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HiveIrghts

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Canadian Beekeepers Association 1940-1972

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Canadian Honey Council 1972-2006

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1993-95	Barrie Termeer	Rollyview	AB	National Coordinator			
1995-99	Wink Howland	Yorkton	SK	1998-	Heather Clay	Calgary	AB
1999-01	Merv Malyon	Brandon	MB				
2001-02	Dave MacMillan	Thornloe	ON				
2002-04	Wink Howland	Yorkton	SK				
2005-06	Alain Moyen	Mirabel	QC				

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Front cover picture

Ice Castle sculpture at Carnaval winter festival

Photo Heather Clay

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SECTION 1: Minutes of the 65th Annual Meeting of the Canadian Honey Council

24-27 January 2006, Quebec City, QC

Business Meeting

The 65th annual meeting of the Canadian Honey Council opened at 7:00 PM, Wednesday 25th January, 2006 at the Palace Royal Hotel, Quebec City, QC
and continued on
Thursday 26th January 9 am-5 pm

Present: Alain Moyen, Ed Nowek, Ron Greidanus, Corey Bacon, Barrie Termeer, Ron Rudiak, John van Alten, Paul Kittilsen, and the National Coordinator Heather Clay

President Alain Moyen opened the meeting. He introduced new delegate Ron Greidanus.

Minutes of the 2005 meeting

Motion: Moved by Alain Moyen, seconded by Ed Nowek.
To accept the minutes of the February 2005, Saskatoon SK meeting as printed in the proceedings.

CARRIED.
There was no business arising from minutes.

2005 Financial Statement

Wink Howland

The financial statements Appendices 1, 2 and 3 were presented to the delegates.

Motion: Moved by Corey Bacon /Paul Kittilsen to accept the 2005 financial statement as presented.

CARRIED

Motion: Moved by Corey Bacon/ Alain Moyen that Jack MacKay be appointed auditor for the year 2006

CARRIED

President's Report

Alain Moyen

The stakeholders meeting held prior to the AGM was successful. All agreed that there is a need to change CHC to allow us to deal with the numerous crises and issues affecting the industry.

Four committees will work towards a new direction in structure and organization. This should improve the funding situation in the future. We hope to secure some government assistance to help us in hire a consultant for facilitating the process. The recommendations from the committees will be brought to the annual meeting in 2007.

The Féderation des Apiculteurs du Québec welcome participants to the conference and we hope that everyone will enjoy the convention.

National Coordinator's Report

Heather Clay
The Canadian Honey Council has completed another successful year.

Liaison with NHB
In June I was invited to speak to the National Honey Board directors in Denver Colorado about the Canadian on Farm Food Safety Program. This presented a great opportunity to meet the members of the NHB and to liaise on a number of industry issues. The dialogue continued in January when I was their guest at the American Honey Producers meeting in Houston Texas, and the American Beekeeping Federation at Louisville Kentucky.

Oxalic Acid Registration
The application for registration of oxalic acid was submitted to PMRA January 10, 2005. After detailed review, the PMRA announced October 3, 2005 that oxalic acid has been approved for the treatment of varroa mites on honeybees. The approval is not a full registration and not an exemption. The official status is not well defined and we are seeking clarification or full registration. In the meantime beekeepers can legally use oxalic acid according to the method specified on the PMRA and CHC websites.

A great deal of work went into the oxalic acid project. We thank the researchers in eastern and western Canada who provided data., the PMRA for their patience and the Canadian beekeepers who supported the project with financial donations.

The CHC offered the oxalic acid information package to the American Beekeeping Federation. They have agreed to proceed with registration in the USA. We all look forward to oxalic acid being available to beekeepers throughout North America in the near future.

Honey Labeling Regulations
The CHC is supportive of having country of origin on the front of the label for honey. We have urged changes to the use of the grade name "Canada No 1" when it is used for grading imported honey. We continue to pressure CFIA to implement these changes but there has been no progress over the year.

Anti dumping action
A beekeeper poll was conducted in August to determine the opinion of beekeepers concerning the possibility of lodging a trade action against "dumped" or subsidized honey. There was an good response from many beekeepers and we have received pledges and donations to help pursue a complaint. However, legal action is expensive and we need more money if we are to pursue the complaint. We believe that we have a strong case. Action such as this is expensive and all donations are gratefully accepted

Motion: Moved by Alain Moyen / Paul Kittilsen to accept the National Coordinator's report as presented.
CARRIED

CANADIAN ON FARM FOOD SAFETY
Heather Clay
The CHC received late funding in 2005 to continue developing a Canadian On Farm Food Safety program for honey. C-BISQT which stands for Canadian Bee Industry Safety Quality Traceability is an industry driven initiative which will be voluntary and will have government recognition. After the program is developed there will be a Technical Review by experts in the Canadian Food Inspection Agency and Agriculture Agri-Food Canada.
A pilot project was conducted with nine beekeepers representing large and mid size operations across the country. They used the forms developed for the C-BISQT program and provided feedback for the steering committee. These comments have been incorporated into a revised version of the forms. The program is now almost ready for Technical Review by the Canadian Food Inspection Agency.

Delegates' Reports

Maritimes
Paul Kittilsen

Warm weather smiled on the Maritimes this past fall and has continued through most of this month. It was a pleasant change from the spring when cool wet weather dominated the spring management and build up time. New Brunswick beekeepers were faced with much higher than normal winter losses. The demand for beehives for blueberry pollination far exceeded the local supply. Beehives were brought in from Ontario and Quebec to help meet the demand. Bragg Lumber Company has established a beekeeping operation within the province to help with their needs.

Nova Scotia has continuing strong demand for blueberry pollination. The boarder between Prince Edward Island and Nova Scotia was opened with an inspection protocol enforced. Two Nova Scotia beekeepers took advantage of this opportunity. Bear damage is still an increasing problem in blueberry fields and spring and summer yards. The honey crop was better than average in Nova Scotia this year. Testing has shown an increase in Fluvinate resistance in Nova Scotia. Many commercial beekeepers switched to coumophos this fall for mite treatment while others used oxalic acid as a treatment.

A research project investigating various baits and deterrent to protect beehives has been started. No reports have yet been generated from this project as it is in its first year of study.

The executive of the Nova Scotia Beekeepers Association is in talks with the Nova Scotia Crop and Livestock Insurance Commission discussing the opportunity for the commission to provide insurance to beekeepers against bear damage, winter loss and crop production.
A local community college has been approached to pursue a course in apiculture. This is in effort to generate a labor pool for beekeepers and or start people off on their on in beekeeping.

Québec
Alain Moyen

The summer turned out to be excellent for many Québec beekeepers. Even with the cool and wet Spring the bees still managed to develop and produce. The Montreal region was very good but other areas were less productive. One beekeeper reported a crop of 8000 lbs from 35 hives, which is pretty good for Québec.

The Québec beekeeping scene has been evolving over the past few years. Honey was the main source of revenue in the past but now pollination is slowly becoming an important source of revenue. If the trend continues, pollination will become the main source of income and honey will become a byproduct for some beekeepers.

Bulk honey price has been maintaining at about $1.30 to $1.50/lb.but for how long? Who knows? Retail prices in some areas have been going down but beekeepers are still reluctant to lower prices too fast. After having a taste of $2.00 or more per pound it is hard to adjust to lower prices.

Ontario
John Van Alten,

Overall, 2005 was a good year for honey production in Ontario. The provincial average for our 76,000 producing colonies was just over 100 lb. I have spoken to several beekeepers who averaged well over 200 lb for the season. Over 10% of our colonies went to pollinate blueberries in New Brunswick and Quebec. In general those colonies were not able to produce a honey

crop when they returned to Ontario, and required the rest of the season to build up for over wintering. Although some beekeepers have indicated that they won't be sending bees to blueberries again in 2006, most plan to ship again, as indications are that honey prices aren't going to jump higher anytime soon.
Low prices for bulk honey have encouraged more beekeepers to pack and sell honey to consumers. This is putting a bit of pressure on the retail price in Ontario. Hopefully most producer packers can see the senselessness of starting a price competition in our Ontario marketplace.

Ontario Ministry of Agriculture and Foods has been surveying honey sold in the province for labelling adherence, and testing for residues. To date they have sampled about 300 batches. Some labelling issues have been identified, and letters have been sent to correct them. However the residue testing has required that 3 CFIA recalls be published. All of the details aren't clear, but it appears that there may be some need to investigate possible environmental causes for the contamination of honey with at least some of these residues. As laboratories are able to test for increasingly minute amounts of residues, we will be facing more and more questions of what belongs in honey and what levels of residues pose no threat to consumers.

Our Tech transfer team has had another busy season. One of the projects that they have taken on is a mite monitoring survey in commercial outfits. This resulted in several larger operations making a decision to treat with Formic an Oxalic, rather than Check mite this past fall. Hopefully, with a good monitoring program we can make more informed decisions for our mite treatments.

Dr. Guzman is settling in to his new digs in Guelph. He has 4 graduate students under his wing, which bodes well for the future of beekeeping in Ontario.

Manitoba

Ron Rudiak

This year excessive spring rains drenched already soggy fields, especially in eastern Manitoba. Unseeded acres around the province, due to flooding and wet soil conditions, have been estimated at 1.6 million. Many beekeepers anticipated placing their bees on fields that would have been seeded to canola but instead had to find alternate locations elsewhere. Most of these locations, east of the Red River and extending northward through the Interlake, provided little more than a small crop of wild flower, volunteer clover and alfalfa honey. The low prices currently offered by packers for bulk honey are not heartening and with the high cost of producing honey and market uncertainty, the industry is unlikely to attract any new beekeepers. Bees located in the western part of the province fared much better, in most cases producing a normal crop of honey.

Farm gate sales have been good with the recommended price of $2.50 per pound in the customers container. Customers appreciate being able to purchase a high quality local honey for their table that has not been blended or otherwise processed.

Bear damage, always a problem, is much more of a problem this year. Because of poor growing conditions early in the season wild nuts and berries, which bears depend on, are in short supply. Bear fences don't appear to be much of a barrier to these starving animals when they break through well constructed fences in search of a meal. Manitoba Crop Insurance, in co-operation with Manitoba Conservation, provides a compensation program to reimburse beekeepers for bear damage to their bee hives.

rAFB is spreading. During 2005 this disease has shown up in two more operations in the central region of Manitoba. AFB, whether resistant to oxytetracycline or not, is another expense that a beekeeper doesn't need especially when input costs continue to climb and honey prices are nearing rock bottom. AFB reduces the colonies ability to produce honey and often results in dead colonies and ruined equipment. Restoring these colonies to health will take up more time, costing the operator more money for materials and labour.

Saskatchewan

Corey Bacon

After receiving above normal rainfall in late spring, we were fortunate through July to have a long stretch of hot clear days ideal for honey production across many parts of the province. All the makings of a bumper honey crop. Unfortunately, this stretch of hot weather included little to no rainfall. As a result, much of the canola flowered for only 3 weeks. The canola that was seeded late flowered much longer saving the honey crops in parts of the province. Some areas of the province also enjoyed a good flow on sunflower. In other parts of the province the later canola produced little honey as wet weather allowed for very little flight. Borage in the Northeast region produced very little honey again. The wet weather has continued into September making it very difficult for beekeepers in many areas to finish pulling honey.

Honey production in Saskatchewan this year is very erratic, even within the same regions. Honey producers have reported crops averaging from a low of 80 lbs per colony to a high of 220 lbs per colony. These preliminary reports would suggest that the provincial average could be below average this year. Prices currently being offered for this crop are up from the $0.69 per pound offered in spring but are still depressed and currently sit around $0.75 per pound.

