop a few lids to see how our colonies wintered over. I don't know about the rest of you, but I am finding that winter isn't nearly long enough to get all the projects done that were planned or put off from last year.

If conditions continue to become more spring like, I think I can safely say that Ontario's winter was fairly mild. Until about mid January, we didn't have frost in the ground in south between Ottawa and Windsor. Winter finally arrived at that point but there were only a few weeks of very cold weather. And now in mid March, the sun's intensity is noticeably stronger. Daytime highs are allowing the bees to take cleansing flights.

Our bees went into winter in variable condition. My guess is that we will see variable mortality rates as a result. Some parts of Ontario are dealing with resistance issues in our miticide efficacy. As a result we may see high mite levels this spring as we do our early monitoring.

Manitoba

There seems to be a strong demand for pollination hives in Eastern Canada. Many hives have been committed to go to blueberries in New Brunswick and Quebec again. This has been a needed shot in the arm for our cash flow, as we see bulk honey prices go ever lower. Fortunately, farm gate sales of honey have been steady and most beekeepers have maintained or exceeded our recommended price of \$2.50/lb in the customer's container. We are seeing some cheaper honey on the supermarket shelves, but there is still a demand for high quality, and as a result, we are still seeing good sales of higher priced honey, even if there are cheaper brands displayed on the same shelf.



John van Alten

The OBA held its spring meeting, in Kingston April 4, starting with a tour of Ben Hogan's facilities in Bath. Kirk Webster from Vermont was our guest speaker. The following day Bee Breeder held their annual meeting where we were updated on the latest info available.

On behalf of the beekeepers in Ontario, I want to wish you all a great season, and hope that the acronym CCD will only mean 'Come Closer Dear' to us here in the great white North.

This year should be a busy one for Manitoba producers who will soon be at the start of another beekeeping season. If the weather permits, at the beginning of April, indoor wintered colonies will be taken out and placed into their spring yards. A week or two later, as the weather improves, outdoor wintered colonies will be examined, fed and medicated as necessary. Besides the usual wintering losses, which

often average around 10% of the colonies put away, there are two issues causing additional concern this spring. The first one is the well publicized losses of thousands of colonies south of the border from

Chronic Collapse Disorder (CCD). Everyone realizes that a geographical line between countries does little to stop problems like bird flu, polluted water or, in this case, a problems in honey bee colonies that can cause the rapid and total loss of bees within the colony. The other concern is the parasite organism, *nosema ceranae*, which also causes rapid colony decline and loss of the colony. It has been reported that distinguishing *nosema ceranae* from *nosema apis* is very difficult as the organisms are almost identical in appearance. Most laboratory equipment is not adequate to enable one to make the distinction.



Ron Rudiak

Low price offers are still being made by packers for last seasons top quality honey. More and more shoppers have been making it known that they would prefer to purchase food that is nutritious, tasty, convenient and, preferably, food that has been produced as close to the store where they shop as possible. Canadian honey meets all of those requirements and for that reason we should see Canadian honey capturing a larger portion of retail sales.

Producers are saying that we have to distinguish Canadian honey from off shore imported honey and an assortment of other sweeteners to assist the customer in making informed choices. Manitoba producers feel that the industry will benefit by implementing the CHC's marketing program. An ongoing concern is the word "Canada" in the grade designation for any imported honey. The new CHC honey awareness

brochures are a very popular item and beekeepers have been ordering a stock of them to keep on hand.

The Manitoba Beekeepers' Association is on track to implement the provisions of the Manitoba Farm Products Marketing Act for Honey. The provisions in this document are similar to those of the commissions which have been set up in Saskatchewan and Alberta. Implementation would stabilize MBA membership

and, in addition, provide adequate funding for the disease inspection program, promotion, research and education.

Saskatchewan

Saskatchewan's honey crop from last fall was indeed the bumper crop many of us strive for each year. The provincial average came in well above the 250 lb/colony mark with Saskatchewan's total 2006 honey production topping 26 million pounds. Beekeepers were fortunate for such a bountiful crop as prices plummeted from the \$1.10/lb range in early fall to the \$0.75/lb that was offered in early March. There seemed to be a quick \$0.10/lb - \$0.15/lb drop in honey prices offered by Canadian packers almost immediately after the Canadian honey crop production numbers were released by a federal government agency. Perhaps our industry, especially the government agencies, needs to rethink the reporting of honey production numbers in the fall!

Most colonies in the fall were heavier than expected for that time of year. Many colonies did not need/take the usual amount of fall feed for over-wintering. Much of that excess weight in the colonies came from legumes and wild flowers and is not expected to cause over-wintering problems with the possible exception of those colonies that went into winter extremely overweight. Most

Alberta

beekeeping areas of the province received average to well above average snowfall this winter. Major beekeeping areas of the province, the Northeast part in particular, is expected to see extremely high levels of runoff and the potential for flooding is high. Early reports from beekeepers across Saskatchewan report that colonies have over-wintered well, with outdoor winter death losses anticipated to be around average. Reports from beekeepers that winter colonies indoors are reporting early death losses to be in the average to slightly above average range. The exception to the good over-wintering being the Tisdale-Nipawin area of the province. Resistant varroa mites surfaced in the Pocupine Plain area two years ago and have spread up through Tisdale to Nipawin. Some beekeepers were caught off guard with this spread and began noticing problems with their colonies at the end of the honey flow through to over-wintering preparedness. Others are reporting poor results from formic acid treatments. A few beekeepers have reported losses topping 10% going into winter. Some beekeepers in this area have early estimated winter death losses of 40% - 60%. Resistant mites are the suspected culprits. While current honey prices are depressed, Saskatchewan beekeepers are anticipating a decent increase in prices this spring



Corey Bacon

and remain optimistic. With some reports that areas of Argentina are having their worst crop in 40 years and reports of bee losses in the US, and other parts of the world, between 40% - 90% in apiaries believed to be experiencing CCD (Colony Collapse Disorder), honey could be in short demand to meet supply by late spring. These high bee losses also bring up the debate about the movement of bees from Canada into the US to fill the US demand for bees to replace winter losses and expansion to meet growing pollination needs in the almonds. Could Canadian beekeepers build a market for bees in the US and educate them on the benefits of Canadian bees? Could we change their purchasing and management practices to develop a fall market for bees? The potential may just be there with current circumstances coupled with the success being demonstrated at some of the breeding projects such as "Saskatraz". We definitely have excellent hardy stock and the climate to successfully raise queens and build nucs/singles from early spring through early fall for fall sale. Perhaps one day we may have the potential for bees as the main source of our beekeeping income and honey as a by-product of bee production — Diversification! Wouldn't that option be sweet?

