

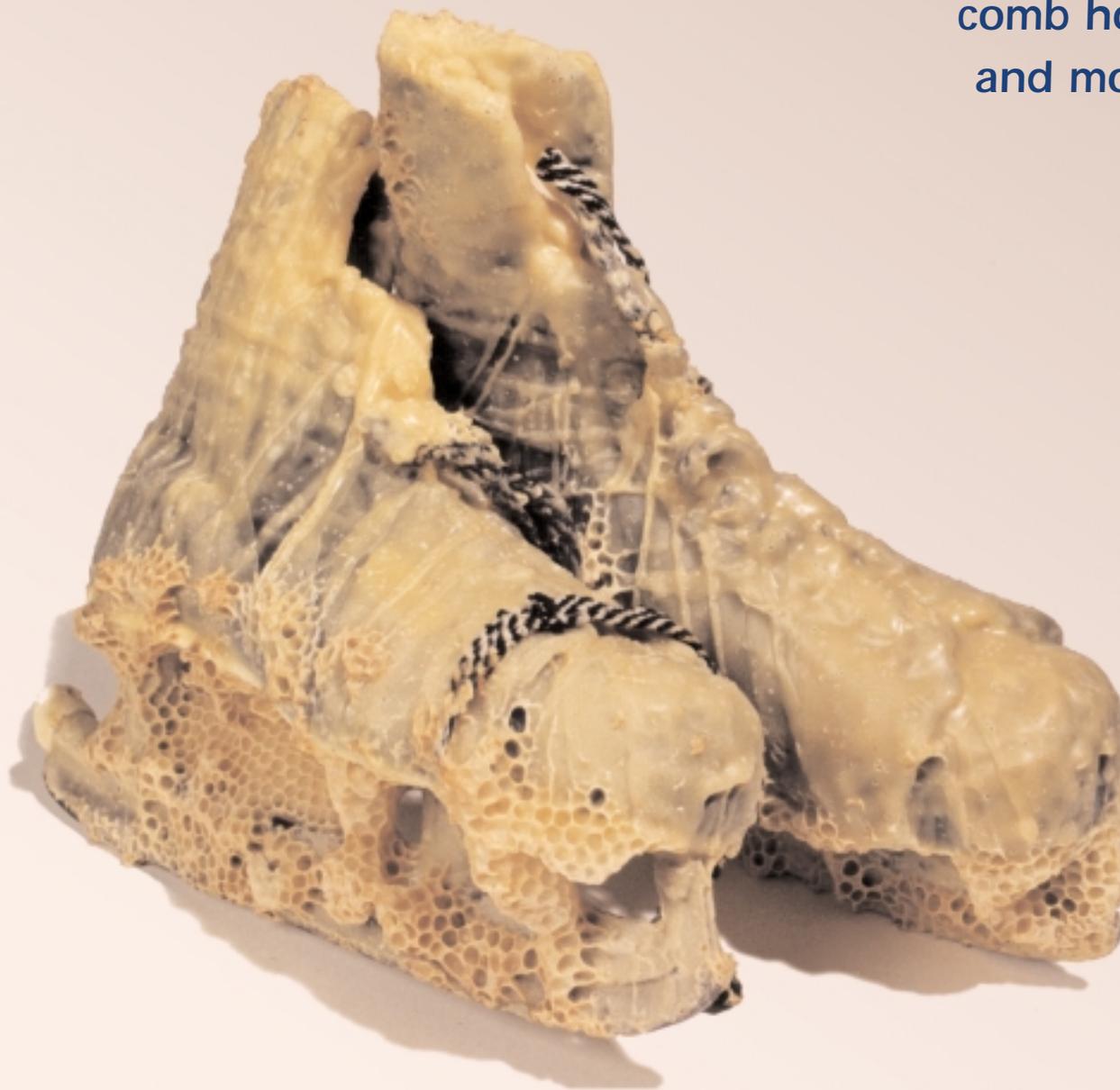


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CANADIAN HONEY COUNCIL
Suite 236, 234-5149
Country Hills Blvd NW
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Calgary, AB T3A 5K8
chc-ccm@honeycouncil.ca
www.honeycouncil.ca
(403) 208 7141

Editor:

Heather Clay

Design and Production:

Rudy Gelderblom

Translations:

Hélène Courtemanche

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HiveLights

August 2003 Vol 16 #3

Skates 1999 (men's size 9), the art of Aganetha Dyck. Working with the bees is delicate and time consuming, some sculptures take years to create (see page 14)



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Photography & illustrations:

CoverDean Goodwin
 Board of DirectorsBilly Burgos
 Art of Aganetha Dyck.....Dean Goodwin
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Next Issue:

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CHC Activities

Heather Clay
National Coordinator CHC

Varroa losses

In late spring there were reports of large colony losses in southern Quebec, border areas of Ontario and in the Peace River area of Alberta. The deaths have been attributed to a bad winter combined with the impact of fluvalinate resistant varroa mites. Many colonies were not fed the optimum in fall because winter came early. In some areas it was discovered too late that varroa mites in the colonies had become tolerant to Apistan. A combination of poor nutrition and a high mite load led to severe decline in populations. The losses ranged from 40-90%. As a result there is a big demand for Coumaphos to treat mites next fall. The CHC is lobbying the government to make the emergency use of coumaphos easier to obtain for those in need of an alternative miticide.

Oxalic Acid and Thymol based miticide

A Quebec company is pursuing the registration of two alternatives for treatment of varroa mites. One is oxalic acid using the vaporizer method and the other is a thymol based product from Andermatt Biocontrol in Europe. The CHC is supportive of any means that are effective against the target insect and not harmful to bees or produce residues in honey. While neither chemical is a silver bullet it may be useful for beekeepers to have more tools available for an integrated pest management approach.

Canadian On Farm Food Safety

The CHC is continuing to develop a food safety program for honey. Our new website (pg. 21) has information about the COFFS program and provides templates for the forms necessary to operate within the guidelines of the program. There are still questions as to who will be the certifying agent. We have been consultation with other commodities about the implementation of a third party audit system and whether we should join these groups in a multi commodity certification program.



Nutrition Labeling

The new nutrition facts table for honey is now available on the CHC website at www.honeycouncil.ca. The generic nutrition facts box can be used by all beekeepers for labeling their honey. (see pg. 20)

Bar Codes

The cost of obtaining bar codes (sometimes called UPC codes) is a concern to beekeepers selling honey to supermarkets. Bar codes are now required by most sales outlets. There is an annual fee of \$695.50 charged by the Electronic Commerce Council of Canada for the use of a bar code. The membership fee applies to businesses under \$5 million dollars in sales.

There is no reduction in the ECCC membership for small businesses. The CHC is lobbying to have another category and reduction in fees for small businesses under \$1 million in sales.

MRL for Oxytetracycline

Health Canada has proposed a change to the regulations for residues of oxytetracycline in honey. The new Maximum Residue Level (MRL) being considered for honey is 0.3 parts per million or 300 parts per billion. The current level of zero has caused a lot of problems because the enforcing group at Canadian Food Inspection Agency laboratory can detect residues as low as 2 ppb.

Health Canada has studied the cumulative effect of oxytetracycline in all foods and has determined that a level under 0.3 ppm in honey is not harmful. The CHC is supportive of the establishment of a reasonable MRL for oxytetracycline. After comments have been received from stakeholders Health Canada will gazette the final recommendation later this year.

Prior Notice required for export to the USA

The US Food and Drug Agency has announced that they are developing four

regulations under the Bioterrorism Act. "Registration" and "Prior Notice for Shipments". "Registration" deals with the requirement for companies to register their operations with the FDA, whereas "Prior Notice" outlines the timing and detail which is to be supplied to the FDA before any shipments enter the U.S. In early August 2003, the FDA unveiled drafts of the final two regulations dealing with "Records" and "Administrative Detention". The "Records" regulations specifies the records that must be kept by all agri-food stakeholders in case the FDA wishes to investigate a danger relating to product entering the U.S. "Administrative Detention" empowers the FDA to detain any suspected product. FDA will be accepting comments on the latter two proposed regulations until early July 2003.

Details in the four proposed regulations under the Bioterrorism Act generally outline the types of operations (production, processing, transportation, etc.) that are expected to comply, what these operations will have to do to comply with the regulations and who may be exempt. The implementation of the Act and its four regulations is moving along at break-neck speed. For example, the FDA expects to have the system operational by mid-October 2003, and fully implemented by December 12, 2003.

Since the FDA to this point has not finalized the exact details of the four regulations, interpretation with certainty is not yet possible. However, all agri-food industry stakeholders are urged to keep abreast of developments in this area and may do so at <http://www.fda.gov/oc/bioterrorism/bioact.html>, the FDA's Web site for the Bioterrorism Act of 2002.

Annual Meeting 2004

Plans are underway for the next annual general meeting which will be held in Winnipeg at the Fort Garry Hotel, 26-30 January 2004. The Manitoba Beekeepers Association is celebrating their 100th anniversary and we are delighted to be able to share with them in this gala event. Details will be posted on the CHC website www.honeycouncil.ca

Maritimes

New Brunswick had the longest uninterrupted cold winter in modern history. Over-winter losses were 40% and apparently much higher for those beekeepers who did not use



Paul Vautour

“Check-mite” last fall. Spring-time was mainly cold and wet and build-up was slow. There was a shortage of colonies for wild blueberry pollination.

Prince Edward Island has approximately 3000 colonies (including several hundred packages)

and 35 beekeepers. The winter loss was serious for some who lost all their colonies. Spring was cold and when it warmed up, everything seemed to bloom at once. Approximately 3,000 colonies were sent to blueberry pollination including 800 from Nova Scotia. The colonies from NS stayed for only a few days then were sent to New Brunswick. Over 700 acres of canola have been sown, and it is expected that at least 1400 colonies will be required for pollination. Leafcutter bees will also be used by the canola seed growers.

Provincial Reports

Nova Scotia had below average survival rate with 20% losses. Winter was long and cold, and spring brought periods of cold and rain that slowed colony build up. The weather - coupled with the short supply of queens from Australia and Hawaii made it a challenge for beekeepers to bring numbers up but beekeepers were able to recover losses in time to ship over 17,000 colonies for blueberry pollination.