Alberta

Ron Gredianus

Alberta formed a commission in 2005. This will provide funding for promotion and research in Canada's largest honey producing province. The colony count is up from last year to 269,000.

Many beekeepers in Alberta have indicated strong support for anti-dumping and have contributed funds to support this action. They see anti dumping for what it is – a short term band aid. Our current situation demands action. Anti-dumping is perceived to be a necessary initial step. They support promotion too but recognize that it is not going to happen overnight. To increase per capita consumption is going to take time and marketing is not cheap. We believe that beekeepers like the milk, egg and beef producers need to take responsibility for the promotion and consumption of their product.

British Columbia

Ed Nowek

The 2005 production year was below average for most parts of British Columbia supporting the traditional pattern of poor production years following exceptional seasons such as 2004. Farm gate prices have declined about 10% from the previous year and wholesale levels have also declined but noticeably more than 10%.

Blueberry growers currently need 20,000 hives with 14,000 acres planted of which 10,000 are mature and in need of pollination while 4,000 + acres are still to come on line with the additional need for a further 8,000 colonies. Only 6,600 colonies were placed in 2005. A need has been identified for an educational program emphasizing the benefit of adequate honeybee pollination. To maximize effectiveness this program should be offered in the Punjabi language.

Now called the BIDC (Beekeeping Industry Development Committee,) the final 3 year contract has been signed between the IAF (Investment Agriculture Foundation – government) and the BCHPA (industry representative). "Request for funding" proposals are being accepted with the strategic priorities identified as:

1. Research & disease prevention
2. Marketing and quality guidelines
3. Industry Communication
4. Training & Education

Initial action has been taken with the update and reprint of the Pollination Brochure.

The B.C. Bee Breeders Association is preparing a multi year Varroa-resistant Queen-breeding project that is expected to commence in 2006.

Research is being carried on to determine the resources required and demand for a beekeeper's technician course that could be offered through one of the lower mainland colleges.
Vancouver Island beekeepers are being requested to carry $2 million liability insurance by forest companies who own the private lands where bees are traditionally placed. Also they now have to pay $1 to $1,200 for a permit to use the land for bee sites and are being asked to sign a release stating that they could be personally held libel in the case of fire.

The BCHPA continues to petition the government not to spray Malathion for control of adult mosquitoes in the event of an outbreak of West Nile Virus, and should losses be incurred by such spraying that there be a plan for beekeeper compensation. The government has asked that beekeepers supply the GPS coordinates for their beeyards so that they can make an attempt to avoid them should spraying occur.
Dr. John Boone, BCHPA historian has reminded us that SFU accepts additional archive materials every 5 years and 2006 is the submission year. Dr. Boone can be contacted at jboone @ telus.net

The BCHPA is continuing to lobby Simon Fraser University to continue honeybee research and hive management at the Burnaby Mountain campus despite the moving to Dr. Mark Winston to a downtown campus.

Our membership at the Nelson AGM has supported a resolution that the Canadian Beekeeping Industry conduct a feasibility study on the economical benefits and inherent risks by the introduction of the free movement of bees north and south of the international borders of the USA and Canada.

BeeMaid

Barrie Termeer

It has been a very difficult and challenging year for the entire honey industry since the last CHC meeting in Saskatoon in 2005. Honey markets continued to decline with bulk prices eventually stabilizing in the Cdn $0.75-80 / lb. range, a significant decline from the highs of over $2.00 / lb. in 2002. World trade and events in exporting countries dominated the honey market. The domestic Canadian honey market is now international, with Canadian honey imports reaching 20 million pounds annually from countries such as China, Argentina and Australia. The past two years saw a world surplus of honey, primarily as a result of reduced demand because of high prices in 2002 and increases world wide in honey production chasing these higher prices.

At the same time, we have seen a dramatic change in beekeeping, most apparent in the United States, where the industry is changing to one driven more by pollination revenues than honey income. Projections are for the requirement of 2 million hives in California for almond pollination services in 2010. Prices offered for pollination have risen from the norms of $50 US in

2004 to upwards of $150 to $200 this season. Canadian pollination services are also growing, with more hives on canola hybrid seed production, blueberries, cranberries and orchards. Returns from pollination are helping beekeepers replace honey revenues. Worldwide, it is more difficult to project the trends that might be occurring with beekeeping in Argentina, China or Australia, however it is likely that similar demands for bees will occur. The demand for bees is fueled partly by increased acres of seed crops, but also by increased difficulties maintaining bee health with mite resistance spreading. Our challenge in Canada is to continue to lead the world in IPM research and to continue to set the standards for the best quality honey, product traceability and documented production safety.

Lower bulk prices also mean that we must continue to move to value-added products, using honey in more ways, and in developing consumer friendly containers and labels. Bee Maid has launched a very successful program for the Bee Maid brand, called "Good for You!" . Honey is perceived as a healthy product and Bee Maid is reinforcing that belief by promoting Bee Maid Honey as part of a healthy, natural lifestyle. We plan to continue to expand the sale of Bee Maid Canadian honey around the world, including China where Bee Maid Honey is now available in upscale grocery stores, giving the rapidly growing upper income Chinese consumer group an opportunity to experience top quality Canadian honey.

This past year Bee Maid saw the retirement of Martin Nechwediuk after 33 years of dedicated service to the members of the Alberta and Manitoba Honey Cooperatives. Martin's focus was in the area of finance and accounting however over the years he has been involved in many facets of the organization from General Manager of the Manitoba Cooperative Honey Producers Limited to his most recent position as Chief Financial Officer of Bee Maid Honey. Martin's dedication to the organization and the Canadian beekeeping industry cannot be measured and we are certainly going to miss him.

We are pleased to announce that Isela Arroya has been added to our marketing team this year as Sales and Marketing Coordinator. Isela has a strong marketing and logistics background and will be a tremendous asset to the organization. Her primary focus will be to expand our "Good for You"program.

We look forward to working with the CHC in the Canadian honey promotion program as it unfolds. We urge CHC to continue to work closely with the Canadian Food Inspection Agency to establish and implement the long awaited "new" Canadian Honey Regulations that will clearly indicate country of origin so that honey consumers will be able to make an informed decision when purchasing their honey

It was another strong year in Bee Supplies, and our sales outlets in Edmonton, Winnipeg and Tisdale will continue to offer the best possible service under the direction of Derrick Johnston. Derrick has forged many strong working relationships both with you, the beekeepers in Canada and with suppliers from the United States and elsewhere. At the last Annual Meeting of the Alberta Honey Coop one of these suppliers, Gus Rouse, Kona Queen Hawaii, Inc, was presented with an honourary life membership to Alberta Honey Coop. Derrick and Gus have done a great service over the years, providing our members and other beekeepers with quality queens in a timely manner and are to be commended for this outstanding service, often under very difficult circumstances, when demand exceeds supply

We are also pleased to announce the launch of the new enhanced Bee Maid website at www.beemaid.com that offers a broad range of services to our customers and honey consumers. We will very shortly be adding an electronic bee supply "E-Store" where beekeepers will be able to order their supplies over the Internet.

In closing, we would like to emphasize our optimism for the Canadian bee industry based on our ability to produce a world class honey using advanced and safe beekeeping techniques.

Motion to accept the delegate reports moved by Ed Nowek
Seconded by John van Alten

CARRIED

Report on Stakeholders Meeting

Facilitated by Green Isle Consulting
Victoria BC.
January 24th 2006, Québec City

This report is the result of the stakeholders meeting held in Quebec City, just before the Canadian Honey Council 2006 AGM. The meeting included members of the Council, the national coordinator, presidents of provincial associations, and representatives of pollinators/breeders, and suppliers.

Alain Moyen, CHC President, began the meeting by welcoming everyone and asking participants to introduce themselves. He outlined the need for a new direction for the CHC in order to better serve the Canadian honeybee industry. Heather Clay, CHC National Coordinator, supported Alain's remarks. She provided an overview of the organization from its inception in 1940 to the present day. Heather noted some of the past achievements and pointed out that the CHC has evolved significantly over the past 65 years and that it is again time for change. The meeting was then turned over to Darlene McCue (Principal, Green Isle Consulting Inc.) who facilitated the working sessions. Darlene began by explaining her interest in helping organizations to become more effective and then reviewed the **purposes of the meeting**:

1. To prepare a resolution for the 2006 AGM regarding the future of the CHC

2. To identify key issues arising, in terms of the future of the organization, and suggest ways to address these

In the forum that followed, **participants affirmed the need for the CHC and the necessity of "forging a new direction"** to better serve the current and future needs of the Canadian honeybee industry. Participants also made a number of **observations** that can make it possible to determine the new direction for the CHC:

- It should be the single authoritative national "voice" of the whole honeybee industry.
- It should have a strong presence in Ottawa.
- Its purpose and roles should be distinct from those of the provincial associations/commissions.
- It should strive to unite the diverse interests of the industry while facilitating responses to regional concerns.
- It needs to promote the industry and honeybee products both nationally and internationally.
- It should use effective and participative decision-making processes to deal with complex issues and diverse interests.
- It requires a supporting administrative structure that is strong, professional (including fund-raising and lobbying and facilitation expertise), and works with the same dedication as the current National Coordinator.

In the first small groups working session, participants began to define the **future purpose and roles** of the CHC. The proposed future purpose is to:

- build and promote a dynamic and prosperous Canadian honeybee industry,
- be the definitive unified national voice for the industry, and
- act as the instrument for achieving a sustainable Canadian honeybee industry in the global economy.

To accomplish this purpose the CHC would perform roles that include:

- Be the national unified voice of the honeybee industry – articulate the concerns of all regions and being recognized by all
- Promote the industry – develop and coordinate ongoing advancement of the national honeybee industry and its products
- Lobby – exert pressure on the national government in the best interests of the industry
- Enable effective decision-making - address areas of concern and take full advantage of opportunities that arise
- Communicate amongst all sectors of the industry throughout the country and between the industry, government and others, - use email, the CHC website, "Hivelights", and a national annual symposium
- Maintain liaison between and among the industry, provincial associations/commissions and governments - participate in policy and program development
- Foster inter-provincial relationships – recognize regional concerns and support constructive solutions
- Coordinate dissemination of research information and maintain partnership with the Canadian Association of Professional Apiculturists – avoid duplication and identify priorities
- Consumer education – serve the public interest
- Encourage food safety and best production practices – throughout the sectors of the industry
- Establish a greater international presence – for the Canadian honeybee industry in the global economy

In the second small groups working session, participants began to determine the **future** membership and participation processes of the CHC. Some options are:

Option 1:
- All interested individuals and organizations may be members
- Voting at AGM is by delegates as now
- Board remains as is

Option 2:
- As above with the addition of more voting delegates to ensure continuity, but still one vote per delegation/region

Option 3:
- All beekeepers who are members of their provincial associations

automatically become members of the CHC
- Industry members are welcome but are non-voting
- Others (e.g. retired beekeepers) are also welcome and are non-voting
- More than one delegate per province with all delegates electing the Board
- New by-laws and constitution to empower the Board
- AGM complemented by an annual national symposium to draw in all sectors of the industry (with workshops, research reports, tours and a spousal program)
- National symposium is to become "the meeting to attend", encouraging member participation and ownership
- Ongoing participation through email and web-based surveys