Winter this year has been just like Agatha Christie's "Ten little Indians" in that "then there were none" — winter that is, is over. Extracting season is upon us. Many beekeepers in Alberta are reporting an early honey flow and have started extracting the lucrative Ice Honey Crop.

Ok maybe that's just a little bit of a stretch. But winter has come and gone and many beekeepers, especially in the south have been able to get into their hives early this spring. Since last year's legendary crop, affectionately known as the wall of 2006, many beekeepers are reporting higher than normal winter losses. Typically at this time of year most beekeepers see a 10-15% mortality rate, many beekeepers are seeing a solid 15% mortality rate. Most of this is attributed to last year's large honey crop. Many of the hives reported dead seem to have been stressed going into fall or had a complication with the queen. Currently, no one is alarmed by these findings and an overall increase in hive count is expected across the province. Many beekeepers are planning expansions for their operations.

The hybrid canola industry has been actively searching out new beekeepers to supply hives to produce

their respective products. As one agronomist put it, "The shelves are bare!" In the light of low honey prices, many beekeepers have signed up to provide bees for pollination, albeit for only one year. The driving force behind the increased acreage this year is speculation that canola oil may become a lucrative alternative biofuel and that this spike in demand is only the beginning of a major climb in demand.



Ron Greidanus

Many producers across the province are beginning to sense a quiet optimism regarding the dismal price of honey. In the last two months many tons of honey have been sold, although there is considerable carryover inventory remaining in the province. Some producers report Sales to Germany have resumed again yielding \$0.90 CDN FOB or better. Sales to the states are still slow, but honey is beginning to move.

The bumper crop initially reported in Argentina is now expected to be average at best, more than likely below average and the honey is expected to be dark. The US seems to have stemmed the flow of Chinese honey into the States. Currently, it costs more per pound, after freight and duty, to purchase Chinese honey than Canadian honey. For the North American market this bodes well for us, however, this is an artificial prop and props can break....

► pg 10

I will go out on a limb once again – I will predict a price on honey of about \$0.85 per pound in August or September. North America will not likely have a repeat of last year's crop. Everything seems to look good so far, but I think that this year will be dryer than normal – not that this really affects the bees significantly. There are more hives this year in Canola pollination than last year. I expect a slightly lower than average production this year. I think that a lot of beekeepers will move their inventory this year and that December will find many beekeepers in a sold out condition. Consumer demand remains strong and at the end of the day we should see this reflected in the price in the barrel.

British Columbia

Our BCHA held its semi annual meeting in Kamloops in early March at which reports were surfacing of some severe winter losses. Varroa appears to be the most likely cause. The afternoon educational sessions included excellent presentations on queen rearing for your own requirements and bee venom therapy by John Gibeau which were very well reviewed, also a report on the B.C. Bee Breeders stock development project advising us that selected queens would be available to members for further evaluations this coming season.

Reports from Northern B.C. have indicated some

near record snow fall amounts and very cold temperatures still in March. Hopefully this will lead to good moisture conditions and improved crop prospects this season.

The October 2007 AGM is scheduled for Dawson Creek and we look forward to celebrating their bumper crops and higher honey prices with them!



Ed Nowek

re-elected as Vice-Chair. The Executive members are Mr. Elmer Zumwalt and Mr. Phil Veldhuis. Barrie Termeer was re-elected as the Bee Maid representative to the Canadian Honey Council.

Bee Maid markets the honey produced by the Alberta and Manitoba Honey Co-ops. Both experienced above average intakes created by excellent conditions

Bee Maid

The Bee Maid AGM was held Nov. 29, 2006. Mr. Bill Bygarski, Jr. was re-elected as Chairman and Mrs. Cleta Dieken

for honey production in the mid to late summer. Our members use Bee Maid drums and we experienced both the challenges and successful outcomes of cooperation amongst our members and markets to produce enough barrels

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to handle the good crop. We observed similar tight supplies and increasing prices of good drums in the private market also.

Honey markets were improved in the late summer as supplies tightened, but we have since seen a decline in prices as packers are aware of the good crop in Canada, and are also waiting to see how much new crop honey will be available from South America in February and beyond. However, Canada has top quality white honey with good production practices and we remain in markets this way. It is important for Canadian producers to use on-farm food safety, product traceability and modern honey houses with quality stainless steel equipment to differentiate our product in the competitive global market. Bee Maid has in place a good HACCP program and has been able to meet an further levels of testing that the market place looks for, including stricter regulations that now exist in a time of increased anti-bioterrorism protocols.

Bee Maid remains a producer and packer of 100% pure Canadian honey and our labels have been developed to emphasize this as well as pursuing a promotion program that draws attention to the healthy lifestyle that is associated with using honey in our daily life. Our promotion programs are integrated in product

labels, web site contests, tags and consumer directed promotions. Bee Maid was pleased to work with the CHC promotion program and we hope it will continue to grow.

Further work done on the labelling issues by CFIA through focus groups and with consultations with industry and CHC will hopefully move regulations forward that will mesh quite well with Canadian honey promotions while still allowing consumers choices in quality, floral sources and prices in an open market.



Barrie Termeer

Another issue shared by Bee Maid and beekeepers are the shortages of skilled labour, labour competition from other industries

and the strong economy in western Canada and Alberta. Labour costs are an important component of any business, but it is equally important to have skilled and dedicated staff and we work diligently to balance the two. Our bee supplies outlets in Edmonton, Winnipeg and Tisdale have had a good year, after some declines following the significant honey price drops we saw in 2005. Our sales of bee supplies, wax and candle supplies and other items continues to grow through the web site option. Again, we have very good staff dedicated to serving all of the bee industry and we look forward to a continued good relationship in 2007.