Québec

It has been a busy spring, with most of us running against time to rebuild our colonies. After hearing all the stories of high winter losses and varroa resistance, I was sure it would happen to the neighbour but not to me. The estimate of overall loss in Quebec is 45 % of the colonies but for some, the losses are as high as 100 %.

Following the December meeting in Niagara Falls the provincial veterinarians decided to check for resistance in our hives. The results

came back positive, so now we have our temporary registration of Coumaphos (Check Mite).

Presently the focus seems to be on the varroa mites for all our losses but maybe we have other problems. One of our researchers from University of Laval, Pierre Giovenazzo, was invited to a conference in Europe. Apparently, after all the years that the European beekeepers have lived with varroa they too have experienced high losses this year.

Since the beginning of May, the Québec

Federation of Beekeepers has been negotiating with the Ministry of Agriculture (M.A.P.Q.) to get some research under way so we can find some alternative methods of treatment.

The interest is in oxalic acid and a Quebec company is trying to register the product

for use with bees. The Quebec government is supporting the application



Alain Moyen

CHC - CCM Delegates 2003 Canadian Honey Council Board of Directors

President Wink Howland

Saskatchewan Beekeepers Association
Howland's Honey
Box 55 RR #3
Yorkton SK S3N 2X5
ph. 306-783-7046
fax 306-786-6001
whowland@accesscomm.ca

Vice President Alain Moyen

Fédération des Apiculteurs
du Québec
83 Alderic-Huot Apt 2
St Thérèse QC J7E 5K5
ph 450-430-1793 - fax 450-430-2864
moyen@sympatico.ca

Executive Director Stan Reist

B. C. Honey Producers Association
Flying Dutchman Honey
6124 Metral Drive
Nanaimo B.C. V9T 2L6
ph 250-390-2313 - fax 250-390-5180
dutchman@mail.island.net

National Coordinator Heather Clay

Suite 236
235-5149 Country Hills Blvd
Calgary AB T3A 5K8
ph 403-208-7141 - fax 403-547-4317
chc-ccm@honeycouncil.ca
www.honeycouncil.ca

Director Paul Vautour

Maritime Beekeepers Association
Acadien Apiaries
488 Cape Breton Rd
St Phillippe NB E1H 1W2
ph 506-388-5127 - fax 506-388-5127
nbbees@nb.aibn.com

Director Henry Hiemstra

Ontario Beekeepers Association
Clovermead Apiaries
RR#4 Aylmer ON N5H 2R3
ph 519-773-3780 - fax 519-773-3780
ushiem@amtelecom.net

Director Phil Veldhuis

Manitoba Beekeepers Association
delegate
227 Renfrew St
Winnipeg MB R3N 1J5
ph. 204-489-1564
vonaphil@mb.sympatico.ca

Director Grant Hicks

Alberta Beekeepers Association
Box 181
McLennan AB T0H 2L0
ph 780-324-3688 - fax 780-324-3712
Djhicks@telusplanet.net

Director John Pedersen

Bee Maid Co-op
Pedersen Apiaries Ltd.
Box 579
Cut Knife SK S0M 0N0
ph. 306-398-2793 - fax 306-398-4054
ped.pen@sk.sympatico.ca

and we hope that pressure can be brought to get this treatment approved.

Ontario

We have had the longest spring that I can remember with cool and wet weather just hanging on but we needed the moisture badly. The black locusts that normally bloom at the end of May were 3 weeks behind. It's surprising though how well the bees have built up with lots of swarms being reported.

According to our provincial apiarist, Doug McRory, we lost about 20% of our bees this winter, except in the St. Lawrence, Niagara, and Haldiman-Norfolk areas where mites became Apistan resistant. There the losses were 50%. With some commercial beekeepers it was almost a total wipe out.

Not everything could be blamed on resistance. Because of a large honey crop last summer some just did not put in Apistan early enough. Others did not know they had resistance and did not bother to find out, even though we were warned this could happen and to be on the lookout for it. According to Doug McRory, the way to test is to use a sticky board for 24 hours in a couple of hives in each yard, count the mites you collect this way, multiply by the 200 that are in the brood nest, in 2 weeks time you double this figure. By the time you reach 3,800 to 10,000 you'd better treat or have no bees. Our bee experts, Medhat Nasr, Tibor Szabo and Doug McRory, have been saying for years, "Know your mite levels within your hives!"

With honey prices the way they are, the winter losses have been a hard lesson for some. A lot of nucs changed hands in Ontario this spring in order to supply those that had heavy losses. It seems that everyone who wanted bees got them as far as I know. Some bees also left the province although the demand was higher than Ontario could supply.

The disastrous find of one cow with Mad Cow disease in Alberta should be a lesson to the bee industry. If even one barrel of honey is found adulterated with a chemical, other countries will use it as a trade barrier. We all have to be very

careful with what we put in the hives. The fewer pests we have the less chemicals we will need to use.

The committee that did the CHC structure review did an excellent job, but I can see that solutions are not always that simple. Other commodities have the same problems. For instance, does every dairy farmer have a vote or do the number of cows determine the input? One



Henry Hiemstra

misconception in the west seems to be that the Ontario Beekeepers' Association is

controlled by hobby beekeepers because we have a large number of them. That is not the case. Very few small beekeepers take out a voting membership; they are not interested in the politics.

With regard to the rival organization, Commercial Honey Producers, I see this as fragmenting the industry. In an age where all kinds of larger unions and alliances are formed just so that they have a stronger voice, this group is doing just the opposite. In any organization not everyone can have it their way but that does not mean you go and form your own little club. What voice is the CFIA supposed to listen to? Just put yourself in the place of the bureaucrats. No matter what they decide they'll always have one group upset, so their solution is to do nothing, that way they'll get no flack. A good example is the Mad Cow disease crisis. When it first surfaced someone in Ontario suggested that we should close our border to Alberta beef. Well it was not long before a whole chorus of voices denounced that statement and a public apology was made. This crisis is costing Ontario too but that's the price we pay for unity. I still like my Alberta steak.

Manitoba

The MBA has been operating without a full board of directors since February this year when the Manitoba Farm Products Marketing Council overturned the November 2002 MBA election results. The action occurred following a

complaint lodged by a member of the MBA that there had been voting irregularities. The MFPMC deemed the last election of four new officers was illegal because it had not been done according to the MBA bylaws. Only one vote is allowed per beekeeping operation but some operations cast more than one vote. Since the overturn of the election results the MBA has sent out new registration forms to producers wanting to vote so that their eligibility can be decided before election day. The next election is expected to be held in November 2003.



Phil Veldhuis

Queen importation under specified conditions is supported by the majority of MBA members. Some producers in the group are pushing for open border with no conditions attached to the importation of all bees. A vote

will be taken on this issue at the next meeting in November.

This year is the 100th anniversary of the Manitoba Beekeepers Association. We have invited the CHC and CAPA to hold their annual meeting with us at a joint convention in Winnipeg. The meetings will be held 26-30th January and will include a 2 day research symposium plus celebration activities at the historic Fort Garry Hotel.

President's Report

Saskatchewan

Spring in Saskatchewan was beneficial this year. Unlike the record cold temperatures we experienced in May last year, the weather this year has been very good. Most areas started the season with better moisture conditions than had the last couple of years, and the frost free nights allowed the plant growth to accelerate rapidly. We are presently in the first week of June, and the growth in our area is at least 3 weeks ahead of last year.

The biggest benefit we derive from a spring like this, is the growth of our colonies. Our colonies, which wintered

relatively well, started off strong, and have continued to expand at a great rate. This has allowed us to produce extra nucs and to make many splits. There has been a steady nectar flow this spring as well, and at this moment, the flow from the dandelions and caragana bushes is phenomenal. I've never tried to collect extractable dandelion honey, but I certainly could have done so this year.



Wink Howland

Not all Saskatchewan beekeepers fared well over winter. It seems that each year, there are a few who suffer substantial losses. As beekeepers in other provinces who had high winter losses know, queens and packages were a scarce commodity. Many beekeepers were unable to adequately replace their winter losses, and that's not a good thing in a year that is promising excellent honey prices.

We have a number of very successful beekeepers in this province, who seem to succeed, even though they are dealing with the same weather conditions as everyone else, and even though they have both mites. Although they complain about the extra work occasioned by the required mite treatments, their winter losses remain in the 15% range and they seem to produce good crops. What these beekeepers seem to have in common, is an ability to produce their own stock, or to use queen stock produced here. I'm convinced that this is the key to good wintering success. The drawback of course, is that it takes lots of work, and not everyone can raise their own stock. However, by taking advantage the stock offered by reputable producers in the province, much of that work can be reduced.

The gain in value of the Canadian dollar, has reduced the offering prices for honey to around the \$2.00 range, but this is still an absolutely incredible price, if you consider that just over a year ago, we were getting \$0.85 or thereabouts. The opportunity to move our industry ahead has never been better. Several of our beekeepers have pre-sold honey in that \$2.00 range, for delivery in August and payment in September. At \$100,000.00 a

load, it's hard to not be excited.

The big news in Saskatchewan this Spring, is that the provincial government has just advised us that funding has been made available to hire an assistant for our provincial apiarist, John Gruszka. John has not had an assistant, or any inspectors, for a number of years now, and the addition of a Field staff person, will be of great assistance. Our provincial government sees our industry in a very positive light and sees also, that we have great growth potential. One of the greatest impediments to our growth still remains, however, and that is the difficulty that buyers experience, when trying to find financial backing for buying into beekeeping. Our assets are rather transitory and difficult to count, and as a result, lending institutions do not jump at an opportunity to lend to would-be beekeepers. It would be interesting to know if other provinces have the same problem, or if Saskatchewan is unique in this situation. We have asked our government to look at some sort of loan guarantee program that would make apiculture loans more appealing to banks. Such loans guarantees already exist for the building of new farm sheds, and perhaps something similar can be put in place for bees and boxes.