Option 4:
- All producers (beekeepers, breeders/pollinators) and co-operatives – with membership optional/elective
- Associate non-voting members (packers, suppliers, researchers, government officials, etc.)
- One voting delegate per province for up to 80,000 hives. Maritime provinces continue to have the option of one delegate for the region or one for each province. For each additional 80,000 hives a province could sponsor one additional voting delegate. For example, Alberta could have 3 districts (Peace River, Central and South) for a total of 3 votes. Status quo could continue for other provinces.
- Membership fee per voting delegate (currently $4,000/year).
- Provinces would collect member fees and a portion of these would come to the CHC.
- Decision-making largely would be by consensus
-

Option 5:
- Members are beekeepers (who should "drive" the CHC) as well as interested others, with membership optional
- Voting could be done directly or by proxy or by mail-in ballot
- Members or delegates could vote
- A mechanism (such as professional facilitation) in place to deal with divisive issues

In the second small groups working session participants also began to identify some possibilities for future funding:

Member and Delegate Fees Options
- Membership fees (e.g. by addition of a national CHC fee to the provincial membership fees)
- Delegate fee
- Determine annual budget requirements and share the cost amongst provincial associations/commissions
- Membership fees to include full and associate members at different rates

Levy Options
- Levy on all significant size beekeeping operations through application of a per-hive formula and linking the levy rate to the price of honey above a "floor" price
- Levy on all honey packaged in Canada
- Levy on imported honey
- Levy on exported honey
- Levy on honey consumed in Canada

Government Support Options
- Government funds (both provincial and federal) at least for special projects
- Government matching grants

Service Fee Options
- "Hivelights" subscription fee
- Selling educational and promotional materials
- Charges to packers for use of logo
- Symposium registration fees

Other Options
- Partnerships (e.g. with cookbook publishers)
- Endorsements
- Sponsorships (e.g. from complementary commodity groups such as blueberry and cranberry growers)
- Merchandising
- Donations

At the conclusion of the meeting participants developed a resolution for consideration at the 2006 AGM. The resolution proposes "forging a new direction", including restructuring, by advancing the work done by the Stakeholders Meeting through committees appointed by the CHC Board. It is expected that the ambitious undertaking of revitalizing the CHC would be supported by funding from Advancing Canadian Agriculture and Agri-Food Program.

Fred Rathje Memorial

The Canadian Honey Council presents the Fred Rathje Award each year to a person who has made a significant positive contribution of innovative,creative, and effective effort for the betterment of the bee industry of Canada during the past year. This year Dr Domingos Oliveira received the Award at the CHC Annual Meeting in January 2006. Dr Oiveira was highly recommended by the Federation of Apiculturists du Quebec for his contribution to the beekeeping industry through his research on the importance of polllination of crops by honeybees. Dr Oliveira gained his Ph.D in biology at Sherbrooke University and spent three years at the Université du Moncton, New-Brunswick, before joining the teaching staff of the Biological sciences Department of Quebec University, Montreal in 1974. He has conducted research on pollinators and pollination of small fruits (wild blueberries, strawberries, raspberries) apples and curcubits. His work has raised the awareness of the importance of honeybees for improving horticultural production.

The Canadian Honey Council extends congratulations to Dr Oliveira and wishes him continued success in his research.

Government Reports

Honey Program

Tom Hauschild
National Manager, Dairy Honey Eggs Program,
Canadian Food Inspection Agency, Ottawa

HONEY REGULATIONS

Why change?

- Need to modernize to meet current honey marketing practices
- Reflect current inspection practices
- Increase consistency with international standards
- Majority of proposals have been accepted at pre-consultation stage
- Respects commitments already made to industry

Registration of Honey Establishments

Will require the following programs to be developed and implemented in order to become registered:

- Sanitation
- Quality Assurance
- Recall Program
- Pest Control Program
- Water Quality

Conditions Respecting Registered Establishments

- Surrounding area
- Construction requirements
- Appropriate food contact surfaces

Operation and Maintenance of a Registered Establishment

- Sanitation practices for employees
- Appropriate materials and coatings used within the establishment
- Lighting and Plumbing requirements
- Vehicles used to transport honey

New standards of identity:

- Raw Unprocessed Honey
- Honey with Comb
- Comb Honey
- Flavoured Honey
- Honey with added ingredients

Definitions

- New definitions

•Eg. Codex definition and standard for honey

- Deleted definitions

•Eg. "Pasteurization" replaced with "heat treated"

Colour Classification

- golden changed to amber

WHAT WILL STAY THE SAME?

Health and safety provisions

- Reference to *Food and Drug Regulations*

Packing

- Retain standard container sizes
- Retain Ministerial exemptions

Trade

- Keep export certification optional
- Maintain exemption for bulk honey movement across provincial boundaries if shipped to a registered establishment

LABELLING OF HONEY

Industry Viewpoints

Some members of industry think the Country of Origin and the grade should appear on the principle display panel

Other members feel the current labelling requirements are just fine the way they are

- More consumer input required

FOCUS GROUPS

To obtain consumer opinions and perceptions about the labelling of honey. To be carried out by a third party contractor – hired by the CFIA

•Focus groups to be carried out in at least two Canadian cities – minimum of 4 separate sessions.

•Consumer feedback and industry input will be used to establish position on country of origin labelling provisions

•While focus groups are conducted, CFIA will continue to work with Dept of Justice on regulatory rewrite (except for labelling)

•After focus group feedback is received and analyzed, industry consultations will take place

•Drafting instructions on labelling requirements will be developed

•Both labelling and other amendments to proceed as one regulatory package

TIMELINES

- Focus groups to be conducted - Winter/Spring 2006
- Results to be shared with industry - Spring 2006
- Complete drafting of regulatory changes Summer/Fall 2006
- Finish preparation for publication in Canada Gazette Part I Fall 2006

WORKING RESIDUE LIMITS

WRLs are recommended safe levels for drug residues in honey

- Health Canada has determined that at these levels there is no undue risk to human health
- These same antibiotics are used in other food-producing animals for which there are tolerances for these drugs in either the tissue or the food product derived from food-producing animals

This is policy only

- WRLs are not found in regulations
- Honey that contains residues is in violation of the *Food and Drug Act and Regulations*
- Provide CFIA with enforcement guidelines
- Avoids unnecessary detention of honey found with low residue levels considered not to cause undue risk

WRLs are not intended to encourage the use of antibiotics in beekeeping

- Application of antibiotics for honey bees should be conducted in consultation with professionals (Provincial Apiarist or veterinarians)

WHY THESE SPECIFIC VETERINARY DRUGS?

- WRLs have been established for antibiotics for which CFIA tests under its National Chemical Residue Monitoring Program for honey
- These antibiotics have been approved for use in other food producing animals
- No WRLs for banned substances

WORKING RESIDUE LIMITS
CFIA ACTION: Residues within WRL
Notification to producer/owner

- Product is in violation of the regulations although does not pose a risk to human health
- Reminded to work with provincial apiarists and/or veterinarians to minimize or eliminate the risk of introducing residues into the honey

- Notification to provincial apiarist for their follow-up as required.

CFIA ACTION: Residues above WRL

- Results forwarded to Health Canada for a Health Risk Assessment
- Subsequent actions based on the Health Risk Assessment
  - detention, recall, disposal, prosecution
- Results brought to the attention of the provincial apiarist.

WHAT ABOUT IMPORTS ?
WRLs also apply to imported honey

- Importers encouraged to implement Good Importing Practices to ensure the products they import are in compliance with Canadian requirements.
- Non-compliant honey may be destroyed or returned to the country of origin
- Honey from certain countries may be sampled more frequently by CFIA

NEXT STEPS
Information Bulletin and Questions & Answers are being prepared

- Will be shared with national industry associations, sent to all CFIA registered establishments and posted in CFIA's website

CFIA will continue with its chemical residue monitoring program

WRLs will be reviewed to reflect new scientific information and could be subject to modification or cancellation by Health Canada

Importation of Honey Bees

Maria Perrone
Veterinary Program Specialist-Import, CFIA, Ottawa

The CFIA Legal department has developed Memoranda of Understanding, which were offered as a template to each Canadian province.
The amendment to the importation legislation was the result of many years of work. The CFIA would like to maintain the current conditions for at least a few full import seasons, so assess the adequacy of the current import conditions.

The most significant change for the 2005 import season was affected by the new American Rule on the importation of honeybees (to the USA). The United States has opened its importation to Australian and New Zealand bees, which could have the effect of limiting the supply of bees to Canada.

Pesticide Risk Reduction

Kurt Randall
Pest Management Regulatory Agency, Ottawa,ON

The PMRA reviewed the documentation submitted by the CHC for the registration of oxalic acid. This product was given ministerial approval 3 October 2005 for use by beekeepers for the treatment of varroa mites.

Checkmite Emergency Use registration was granted for all provinces in 2005. One submission was received from the CHC on behalf of all provinces. This allowed the PMRA to respond to the request on a timely basis.

Bee repellants have been the subject of review. The PMRA has decided that they are not pesticides but food residues must be compliant with the Food and Drug Act MRL of 0.1 ppm for agricultural chemicals.

Canadian Honey Production Situations and Trends

Farid Makki
Senior Market Development Advisor
Horticulture and Special Crops Division
Agriculture and Agri-Food Canada
Ottawa ON K1A 0C5

Canadian Honey Production

According to the preliminary data released by Statistics Canada, Canadian honey production in 2005 reached 33,918 metric tonnes (MT), representing a 1% decrease from the previous year mainly due to a lower production in Alberta and British Columbia. Yields decreased nearly 3%, due to the 15% yield drop in Alberta, Canada's largest honey producing province.

The 2005 honey crop in Alberta which is estimated at 13,041 MT, dropped by 14% compared to 2004, due primarily to a cold 2005 summer. Production in Manitoba reached 5,715 MT, representing a 7% increase compared to 2004, but still 10% below the 5-year average. Saskatchewan experienced a 20% increase in production with a honey production of 8,165 MT, thanks to a 20% jump in yields which reached 180 pounds per colony. Honey production in BC dropped by 25% reaching 1,514 MT, due to a 28% decrease in yields. Although this could appear as a significant drop, it is worth noting that this year's production is only 7% below the 5-

year average and that the 2004 BC honey crop was unusually high due to ideal climate conditions which led to above-average yields.

In Québec and Ontario, honey was extracted from a higher number of colonies. Ontario's production is estimated at 3,543 MT, up 3% from the previous year, while Québec had the largest increase in honey production among all provinces, with an estimated production of 1,500 MT which represents a 63% increase from 2004. This increase was primarily due to ideal weather conditions which promoted higher yields (110 pounds per hive), as well as to an increase in the number of colonies which reached 30,000, 11% higher than in the previous year. It appears that the Québec beekeeping industry has been able to restore the number of hives to the pre-2003 level (the particularly harsh winter in 2003 wiped out almost 30% of the bee colonies) much faster than anticipated.

Honey Bee population

The Canadian honey bee population peaked at about 700,000 hives in the mid-eighties and dropped to around 500,000 hives in the early nineties. However, in the past decade the number of hives has slowly risen to reach just over 600,000 in 2001. Preliminary estimates indicate that the number of hives was 609,645 in 2005, representing a 2% increase from 2004 and a 3% increase compared to the 5-year average.

The number of Canadian beekeepers continues its downward trend and is estimated to have fallen to 7,895 in 2005, which is 0.4% lower than in 2004 and 9% below the 5-year average. This clearly indicates that while there are fewer beekeepers, the average number of hives per beekeeper is on the increase. For 2005, it is estimated that on average there were 77 colonies per beekeeper, up from 75 in 2002. Alberta had the highest average in 2005 with 357 hives per beekeeper, while BC had the lowest average with 21 hives per beekeeper.