One item of interest now being sold through the bee supply outlets are member signs. They incorporate our new image and colours together with producer information and are printed on a 4' x 4' weather resistant corrugated plastic panel selling for \$32. Samples can be seen in the beekeepers' section of www.beemaid.com.

This year saw the retirement of Ida Macleod after twenty years of dedicated service to the Manitoba Cooperative. The Board of Directors of the Manitoba Cooperative Honey Producers Limited presented Ida with a travel voucher that she will be able to enjoy as it was hinted that she was hoping to take an Alaskan cruise with her husband Bill following her retirement. Thanks again Ida!

On a lighter note, Bee Maid was challenged to send a larger contingent to the Alberta Beekeepers convention for their annual "Drones" hockey game. We were very well represented by Guy Chartier, Derrick Johnston, Barrie Termeer, Phil Veldhuis, Tim Banting and Real Dubeau, with some help in net by Rob Dickson. Our boys played at the highest levels but were stopped in the end by some divine goaltending by Jerry Poelman in the other team's net. Thanks to the Alberta Beekeepers for the exercise and fun, part of healthy living with honey!

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Canadian Entrepreneur Recognised for On-farm Innovation

Ontario Ministry Agriculture Food and Rural Affairs, Toronto, ON

QUEEN'S PARK - The Ontario government recognizes that innovation will pave the way forward for the province's agri-food sector, and Premier Dalton McGuinty took the opportunity to recognize farmer-innovators at the Premier's Summit on Agri-Food, March 8, 2007.

"Ontario's farmers have helped build a world-class agri-food sector in this province," said Premier Dalton McGuinty. "By recognizing their hard work and investing in their innovative ideas, we can help farmers pursue new markets, attract investment and strengthen our rural communities."

The first \$100,000 Premier's Award of Excellence for Agri-Food Innovation will go to David VanderDussen. VanderDussen developed Mite-Away II, an environmentally friendly product to protect honeybees from

mite infestations, which is exported around the world. The Hastings County resident has disarmed a major threat to Ontario's bee industry. That's not only good news for apiarists, but also for all those farmers whose crops depend upon pollination.

The varroa mite has long been a serious problem, threatening bee populations and reducing honey production. VanderDussen worked with the University of Guelph, the Ontario Beekeepers Association and the Canadian Honey Council to develop an effective and environmentally-friendly product to control the mites.

Mite-Away II, with its extremely high efficacy rate, has received approval from the Pest Management Regulatory Agency in Canada and is registered with the Environmental Protection

Agency in the United States, and is now widely used across North America.

Apimondia

Expression of Interest

The CHC has applied for funding to assist in sending a small group to the next Apimondia conference in Melbourne Australia. The team will represent the different aspects of our industry and regions. Our goal is to foster trade links and promote the superior quality of Canadian honey and hive products. We are looking for expressions of interest from CHC members who would like to represent the Canadian honey industry in Australia. Should the funding be approved the travel dates will be Sep 7-16. Contact us by email at editor@honeycouncil.ca or drop a note by post to the CHC office and tell us what you can contribute to the team.

inset: David and Mary VanderDussen (centre) accept the Premier's Award of Excellence for Agri-Food Innovation from Premier Dalton McGuinty and Agriculture Minister Leona Dombrowsky.

Left: David VanderDussen in the beeyard



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Decline of bees and other pollinators raises concern for food supply

Dennis Bueckert, Canadian Press
Published: Friday, January 19, 2007

OTTAWA (CP) - The decline of bee populations in Europe and North America has raised alarm about pollinators that fertilize crops essential for the human food supply.

Experts are calling for measures to protect pollinators of all kinds, including not only bees, both managed and wild, but birds, bats, flies and even beetles. They say people should become much more tolerant of plant species that are currently viewed as weeds, which can be vital to pollinators' survival.

"Pollinator declines and pollination deficits are now being reported for North America and may signal a threat to ecosystem and agricultural productivity," says a paper by University of Guelph ecologist Vernon Thomas. The paper was presented January 18 in Ottawa at the first Canadian meeting of the North American Pollinator Protection Campaign.

A report by the U.S. National Academy of Science last year said long-term population trends for several wild bee species, notably bumble bees, some butterflies, bats and hummingbirds are "demonstrably downward." But there is virtually no population data on many pollinating insects, the report says.

Protecting pollinators requires a continent-wide approach because they don't respect national borders, said Charles Caccia, senior fellow at the Ottawa University Institute of the Environment. Caccia has been instrumental in launching the Canadian Pollinator Protection Initiative, modelled on a similar U.S. campaign.

Threats to pollinators include pesticides, climate change, habitat destruction, invasive species and human indifference. Farmers and others should be less zealous about eliminating weeds around the boundaries of farmland, in ditches or utility rights of way, experts say. "It's actually these kind of scruffy

areas that pollinators like," said Laurie Davies Adams, executive director of the Washington-based CoEvolution Institute. Government regulations that discourage the growth of certain types of plants, such as milkweed, can also be a problem. Gardeners can play a useful role by creating habitat for pollinators, Adams said. "What we want is for everyday people to look at their gardens and say, do you want just a static stage that is an empty theatre or do you want actors to come in and have this interaction?"

Faisal Moola, a biologist with the David Suzuki Foundation, stressed the importance of protecting a wide variety of plants. "Very few pollinators are specialists; most are generalists. Consequently they depend on a full range and diversity of plants. "Keep in mind that many flowers have particular blooming periods. You need to have an availability of floral resources right through the lifespan of that insect."

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Colony Collapse Disorder, CCD,
(also known by several other names)
has become a plague throughout the

United States. Major losses in colonies have been reported from all states that have reported (<http://maarec.cas.psu.edu>) as of 26 February, 2007. In Canada, where winter losses are commonly problematic, no instances of CCD have been confirmed, at least so far. But, very recent reports are of suspicious losses having been experienced in Ontario and Saskatchewan. Should Canadian beekeepers be concerned? Does Canadian beekeeping provide insights into CCD?