The struggle to arrive at a suitable queen import protocol, presented a formidable task to our SBA Board. We spent a lot of time in discussing the import issue and in attempting to fully explain all the issues to our membership. The vast majority of SBA members opposed any efforts to allow US queens into Saskatchewan, under any type of protocol. The issue will be again discussed at up upcoming Field Day, but I see little chance that there will be a change of opinion take place. So far, very few Saskatchewan beekeepers have experienced the kind of winter losses that other provinces have reported, and therefore, do not see a need for border opening. If there was any way that Saskatchewan could enforce a provincial border closing, I think they would have no difficulty in supporting a protocol that would allow importation into other provinces. However, having heard about the high level of smuggling

through the US/Canada border that has evidently gone on for years, it is hard for anyone here to imagine that a closed Saskatchewan border would not be immediately and often breached. Saskatchewan enjoys an excellent disease profile which they credit to a number of things. Firstly, bees are not extensively moved in this province, as there is little pollination work to be done. Secondly, John Gruszka has been very persuasive in his depiction of the problems with imports and has, for 25 years, been very consistent in his encouragement of over-wintering. He has, without an inspection force, pushed beekeepers to become very knowledgeable regarding bee diseases and problems, and has been quick to respond to any beekeeper situations. This knowledge appears to be the key and certainly has worked, in helping beekeepers maintain a low disease profile.

We are heading into a summer with lots of optimism. I hope, for all of us, that we get a good crop and that prices remain high. I also hope, that those beekeepers experiencing problems with resistant mites and rAFB, can work with the tools and drugs available to them, to reduce the affect of those conditions, and that their operations can begin to recover. I lost most of my bees one year, and I know how devastating that can be. I was able to recover, but not everyone may be as fortunate. I wish everyone success this year.

Alberta

Colony development has generally been very good across Alberta. April followed the pattern of recent years, being far more like winter than spring, but there were two five day spring episodes that allowed colonies to acquire pollen and get build-up started. Moisture conditions were adequate but the northern half of the province will need a couple of three-day soakers to maintain average conditions.

Isolated incidents of colossal winter losses occurred across the province. These have been attributed to an early winter, and varroa and tracheal mite problems.

CHC delegates, in the last Hive Lights, commented on the queen importation initiative. Some on the ABA board were opposed to pursuing the initiative proposed by Dr Nasr. The ABA has tried to work through the CHC and CAPA for the past several years to acquire support for the opening of the U.S. border for bee stock. The avenue appeared to have been a waste of time and effort. The ABA began to deal directly with the Canadian Food Inspection Agency and the Risk Assessment process began. The Risk Assessment arrived at some very questionable conclusions, but has initiated productive discussions across the country.

The difference in thinking over Dr. Nasr's initiative arose around the practicality of acceptance by all provinces. Some on the ABA board felt that if all Western Canadian producers could persuade their associations to support the opening of the U.S. border, that it still would not happen. The Ontario politicians, bureaucrats, and producers have consistently stated, over the last four years, that they cannot envision a scenario where they would ever support an opening of the border. As time has shown, Dr. Nasr's initiative was a victim of Ontario's opposition.

The ABA wants only the healthiest bee stock available, with the genetics most conducive to the region, accessible and affordable. California queen breeders currently offer health certificates for their stock, similar to the health certificates issued for interprovincial movement of bees in Canada. Anyone who has ever visited a queen breeding operation anywhere, knows that these operations could not function with any significant disease levels.

Protocol seems to be a huge component of any discussion from the national perspective. Protocol is only as good as the support given to it in practice. Dr. Nasr's proposal with its complex protocol is expensive, impractical and unnecessary. Further, who has established a Canadian bee health profile; including the DNA of Canadian bees? What of the

"hot" Australian stock, are they carrying AHB genes? Making huge demands of American producers is irresponsible when you don't know the base line health of your own stock.

The bottom line is that we have acquired the disease profile of American stock in the border region from New Brunswick to British Columbia. Protocols in place for South Pacific stock importation have failed. The closed border worked for several years, but has now failed. Why hang the industry up on protocol that is not cost effective or practical?



Grant Hicks

If U.S. bee stock is below standard for price, health or availability, then the industry will continue to support the sources used for the past fifteen years. A similar dragged out debate surrounded the access to Hawaiian stock several years

ago. Where would we be today if we didn't have Hawaiian queens? If the U.S. beekeepers happen to be a viable source of stock, it can only benefit the Canadian industry!

BeeMaid

Greetings from BeeMaid. There is not a great deal new to report at this time. Winter and spring weather across western Canada has been variable. Some members report very low winter losses while others had losses ranging from 20% to more than 50%. Because the Small Hive Beetle limited the area in Australia where queens and packages could be sourced, replacement bees and queens were in shorter supply this year than previously. New Zealand bees and queens were restricted to areas in Canada that already had Varroa mites. Overall the spring has been somewhat cool but most areas that suffered from drought last year have been getting some rain this season. In my area canola crops are looking good, a far cry from this time a year ago. Most beekeepers report that their existing hives are in good shape this spring. Everybody is hoping for a large honey crop to cash in on continuing good honey prices.

In early June BeeMaid held a series of member meetings across western Canada. They were at Spruce Grove, Alberta, on June 3; at Saskatoon, Saskatchewan on June 4; and Winnipeg, Manitoba on June 5. At these meetings, management explained the present honey marketing situation and made some predictions about the future. Management is still hopeful of reaching the target of price \$2.00/lb. for the 2002-2003 crop year. This price will be net to the members who shipped honey to BeeMaid. The increase in value of Canadian dollars in relation to US currency has put some downward pressure on Canadian honey prices. Any honey sold into the US, whether bulk or in retail packs, is paid for in US dollars. With the change in exchange rate this translates into lower money in Canadian dollars. BeeMaid management is still hopeful that it will be possible to anticipate close to a \$2.00/ lb. price for honey for the next crop year as well.

BeeMaid management is dubious about the recently announced minimum residue level (MRL) for oxytetracycline in honey. This proposed MRL is .3 parts per million (PPM) or 300 parts per billion (PPB). According to Gordon Marks a more realistic MRL would be .05 PPM or 50 PPB. He feels that setting a MRL that is too high could lead to careless use of the antibiotic. Gordon plans to make BeeMaid's position known to Veterinary Drug Directorate of Health Canada



John Pedersen

during the comment period that is built into the regulation change process.

BeeMaid is in the process of change of command at the administration level. Don Cozine, who has been CEO for the last three years, is retiring. Gordon Marks, who has served at BeeMaid in

various positions for the last 30 years, will assume the position of CEO on July 1, of this year. I want to wish Don many years to enjoy his retirement. And I want to welcome Gordon in his new position.

This is all for this time. I want to wish all beekeepers a good honey crop and continued good prices.

CFIA sampling procedures

The Canadian Food Inspection Agency (CFIA) has given extensive and careful consideration to requests to reduce the level of sampling and analysis required for honey imported from China.

CFIA has determined that the conditions outlined in the May 2002 Industry Notice will remain in effect (clarifications included below) regarding the detention of Chinese honey imported into Canada. Importers will continue to be responsible for having product sampled by CFIA and tested at their own expense at a laboratory recognized by CFIA.

Sampling and testing is required as follows:

- each container in the shipment sampled and analyzed for chloramphenicol
- six containers (previously 100%) sampled and analyzed for sulfa drugs and tetracyclines
- one container (previously 100%) sampled and analyzed for adulteration

This decision has been based on the fact that CFIA has not received adequate assurances from the Chinese authorities that additional control measures have been taken and CFIA has not determined a reliable means to validate whether the lots are homogeneous.

CFIA is continuing discussions with Chinese officials to resolve these concerns. Until resolution is reached, the May 2002 Industry Notice will remain in effect. Current shipments of honey from China, along with any future shipments, will need to meet the parameters in this 2002 Industry Notice .

Gail Daniels
A/National Manager
Dairy and Honey Programs

Health hazard alert — certain Dickinson's brand honey may contain chloramphenicol

OTTAWA, June 21, 2003 - The Canadian Food Inspection Agency (CFIA) and The Dickinson Family Inc. are warning consumers not to consume certain Dickinson's brand honey which may contain chloramphenicol, an antibiotic which may pose a human health risk.

The affected product was distributed to food service establishments and hotels. There were no sales through retail stores. Although this product was not sold at the retail level, some consumers may have obtained this product from food service establishments or hotels for home use.

The affected product can be identified from the label which reads Dickinson's Honey, # 1 White Liquid, Distributed by The Dickinson Family Inc., Salinas, CA, 93901, U.S.A.. This product is packaged in 32 g glass bottles bearing codes 72C11, 72E13, and 72F14.

The affected product, imported from United States of America, is being voluntarily recalled from the marketplace. This product has been distributed nationally.

Chloramphenicol is an antibiotic which is not permitted for use in Canada in food producing animals, including bees. The presence of chloramphenicol in honey poses a risk (although small) of a serious blood disorder known as aplastic anaemia.

There have been no reported illnesses associated with the consumption of this product.

The CFIA is monitoring the effectiveness of the recall.

For more information visit our web site at www.inspection.gc.ca.

Pollen, Propolis and Royal Jelly under new NHP regulations

The new Natural Health Products Regulations (NHP Regulations) were published in the Canada Gazette, Part II on June 18, 2003. The NHP Regulations will come into force on January 1, 2004, with a transition period ranging from two years (for site licensing) to six years (for product licensing, for products already issued a Drug Identification Number).

These Regulations are the result of a comprehensive and inclusive consultation process with Canadian consumers, academics, health care practitioners and industry stakeholders, and are a key element in fulfilling the Standing Committee on Health's 53 recommendations on natural health products. They place requirements on people who manufacture, package, label, import or distribute NHPs [editor- including pollen, propolis and royal jelly], and are intended to regulate substances that are safe for over-the-counter use. The role of the Natural Health Products Directorate is to ensure that Canadians have ready access to natural health products that are safe, effective, and of high quality while respecting freedom of choice and philosophical and cultural diversity.

It is equally important to note that Health Canada is particularly mindful that much of the natural health products industry consists of small and medium sized businesses, and that a sustained effort will be undertaken to provide working tools and processes to support these enterprises, including initiatives such as the public education program that will be launched in the fall.

We are confident that the new regulatory framework will be appropriate to this category of products - one that has enjoyed a long history of safe use. With their own distinct framework, natural health products can bear a full range of health claims, based on appropriate levels of evidence. They can also have appropriate good manufacturing practices that are outcomes-based, which will boost consumer confidence in the quality and safety of these products. Improved labelling will help consumers to make informed choices and take more control over their health care decisions.

For further details on the NHP Regulations we invite you to visit the Natural Health Products website at www.healthcanada.ca/nhpd

Diane Gorman Assistant Deputy Minister Health Products and Food Branch Health Canada

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OUTSTANDING SERVICE TO BEEKEEPING AWARD FROM THE WESTERN APICULTURAL SOCIETY

Jaquie Bunse,
 President Western Apicultural Society, Burnaby, BC.