Honey Yields and Prices

With the exception of 1998, which was a record year for honey production with an average yield of 180 pounds per colony, the average yields have been in the 117-142 pounds per colony over the last 10 years. The estimated average yield for 2005 is 123 pounds per colony, down 2.4% from the previous year, but well within the last 10-year average. With an average of 180 lbs per hive, Saskatchewan has still the highest yields in the country, followed by Manitoba (150 lbs/hive) and Alberta (115 lbs/hive).

Estimates of the value of the 2005 Canadian honey crop are note available yet. However, historical data show a continuing upward trend in the average producer prices for bulk raw honey, rising steadily from $0.86/lb in 1999 to a peak of $2.04/lb in 2003. The price of honey has increased during that period on account of a world shortage of honey, due in part to drought in major producing areas, loss of Chinese honey from the market caused by antibiotic residue concerns as well as anti-dumping actions against China and Argentina in the U.S. However, this upward trend was abruptly reversed in 2004 as a result of a massive influx of low-priced Chinese honey on world markets and particularly in the US, which accounts for about 85% of our export market. According to Statistics Canada, the average producer price for bulk honey had fallen to $1.60/ln in 2004 and we expect that when the data for 2005 is released it will show an average price of well below $1.00/lb.

The availability of large amounts of low-priced Chinese and Argentinean honey on the world market has encouraged most North American honey packers to source an ever - increasing portion of their needs from offshore, particularly China. This has resulted in an unprecedented build-up of Canadian honey inventory levels. This factor along with a worldwide decrease in honey consumption has triggered a rapid decline in honey prices in Canada, as well as in our traditional markets, namely the United States and Europe.

Imports and Exports

Canada is a net exporter of honey. Total Canadian honey exports for the calendar year 2005 were 12.2 million kg, up 2.3% from 2004. Imports of honey into Canada peaked at 13.4 million kg in 1996, then levelled off to about 2-3 million kg until 2000 and have been growing steadily since then reaching 8.9 million kg in the calendar year 2004. Total Canadian honey imports for the calendar year 2005 were 8.2 million kg, down 7.4% from 2004.

Argentina captured 38% of the Canadian import market for honey, while imports from China represented 30% and Australian honey captured 19% of that market in 2005. Although China and Argentina together account for 70-80% of our imports in the last few years, it appears that since 2002, following the CFIA recall of Chinese honey related to chloramphenicol residues, Argentina has taken the lead from China.

Canadian honey exported in 2005 fetched an average of $1.12/lb, 38% less than in 2004, while imported honey fetched an average of $1.07/lb on the Canadian market in 2005, 8.5% lower than in 2004. Imported honey from China fetched an average of $0.62/lb in 2005, compared to $0.98/lb a year earlier (37% lower), while the average price of honey imported from Argentina was $0.79/lb in 2005 compared to $1.18/lb in 2004 (33% lower).

Given the uncertainty surrounding the size of the current year's honey crop in the world's major honey producing areas, the magnitude of North American honey imports in the next few months and the Canadian exchange rate, the best we might be able to conclude at this point in time

is that after the abrupt collapse in honey prices in the world and particularly in North America, prices might have bottomed out or be close to reaching those levels. Even if Canadian prices do get higher, the upward movement is very likely to be short lived and not sustainable as packers can always switch to using more, cheaper imported honey.

Resolutions

1A

WHEREAS a national levy on domestic and imported honey could be used to promote honey, and
WHEREAS such a levy already exists for honey being shipped into the USA,

BE IT RESOLVED that CHC continue to investigate the possibility of establishing a national levy on honey.

Moved by Cory Bacon
Seconded by Ed Nowek

CARRIED UNANIMOUSLY

1B

WHEREAS the Alberta Beekeepers have committed $20,000 as seed money towards implementing a national honey promotion program for Canadian honey;

BE IT RESOLVED that Canadian Honey Council strongly supports this program with $20,000 and make all efforts to have these funds matched.

Moved by Ron Greidanus/
Seconded by Paul Kittilsen

CARRIED UNANIMOUSLY

2

WHEREAS the Canadian Honey Council is often short of the resources necessary, both monetarily and personnel-wise, to sustain the necessary lobbying efforts required to successfully bring about regulatory changes sought by the beekeeping industry in Canada; and
WHEREAS there are precedents of work being done on behalf of Canadian Honey Council by non-Board members (e.g. Tim Townsend on COFFS), and;
WHEREAS the benefits of this type of approach to achieving important results in areas that are not controversial to Canadian Honey Council members (e.g. changes to the Federal Honey Regulations) have been discussed at the meeting of association presidents held in Saskatoon in January of 2005,

BE IT RESOLVED that the Canadian Honey Council expand its usage of working committees to include more help from Canadian Honey Council members not on the Board to enable more pressure and more follow-up to be done on behalf of the beekeeping industry in Canada on issues of importance.

Moved by Ron Greidanus
Seconded by Alain Moyen

CARRIED UNAMIMOUSLY

3

WHEREAS there are currently no requirements in place in Canada that requires honey house standards to be in place by countries exporting honey into Canada, and
WHEREAS there have been conflicting opinions by WTO trade experts concerning the legal ability of Canada to restrict the importation of honey into Canada based on honey house standards and remain WTO compliant,

BE IT RESOLVED that the Canadian Honey Council obtains a definitive opinion on this matter by the most credible sources available so that the beekeeping industry in Canada can accurately know and be better able to devise an effective multi-pronged strategy to counter the negative effects of offshore honey being imported into Canada.

Moved by Ron Greidanus
Seconded by Corey Bacon
CARRIED UNANIMOUSLY

4

WHEREAS the president should represent only the Canadian Honey Council and
WHEREAS the president should have a certain independence from all the provinces especially that which he or she represents

BE IT RESOLVED that the CHC reconsiders its formula for appointment of the president and selects from the members of the CHC-CCM a president who exercises an impartial vote.

Moved by Alain Moyen Seconded by Ed Nowek

CARRIED UNANIMOUSLY

5

BE IT RESOLVED that the Canadian Beekeeping Industry support a feasibility study on the economic risks and/or benefits if free movement of bees north and south of the international border occurred. This study should include benefits from pollination, package bees, nucs and queens as well as possible bee diseases. This information should be obtained from Canadian and U.S. government bureaucrats as well as the beekeepers from both countries.

Moved by Ed Nowek, Seconded Ron Greidanus
DEFEATED 4 to 3
1 abstention

6

WHEREAS there are significant regional concerns regarding the importation of queen bees into Canada and
WHEREAS no one region wishes to mitigate or devastate another region of the beekeeping industry and
WHEREAS the country has been divided on the importation issue for many years

BE IT RESOLVED that the CHC facilitates a process whereby the different regions can discuss the details addressing the regional concerns on the importation issue during 2006 so as to bring consensus to CHC and to give clear direction to government.

Moved by Barrie Termeer/ Seconded John van Alten

CARRIED 5/2, 1 abstention

7

WHEREAS, the importation of queens and attendants from continental U.S.A. presents a risk of importing the small hive beetle into Canada.
WHEREAS there is ongoing potential for small hive beetles to enter Canada because of our shared border and beekeeping activities near that border.
WHEREAS there is a product called Gard Star® (40% permethrin) registered for use against small hive beetles in the U.S.A.

BE IT RESOLVED that CHC work with the manufacturers of Gard Star®, to have that product registered for use in Canada.

Moved by John Van Alten Seconded Ron Rudiak

CARRIED UNANIMOUSLY

8

WHEREAS queens from the continental U.S. are being imported into Canada, and are of economic importance to Canadian honey production and pollination services.
WHEREAS confirmed cases of Africanized bees are being discovered in various locations around the continental U.S, because of long distant trucking of bees.
WHEREAS importation of Africanized bees is a serious threat to Canadian Queen breeding programs, and current beekeeping practices in more urban areas of the country.
WHEREAS Canadian beekeepers would like to reduce the risk of inadvertently importing Africanized bees into Canada.
WHEREAS Morphometric testing, with Mitochondrial DNA testing as outlined by Dr. Ernesto Guzman's 2 step protocol (Appendix 1) would increase the reliability of pre-import screening and reduce the risk of importing Africanized genetics.

BE IT RESOLVED that the CHC instruct CFIA to require these tests on all imports of queens from continental U.S.A.

Moved by John van Alten Seconded Corey Bacon

DEFEATED 5/2, 1 abstention

9

WHEREAS queens from the continental U.S. are being imported into Canada, and are of economic importance to Canadian honey production and pollination services.
WHEREAS confirmed cases of Africanized bees are being discovered in various locations around the continental U.S, because of long distant trucking of bees.
WHEREAS importation of Africanized bees is a serious threat to Canadian Queen breeding programs, and current beekeeping practices in more urban areas of the country.
WHEREAS Canadian beekeepers would like to reduce the risk of inadvertently importing Africanized bees into Canada.
WHEREAS Morphometric testing, with Mitochondrial DNA testing as outlined by Dr. Ernesto Guzman's 2 step protocol (Appendix 1) would increase the reliability of pre-import screening and reduce the risk of importing Africanized genetics.

BE IT RESOLVED that the CHC instruct CFIA to require these tests on all imports of queens from continental U.S.A.

Moved by John van Alten, Seconded Corey Bacon

DEFEATED 5/2, 1 abstention

10

WHEREAS there has been no improvement in the disease and pest situation in the continental USA,

BE IT RESOLVED that the CHC support a continuation of the current regulations governing the importation of queens from the continental USA

Moved: Corey Bacon/ Seconded Alain Moyen

CARRIED 6/1, 1 abstention

11

WHEREAS there has been no improvement in the disease and pest situation in the continental USA,

BE IT RESOLVED that the closure of the Canadian border to package bees and bees on comb from the continental USA be extended.

Moved by Corey Bacon/ Seconded John van Alten

CARRIED 5/2, 1 abstention

12

WHEREAS the Canadian Honeybee Industry faces ongoing significant challenges, and
WHEREAS the Canadian Honey Council has met the challenges of the past but is struggling with emerging issues, and
WHEREAS the Canadian Honey Council has an opportunity to be strengthened (either independently or with the support of ACAAF funding) in order to meet current and future challenges,

BE IT RESOLVED that the Canadian Honey Council commits to forging a new direction, including restructuring the organization, to:

- build and promote a dynamic and prosperous Canadian Honeybee Industry,

- be the definitive unified national voice for the industry and
- act as the instrument for achieving a sustainable Canadian Honeybee Industry in the global economy.

Further, this commitment will be undertaken through broadly representative working committees, appointed by the Board, to plan for implementation of the new direction considering the options outlined by the Stakeholders Meeting; specifically to propose to the 2007 AGM:

- the new purpose and roles of the CHC,
- the future CHC membership and participation processes, and
- funding streams to support the revitalized organization.

Moved by Alain Moyen, Seconded Ed Nowek

CARRIED UNANIMOUSLY

Canadian Bee Research Fund

Rhéal Lafrenière

The CBRF directors are pleased to announce the successful projects for 2006:

Currie R.W., University of Manitoba, $5,000 "Integrating Chemical Control and Host Resistance to Increase Treatment Thresholds for *Varroa destructor*."

Guzman, E. University of Guelph, $5,000 "Varroa mite resistance to current chemical treatments, alternative control products applied with different delivery methods, and chemical residues in honey."