COLONY COLLAPSE DISORDER in Canada: Do we have a problem?

Peter G. Kevan, Department of Environmental
Biology, University of Guelph,

Ernesto Guzman, Department of Environmental
Biology, University of Guelph

Alison Skinner, Technology Transfer Specialist,
Ontario Beekeepers' Association, and

Dennis van Englesdorp, Acting State Apiarist for
the Pennsylvania Department of Agriculture

Let's first look at the information that the CCD Working Group in the USA has provided (<http://maarec.cas.psu.edu>).

The symptoms of a CCD collapsed colony are no adult bees and no corpses, presence of capped brood, presence of both honey and pollen (bee-bread) stores. A collapsing colony shows too small a workforce for colony maintenance and that workforce is made up of young bees, and the bee cluster seems reluctant to feed on either stored honey or pollen. One of the most peculiar of symptoms is the lack of robbing behaviour of surviving colonies of colonies that have died out. What is going on? Strange symptoms indeed!

The CCD Working Group concludes that "stress" is a major contributor to the condition, and they itemize a number of stresses that are likely involved. In particular, they mention that migratory beekeeping practices are stressful to the bees. The reasons suggested are confinement and temperature fluctuations during transport. Certainly, added to those reasons are the mechanical vibrations and shocks that colonies on trucks experience, which, when protracted over several days' duration would be upsetting to the bees. Confinement itself would cause the

air within the hives to become stale, with higher than usual levels of Carbon dioxide (CO²) and moisture. Even moving colonies short distances for pollination or honey production is well known to cause the bees to become upset, so moves taking days and over thousands of kilometres would be expected to be stressful on the bees, as well as on the beekeepers.

Rapid movement of colonies of bees across the USA may cause "jet-lag". Yes, bees need to sleep and do have regular daily rhythms of activity (just as people do) (Kaiser 1988; Sauer et al. 2003, 2004; Zhang et al. 2006), so one can suggest that a colony of bees being whipped across two or three time zones in a quick move would be subject to some stress.

Migratory beekeeping involves the packing of large numbers of colonies onto the backs of trucks. There, the colonies are unnaturally close together. The CCD Working Group acknowledges that when the bees cluster on the outsides of hives packed as truckloads, mingling of bees between the hives would occur. The bees' defecation on the outside of the hives would increase rates of transmission of pathogens.

That transport in and of itself causes colony death and the CCD Working Group reports that 10% to 30% losses are "not uncommon" as a result of moving colonies for pollination. With such losses, migratory beekeepers make splits to compensate for the losses. The Working Group notes that the reuse of equipment from hives that have died out is part of the transfer of diseases and chemical contaminants and may contribute to the problem. They also point out that making splits changes the age structure of the colonies being split, and results in an unnatural age structure of bees in the split itself. Thus, the ratio of young, nurse workers to older foragers becomes imbalanced, further stressing the colonies.

Although migratory beekeepers seem to have suffered badly, reports of CCD are not confined to their operations.

Other stresses noted by the CCD Working Group are overcrowded apiaries, nutritional stress, drought and contaminated water, use of antibiotics and chemical pesticides

(within and outside the hive) and, of course, mite parasitosis.

Overcrowded apiaries are commonly part of migratory beekeeping, especially for pollination services. The “staging apiaries” where hundreds of hives are placed cheek-by-jowl are not healthy for the bees. Often there is not enough food within the flight ranges of the foragers, robbing is commonplace (and would lead to disease transmission), and hives weaken despite the efforts of the beekeepers to provide food (pollen or pollen substitute and syrup).

Nutritional stress is not really addressed by the Working Group, but several points are worth mentioning. Honeybee colonies used for pollination services on large monocultures, such as almonds, blueberries, alfalfa are

placed in environments where little or no food choice is available to them. It is known that a diverse diet of a mixture of pollens from different plant sources is beneficial to bees, and the same would be true for nectar (Schmidt et al. 1987, 1995). Thus, nutritional imbalance could explain, in part, some of the observed symptoms. Moreover, the situation for almonds is complicated by the potential toxicity of pollen and nectar from almond flowers (Kevan and Ebert 2005), especially perhaps in large quantity and for prolonged durations.

Pollen or pollen substitutes fed to the colonies, although not generally used by the beekeepers surveyed by the CCD Working Group, may offer some relief to migratory beekeeping and the potential problems that could result from prolonged use of colonies on a single crop, but care must be taken. Pollen can be a route for transmission of diseases, so only properly treated and sterilized pollen should be used. Pollen substitutes that use soy flour as the main source of protein are not as well accepted, nor as nutritious, as pollen substitutes that avoid the use of soy flour (Saffari et al. 2004). Some soy flours seem to contain anti-feedant compounds that detract from their

palatability to honeybees.

The problems that mite parasitosis pose to beekeeping are the same in Canada as in the USA. Varroa infestations have lethal consequences, and must be kept in check. Although varroa is recognized as the major problem, tracheal mites are still very much around. Their presence in the breathing tubes of honeybees has been proven to cause respiratory distress (Harrison et al. 2001; Skinner 2000). Associated with varroa infestations is a complex of viral infections (Kevan et al. 2006). The report of the CCD Working Group includes information on the incidences of various diseases in samples that they examined, but it is too early to conclude cause and effect.



Jeff Pettis Research Leader of the USDA Bee Research Lab Beltsville (right) and his technician Nathan Rice investigating collapsed colonies

The Working Group also considered pesticide contamination, notably the neonicotinoids (which includes imidacloprid, notorious for its implications in “mad bee disease” (also a colony decline condition), clothianiden, and thiamethoxam). In general, these insecticides are well known to be highly toxic to honeybees, to be highly persistent in the environment, and translocatable in plants and into pollen and nectar. These compounds are becoming increasingly widely used, sometimes on crops for which honeybees are used for pollination. They are inadequately tested for their hazards to pollinators, even honeybees. Sub-lethal effects of imidacloprid include impairment of memory, and inability to remember (Decourtye et al. 2004); both important to bees that need to forage far from home and find their way back!