Don Dixon will receive the 2003 Outstanding Service to Beekeeping Award from the Western Apicultural Society at their

annual August meeting, held this year at Simon Fraser University in Burnaby, British Columbia, Canada. The award recognizes his 25 years of service to the beekeeping industry while Provincial Apiarist with Manitoba Agriculture following completion of his M.Sc. research under the supervision of Dr. Cam Jay at the University of Manitoba in 1978.

Don's dedication and commitment to the development and promotion of the beekeeping industry locally, nationally and internationally have left an admirable legacy.

Throughout his career he has maintained a strong level of participation in several beekeeping industry and professional associations. He was the Secretary of the Manitoba Beekeepers' Association (MBA) from 1978 - 2003 and was active on many MBA committees, including the Chairman of the Organizing Committee for the Annual Convention. He also participated on numerous Canadian Honey Council Committees and was the Acting Secretary/Treasurer of CHC in 1981/82.

Don has been a strong participant in the Canadian Association of Professional Apiculturists (CAPA) and was a member of the CAPA Executive for several years, including 2 terms as President from 1985-1990. He also represented the CAPA on several international committees including the Tri-Country Committee on Africanized Bees and Parasitic Mites which, during the 1980's organized several symposia for beekeepers in Mexico, the U.S. and Canada as well as worked on developing coordinated prevention and control strategies for both Africanized bees and parasitic mites.



Don Dixon

As the Chairman of the Organizing Committee for the Apimondia '99 Congress, Don was instrumental in bringing this international beekeeping Congress to Vancouver and for making it one of the best beekeeping meetings ever held. It was attended by approximately 3000 participants and a significant profit from the Congress was provided to the Canadian beekeeping industry to support future research and development activities. Don's reputation as a conference organizer has gained him international recognition and his skills in this area have been sought by many professional beekeeper and entomology associations.

Over his career, Don has been a tireless supporter of beekeeping extension and education. He has lectured on numerous aspects of beekeeping throughout Canada and the U.S. and has worked on several beekeeping development programs in India, Sri Lanka and the Philippines. Don has co-instructed the University of Manitoba, Introduction to Beekeeping Course for 27 years and has lectured at numerous commercial beekeeping courses in Manitoba and at the University of Guelph and Simon Fraser University. He has contributed to numerous beekeeping publications, including being the primary editor of the first edition of the CAPA publication on Honey Bee Diseases and Pests. This publication has since gone through numerous updated revisions and printings, has been translated from English into two other languages and has sold tens of thousands of copies throughout North America and the world.

The timing of the WAS award is most fitting, since Dixon was appointed to the position of Director, Soils and Crops Branch, Manitoba Agriculture and Food in June 2003.

Don previously received numerous awards and recognitions for outstanding contribution and service to the beekeeping industry, including the MBA - Bee Hive Award and the CHC - Fred Rathje Memorial Award. It is with pleasure that WAS recognizes the accomplishments of this extraordinary contributor to our industry, whose accomplishments, honesty, integrity, sense of humor, and respect for the dignity of others have earned him this most deserved honor.



ROYAL SOCIETY HONOURS MARK WINSTON

Simon Fraser University
Media & Public Relations



Mark Winston, SFU professor of biology, is a newly elected fellow of the Royal Society of Canada.

Fellowship in the society is considered to be one of Canada's most prestigious academic accolades. Winston is one of 60 researchers to be inducted into the society in a ceremony in November 2003.

Recognized for his contribution to life sciences, Winston is an internationally known bee expert. He has pioneered research on bees and excels at both science and the public communication of scientific concepts and controversy.

His award-winning studies of the queen bee's pheromonal control of workers has

led to new commercial products that enhance pollination, such as Fruit Boost and Bee Boost. He is currently working on investigating the impact of genetically modified crops on bees.



Winston has received many awards and honours, including the Sterling Prize for controversy (1998), the Manning award for innovation (1997) and a Killam fellowship (1999-2001). He is the author

of five books, 137 published research papers and a monthly column in *Bee Culture*. His recent writing on environmental issues and science policy has culminated in two highly acclaimed books, *Nature Wars: People versus Pests* and *Travels in the Genetically Modified Zone*.

DON NELSON RECEIVES AWARD FOR SERVICE TO APICULTURE

Heather Clay,
National Coordinator, CHC



Don Nelson is retiring from Research in September 2003. He has been a Research Scientist with Agriculture and Agri-Food Canada for 34 years

and contributed an immense amount of knowledge to the field of apiculture. At the recent 50th Anniversary of the Beaverlodge Beekeepers' Field Day he received an award presented by Steve Pernal of Beaverlodge Research Station for his service to the apiculture field days and he received a resounding ovation from the audience.

Don's work on indoor wintering of bees is considered landmark research in Canadian apiculture. His research determined how to successfully overwinter colonies of honey bees indoors using a simple low cost building. From the work conducted at Beaverlodge in the early seventies, he showed that

inside overwintered hives produce 40% more honey compared to package bees. This helped beekeepers nationwide to adopt this effective management technique.

Don has worked on numerous projects including

- ▷ Developing an Integrated Pest Management strategy for oxytetracycline resistant American Foul Brood
- ▷ Evaluation of indoor winter treatments on bee colonies using oxalic acid, lactic acid, thymol and formic acid.
- ▷ Evaluation of extender patties for the control of European Foul

- ▷ Brood in colonies used for blueberry pollination.
- ▷ Tracheal mite analysis and technology transfer initiative
- ▷ Identification of microorganisms associated with tracheal mite-infested honey bees
- ▷ Evaluation of the ELISA technique for determining tracheal mite levels in bulk bee samples.

The Canadian Honey Council awarded Don the prestigious Fred Rathje Memorial Award in February 2001 for outstanding positive innovative and creative contribution resulting in the betterment of the Canadian bee industry.

We thank Don for his contribution to apiculture and wish him a happy retirement doing the things that he loves to do, hunting and fishing in the beautiful region of north central Alberta.



caption



New technology designed to revitalize the comb honey market

By Maribeth Fitts

AT one time, beekeepers spent considerable labour and time cutting comb honey out of the frame by hand, draining off the honey from cut cells, and repackaging the comb for retail sales. With the advent of modern extraction equipment, liquid honey became the norm and comb honey fell out of favour in the marketplace. Now, new technology promises a revival of the comb industry.

The designers of Bee-O-Sphere Technologies have spent the past two years, with the assistance of federal funding from the Industrial Research Assistance Program (IRAP), studying bee behaviour and developing a new packaging product for comb honey production called the Bee-O-Pac.

According to beekeeper and co-designer, Andrew Sperlich, the Bee-O-Pac is

continued on pg. 16



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Continued from page 11

unique in that it consists of two virgin food-grade plastic frame halves which can be snapped together and inserted as a group of eight directly into a standard half frame without any modification. A comb foundation is embossed directly into the plastic containers so wax foundations are not needed for the bees to create the comb. At harvest time the frames break apart into sixteen marketable units along preformed perforations, a lid is snapped on, and the combs can be sold without modification or repackaging. This means less chance of contamination because there is minimal handling of the product required. Also the size of the individual units is smaller than former comb packaging, about 4 ounces of comb as opposed to traditional packs of eight to twelve ounces, making the product more consumer-friendly for small households.

Sperlich says that the Bee-O-Pac units are much more affordable and much less time consuming than the other commercial units available. He estimates that the Bee-O-Pac units save at least three steps compared with traditional methods of packaging comb honey. The low cost of the units also makes it feasible to wholesale comb honey, which was virtually impossible to afford with former methods.

The impetus for the new product started a couple of years ago when Sperlich and design engineer, Ian Bigham got the idea to come up with a simpler method of creating comb honey. Looking for an alternative to wood, the first year they tried out a number of different plastic containers in hive frames. By their second season, they had an improved plastic unit which was more extensively tested at five locations across Ontario. In particular, units tested in hives at the University of Guelph worked perfectly, says Sperlich. He says that the key to the success of the units has been the pre-embossed comb foundations and the fact that they fit directly into the standard size supers.

Test sales of the comb products in the Bee-O-Pac at local farmers' markets and to retailers have been very positive. The

company is hoping to market this patent-pending technology worldwide and also to increase the sales and interest in comb honey production. Sperlich says that there has been a supply deficit of comb honey for a long time now, but hopes

that this affordable packaging will revive the industry and increase demand.

To contact Bee-O-Sphere call 519 586-8289, email nfapiaries@kwic.com, or visit www.aginnovation.ca/profile.



Don Nelson,
Agriculture & Agri-Food Canada,
Beaverlodge, AB

Mr. W.D. Albright, the first Superintendent of the Beaverlodge Experimental Farm, was instrumental in encouraging the bee industry in the Peace River area.

On his advice the first colony of bees was purchased in Beaverlodge on July 15, 1922. This hive and others became an important tool for demonstration and teaching a number of beginning beekeepers. It is recorded in the American Bee Journal, 1925, Vol. 65, No. 5, that this first package of bees was obtained from the Experimental Station in Lacombe. This hive arrived as a colony weighing 42 lb, built up rather rapidly in bees, accumulating considerable honey until its gross weight was 72 lb. The colony appeared to obtain most of its nectar from Alsike Clover, White Dutch Clover, Sweet Clover, and Fire Weed. The bees also worked on Sunflowers and wild flowers. The colonies were put into the house cellar in early November for overwintering and were removed on April 28, 1923 when the willows showed pollen. Colonies were fed syrup at intervals and left to their instincts until a fortunate and timely visit from Mr. John Fixture from Ottawa on June 6. Mr. Fixture gave Mr. Albright the first practical lessons in colony manipulation. From that time on Mr. Albright took personal charge of the bees and began to explore their potential. Mr. Albright reports that great interest was taken in the little experimental apiary and a number of local settlers began beekeeping.

In 1925, eight colonies were wintered at the Experimental Farm packed in straw in two quadruple wintering cases. Mice invaded several, causing the death of one colony; probably dequeening caused the death of a second and two which were quite weak probably should have been united. In the summer of 1926, except for one

extraordinary occurrence, the summer was good to bees. In that year, in early June, there was a four-day snow storm, followed by rain, giving the total precipitation of 3.24 inches; at one time as much as 10 inches of snow lay on the ground. This occurrence checked the grasshoppers and soaked the subsoil, helping to produce a marvellous grain crop; one field of wheat as high as 72 bushels per acre, and oats more than 100.