Pernal, S., Agriculture and Agri-Food Canada, $5,000 "Management of Honeybee Diseases Using Lysozyme."

Robertson, A. J., Saskatchewan Beekeepers Association, $5,000 "Evaluation of Varroa and Tracheal Mite Tolerance in Selected Honeybee Lines and Attempted Correlation of Tolerance with DNA Markers"

Nasr, M. Alberta Agriculture Food and Rural Development.$5000 "Study of Environmental Sources for Antibiotic Residues in Honey"

Elections

The nomination committee brought names for each position to the board. Elections were held and the positions for 2006 are

President Alain Moyen
Vice President Ed Nowek
Executive Directors
Paul Kittilsen and Corey Bacon

CARRIED

Adjournment

Motion to adjourn the meeting by Alain Moyen, seconded by Ed Nowek.

CARRIED

SECTION 2 Canadian Bee Research Reports

The Saskatchewan Beekeepers Honey Bee Breeding Program 2005-2006: The Saskatraz Project

Albert J. Robertson, Meadow Ridge Enterprises Ltd., RR 6, Sasktoon, SK, S7K 3J9

The 2005 results of our breeding program were presented at our annual SBA convention in Saskatoon (February 1-4), Quebec City at the Canadian Honey Council meetings (January 24-28) and in Houston, Texas at the American Honey Producers Associations annual meeting (January 10-14). Considerable interest was expressed in Saskatraz genetics at all meetings and some new collaborations involving selections and molecular marker analysis will be taking place in the future.
The objective of our research program is to select productive, gentle, honey bees with some tolerance to mites and brood diseases. In addition, correlation of beneficial traits with molecular markers will be attempted. This will potentially eliminate the time consuming and expensive process now needed to identify lines with tolerance to mites and brood diseases.
Saskatraz was established in 2004 with 35 pre-selected colonies from fourteen different queen breeders, reselected Russian stock,(2000 to 2004) and breeding lines from the Manitoba Queen Breeders Association. In 2005, 14 more selections were placed at Saskatraz with crosses made between Russian and German lines (Dr. Ralph Büchler) in 2004 and with additional selections from Canadian lines.
In 2005, more honey bee semen was imported from Dr. Büchler's program in Germany. Dr. Büchler's program involves selection for varroa tolerance, honey production, grooming and hygienic behaviour. Susan Cobey assisted us in making 35 new crosses with this semen, (G-08 and G-72) by instrumental insemination of virgin queens from the following selected lines (yellow-green-05, yellow-blue-05, UM-163, 234, 147, SAT 28, 30 and BTP-30).
No chemical mite treatments are being made at Saskatraz and natural selections is being used to identify tolerant phenotypes. Our primary selections made in May 2005, involved wintering ability, (spring populations, brood pattern, etc) gentleness, lack of brood disease and general queen and economic hive characters. Honey production and mite populations were monitored throughout the summer. Honey production was given top priority and Figure 1 shows the results of colony honey production during the summer of 2005. Three colonies produced over 300 lbs (SAT-17, 14 and 30) and three over 250 lbs (SAT-18, 25, 34). The two colonies with the highest tracheal mite levels (12 to 14%) in October, 2005 being SAT-08 and SAT-31, produced 208 and 142 lbs of honey respectively (Fig 1.). SAT-06 (10% Varroa) and 26 (30% Varroa) showed the highest levels of varroa population growth as determined by alcohol wash in October 2005 and produced 147 and 159lbs of honey respectively (Figure 1).

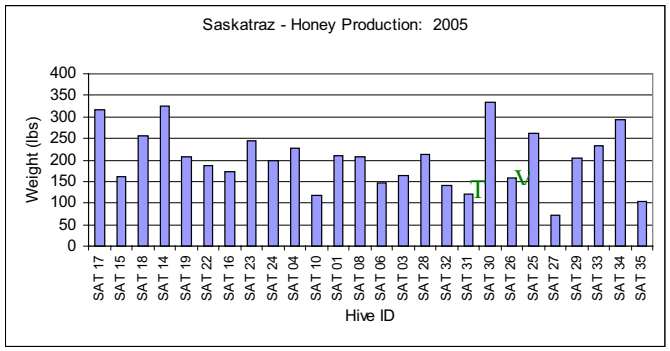

Figure 1. Total net honey production per hive was determined by weighing all supers of honey produced by each colony. Honey was harvested at three time periods between July 15 and Sept 10, 2005. Stars denote hives selected on the basis of honey production, T and V identify colonies showing the greatest increase in tracheal (T) and varroa (V) mite population growth.

In 2004 all colonies selected for Saskatraz were thoroughly evaluated for the presence of both tracheal and varroa mites. No tracheal mites were detected in any of the colonies from two independent samples of 100 bees/colony, Therefore all colonies were infected in the fall of 2004 with 200 to 300 worker bees collected from a colony showing 60% tracheal mite infestation (John Gruszka, personal communication).
Tracheal mite levels were monitored on a monthly basis from May 2005, to October 2005. Figure 2 shows spring and fall tracheal mite populations detected in individual hives at Saskatraz. Stars designate hives selected for honey production (SAT-34, 28, 30, 23, 14, 17).

Saskatraz Tracheal mite levels and hive locations

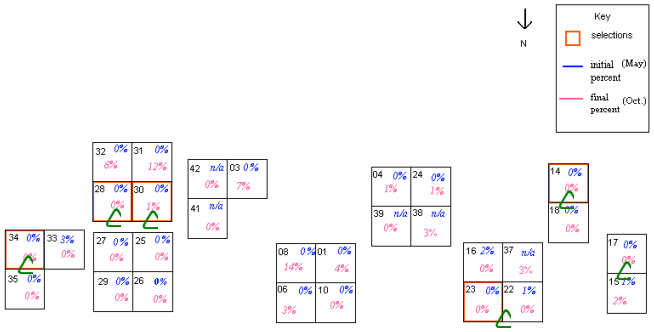

Figure 2. Per cent tracheal mite infestations were determined on a monthly basis by sampling 100 bees per colony from May to October. May (blue) values for each colony at each location are indicated in the upper right corners of each hive location, stars denote selected colonies; October (red) values are in the centre

Evaluation of colonies for varroa mites in 2004 (July-August) showed wide variations in varroa populations. Eighteen colonies tested positive with trace levels to 50 mites detected by natural drop per day. In seventeen colonies no mites were detected by natural drop analysis in a 28-day test. In order to normalize varroa mite populations all colonies were treated with Apistan for 14 days in the fall of 2004 (October 1-14). Varroa mites were detected in all colonies in October 2004. No further treatments were made and varroa population growth was monitored in each colony from May 7 to October 15, 2005. Monitoring was performed by measuring the natural drop rate of varroa mites on sticky boards as described by Martin, S.J. 1998. (Ecological modeling 109; 267-281) on a weekly basis. Varroa populations were also determined by the alcohol wash method on a monthly basis in samples of approximately 200 to 300 bees per colony.

Figure 3 shows changes in varroa mite populations in selected colonies between May 7, and Oct 15, 2005. Varroa population analyses of 8 colonies are shown in Figure 3, representing high, low and intermediate varroa populations. SAT-26 showed a rapid increase in varroa population 40 days after count initiations. Between the middle of June and September varroa populations increased from very low levels to 5000 varroa /colony. Alcohol wash analyses of SAT-26 (October) showed 30% of the worker bees sampled were carrying varroa, confirming the natural drop analyses. SAT-26 appears very susceptible to varroa infestation and it will be of interest to see if this colony survives the winter. SAT-06 showed a steady increase in varroa population growth from July to September, as did SAT-17. SAT-14, 23, 28, 34 and 30 suppressed varroa population growth throughout the test period. SAT-34 showed an increased varroa drop rate between 110 and 120 days (Sept 7-17) into the analyses, with counts returning to trace levels in the next month. Spring counts will reveal how well these colonies continue to suppress varroa population growth.

Changes in varroa mite populations in selected colonies (May to Oct 2005).

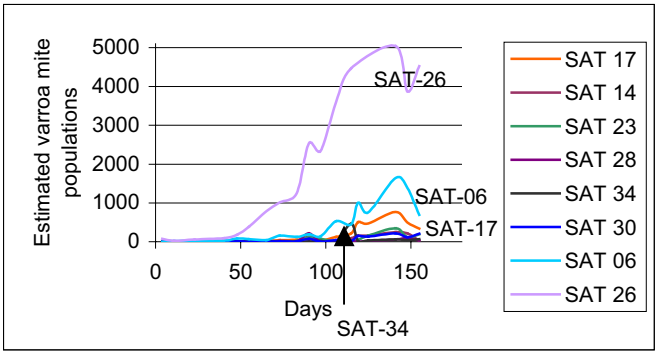

Figure 3. Varroa mite population were estimated by the natural drop method. Varroa mites were counted on a weekly basis between May 7 and Oct 15, 2005. Data from 8 colonies are shown representing high (SAT-26,-06) varroa populations, intermediate (SAT-17), and low population levels (SAT-14,-23,-28,-34,-30). SAT-34 (arrow) showed low varroa counts except for a increased drop rate detected between 110 and 120 days (Sept) into the analyses.

On the basis of honey production, suppression of tracheal and varroa mite population growth and other desirable colony traits six selections of Saskatraz colonies were made in 2005. SAT-14, 17, 23, 28, 30 and 34 were selected for multiplication of daughters. SAT-23, 28 and 30 were selected early enough so that some queen cells could be produced from embryos collected from these colonies during the summer. Queen cells were distributed to about seven SBA queen breeders for out crossing. We need to expand the multiplication of these selections in the coming years to maintain these breeding lines.

Acknowledgements

The financial support of the Saskatchewan Beekeepers Association, Meadow Ridge Ent. Ltd.,

Saskatchewan Agriculture and Food and the Canadian Bee Research Fund is gratefully acknowledged. The expert technical assist of Eric Pedersen and help with mite analyses by John Gruszka, Provincial Apiculture Labs in Prince Albert, Saskatchewan helped make this work possible. We also than Yves Garez for his assistance in importing honey bee semen.

Varroa mite resistance to current chemical treatments, alternative control products applied with different delivery methods, and chemical residues in honey.

Ernesto Guzman,
Department of Environmental Biology
University of Guelph

Summary:

Many hard and natural chemicals have been tested to treat colonies against the mite *Varroa destructor*. Ideal chemicals should be effective against the mite without promoting parasite resistance, their application should be practical and economical, and they should not leave or minimally leave residues in honey. Some of them have shown promise, but their efficacy has not been evaluated with a variety of delivery methods, which may affect their degree of control, as well as the amount of residues in honey. The objectives of this project are: 1) to determine the degree of resistance of the mite *Varroa destructo*r to fluvalinate and coumaphos in colonies from different regions of Ontario, 2) to test the efficacy of oxalic acid and thymol against Varroa mites using three delivery methods, and 3) to determine the residue levels of these chemicals in honey.