Then, what about the chemical and antibiotic cocktails that beekeepers themselves are using in their hives?

Honey that has residues above the WRL will be subject to a Health Risk Assessment by Health Canada. Subsequent action by the CFIA will be based on this assessment and could include product detention, recall, stop sale, disposal, prosecution, and in the case of imported honey, return to the country of origin.

The responsible party will be notified of the results. Producers will be asked to submit an action plan outlining that contact with the provincial apiarist/apiculturist has been made, what has caused the presence of chemical residues in the honey and an action plan to prevent reoccurrence.

Packers and importers will also be asked to provide follow up documentation as to source of contamination and action plan to prevent reoccurrence.

For further information:

Working Residue Levels (WRLs) in Honey

<http://www.inspection.gc.ca/english/fssa/honmiel/ind/worfone.shtml>

Questions and Answers about the WRLs

<http://www.inspection.gc.ca/english/fssa/honmiel/ind/resqueste.shtml>

Health Canada's Veterinary Drugs Directorate Recommended WRL Levels

http://www.hc-sc.gc.ca/dhp-mps/legislation/vet/pol/cfia-acia_amr-ram_intro_e.html

A chemical pesticide is a poison and the trick in the use of poisons is to differentially kill the pest while not killing the host. That is the basis for pharmacology and administering the right dose. Too much, and the host becomes debilitated, at the least, and may even die, along with the pest. 'The operation was successful, but the patient died!'

The autopsies made by members of the CCD Working Group revealed a number of anomalies and infections, but the data are too preliminary to allow for conclusions about symptoms, effects, and causes.

All in all, it seems that a broad suite of stresses is taking its toll on US honeybees. Are various combinations of stresses resulting in a set of similar symptoms across the country? Stress in general increases human susceptibility to illness, and the same idea applies to honeybees. Stressed, their capacity to ward off primary infections of the well-known suite of larval and adult diseases (Morse and Nowogrodski (editors) 2000) is reduced. Moreover, stressed, their capacity to fight secondary infections, such as of viruses associated with varroa (Kevan et al. 2006) is lessened. Stress, immunocompromization, and unusually serious infections by common pathogens and/or otherwise and usually benign organisms, seem to have combined to produce this devastating condition, CCD.

Although there is no presently confirmed evidence for the same condition's occurrence in Canada, complacency is not recommended. In Canada, we can be proud that Canadian beekeeping seems to be a gentler practice than in the USA, especially when it comes to the major commercial operations there. Canadian beekeepers, by and large, seem to use fewer chemical and antibiotic control agents against pests and diseases than do their US counter parts, and those that are used are applied more

conservatively. Migratory beekeeping for pollination services is not so much a part of commercial beekeeping in Canada as it is in the USA, and where it is practised in Canada, the moves are shorter and fewer. Nevertheless, vigilance is required. Beekeeping in Canada and the USA share too many similarities for Canadians to dismiss the problem out of hand. Some reports of higher than expected winter losses are now coming to the attention of the industry, and CCD can not be eliminated as being involved.

In Canada, we may be lucky. We may not. Whatever happens this spring as Canadian beekeepers open their hives, an international effort can work to the benefit of beekeeping continentally. It seems that the industry in the USA will require a major influx of support and funding to rebuild. If Canadian beekeepers do not encounter CCD, the differences between the two countries may provide insights that could help understand, solve, and prevent repetition of the problem. If Canadian beekeepers do encounter CCD, then there is advanced warning from neighbours to the south, and collaboration will be the order of the day.

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Bee Maid Honey is proud to announce that they will be contributing financial assistance to the following research projects this coming year:

Dr. Stephen Pernal, Agriculture and Agri-Food Canada, Beaverlodge Research Station, Beaverlodge, Alberta
 Management of Honey Bee Diseases Using Lysozyme. Options for the control of the bacterial brood diseases of honey bees, American foulbrood and European foulbrood.

and

Katrina Brudzynski, PhD, Adjunct Professor, Department of Biological Sciences, Brock University, St. Catharines, Ontario
 Canadian Therapeutic Honey: Evaluation of UV light sterilization of "active" honeys prepared for clinical applications.

and

Anna Birmingham, MSc, R&D Specialist, Pherotech International Inc. Delta, BC. To develop and evaluate an inexpensive granular formulation of 2HHA (2-hydroxy hexanoic acid – a naturally occurring compound) that can be sprinkled on bottom boards to attract varroa and increase the effectiveness of mite boards.

Bee Maid considered project proposals in the area of apiculture or pollination research. Preference was given to the area of honey, and the production of pure quality honey in the Canadian beekeeping industry.

Bee Maid Honey is the marketing organization owned by the Alberta Honey Producers Cooperative Ltd. and the Manitoba Cooperative Honey Producers Ltd. Both member owned Cooperatives have lead the beekeeping industry in their support for beekeeping research. All Bee Maid members are supporting research through their Bee Maid contribution, Provincial Association and the Canadian Honey Council's; Canadian Bee Research Fund. Bee Maid and the membership of the two Cooperatives recognize the importance of research and take pride in their leadership and urge all beekeepers to support their Provincial Associations and the Canadian Honey Council research projects.

For further information, please contact:

Gordon Marks
 Bee maid honey Ltd.
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CheckMite+™

Bayer CropScience Inc. has received official approval for the registration of CheckMite+ in Canada. The product is used for the treatment of varroa mites. This registration means that the CHC no longer has to pursue the temporary

measure of applying for Emergency Use Registration for varroa mites. However the use for Small Hive Beetle treatment was not part of the registration application. The CHC has applied for and received a temporary EUR for small hive beetle for the current year.