Gordon Marks, CEO BeeMaid, Dale Hansen, Chairman Alberta Honey Producers Co-op, Medhat Nasr, Alberta Provincial Apiculturist, Elmer and Sheila Zumwalt, Beaverlodge. at the 50th annual Beaverlodge Field Day.

In 1926, Mr. George Nelly was looking after the bees at the Experimental Farm. One colony was placed on scales. During August this colony had an average daily gain of 7.7 lb, its best 24-hour intake being 25 lb on August 23. From June 16 until September 4 there were only 18 days in which no gain was recorded. The test colony was finally supered up to a height of 8 feet and attained a gross weight of 550 lb.

From this time until the start of the Second World War, bees were kept at the Experimental Farm and managed by Mr. Johnny Foster. Bees were discontinued about 1939 and were not kept on the Research Station again until about 1953, when Peter Pankiw was appointed to the position of apiculturist at Beaverlodge. The position was created at Beaverlodge mainly due to the outbreak of European foulbrood disease in northern Alberta. Members of the Canadian Honey Council and the Alberta Beekeepers Association were instrumental in outlining the problem and providing the pressure from the industry. During the 1950's and 60's, Peter Pankiw conducted research on European foulbrood disease, pollination of Alsike and Red Clover and management of package bee colonies. Queens shipped from New Zealand were evaluated for honey production under Canadian conditions and the production of package bees in southern British Columbia was evaluated. In the late 60's Peter Pankiw began studies on leafcutter bees and seed production studies in alfalfa and other forage crops.

In 1971 Don Nelson was appointed Apiculturist at Beaverlodge and continued work on package bee production in southern British Columbia, management and production studies, wintering, chalkbrood disease, and some nutrition work. In 1974 Dr. Tibor Szabo came to Beaverlodge and started research on queen rearing, honey bee behaviour, breeding, comb building and wintering. From 1979 Dr. Szabo's research primarily involved an intensive bee breeding program (funded by Alberta's Farming for the Future) to develop bees better suited to specific conditions, especially those of northern and southern Alberta.

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A Collaboration With The Bees: The Art of Aganetha Dyck

Sarah Alford, Beaverlodge Alberta

collaborates with bees, professional beekeepers and apiarists take care of the bees during any of my exhibitions.” Dyck has worked with many beekeepers including a ten-year residency on an apiary owned by Phil Veldhuis, “beekeeper extraordinary,” at the St. Norbert Arts and Cultural Centre in St. Norbert, Manitoba. She also acknowledges a particular debt to Rita and Henry Funk from Hadashville, Manitoba and Gary Hooper from St. Rose du Lac for “sharing their knowledge and creative methods of beekeeping with me over many summers” .

Dyck also works with Dr. Mark Winston at Simon Fraser University. When Dyck discovered how plants and insects communicate, she was inspired to experiment with inter-species communication. This included the use of Braille in the hives, and with Winston she began using bee pheromones, one of the methods by which the bees communicate with each other.

Dyck is probably best known for her sculptures in which she places found and constructed objects into hives and constructed by her husband. The bees then transform these objects by building cells of wax on them and filling them with honey. However, she does not just put the objects in the hive and leave them there. Some of her sculptures take years to complete.

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Beekeeping is not just a business, it is a craft. For, like many craftspeople, beekeepers seem to be as motivated by the process of their work, as they are by the final results. I am always amazed by the endlessly inventive ways beekeepers find to culture their bees. There must be something about working with bees that draws out one’s creative energy. Manitoban artist Aganetha Dyck first discovered the creativity in the hive over a decade ago, and has turned the craft of beekeeping into an art. Her work involves bees drawing comb over surfaces and objects that range from clothing, to drawings, to Braille. An exhibition of the art of Aganetha Dyck is on display at the Prairie Art Gallery in Grande Prairie this summer. It is an excellent opportunity to see what happens when contemporary art meets honey bees.

Dyck began working with bees in the early 1990s when chance brought her to the Manitoba Honey Co-op store to buy wax. She recalls: “Above the office door I read the words BEEMAID HONEY. This text was in honeycomb, about 4 inches deep, created by the bees. I knew instantly that I had found new collaborators”. Her collaborations with honeybees, extends of course, to collaborations with beekeepers and scientists. “I am not a beekeeper, I am an artist who



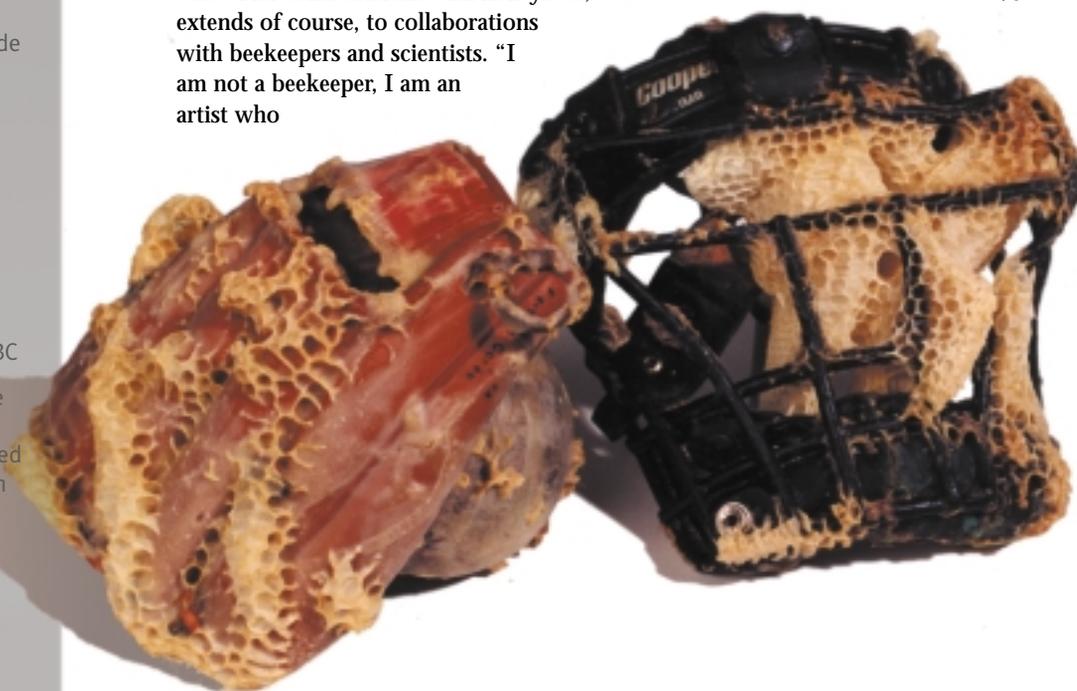
August 2003
The Prairie Art Gallery, Grande Prairie, AB

October 29 2003
Visiting artist Concordia University, Montreal, QC

March 2004
DeLeon White Gallery, 1096 Queen Street, Toronto, ON

Spring 2004
Kelowna Public Art Gallery BC

Aganetha has worked in the Netherlands, Britain, France and Canada. She is interested in working as an artist in an apiary in any country where an art gallery or cultural centre is interested and will fully support a site specific project.



Plants for bees — Chokecherry

Common Name: Chokecherry
varieties known as: black, common or western chokecherry
Scientific Name: *Prunus virginiana* L.

Native Range:

Found across North America north to Canadian hardiness zone 2. See Canadian distribution.

Canadian Distribution:

The chokecherry is found across southern Canada from Newfoundland to British Columbia. The common chokecherry (eastern variety) is found east to Saskatchewan, the black chokecherry is found in Alberta and eastern BC, while the western chokecherry is found in western BC.

Description:

The chokecherry is a small suckering deciduous tree or large shrub with fruit (red to dark purple berries) often used for jellies and jams and some wines. Individual plants can grow up to 13 m with an 8 m canopy although most are in the 4 to 8 m height range with a 5 m spread. It is a hardy fast growing (10 to 50

cm/yr) tree promoted as a shelterbelt variety in the prairies. The leaves are alternate, 4 to 12 cm and the buds are about 4 to 6 mm in length. In winter terminal buds are present and the smooth bark is a dull light brown with raised horizontal slits. The leaves are elliptical with a point and have serrated edges. The flowers and fruit form a pendant raceme 5 to 12 cm long

Uses

Fruit can be used for making pies, jam, jelly, juice and wine. Aboriginal people often used the berries to make pemmican a cake of dried meat and grease which nutrients through winter. The berries are sweeter if harvested after the first frost.

Ecology

Chokecherry prefers well-drained loamy soils and sun to light shade. It can tolerate some salinity in the soil. Susceptible to tent caterpillar infestations in the west and ugly nest caterpillar in the east. They bloom from early to late May depending on the climate.

Canadian Habitat:

The 3 varieties of chokecherry are found in mixed stands with other tall shrubs, often on the edge of forest patches, along the edge of agricultural land, and in riparian zones. This wild fruit tree is highly palatable to wildlife and bear, moose, deer, and many species of birds will share any plantings designed for bees.

Methods of Reproduction and Spread:

The chokecherry is generally propagated by seed, but can also be raised from hardwood cuttings. After a fire or sever cutback they regenerate from the root crown or suckers. In the prairie provinces and the Peace River area of BC, landowners of more than 40 acres can obtain free 'bare root' chokecherry seedlings from the PFRA of Agriculture and Ari-Food Canada. This is a very effective way of planting large numbers quickly, as the stock provided is good quality and drought tolerant.

Honey/Pollen Potential:

The potential for honey is low (up to 50 kg/ha) as the early blossom is generally prior to the spring buildup. The early bloom is actually the key value of the chokecherry to beekeepers as it provides early sources of

pollen and nectar while the trees provide a shelterbelt for other honey plants or an apiary during the rest of the season. In some regions the *Prunus* sp. family are considered to produce honey with a bitter flavor although others have reported a mild flavored light honey. The U of Saskatchewan has conducted R&D on commercialization of chokecherry orchards, the key to high fruit yields is pollination.