During 2005, we conducted activities to test the efficacy of oxalic acid and thymol against Varroa mites. These products are not harmful to human health and theoretically leave very small amounts of residues in honey. In order to increase the efficacy of these products, we applied them with three different delivery methods (mixed with confectionary sugar, impregnated in florist block and mixed with sugar syrup) as single or combined treatments, to find which one provides the best mite control leaving the least residues in honey. Additionally, we estimated the bee population of the experimental colonies and took samples of brood and dead bees from treated and untreated colonies, to look for possible toxic side effects of these products to the bees. Food safety and efficacy are the main concerns of this project. We conducted the study with 70 colonies that were artificially infested with a similar load of mites in the beginning of the season, and spent several months waiting for the mite populations to develop. The products were applied, the samples were taken, and a final treatment with coumaphos (check mite®) was used to compare the efficacy of the different treatments. We finished the first part of the experiments and will have all results analyzed in 2006. The most important results so far are that thymol in dust mixed with confectionary sugar as well as delivered in florist block yielded the best control against Varroa mites. None of the products seemed to be toxic neither to adult bees nor to the brood. Berna Emsen, a student from Turkey was the main person responsible of the development of this study, but six other students participated in this project too. The experiments so far conducted demanded a lot of effort and logistic organization, but the students' assistance, the work coordination and field experience of Paul Kelly, as well as the collaboration received from the Technology Transfer team of the OBA and that of beekeepers such as Geoff Wilson and Peter Bussell, allowed us to collect a good amount of data. Next year we will analyze the samples of honey and comb as well, as the workers' samples. Additionally, and as a consequence of the results obtained this year, we will assess the effect of different application materials, solvents and temperature on the rate and time of release of thymol to develop a method of slow and constant release of the product for at least 10 days.

Management of Honey Bee Diseases Using Lysozyme

Amanda Van Haga & Stephen F. Pernal,
Agriculture Agri-Food Canada Research Station
Beaverlodge, AB

American foulbrood (AFB) is a honey bee brood disease caused by the spore-forming bacterium *Paenibacillus larvae*. Oxytetracycline hydrochloride (OTC) is the only antibiotic approved for the control of American foulbrood in Canada, but recently, strains of *P. larvae* resistant to OTC have been reported in Canada and several other countries.

Our research project aims to evaluate lysozyme and nisin as alternatives to OTC for the control of AFB and other honey bee diseases. Lysozyme is a ubiquitous lytic enzyme that is commercially extracted from hen egg albumen. It inhibits a broad spectrum of gram-positive bacteria and preliminary laboratory testing has demonstrated it is also active against *P. larvae.* Lysozyme is a superior alternative to conventional antibiotics because it is considered low risk, being used as a food additive in several applications. Consequently, any residual quantities deposited in hive products would pose little or no risk to human health. Nisin is another low risk antimicrobial that may control AFB and synergistic activity between lysozyme and nisin has been shown against other bacteria. The potential for synergy may provide beekeepers with a means to control AFB with very low concentrations of these compounds.

We evaluated the toxicity of lysozyme to honey bees as well as its *in vitro* efficacy against AFB during the summer and fall of 2005. We also undertook preliminary investigations of the toxicity and efficacy of nisin with and without the addition of lysozyme.

Objectives and Methodologies

Adult Worker Honey Bees

The acute and chronic oral toxicity of lysozyme to adult worker bees was determined with cages of field-collected bees, treated and incubated in the laboratory at 34° C, 60% RH. In the acute studies, 30 adult worker honey bees, aged 7-9 days, were fed a range of eight target doses from 0-6400 µg lysozyme/bee in a 40% (w/v) sucrose solution and were monitored over a period of 72 h. Mortality among the lysozyme doses was compared with a highly toxic reference compound, dimethoate, as well as OTC. The relationships between dose and mortality at 24, 48 and 72 h were modelled using logistic regression which allowed us to estimate the dose that was lethal to 50% of the bees tested (LD_{50}) for each compound.

The chronic toxicity studies involved continuously feeding 100 newly-emerged caged worker bees target doses of 0, 64, 640 and 6400 µg lysozyme/bee/day in 40% (w/v) sucrose solution. Consumption of the treatments and mortality was monitored every 1-3 days over a 42 day period. The percentage of workers surviving per cage at each date and for each empirical dose was compared using survival analysis. The chronic oral toxicity of nisin was also tested using the same protocol.

In a colony, OTC is fed to larvae after it is consumed by nurse bees and integrated into the brood food. Lysozyme could similarly be fed to adult workers however it is unknown whether the enzyme will persist in their honey stomach. To test the stability of lysozyme, adult worker bees (7-9 days old), were fed target doses of 0, 64 and 6400 µg lysozyme/bee in a 40% (w/v) sucrose solution. The contents of the honey stomachs from 10 bees/cage were forcibly regurgitated at 0, 2, 4, 8, 16, and 24 h and placed into capillary tubes. Changes in the quantity or activity of the enzyme after consumption were analyzed by Inovatech BioProducts of Abbostsford, BC.

Larval Worker Honey Bees

The effects of feeding lysozyme to larval honey bees and the ability of the enzyme to treat larvae infected with AFB was evaluated using an *in vitro* larval rearing assay. Honey bee larvae less than 24 h-old were grafted into 24-well tissue culture plates and reared to adulthood in an incubator set to 34° C. The larvae were transferred onto fresh food daily until pupation occurred, at which time they were moved into pupation trays (culture plates lined with absorbent tissues) and monitored until emergence as adults. Infected larvae were fed 1.5 x 10^8 *P. larvae* spores mixed into their basic larval diet (BLD). Each tray contained approximately 30 infected or uninfected larvae fed one of the following treatments mixed in their BLD: 1) 0, 0.0025%, 0.025%, 0.05%, 0.1%, 1%, 3%, 4%, 5%, or 10% lysozyme, 2) 0.01%, 0.1%, 1%, or 4% nisin, 3) 0.00025%, 0.0025%, 1%, or 4% 3:1

lysozyme:nisin: or 4) 0.025% or 0.0025% OTC. The percentage of adult emergence and larval (pre-defecation) and pupal (post-defecation) mortality per tray was compared among the doses using a one-way analysis of variance (ANOVA). Dose differences were compared using a Tukey-Kramer honest significant differences test.

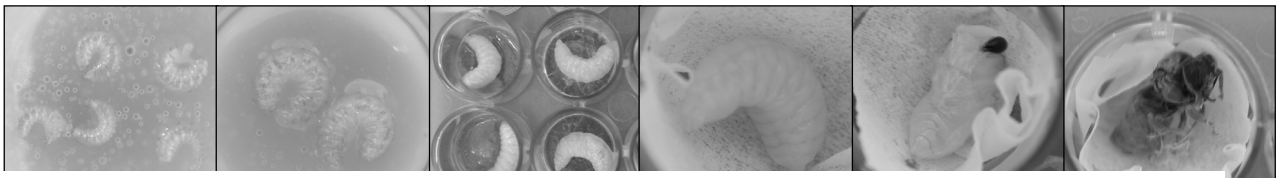

Figure 1. Various stages in the growth and development of honey bees reared in the laboratory: (A) $2^{nd}/3^{rd}$ instar larvae floating on basic larval diet, (B) 4^{th} instar larvae, (C) 5^{th} instar larvae in various stages of defecation and ready to transfer to (D) pupation trays lined with tissue, (E) pupal stage, and (F) emergence.

Results

Adult Worker Bees

Lysozyme, similar to OTC, was not acutely toxic to adult worker honey bees (Table 1). In fact, the highest dose tested failed to result in significant adult mortality within 72 h. By contrast, dimethoate killed bees at extremely low doses. The LD_{50} values for dimethoate were within the range of previously published literature values, suggesting our assay conformed to internationally recognized standards.

The longevity of workers in the chronic toxicity tests was influenced by the dose of lysozyme they consumed (χ^2=1594.5; df=3; P<0.00001). While mean worker lifespan was reduced by 12 days at the highest dose, this difference diminished to only 2 days at the lowest dose (Figure 2A). For evaluation of toxicity, all doses used in the chronic test were exceedingly high and were much greater than doses that would likely be applied to colonies for the control of AFB.

Nisin was more toxic than lysozyme and accelerated mortality was seen at all doses tested (χ^2=1643.9; df=3; P<0.00001). The lowest dose tested (58 µg/bee/day) had a LT_{50} (time to death of 50% of honey bees tested) of 18.10 ± 0.52 days (Figure 2B), approximately 44 days less than mean survival in days of control worker bees. The large discrepancy between the LT_{50} values for lysozyme and nisin control treatments can be attributed to the time of collection of bees used in the tests, Aug 23 vs. vs. Sept 27, respectively. "Winter bees" produced during the fall normally live considerably longer than bees reared during summer months. Analysis of lysozyme quantity and activity from adult worker honey stomach samples is currently being completed by Inovatech BioProducts laboratories.

Compound	Time (h)	LD_{50} (µg a.i/bee)
Dimethoate	24	0.33
Dimethoate	48	0.29
Dimethoate	72	0.26
Oxytetracycline	24	2994
Oxytetracycline	48	2580
Oxytetracycline	72	1554
Lysozyme	24	> 6400
Lysozyme	48	> 6400
Lysozyme	72	> 6400

Table 1. Toxicity of oxytetracycline and lysozyme compared with dimethoate: LD_{50} values obtained in laboratory acute oral toxicity tests with worker honey bees aged 7-9 days

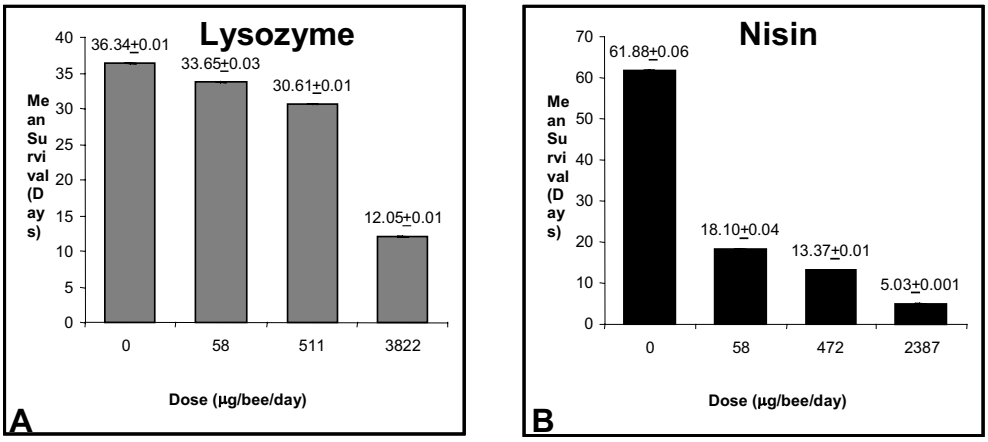

Figure 2. Mean survival time in days of adult worker honey bees (*Apis mellifera*) during chronic exposure to increasing doses of lysozyme **(A)** and nisin **(B)**. Doses represent actual empirical amounts consumed by bees.

Larval Worker Honey Bees

Although lysozyme was not toxic to worker larvae at doses ≤ 4% in BLD, it killed all the larvae during the pre-defecation stage when fed at 10% in BLD (Figure 3). Toxicity of doses > 4% are significantly higher than the dose of 0.0025%, which was the only dose that reduced mortality to AFB (Figure 4). In a previously published study, chlorotetracycline was also found to be effective at a dose of 0.0025%.

The large difference between lysozyme's toxic and therapeutic dose, however, is complicated by our finding that larval susceptibility to AFB is increased by sub-lethal doses of lysozyme. As a consequence, all infected larvae were killed when treated with doses as dilute as 0.05% (Figure 4), a dose that was not toxic to uninfected larvae (Figure 3). Increased larval susceptibility to AFB in the presence of hyper-therapeutic and sub-lethal doses of an antibiotic, however, has been previously observed in other published studies; significantly elevated larval mortality for a sub-lethal dose of tylosin was only 30% more concentrated than the therapeutic dose. Because our findings with lysozyme *in vitro* resemble those reported for tylosin, lysozyme may have the potential for colony-level control of AFB.