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UPEI Researchers Track Bumblebee Traffic

Innovative sensor detects direction and size of bumblebees

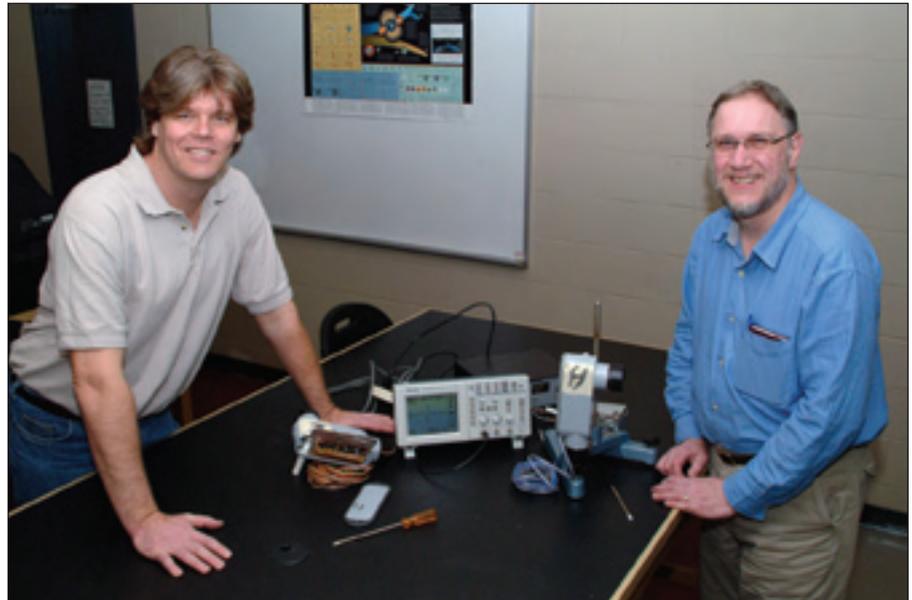
Lauranne MacNeill, Science Communications Officer, University of Prince Edward Island, Charlottetown, PE

Employed to watch a single bee buzz around his town of Hawtch-Hawtch, the Bee Watcher is a patient, meditative character who could only be pulled from the popular pages of Dr. Seuss. In the real world, researchers and beekeepers interested in bee behaviour may lack the resources to personally watch, record, and interpret the intricate traffic patterns of bees.

Researchers at the University of Prince Edward Island (UPEI), Drs. Dan Ryan and Douglas Dahn with the help of Jennifer Campbell, UPEI alumna, designed and produced a bumblebee counter with the innovative capacity to determine the size and direction of the insects. Determining the size is an important feature of the device as it makes it possible to distinguish bees from the smaller parasitic wasps that may enter and potentially damage a colony.

“Bee traffic is like a heartbeat. Each beat represents a bee coming in and out of a colony,” says Ryan. Bumblebee traffic is less intricate than honeybees at a hive as bumblebees go in and out of a single tunnel. “We are working to take the device to the next step—keeping track of many beats, many bees at once like at a honeybee hive.”

The long-term plan is to develop an extension of the bumblebee method to track honeybees at the typical slot opening of commercial hives. Ideally, the data from the device will map the intensity and patterns of bee traffic which could help managers to determine when honey-making is in its prime or crop pollination is finished and, in turn, the best time to relocate hives to another field. Ryan envisions the bee counter linked to a cell phone that would call the manager when it is time to move the hive.



Drs Dan Ryan (left) and Doug Dahn UPEI researchers with a prototype of the new bee counter

“Usually, managers move honeybee colonies based on experience,” says Ryan, Chair of the Mathematics and Statistical Department at UPEI. “This bee counter device has the potential to identify when the bees have done their job and are having to work harder to pollinate.”

The device will also give researchers insight into different types of bees. For example, many wild bees are good at pollinating native crops like blueberries. This bee counter would give researchers a window into determining the behaviour of native bees and their foraging dynamics.

Hands-On Learning for UPEI Students

Ryan and Dahn, UPEI Physics Department, teamed up to develop the bee counter. “I teach courses where students take on electronic design projects. We knew this bee counter would make a great project for a keen student,” says Dahn.

And it was a great fit for Jennifer Campbell and Randy Harper, two

students in Dahn’s experimental physics course. They worked to develop the first prototype. From this, Campbell continued to develop the bee counter for two summers. For Campbell, developing and refining the bee counter was a hands-on learning experience that added substance to the theoretical knowledge she gained in the classroom.

“There is so much you can learn by working in the lab on a real project that is difficult to learn in the classroom. I was involved in the entire design process of a real product, from brainstorming to building a prototype to optimizing and testing a field-ready device,” says Campbell, currently doing a Masters in Applied Physics at Queen’s University.

“I thoroughly enjoyed working on the bee counter. I enjoyed the challenge of solving a real problem by designing a product that was different than everything that is currently available commercially.”

Campbell's hard work paid off. She and Harper won first prize for a poster at the Atlantic Undergraduate Physics and Astronomy Conference. She was also a lead author on a paper that was named by the international journal *Measurement Science and Technology* as a 'highlight of 2005'. She graduated from UPEI in 2004 with a degree in Physics and a Diploma in Engineering. "A lot of credit goes to Jennifer. She worked through all the stages of development and invested a lot into the success of this bee counter," says Ryan.

Hard-wiring

According to Dahn, bee counters have been made using optical sensors where a bee is counted each time a bee flies through and breaks the light beam. The UPEI team had two concerns with this method. First, they wanted a sensor that could detect whether actual bees or smaller parasitic wasps were entering the hive. Therefore, they needed a sensor with the capacity to detect the size of the insects. Second, the lenses in optical sensors can get gummed up with pollen which requires the extra effort of frequently cleaning the lenses.

"We wanted to know the size of the insect and not have to constantly clean the device," says Dahn. "Our solution was electrical capacitance. Using this method we could determine the size of the insect flying through the electric field and not have to worry about the pollen dragged into the device," says Dahn.

Electrical Capacitance places insects in an electric field where differences in electrical charges can be measured. This allows researchers to measure the size of an insect, its speed and direction. The electric field is not strong enough to be harmful to the insects says Dahn.