Sources:

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photo of chokecherry blossom from:
<http://community.webshots.com/photo/nanab>

Within the six to ten weeks a year that Dyck can work with the bees she examines her objects on a weekly basis unless the crops, weather, the bees or the beekeeper direct her otherwise. As Ann Beam describes, "she will add to some works, remove others, or leave them in the hives. She doesn't direct the bees as such, but rather responds to their response to her work." The resulting hive sculptures seem to belong neither in the human world nor in the bee world. What was once worn on the body, or drawn by the hand becomes an ethereal and sometimes eerie artifact. I can't help but compare my curiosity with the honey-combed shoes and helmets to, say, a sheep examining a wool sweater.

While the results of her work may look bizarre to those used to the routine and orderly arrangement of comb in managed colonies; in nature, where top bars are absent, the forms found on Dycks' pieces are common. "I do think they rather like the free forms as much as they like the beekeeper's frames. Bees appear to work

anywhere — from the regular beekeeper's hives to the inside of brick walls to hollow logs and trees to the great caves in India where the honeycomb can reach more than 6 feet in length and 4 feet in width." Dyck's piece *The Glass Dress*, which is part of the National Gallery of Canada's collection, contains 300 pounds of honey.

At the Prairie Art Gallery, as in many of Dyck's exhibitions, the audience will be able to watch the honey bees at work on her objects. "I have had live bees in exhibitions in Winnipeg, Guelph, Regina and Vancouver. Also live bees at the Yorkshire Sculpture Park in Britain where I worked with two beekeepers who collected swarms of bees in the park. In Yorkshire the bee works were exhibited in the Camellia House, a huge glass building circa 1850s. I placed bee works into this glass building, bees soon populated the building which meant the public had to view the work through the windows and doors instead of touring the complex"

In 1995, Dyck and the bees created *Sports Night in Canada* by altering used sports equipment. Veldhuis' apiary turned into an outdoor gallery while twenty to thirty people at a time, dressed in bee suits toured the exhibition.

Her exhibition at the Prairie Art Gallery will not only include live bees, it will also include examples of her early work in which she links the processes of domestic chores with art. In an interview with Roger Balboni and Sylvie Marandon in 2001, Dyck recalls that she didn't always see herself as an artist. Her self-perception changed when she began to take life-drawing classes with George Glenn at the Prince Albert Community College in 1975. He told his class "You have to make art from who you are and what you know." At first, Dyck admits she was stymied by this proposition: "Because I was a housewife and a mother, I couldn't, I didn't know what to do." She began by using the processes inherent in what she knew: she canned over six hundred jars of buttons, ironed Polaroid film, and shrunk sweaters, making manifest the invisible labour in women's work, the same way she now does with bees' work. Dyck writes that viewers "find the shrunken clothing both morbid and/or humorous, references to ancient times, bad laundry days, refugee walks, fear, hunger have been sited in my presence during exhibition of the shrunken clothing." John Kerl, curator of *Aganetha Dyck: Survey and Bee Project* states that while her work is accessible, "it is not traditional by any means." He adds that Aganetha Dyck will be visiting Grande Prairie in conjunction with the exhibition and that she has a great reputation as an individual, and as a lecturer. Everyone, especially those practicing beekeeping, will not want to miss this exhibition. *Aganetha Dyck: Survey and Bee Project* will be at the Prairie Art Gallery in Grande Prairie (780 532-8111), June 26 – September 7, 2003.

Sarah Alford earned her BA in Art History from the Nova Scotia College of Art and Design

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Abridged from keynote address “
Environmental Stewardship and Soil
Health in PEI”, PEI ADAPT Council
Conference, March 29th 2003,
Charlottetown, PEI

INTRODUCTION AND BACKGROUND

Soil scientists around the world concur that how we manage soil health determines the sustainability of agricultural production systems. Application of herbicides, fungicides and insecticides to the soil along with tillage practices continue to obliterate the capacity of the soil to renew fertility, suppress disease and resist stresses of climate. Soil erosion, loss of organic matter and soil structure, nitrates and pesticides in surface and ground water, fish kills, estuarine eutrophication by high phosphate soil sediments are early warning indicators that the soil system is not as healthy as it needs to be to achieve 'real time' agricultural sustainability.

There is an urgent need to revitalize the health of our natural resource base of agriculture, horticulture and forestry. Recent advances in soil microbial ecology clearly shows that this reclamation has more to do with the conservation and care of life in the soil rather than adding more chemicals or engineering a bigger machine.

THE RHIZOSPHERE

Sustainable agriculture requires nothing less than well structured fertile soil, high in humus content with a superb mineral balance to insure that good nutrition is passed on down the food chain. The seat of these qualities is a healthy soil foodweb.

The rhizosphere is the micro-world where plant roots hairs come into direct

contact with the soil and the beneficial fungi, bacteria, protozoa and nematodes living there. This is the place with the highest biomass and diversity of plant promoting life in the soil. It is the region where almost all synthetic and natural fertilizers are

“When a soil loses fertility, we pour on fertilizers, or at best alter its tame flora and fauna, without considering that its flora and fauna, which built the soil to begin with, may likewise be important to its maintenance.”

Aldo Leopold (1949)

processed, stored or recycled to plant available form. It is where disease suppression or infection is decided, a region of intense competition for resources but actually trends toward powerful symbiosis and efficiency in a healthy state.

Molecular DNA testing at Cornell tells us that we have grossly underestimated life in the soil. There is a vast complex of genetic and biochemical diversity including 25,000 species of bacteria, 10,000 species of fungi, 100-1000's of microarthropods, 100-1000's of nematodes, as well as the commonly known earthworms, insects and spiders roaming in the underworld below our feet. It can be measured in tonnes of living and dead biomass per acre.

THE SOIL FOODWEB FOUNDATION FOR AGRICULTURAL SUSTAINABILITY

A commonly missed and misunderstood function of a healthy Soil Foodweb is how it can suppress diseases insects and even weeds. How it works has to do with the complex ways populations are controlled to maintain a balance and structure of the soil organisms populations in relation to one another. It involves a common mechanism found in natural systems and as it works in soil it also works in compost and compost tea.

The power to suppress pests has to do with the very complexity of the soil and all its residents and is under the control of the sum and total of the genetic diversity of a whole complete healthy soil foodweb. As with healthy natural ecosystems, pest suppression involves a multifactor, multifunction mode of action under the control a millions species of life in the soil under the direction of millions of genes. Most suppression occurs due to competition for space and nutrients, predation, secretion of antibiotics, parasitism and induced resistance involving phytoalexins. For it to work well, there must be adequate populations of organisms in the right proportion of ecological functional groups.

MICORRHIZAE

Eighty to ninety per cent of all plant species require beneficial microbes in the soil to survive or thrive. Dr. Robert Linderman, the USDA Research Leader for Mycorrhizae explains that "It is well known that mycorrhizae can benefit the growth and health of plants, but it is not widely known or appreciated just how critical and normal this association is to the well-being of plants, especially in disturbed ecosystems (clear-cut forests, agricultural fields, gardens, open pit mines, roadsides).

The presence or absence of these symbiotic mycorrhizal fungi can impact yield by up to 37%. In some cases the amount of protein determining crop quality, like taste in wine, is impacted by as much as 300%. Hence the investment by governments and corporations to develop mycorrhizal and Plant Growth

continued on pg. 19



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Promoting Rhizobacteria (PGPR) inoculants for emerging biofertilizer markets.

Having the correct levels of biomass and diversity of life in the soil and the foods to feed them is an absolute essential for sustainable production .

COMPOSTS AND COMPOST TEAS

The research career of Dr. Elaine Ingham, President of Soil Foodweb Inc. has developed a direct look protocol to assay the soil foodweb. Since the early 1980's she has used this protocol to develop an extensive database of near 100,000 soil biology profiles of the whole range of grassland and forest growing scenarios we operate. Her research and database confirms that as with natural ecosystems, on most occasions, poor yield, poor quality and disease pressure are related to a breakdown or destruction of the soil foodweb. Dr. Ingham's research also clearly shows that plants need certain kinds of organisms around their roots in a proper ratio with regard to fungi and bacteria. Annuals especially broccoli require a beneficial bacterial dominated soil. Row crops like potatoes require and equal balance of fungi and bacteria. Trees and the plants living under the canopy of trees eg strawberries and blueberries require a fungal dominated soil with just a little bacteria. (Soil Biology Primer p. 10)

THE ORIGIN OF AEROBIC COMPOST TEAS

Aerobic compost teas were born out of intelligent observations and trials of farmers and growers. When Soil Foodweb Inc. applied the direct observation tests to the experimental aerobic teas, an old concept was immensely refined and aerobic compost teas were born. Research at SFI Inc. confirms that highly aerobic water extracts of such selected very high quality SFI tested composts and vermicomposts, popularly referred to as 'compost teas', can be aerobically brewed in 12 to 48 hours and applied as foliar sprays and drenches to effectively manage foliar and soil borne crop diseases in a wide range of crops and growing situations. This has spawned a new worldwide industry manufacturing 'tested' aerobic compost tea brewers in sizes from a few gallons up to several thousand gallons capacity.

Conventional potato growers in the pacific northwestern USA are applying these teas regularly to 300,000 acres through centre pivot irrigation systems. Some conventional strawberry, blueberry, wine grape producers in addition to turf management industries have also recently embraced soil foodweb technology because of the savings experienced with reduced use of chemical inputs. Naturally, the organic sector finds these tools extremely valuable because they can't use pesticides.

Characteristics of a Healthy Soil Foodweb, per Gram of Soil:

600 million bacterial individuals;
15,000 to 20,000 bacterial species
150 to 300 meters of fungal biomass;
5,000 to 10,000 fungal species
10,000 protozoa
20-30 beneficial nematodes:
bacterial-feeding, fungal-feeding, predatory
200,000 arthropods per square meter

Prairie grain farmers are beginning to make their own 10,000-gallon units to attain similar benefits. Additionally, the "teas" are also a valuable mechanism to apply mycorrhizal, PGPR and biocontrol inoculants and new sophisticated soil foodweb enhancing biofertilizer formulations. Compost tea service centres are also emerging initially in the turf and landscape management sectors but the idea is quickly spreading to commercial agriculture and horticultural. These growers will need a laboratory to test soil samples to maintain quality control to achieve the benefits claimed and that is the function of SFI Canada Ltd.