Nisin was more toxic to honey bee larvae than lysozyme as it killed all larvae at a dose of 1%. Nonetheless, nisin provided slight protection of larvae from AFB at doses of 0.1%, where 4% of the bees emerged to adulthood in one trial and 13% in a second. The 3:1 lysozyme/nisin mixture was not toxic below 1% in BLD but it was also not efficacious in suppressing *P. larvae* infections at dosages of 0.00025% and 0.0025%.

Oxytetracycline at a dose 0.0025% in BLD was therapeutic against AFB; in two trials an average of 55% of infected larvae emerged to adulthood.

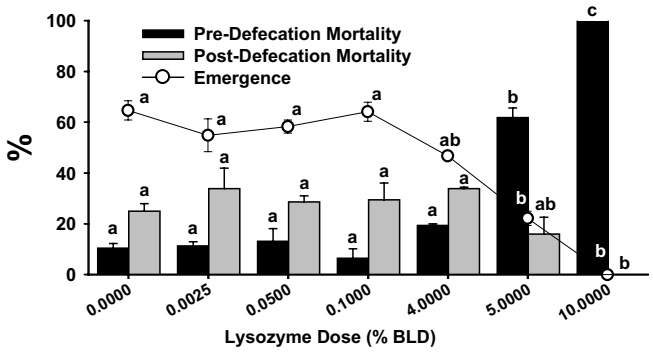

Figure 3. Effects of various doses of lysozyme on the percentage survival/emergence of worker bee brood per larval rearing tray. Dose-related differences were observed for proportions of pre-defecation mortality, post-defecation mortality and emergence. Doses followed by the same letter indicate no significant difference among percentages within pre-defecation mortality, post-def**F**ecation mortality or emergence (Tukey-Kramer HSD, α=0.05). The number of larval trays per dose varied between 2 and 11.

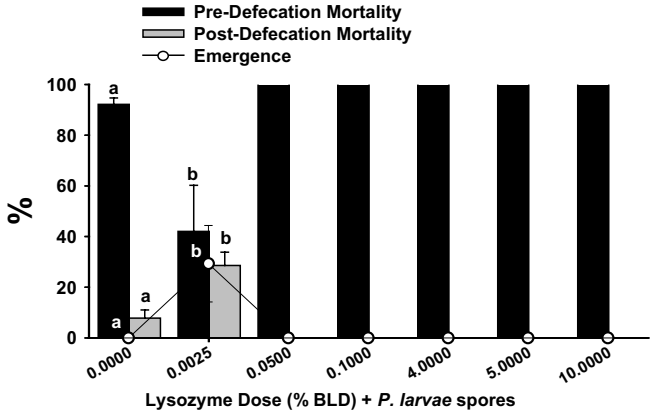

Figure 4. Effects of various doses of lysozyme on the percentage survival/emergence of worker bee brood per larval rearing tray infected with *P. larvae*. Dose-related differences were only compared between trays treated with 0 and 0.0025% lysozyme because other doses experienced 100% mortality. Differences, indicated by different letters, were observed for pre-defecation mortality, post-defecation mortality and emergence (ANOVA, α=0.05; *N*=4 larval rearing trays for 0.0025% dose and 11 trays for 0% dose).

Conclusions

The evaluation of lysozyme for the control of AFB has produced a number of positive results. Lysozyme is virtually non-toxic to adult worker honey bees according to international standards for acute laboratory tests with a 24 hour LD_{50} value >6400 µg, and is also less toxic than OTC.

Long-term consumption of lysozyme at low doses is relatively non-toxic. The application of the lowest dose, 58 µg lysozyme/bee/day, over a period of 42 days would be equivalent to applying 121 g of lysozyme to a colony of 50,000 bees. In contrast, the established field dose of OTC administered per colony is 0.6 g. Consequently, our results suggest that worker longevity would not be affected by orally administered lysozyme at doses 200x greater than that for OTC.

Chronic consumption of nisin appeared to reduce adult worker survival time to a greater extent than when bees were fed lysozyme. The difference in chronic toxicity between the two compounds, however, is difficult to interpret because they were not run coincidentally and survival of untreated bees differed between experimental dates. We are planning experiments for 2006 to establish what dose of nisin and lysozyme has no effect on adult worker longevity and, as well as establishing an LD_{50} for nisin.

Lysozyme is toxic to larval worker honey bees at doses above 4% (0.04 mg lysozyme/mg BLD) but is partially therapeutic at a dose of 0.0025%. Nisin, by contrast, exhibited slight therapeutic effects on larvae infected with *P. larvae* spores and was not toxic to uninfected larvae below 0.1%. Future *in vitro* studies will investigate doses of lysozyme and nisin less than 0.0025% and 1%, respectively, to determine the full range of therapeutic doses. Moreover, formulating lysozyme and nisin in mixtures other than 3:1 may yield a formulation more efficacious and less toxic to larvae.

Acknowledgements

Funding for this project was provided by the Canadian Bee Research Fund, Inovatech BioProducts, the Alberta Beekeepers' Association, Bee Maid Honey and the Matching Investment Initiative Program of Agriculture and Agri-Food Canada. We also acknowledge the assistance provided by other members of the Apiculture Program at AAFC Beaverlodge, especially Adony Melathopoulos, Sterling Smith, Robert Albright, Devon Coupland, and Diana Munro.

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

R.W. Currie, Dept Entomology,University of Manitoba, Winnipeg, MB

Varroa mites can have a severe impact on honey bee colonies and cause direct losses in honey production, increased susceptibility to other diseases and parasites and colony death. In our lab we have developed economic thresholds that beekeepers can use to predict when colonies should be treated to prevent economic loss from varroa. These thresholds are based upon sampling the colonies mite population through mite drop and/or assessing the mite population on adult bees using an alcohol wash (or some other method). Knowing what level of mites your colonies can tolerate is essential in an environment where mites can be resistant to one or more of the products commonly used in their control. We are now focussing on research to integrate selection of bees with mite tolerance with different mite control strategies so that we will be able to manage colonies with higher mite levels and/or treat colonies less often without experiencing economic loss.

A number of different factors are thought to influence the ability of bees to tolerate varroa

infestations. Our research is focusing on looking for mechanisms that will enhance winter survival of colonies (tolerate higher mite loads) and/or allow colonies to reduce their mite "loads" overwinter.

Mite population changes during winter and efficacy of late season (fall and winter) acaricide treatments might be affected by the amount of late fall and winter brood rearing. We are conducting studies to look at the effects of winter brood rearing on survival of varroa over winter as this could have an effect on both treatment efficacy (of late fall and winter treatments with compounds like oxalic and formic acid) and the reduction in mite load over winter. The results so far have shown that infestation of winter brood patches is low in mid winter but increases substantially near spring. Small numbers of varroa mites are able to utilize that brood during winter but "winter mites" have very low reproductive capacity. Experiments were conducted in the winter of 2005-2006 to assess the utilization of brood by varroa in early winter and wether it has a major affect in affecting the variability of late fall and winter acaricide treatments.

Environmental effects also are thought to have an influence mite survival and might interact with bee genetics to provide effective control of varroa in some cases. In the summer and fall of 2005 experiments were conducted to examine the influence of temperature and ventilation rates on mite and bee mortality. Bees from unselected stock were collected and placed in bioassay cages to which varroa mites were added. Cages were then confined within sealed glass chambers and exposed to low, medium and high air flow rates to determine the effect of ventilation on both worker and varroa survival. The experiment was conducted at two temperatures 10^0C and 25^0C and replicated 12 times.

The results showed that maintaining small clusters of bees at low to medium ventilation rates for short periods killed significantly more varroa than worker bees when they were maintained near the core temperature of the winter cluster (~25^0C). Similar results were seen at the lower temperature but significant bee mortality resulted in some trials, probably as a result of the small cluster sizes used in our experiment. The results confirm our observations from other experiments where we have been manipulating hives in the wintering building. The experiments suggest that changes in ventilation rates might be able to be used in conjunction with high grooming lines of bees to significantly reduce a colony's varroa load over winter. This technique has the potential to substantially increase treatment thresholds. However, the results will have to be repeated in full scale colonies to determine if similar levels of mite control can be obtained without causing substantial colony mortality or negatively affecting colony size in spring.

In an ongoing experiment, indoor and outdoor - wintered colonies are also being monitored to determine the potential for high grooming bees to reduce mite loads in different environments.

Grooming level of colonies, some of which contained queens from "unselected stock" and some of which were chosen because they appeared to show tolerance to *Varroa destructor* were assessed using a standardized bioassay and by measuring the mite load reduction over winter in colonies wintered indoors. In addition to grooming behaviour we evaluated all of the colonies to assess hygienic brood removal behaviour (Nitrogen Test), brood rearing capacity under mite pressure, changes in tracheal mite and varroa population over winter, changes in the levels of Nosema over winter and changes in the bee population over winter. We are also currently assessing some of this stock to determine if there may be possible interactions between varroa and honey bee viruses that influence the tolerance of bees to varroa. The results of this work will allow us to focus on mechanisms that are best suited to enhancing winter survival of colonies carrying moderate varroa mite loads.

Stock from this study was distributed to cooperating queen producers from Manitoba and Saskatchewan who, in turn reared queens from it and will evaluate it in commercial honey producing apiaries. In the near future we will begin assessing this stock to determine if higher economic thresholds can be used to treat varroa without causing significant losses in honey production or colony survival.

Appendix I: Consolidated Balance Sheet and Statement of Income

Canadian Honey Council
2005 Financial Statement
General Fund Balance Sheet as at October 31, 2005
(Unaudited)

	2005	2004
Assets		
Current Assets		
Cash	**38,471**	
Short-term investments	**106,322**	110,605
Accounts receivable	**5,989**	1,227
Inventory		49
Accrued interest receivable	**1,062**	719
Prepaid expenses	**4,425**	
	156,219	112,600
Capital Assets, net book value – note 5		
Equipment		1,017
	$156,219	$113,617
Liabilities		
Current Liabilities		
Bank overdraft		2,387
Accounts payable - note 6	**2,944**	1,311
Deferred income – note 7	**55,063**	5,120
	58,007	8,818
Members' Equity		
Reserves for Future Expenditures – note 8	**85,733**	78,914
Equity in Capital Assests – note 5		1,402
Unappropriated Retained Earnings	**12,529**	24,869
	98,262	104,799
	$156,269	$113,617

Canadian Honey Council
Consolidated Statement of Income
For the year ended October 31, 2005
(Unaudited)

	2005	2004
Revenue		
Membership fees	**70,875**	63,675
Annual meeting	**4,596**	3,640
Canadian on Farm Food Safety Program	**9,949**	41,104
Oxalic revenue		24,463
Donations – Canadian Bee Research Fund		11,460
Hive lights	**18,251**	16,528
Interest	**590**	841
Promotional materials	**45**	110
Other		3,143
	104,306	164,964
Operating Expenses		
Advertising and promotion		336
Annual meeting	**100**	2,581
Apimondia committee	**1,637**	
Awards and donations	**357**	
Bank charges	**177**	199
Canadian Bee Research Fund – Donations		11,460
Canadian on Farm Food Safety Program	**9,949**	41,104
Oxalic		1,950
Credit card charges	**727**	93
Hive lights	**30,128**	20,543
Memberships and subscriptions		1,003
Office	**3,132**	9,211
President's honorarium	**2,000**	2,000
Professional fees	**2,726**	1,351
Rent – building	**1,208**	1,200
Telephone	**2,306**	1,667
Travel	**3,010**	1,302
Wages and benefits	**59,189**	33,598
	116,646	129,598
Net Income for the Year	**$(12,340)**	$35,366

Canadian Honey Council

Notes to Financial Statements
For the year ended October 31, 2005
(Unaudited)

	2005	2004
Note 4		
Accounts Receivable		
Accounts receivable are comprised of the following items:		
Trade accounts receivable	**5,989**	340
Overpaid wage deductions		887
	$5,989	$1,227

Note 5

Capital Assets

Cost		
Equipment		9,309
Accumulated amortization		
Equipment		8,292
Net book value	**$0**	$1,017

Equity in Capital Assets

General Fund		
Balance, beginning of year	**1,016**	1,402
Amortization		386
Disposal of Capital Assets	**1,016**	
Balance, end of year	$0	$1,402

During the year it was determined that the computers and other office equipment, which had been capitalized, had either been discarded or were no longer useable. The balance of the equity in capital assets was therefore reduced to nil.