The current prototype consists of tubes where the bees fly in and out. Sensor electrodes are looped around the tube to give a clean consistent signal. On paper, the measurements

of a bee flying into the hive look like a cresting wave and a bee flying out looks like a wave trough. The amplitude—height of the crest or depth of the trough—determines the size of the bee. A big amplitude equals a big bee and vice versa. The breadth of the wave indicates the speed of the bee. The tighter the wave the faster the bee is traveling.

The Next Level

"Currently, we're developing software to save only the important chunks of information like the time, direction, speed and relative size of the bee."

The upcoming phase of development will also include weatherproofing. According to Ryan, the next level of development is to work through real-world situations with managers in

charge of hives. People interested in this upcoming phase of the research can contact Dr. Dan Ryan or Dr. Douglas Dahn at dahn@upei.ca or dryan@upei.ca.

The counter has the potential to be scalable says Ryan. "Anything that can go through a tunnel has the potential to be analyzed like mice, other rodents in the wild, or birds. The possibilities for this device based on electrical capacitance are limitless."

Dr. Seuss and researchers at UPEI may not go about watching bee traffic the same way, but they both understand that you can learn a lot from how bees behave.

Beekeepers invited to monitor Pollinators and Plants

Beekeepers are keen observers of their environment, especially in relation to plants and pollinators. Most know the species of flowers, period of bloom and a variety of pollinators present in the field. Many take the time to record this information for potential honey production. Now this data can be submitted to two national programs that are designed to gather information from "citizen scientists". Environment Canada in cooperation with the Canadian Nature Federation operates the Plant Watch program and with Seeds of Diversity they operate the Protecting Pollinators program. Beekeepers are invited to participate in these programs and contribute the important baseline data that researchers need for analysis of environment changes.

What is PlantWatch?

By Ecological Monitoring and Assessment Network and the Canadian Nature Federation, Burlington, ON

PlantWatch is part of Environment Canada's national NatureWatch series of volunteer monitoring programs.

It is designed to help identify ecological changes that may be affecting our environment. A joint venture between the Canadian Nature Federation and Environment Canada's Ecological Monitoring and Assessment Network Coordinating Office (EMANCO), PlantWatch partners include representatives from each province and territory. The goal is to encourage Canadians of all ages to get involved in helping scientists discover how, and more importantly why, our natural environment is changing.

► pg 23



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The PlantWatch program enables "citizen scientists" to get involved by recording flowering times for selected plant species and reporting these dates to researchers through the Internet or by mail. When you submit your data electronically, it's added instantly to Web maps showing bloom dates across Canada, so your observations make a difference right away!

PlantWatching has a long tradition and rich history. In 1750 the Swedish scientist and artist Linnaeus turned plantwatching into a systematic science. He made calendars of flowering times for 18 places in Sweden, also noting the exact climatic conditions at these times. This was the foundation of modern plant phenology which spread to many European countries and revealed, over the centuries, that some spring wildflowers are super-sensitive weather instruments!

Over one hundred years ago in Canada, Nova Scotia's Superintendent of education, Dr. Alexander H. MacKay had students collect plant, animal, agricultural and weather phenology from 1897-1923. Then in 1987 the Alberta Wildflower Survey started and blossomed into a program that initiated Alberta PlantWatch. The Alberta program then advised in the creation of Nova Scotia and Newfoundland PlantWatch. Today there are PlantWatch programs in each Province and Territory.

The plants chosen for the PlantWatch guide bloom every spring, largely in response to rising temperatures. However, some species are flowering almost a month earlier than they were a century ago! Scientists believe climate change is affecting blooming times - a trend that is continuing. They predict that the greatest increases in temperature will be in Western and Northern Canada, while some parts of Eastern Canada actually may be cooling. By reporting on the PlantWatch species found in your community, you can help researchers discover how common plants are

responding to climate change - and track where changes are taking place in Canada, and at what rate.

For information on regional coordinators, observation forms and identification of flowers for monitoring, visit www.plantwatch.ca

Or contact : Heather Andrachuk
Science Outreach Advisor
Ecological Monitoring and Assessment
Network Coordinating Office
Canada Centre for Inland Waters
867 Lakeshore Road
Burlington, ON L7R 4A6

Be a Pollinator Observer!

By Ecological Monitoring and Assessment Network and the Seeds of Diversity Canada

Watch for pollinating insects in your garden, in your local park, and along country roads. A joint venture between Seeds of Diversity Canada and Environment Canada's Ecological Monitoring and Assessment Network Coordinating Office (EMANCO), allows volunteers throughout Canada to join in a nationwide survey of pollinators. It's easy to help, and your observations can assist scientists to understand these beneficial insects better.

How Does the Project Work?

Volunteers across Canada can download training materials that include detailed pictures of the most important families of pollinating insects. When volunteers observe insects visiting flowers in gardens, parks or roadsides, they use a check-off form to record the insect families, number and some simple details about the time and place. Observations are submitted by mail, or online directly to the online Pollination Canada database.

When many observations are made, they form an invaluable indication of the habits and population trends of the important pollinators, especially when observations are repeated several times at the same site. Entomologists will use this information to evaluate where further detailed studies are needed, and gardeners will benefit from a greater appreciation of pollination and the insects that we depend upon.

For more information on becoming a pollinator observer visit www.seeds.ca or contact

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CBRF Research Project Awards

Rob Currie, Chair CBRF committee

The Canadian Bee Research Fund (CBRF) was established to counteract the problems caused by severe reductions in federal and provincial funding for honey bee research. It is a joint project of the Canadian Association of Professional Apiculturists and the Canadian Honey Council.

The Board of Directors is comprised of four members, two from CAPA and two from CHC. The Canadian Honey Council takes direction from the CBRF board of directors and administers the fund as required.

The CBRF has been set up as a long-term endowment fund. Interest generated by the CBRF is made available for annual grants. Beekeepers direct the type of research that they want to support. The CBRF is entirely supported by donations from the apiculture industry and is a unique partnership between CAPA researchers and CHC members.

The projects that received funding for the current year are:

“Management of Honeybee Diseases Using Lysozyme.”

Dr. Steve Pernal, Agriculture Agri-Food Canada, \$5,000

“Integrating Chemical Control and Host Resistance to Increase Treatment Thresholds for *Varroa destructor*.”