So, here's a plan of action to restore and maintain soil foodweb health. Essentially, all we need to do is to simply, put back the biology:

1. The first step is to adopt a more rigorous 'systems' approach to monitoring the composite of soil mineral balance, humus constituents and soil food web diversity and biomass utilizing hi-tech direct observation and measurement.
2. Begin to make and apply "Tested" Compost of the right type for the plant (Fungi to Bacteria Ratio)

"Tested" means a sample has been examined by the laboratory and the numbers of organisms meet the SFI Standards" (See www.soilfoodweb.com)

3. Begin to make and use "Tested" Aerobic Compost Teas. A suggested program based on how teas are used elsewhere begins with a pre-season application a 15-30 gal/ac application of compost tea. As the crop develops apply teas at 5-10 gallons/acre every 7-10 days. During disease outbreaks this may increase to every 3-5 days.
4. As the use of compost and teas is increased, rates of chemical inputs can be reduced.
5. Slowly reduce tillage. Composts and teas should fix compaction and hardpan challenges over time although mechanical measures may be needed to get things going.
6. Leave as much crop residue on the soil surface as possible. Amounts of organic material needed to maintain soil foodweb health are usually underestimated.
7. Expand rotation sequences to include a greater variety of crops and include more forages with longer residencies.
8. Add organic matter using green manure crops sprayed with compost teas.
9. Add missing microorganisms (mycorrhizae, Plant Growth Promoting Rhizobacteria PGPR, fungal protectant inoculant products). Mycorrhizae are key to a good start to establish a healthy soil foodweb.

Attending to the health of the soil foodweb ensures that your soil conservation plan will work to save your soil and water resources, lower input costs and, and conserve your microbiotic heritage. Healthy soil foodwebs in your fields provide the following benefits:

1. Disease suppression. Yes, this even includes potato "Blight" and this means less pesticides going into the environment.
2. Nutrient retention stops run-off, leaching and uses chemical fertilizers more efficiently so that fertilizer application rates can be reduced.

continued on pg. 20

3. Nutrients are made available at rates plants require. There is no more fertilizer moving around to pollute surface and ground water
4. Detoxification. As pesticide use is reduced, certain microbes in the soil are able to help to further break down poisons in the environment
5. Rebuilding of soil structure. Soil stays in the fields. Phosphate remains in the soil instead of leaching out to pollute local estuaries. Rooting depth of crops is also increased, which lead to higher yields
6. Reduction of water use, by increasing water holding capacity.

Restoring soil foodweb health puts "quality" and "the capacity for self renewal" back into all gardens, lawns, yards, landscapes of all kinds and especially our farmlands and pasture space. Such effort restores and conserves our native beneficial bacteria, actinomyces, fungi, protozoa, nematodes, micro and macro arthropods (insects, mites and spiders) and earthworms. Restoring soil habitat is a common sense grassroots effort that everybody can all be a part of and needs to be a part to ensure that this important task of biodiversity conservation happens. The cumulative effect of everybody's effort small and large creates a very powerful change. It works because it has worked for centuries and it gave us our rich productive soils in the first place.

For more information visit www.soilfoodweb.com

Ingham., E., 2003 " The Compost Tea Brewers Manual", available at www.soilfoodweb.com website

Leopold, A. 1949. A Sand County Almanac and Sketches Here and There. Part III The Upshot Wilderness for Science. Oxford University Press, Oxford UK. Reprinted 1968. p195.
Soil and Water Conservation Society (SWCS). 2000. Soil Biology Primer. Rev. ed. Ankeny, Iowa: Soil and Water Conservation Society. pp:50.
Soil Biology Primer also online at http://soils.usda.gov/sqi/SoilBiology/soil_biology_primer.htm

Nutrition Labeling for Honey

Heather Clay,
National Coordinator CHC

Honey sold in Canada now requires a Nutrition Facts table on the label. Starting December 12, 2002 there is a phase in period of 3 to 5 years, after which time the labeling is mandatory. Businesses with over \$1 million in sales have 3 years to introduce the new labels (December 12, 2005) and smaller businesses have 5 years to comply (December 12, 2007).

The Nutrition Facts table shows the calories and the amount of 13 core nutrients (fat, saturated and trans fats, cholesterol, sodium, carbohydrate, fiber, sugars, protein, calcium, iron and Vitamins A and C) in one tablespoon of honey.

The regulation will be enforced by the Canadian Food Inspection Agency (CFIA) under the food provisions of the Food and Drugs Act and Regulations.

Simplified Nutrition Fact Table

The simplified format of the Nutrition Facts table may be used if seven or more of the core nutrients contain "0" amount. The table must include calories, fat, carbohydrate, protein and any core nutrient that is not "0" plus the statement "Not a significant source of (naming the omitted core nutrients)."

As a service to the honey industry the CHC has

produced a generic Nutrition Facts table for honey. The table is available for download at the CHC website www.honeycouncil.ca.

Nutrition Facts Valeur nutritive	
Per 1 tablespoon (20g) Pour 1 cuillère à table (20g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories	60
Fat / Lipides	0 g 0 %
Carbohydrates / Glucides	17 g 6 %
Sugars / Sucres	16 g
Protein / Protéines	0 g
Not a significant source of saturated fat, trans fat, cholesterol, sodium, fibre, vitamin A, vitamin C, calcium or iron.	
Source négligeable de lipides saturés, lipides trans, cholestérol, sodium, fibres, vitamine A, vitamine C, calcium et fer.	

Upcoming Events

Eastern Apicultural Society	Bowdoin Maine	Aug. 4 - 8
Western Apicultural Society	Simon Fraser University	Aug. 12-16
Apimondia	Ljubljana, Slovenia	Aug.24-29
BCHPA	Kelowna BC	Oct.23-25
COFFS Directors	Kelowna BC	Oct. 22
Alberta Beekeepers Association	Edmonton AB	Nov. 3-5
Alberta Honey Producers Cooperative	Edmonton AB	Nov. 6
Fédération des Apiculteurs du Québec	QC,	Nov. 6-7
Manitoba Beekeepers Association	Neepawa MB	Nov. 17, 2003
Ontario Beekeepers Association	London ON	Nov. 21-22
Canadian Western Agribition 2003	www.agribition.com	Nov. 24-29
CAPA	Fort Garry Hotel, Winnipeg, MB	Jan. 26-27, 2004
Canadian Honey Council	Fort Garry Hotel, Winnipeg MB	Jan. 28, 2004
CHC/CAPA Research Symposium	Fort Garry Hotel, Winnipeg MB	Jan. 29-30, 2004

Honeycouncil.ca gets make-over

The Canadian Honey Council website has undergone a facelift. The new format offers features like a member search function, a classifieds section and a front page news feature that helps to keep members of the CHC, as well as the general public, informed about issues related to the honey industry.

The information on the site has been divided into five main sections: information about the **CHC, Hivelights, Contacts, Classifieds, Bees and beekeeping and Honey**. (I know, that is six, but see below)

Canadian Honey Council

Here you will find lists of current and past council members, archives, minutes of past meetings, etc.

Hivelights

Indices to articles that have migrated from the magazine to the website, tables of contents from past issues and information on advertising rates and other submissions.

Contacts

Listings of beekeepers associations, federal government and industry connections and a search engine to find a particular member of the CHC. Members can opt out of this feature if they wish, so that their name will not be displayed in searches. See below on how this is done.

Classifieds

Members can post items for sale and positions available or wanted. The CHC posts here the merchandise it has available and a list of sponsors is available. Contact Heather Clay if you wish to add items.

Bees and Beekeeping

Here all information pertaining to bees, hive products and beekeeping techniques has been collected. The COFFS program is represented here as well

Honey

This is a shortcut to the honey segment under hive products in Bees and Beekeeping. For convenience a link is provided on the front page.

Other features on the front page are a news section, an events calendar and links to weather reports for major Canadian cities. Click on "site map" to see a complete listing of the site. A search engine for the site allows you to find text on any page on the site, simply enter the term to search for in the text box at the top of the page and click "Search".

It is a technological (and financial) challenge to offer the site in both English and French. By clicking "Francais" or "English" you can toggle the display language for the interface, but the content remains the same. Both English and French articles are listed in submenus no matter which language you choose. As more content in French is posted we may change that to make it more convenient to browse the site in one language or the other. Perhaps volunteers will come forward to do some translations...

Something else under construction is compatibility with different browsers both on Windows and Mac platforms. Especially compatibility with Mac poses some technical problems with the way submenus are created from the database. We hope to address this problem over the next few months so please bear with us.

Every member of the CHC will get a username and password in the mail. Once logged in, members can make changes to information about them, including the user name and password. Click on your name in the top bar to open a window where you can edit the information. This window is also where you can turn on or off whether your name is included in searches for members of the CHC.

The reason for the makeover is the increased support the CHC plans to offer for the Canadian On Farm Food Safety (COFFS) Programme. The database driven format and the online content management

technology used for the site makes it possible for a group of people to collaborate on content for the site without funneling the material through a technical person to the encoding for the website. All someone needs is a basic understanding of web browsers and experience in a text editor like Microsoft Word or some other word processor to be able to contribute to the online material.

The COFFS section offers "Best Management Practices" for common procedures in beekeeping ranging from treatments for pests and diseases to taking off honey supers to requeening colonies. All information is compiled with an eye to assuring the safety of the final product on the consumer's table. To be able to document how you conduct your operation, the CHC is developing forms. Members will be able to download these forms and use them in their operation.

The technology for the site was made available to the Canadian Honey Council by Karo Design of Calgary. They developed the technology to use in situations where a group of people collaborate on publishing content online. Instances of the site are in use by clients of Karo and by Karo itself for its own intranet. The CHC is grateful for their support.



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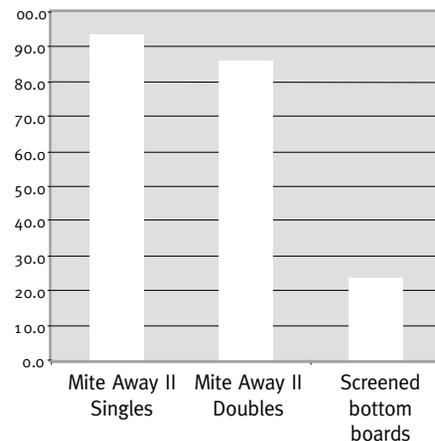


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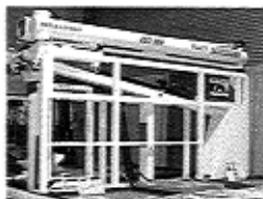
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## Prince Edward Island – Pesticides and Bees

Heather Clay National Coordinator CHC

Reports of high unexplained winter losses of honey bee colonies continue to plague beekeepers on Prince Edward Island. One beekeeper who was an important supplier of colonies for pollination has pulled the plug on his operation and given up trying to keep bees. The cause of the bee death is not immediately apparent. Dr Jim Kemp is conducting a survey to examine some of the problems. The losses began several years ago, before varroa mites arrived on the Island. Many biologists think the losses may be related to the high use of agro chemicals on the island.

There may be a cumulative effect of the various agro-chemicals used by potato growers to help maintain a high production rate. The most common threat to the potato crop is the fungal disease *Phytopthera infestans* which causes Late Potato Blight and the insect, Colorado Potato Beetle, both of which can have a serious impact on production. Growers have had to resort to stronger fungicides and systemic insecticides to help control the insect pests and diseases.

Soil, water and plants have become reservoirs for the toxic chemicals and bees are affected when they come into contact with the poison through their food or water. One obvious effect of the problem of chemicals is the fish kills reported in rivers flowing through potato fields. Analysis of the water has indicated the presence of chemicals used in the potato growing industry (Teather, 2003).

Potato growers are aware of the problem but they need insect control. A novel treatment is currently showing great promise. Many Washington, Oregon and Idaho potato growers have changed their management system and now avoid the use of fungicides through the application of compost tea along with an integrated pest management approach. Recent research on compost teas suggests that it may be effective for late potato blight (Ingham, 2002, Leischner, this issue Hivelights). There is no information about reduction of pests like Colorado Potato Beetle but it is clear that a healthy plant can resist attack better than plants that are challenged.

Dr. Ralph Martin, Director of the Organic Agriculture Centre, Truro Nova Scotia is undertaking a cooperative research programme on Prince Edward Island to test the cost/benefit effect of a pesticide free watershed. This is an ambitious project but one which can only benefit beekeepers. Beekeepers on PEI are ready to cooperate in any project that may reduce the quantity of insecticides applied to the environment.

Teather, K. , K.Gormley and D. Guignon. 2003. Pesticide Impacts on Fish in Coastal PEI. Canadian Water Network, Connecting Water Resources Symposium. Saint John March 2003.

Ingham, E. 2002. Compost Tea: Promises and Practicalities. Grandiflora. Feb/Mar 2002.

Leischner. 2003 Lab Director, Soils FoodWed Inc  
Calgary Alberta

In 1978 Dr. Harvey Lerer was appointed Apiculture Pathologist and began work on bee pathology. However, in 1980 he transferred to Ottawa to another department within Agriculture Canada. In 1981, the pathologist's position was filled by Dr. Steven Liu, whose research focussed on Nosema disease and other protozoa, morphological studies of the Varroa mite, and developing early detection methods for bee diseases using enzyme-immunosorbant assay techniques.

In 1992 Dr. Szabo was granted a work transfer to the University of Guelph. During this period he continued his selection of bees tolerant to Varroa. Much of this work was with Ontario beekeepers in conjunction with the Ontario Beekeepers' Association.

The research branch evoked a major downsizing occurred in 1995. This 'event' was the result of the Federal Governments' national budget of 1995. The downsizing was at least 15-20% across the branch with major decreases in Ottawa and several research stations. Part of this reorganization also aimed to reduce the number of centres with administration staff in each province to two. Although no facilities were closed, several were substantially reduced and became linked to other centres for primary administration functions.

The Northern Agriculture Research Centre at Beaverlodge was one of the sites that was downsized below the 20% level and linked to Lacombe Research Centre. Over the next two years the number of employees was reduced by 50%. Several major program areas of research were eliminated and most were reduced.

The Apiculture program was cut from three professionals and support staff to one professional and one technician. Thus, in March of 1996 Dr. Steve Liu retired and in February of 1997 Dr. Tibor Szabo retired. In September of 2001.

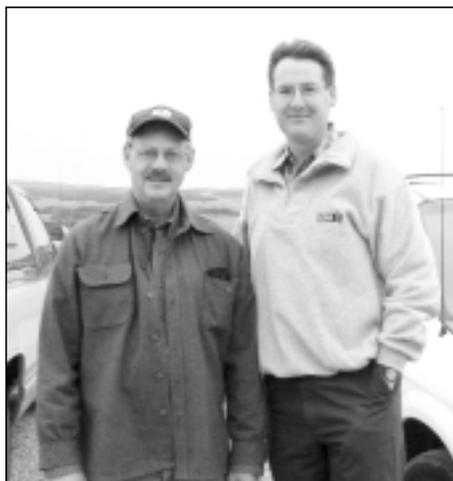
Dr. Stephen Pernal was successful in a competition for a term scientist position in apiculture. Steve has been an integral part of the planning and execution of the resistant American foulbrood program. He had presented reports and talks at many Canadian and several U.S conferences during this time. In April of 2003 Stephen Pernal was appointed to a Research Scientist position and will assume the full responsibilities for the Federal Apiculture program upon the retirement of Don Nelson in the fall of 2003.

In 2002 Agriculture and Agri-Food Canada embarked on another reorganization which is very different from any in the past. In the new system four national program areas will link studies across all departments. Under each of the four national program areas themes or groups of studies of more or less similar nature will be grouped under a national theme leader. Individual Stations no longer have budgets, but individual

studies will have a budget within their theme. Thus, apiculture now falls under the national program "Sustainable Productions Systems", and within that, under the theme "Livestock Production Systems" and will be linked with livestock, which encompasses cattle, dairy, poultry, sheep, hogs and honey bees.

The present program and future research at Beaverlodge are directed primarily at aiding the beekeeping industry with pest, disease and management problems. Emphasis from 2002 to 2005 will be on the following three areas: 1) Reduced Residue Risks with Alternative Antibiotics; 2) predicting AFB infection by examining *Paenibacillus* larvae spores in honey; and 3) improved AFB resistance among bee stocks to increase resistant in populations of colonies within a beekeeping operation.

The building we commonly call the "Bee House" was constructed in 1954 (30' by 38'). At that time it was divided into an extraction room and a storage/work room. In the



Dr. Don Nelson and Dr. Stephen Pernal

basement were four controlled temperature rooms for indoor wintering experiments. Each room was small but would hold about eight colonies. I think an old granary was also used to store some equipment and supers. The extraction room had a 36-frame extractor bolted down to a stand about twenty inches high so that the honey could flow into a sump which was located on the floor. A small steam generator (on a gas burner) produced steam for a jacketed pipe leading from the extractor and also to heat the bran melter. This was the extent of the extraction facility until about 1978. At that time, because a laboratory was needed for Dr. Lerer the extraction facility was moved to the metal storage

building next door and a lab was built in the old extracting room. In about 1982 another metal storage shed was built for equipment storage. In 1994 (finally) a proper extraction facility was added to the first storage building. The old extraction room was converted into a combination hot room and wintering room and with the addition of the new facility (40' by 32') a very convenient flow-through pathway was created from the loading dock to the hot room to extraction and then back to the loading dock or into stores.

#### Summary of Honey Bee Scientists in Apiculture at Beaverlodge

|                     |                |                               |
|---------------------|----------------|-------------------------------|
| Dr. Peter Pankiw    | 1953 - 1979    | deceased: Feb 22, 1996        |
| Dr. Don Nelson      | 1971 - present | to retire in the fall of 2003 |
| Dr. Tibor Szabo     | 1974 - 1997    | retired                       |
| Dr. Harvey Lerer    | 1978 - 1980    | moved to other department     |
| Dr. Steve Liu       | 1981 - 1996    | deceased: May 18, 1998        |
| Dr. Stephen Pernal* | 2001 - present |                               |

\* will assume all responsibilities for the apiculture program in the fall of 2003

## 50th Anniversary of Beaverlodge

### Beekeepers' Field Days

Don Nelson, Agriculture & Agri-Food Canada,  
Beaverlodge, AB

In the winter of 1953-54, Peter Pankiw discussed the possibility of a field day with local beekeepers, Jack Smith and Les Emes, and decided to hold the first one on Farmers' Day - June 11, 1954. The purpose was to acquaint beekeepers with research programs and to facilitate the transfer of beekeeping technology; to provide a chance for beekeepers to convey their concerns and problems so that research could be directed to solve specific needs; to give beekeepers an opportunity to meet each other, socialize, and discuss problems.

At the first field day 20 participants attended with a sum total of about 4000 colonies; notably Stan Steward of Peace River Honey Co., Dawson Creek, B.C. who had 2100 of these colonies. In 1954, it is estimated that about 8000 colonies were being kept in the Peace River block.

At the 1955 field day Mr. Larz Le Maistere and Peter Pankiw were the featured speakers. The big concern was European foulbrood, which was rampant at that time. Forty people attended with about 7000 colonies. During these early years the field days were in the afternoon only and generally held outdoors. In 1958, the Apiary building was completed and much of the program was held in this building. The field days continued to grow and in 1963, 80 people attended. In 1966, the afternoon part of the program took place downtown in the old community centre in order to accommodate all those attending. In that year it is noted that Vic Mesley (President of Canadian Beekeepers' Council), Jack Grossman (Billy Bee Honey), Roy Pugh (Saskatchewan Honey Co-op), and Paul Pawlowski (Alberta Honey Co-op) all attended the meeting, thus putting industry people and honey buyers in contact with each other early in the season. In 1966, people attending represented more than 46,000 colonies. In 1977, the afternoon program was moved back to the Research Station because the old community centre was being replaced by a new one. Since then, it has been held in the north end of the garage on Station.

Although the field days have continued to attract up to 200 people each year since the mid '70s, some changes have taken place. A noon Bar-B-Q, sponsored by up to 12 honey bee industry collaborators, is now a regular part of the field day program. The aims of the first field day in 1954 are still the driving force behind the current field days.

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### Erratum

A reader pointed out a serious factual error in an article in the May issue of Hivelights. We do try to verify all information but in many instances we rely on our contributors. The reader noted that the article "One Hive Two Crops" in the May issue, implied Peter



Keating was working non stop during pollination season. Our reader, who claims to have been there, feels this photo provides a more accurate representation.

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