Dr. Rob Currie, University of Manitoba, \$6,000

“Evaluation of Varroa and Tracheal Mite Tolerance in Selected Honeybee Lines and Attempted Correlation of Tolerance with DNA Markers”

Albert J Robertson, Saskatchewan Beekeepers Association, \$6,500

“Canadian Therapeutic Honey TM Development of production process”

Dr. Katrina Brudzynski, Brock University, \$7,500

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Help Wanted 21

Beekeepers with a minimum one year of experience are required at Golden Eagle Apiaries for the months of February to November, 2007. Qualified candidates will have knowledge of honey bee colony pathology and management, experience in queen rearing, and good driving skills. This position pays \$1800 - \$2200 per month, plus accommodation benefits. Interested applicants should contact the Apiary Manager by Email (neilm@aquilini.com) or Fax (604-460-0944) with a resume of experience and qualifications.

Help Wanted 22

4 to 6 experienced beekeepers wanted

from March-November. Preference will be given to candidates with queen rearing experience. Must be able to operate truck and fork lift. Wages based on experience. Golden Ears Apiaries BC. Phone 604-820-6924 email jmcshiple@shaw.ca

Help Wanted 25

Experienced Beekeeper (s) needed for 2007 season. Full time employment March through Oct. 1500 colony operation, must have good driving record, be able to perform most beekeeping related jobs independently, work long hours during peak periods, heavy lifting. Send resume to Dutchman's Gold Inc. 300 Carlisle Rd., Carlisle Ont. L0R-1H2. Phone: 905-689-6371 Fax: 905-689-7730 email info@dutchmansgold.com

Help Wanted 26

Full time beekeeping help, April to October. Wages based on experience. Contact Brad Lechler 306-278-2198, Porcupine Plain SK.

Help Wanted 27

3 seasonal beekeepers wanted in Saskatchewan for work in a commercial honey production operation from April - October. Experience, valid drivers licence and English speaking skills would be an asset. Pay based on experience. Potential to earn bonuses. Housing and transportation may be an option. For the right individual, this could lead to full time employment. Contact Corey Bacon Fax 306-864-3260 Phone 306-864-3774

Help Wanted 28

Seasonal beekeeper wanted in Saskatchewan honey operation. Work period from April to November. Wages base on experience. Contact Gerry Moyon phone 306-767-2757 or fax resume 306-767-2626.

Help Wanted 29

Golden West Enterprises is now looking for seasonal help for April thru Oct. Wages dependent on experience \$10 to \$12 per hour. Contact Lester at martts@sasktel.net or 306-665-2178

Help Wanted 28

Looking for seasonal help in commercial operation in Shellbrook, Sask. Wages are dependent on experience and accommodations. Contact 1-306-747-3299 or PO Box 367, Shellbrook, SK S0J2E0

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Seasonal Beekeepers Wanted for Saskatchewan operation. April - Oct 2007. Experience Preferred. Wage \$12.00/hr based on experience Contact: B.STRONG APIARIES LTD. email bdstrong@sasktel.net fax: (306) 645-4591

Help Wanted 30

Experienced Beekeepers wanted for seasonal position in Nipawin area of Saskatchewan. Pay based on experience, housing and transportation. Contact Yves Garez ph: 306-862-5979 fax 306-862-5974 or email y.garez@sasktel.net

Help Wanted 31

9 full time beekeepers help, April to October 2007. Beekeeping experience would be preferred. Wages start at \$12.00 per hour. Contact Mark Knox , mknox@lincsat.com 306-862-5657, Box 179 Nipawin, Sask. S0E 1E0.

Help Wanted 32

Full time experienced beekeeper required. Willing to train person with right attitude. May 1 to Sept 30. Accommodation available. Contact Neil Carter, Carter Bees & Honey, 306-229-2530.

Help Wanted 33

Full time beekeeper required. Beekeeping experience an asset. Apr till Oct \$12.00 per hour. Glory bee Honey, phone 306-743-5469 or email dennisglennie@sasktel.net for more information

Help Wanted 34

4 Experienced beekeepers wanted for 2007 March -November. Preference

will be given to candidates with queen rearing and royal jelly production experience. Monthly salary range \$2200 - \$2700, depending on experience. Send resumes to DrBee@shaw.ca Honeyland Canada or Fax 604-460-8887

Help Wanted 35

2 experienced beekeepers needed from May to Oct 2007. Queen rearing experience essential. Starting wage \$12 per hour. Contact Valteau. apiaries@sasktel.net Saskatchewan.

Help Wanted 36

Experienced beekeepers wanted for 2007 season April -October for honey production and queen rearing. Contact Jack Cage 780-354-2728 Beaverlodge, AB

Help Wanted 37

Inexperienced and experienced beekeepers assistants required for seasonal fulltime employment in Ardmore AB. April to November 2007 for honey and queen production. Assist owner/operators with general hive management and extraction of honey on a commercial apiary. Preference to those with valid operator's licence and ability to drive forklifts and standard transmission vehicles. Average 50 hrs/wk. Occasional evening, night & Sunday work. \$10.45 - \$11.45/hr depending on experience.

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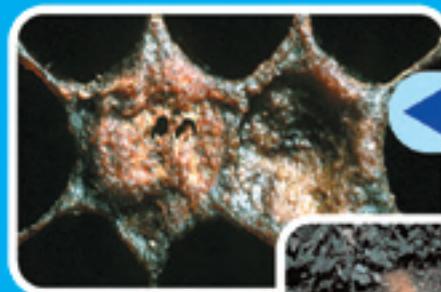
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AFB



TREATMENT!

European Foulbrood (EFB) is a bacterial brood disease caused by several agents the main being the bacterium *Melissococcus pluton*. It occurs most

frequently in the spring or early summer during brood rearing and is thought to be caused by stress in the colony and lack of pollen. Symptoms can be variable which makes EFB difficult to identify with certainty; frequently disappearing once there is a nectar flow. But EFB can seriously affect brood development and needs to be identified in a colony as soon as possible.

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