Note 6

Accounts Payable

Accounts payable are comprised of the following items:		
Trade accounts payable	**1,397**	1,311
Wage deductions payable	1,547	
	$2,944	$1,311

Note 7

Deferred Income

General Fund		
Prepaid Hivelights advertising	**6,193**	5,120
Projects Fund		
Project to Promote Consumtion of Canadian Honey	2,150	
Anti-dumping Project	46,087	
Coumaphos Registration	633	
	$48,870	$

Note 8

Reserves for Future Expenditures

The organization receives donations and other revenue that is identified for specific purposes. If the activity for which the funds were intended is not completed during the year received the funds are transferred to reserves for future expenditures. The following is a summary of the activity in each of the reserves being maintained by the organization;

Projects Fund

Apimondia Reserve

This reserve represents funds raised at the apimondia Convention. These funds are to be used for research projects as decided by the board of directors.

	2005	2004
Balance, beginning of year	**50,961**	
Investment income	**798**	961
Allocation from Projects Fund		50,000
Balance, end of year	**51,759**	50.961

Oxalic Reserve

This reserve represents funds that were raised to assist in offsetting the costs associated with the registration process of Oxalic acid with the Pest Management Regulatory Agency

	2005	2004
Balance, beginning of year	**22,513**	
Donations and Fund raising	**14,503**	
Investment income	**387**	
Allocation from Projects Fund		22,513
	37,403	22,513
Expenditures for the year	**(8,869)**	
Balance, end of year	**28,534**	22,513

Rathje Memorial Fund
Capital Reserve

This fund was created from donations received in the memory of Fred Rathje. The purpose of the fund is to make an annual award to a person who has made a significant contribution to the beekeeping industry in Canada. The original capital of the fund is not used for awards. Only the investment income earned by the fund can be used for fund activities.

Balance, end of year	**5,440**	5,440

Appendix II: General Fund Balance and Statement of Income

Canadian Honey Council
2004 Financial Statement
General Fund Balance Sheet as at October 31, 2005
(Unaudited)

	2005	2004
Assets		
Current Assets		
Short-term investments	**30,109**	35,195
Accounts receivable - note 4	**340**	340
Inventory		49
Accrued interest receivable	**287**	586
	30,736	36,170
Capital Assets, net book value		
Equipment		1,016
	$30,736	$37,186
Liabilities		
Current Liabilities		
Bank overdraft	**15,806**	12,551
Accounts payable – note 6	**2,942**	424
Deferred income – note 7	**6,193**	5,120
	24,941	18,095
Members' Equity		
Equity in Capital Assets - note 5		1,016
Unappropriated Retained Earnings	**5,795**	18,075
	5,795	19,091
	$30,736	$37,186

Canadian Honey Council
General Fund Statement of Income
For the year ended October 31, 2005
(Unaudited)

	2005	2004
Revenue		
Membership fees	**70,875**	63,675
Annual meeting	**4,596**	3,640
Donations – Canadian Bee Research Fund		11,460
Hive lights	**18,251**	16,528
Interest	**468**	712
Promotional materials	**45**	110
Other		3,143
	94,235	99,268
Operating Expenses		
Advertising and promotion		336
Annual meeting	**100**	2,581
Apimondia committee	**1,637**	
Awards and donations	**175**	
Bank charges	**177**	199
Canadian Bee Research Fund – Donations		11,460
Credit card charges	**727**	93
Hive lights	**30,128**	20,543
Memberships and subscriptions		1,003
Office	**3,132**	9,211
President's honorarium	**2,000**	2,000
Professional fees	**2,726**	1,351
Rent – building	**1,208**	1,200
Telephone	**2,306**	1,667
Travel	**3,010**	1,302
Wages and benefits	**59,189**	33,598
	106,515	86,544
Net Income for the Year	**(12,280)**	12,724
Unnappropriated Retained Earnings, beginning of year	**18,075**	6,753
Prior year's adjustment	**0**	(1,402)
Unnappropriated Retained Earnings, end of year	**$5,795**	$18,075

Appendix III: Canadian Bee Research Fund Financial Statement

Canadian Bee Research Fund
2004 Financial Statement
Consolidated Balance Sheet as at December 31, 2005
(Unaudited)

	2005	2004
Assets		
Current Assets		
Cash	**3,962**	4,355
Temporary investments		81,203
Accrued interest receivable		210
	3,962	87,768
Long-Term Investments (Fair Market Value $394,860)	**465,017**	403,045
	$469,017	$488,813
Liabilities		
Current Liabilities		
Accounts payable	**910**	777
Equity		
General Fund Balance	**6,392**	28,693
Endowment Fund Balance	**461,755**	459,343
	468,107	488,036
	$469,017	$488,813

Canadian Bee Research Fund
General Fund Statement of Operations and Changes in Fund Balances
For the year ended December 31, 2005
(Unaudited)

	2004	2004
Revenue		
Donations	**3,913**	7,160
Investment income	**674**	1,627
Gain (Loss) on disposal of investments	**(563**	
	4,024	8,787
Less: Transfers to Endowment Fund	**631**	626
	3,393	8,161
Operating Expenses		
Bank charges	**8**	3
Office	**61**	52
Professional fees	**665**	452
Research grants	**25,000**	
	25,734	507
Net Income for the Year	**(22,341)**	7,654
Fund balance, beginning of year	**28,693**	21,039
Balance, end of year	**$6,352**	$28,693

Appendix IV: Awards

Fred Rathje Award Winners
2005 Domingo d'Oliveira (Quebec)
2004 Wink Howland (Saskatchewan)
2003 Mark Winston (British Columbia)
2002 Doug McRory (Ontario)
2001 Don Nelson (Alberta)
2000 John Gruszka (Saskatchewan)
1999 Doug McCutcheon (British Columbia)
1998 Jean Pierre Chapleau (Quebec)
1997 Merv Malyon (Manitoba)
1996 Lorna and Jack Robinson (Ontario)
1995 Gordon Kern (British Columbia)
1994 Kerry Clark (British Columbia)
1993 Linda Gane (Saskatchewan)
1992 Babe and Charlie Warren (British Columbia)
1991 Gerry Paradis (Alberta)
1990 Cam Jay (Manitoba)
1988 Don Dixon (Manitoba)
1987 John Corner (British Columbia)
1986 Gerry Smeltzer (Nova Scotia)
1985 Paul Pawlowski (Alberta) First year of award

Honourary Members
1950 Hon J G Gardiner (Ontario)
1950 Tom Shield (Ontario)
1950 Harry Jones (Quebec)
1950 G. H. Pearcey (British Columbia)
1951 P.C. Colquhoun (Saskatchewan)
1951 C.G. Bishop (Quebec)
1955 J.N. Dyment (Ontario)
1956 F.R. Armstrong (Ontario)
1963 C.F. Pearcey (British Columbia)
1964 Percy Hodgson
2002 Kenn Tuckey (Alberta)

Appendix V: Canadian Honey Production, Statistics Canada

Estimates of the Number of Beekeepers, Colonies of Bees, Production of Honey and Value in Canada[1] by province[2], 2003 and 2004 with five year averages, 2000 – 2004

Abrégé des statistiques provinciales de la production du miel au Canada, 2004 et 2005 et moyenne quinquennale 2000 à 2004

Province(1) and year Province(1) et année	Beekeepers(3) Apiculteurs(3)	Colonies(3)	Honey -Miel Total Production Production totale		Valeur
	number nombre	Number Nombre	lb '000 liv '000	metric métriques	$'000
PrinceEdward Island - Île-du-Prince-Édouard					
Average/Moyenne 2000 - 2004	46	2 056	128	58	159
2004	30	2 250	90	41	150
2005 p	25	1 200	55	25	..
Nova Scotia - Nouvelle-Écosse					
Average/Moyenne 2000 - 2004	400	19 996	725	329	1 043
2004	375 r	19 400 r	785 r	357 r	1 100
2005 p	350	18 500	772	350	..
New Brunswick - Nouveau-Brunswick					
Average/Moyenne 2000 - 2004	241	4 646	256	116	377
2004	225	4 470	195 r	88 r	355
2005 p	225	5 300	152	69	..
Quebec - Québec4					
Average/Moyenne 2000 - 2004	220	28 447	2 701	1 225	4 356
2004	205 r	27 145 r	2 035 r	923 r	5 600
2005 p	200	**30 000**	**3 300**	**1 500**	..
Ontario					
Average/Moyenne 2000 - 2004	**2 860**	**74 600**	**8 467**	**3 841**	**12 330**
2004	**2 650**	**72 000**	**7 620 r**	**3 456 r**	**14 005**
2005 p	**2 600**	**76 000**	**7 810**	**3 543**	..
Manitoba					
Average/Moyenne 2000 - 2004	**706**	**86 100**	**14 369**	**6 518**	**18 290**
2004	**580**	**81 500**	**11 820**	**5 362**	**16 905**
2005 p	**610**	**84 000**	**12 600**	**5 715**	..
Saskatchewan					
Average/Moyenne 2000 - 2004	**1 266**	**100 000**	**19 300**	**8 754**	**24 380**
2004	**1 055**	**100 000**	**15 000**	**6 804**	**21 000**
2005 p	**1 085**	**100 000**	**18 000**	**8 165**	..
Alberta					
Average/Moyenne 2000 - 2004	**727**	**230 000**	**26 793**	**12 153**	**38 622**
2004	**695 r**	**248 000 r**	**33 480 r**	**15 187 r**	**50 455**
2005 p	**700**	**250 000**	**28 750**	**13 041**	..
British Columbia - Colombie-Britannique					
Average/Moyenne 2000 - 2004	**2 224**	**44 973**	**3 547**	**1 609**	**6 704**
2004	**2 110**	**43 125 r**	**4 465**	**2 025**	**11 535**
2005 p	**2 100**	**44 645**	**3 337**	**1 514**	..
Canada2					
Average/Moyenne 2000 - 2004	**8 690**	**590 818**	**76 286**	**34 603**	**106 261**
2004	**7 925 r**	**597 890 r**	**75 490 r**	**34 242 r**	**121 105**
2005 p	**7 895**	**609 645**	**74 775**	**33 918**	..

(1) Figures are compiled by Statistics Canada from provincial data, with the exception of N.B. and P.E.I. where data are collected through a Statistics Canada mail survey.

(1) Les chiffres sont compilés par Statistique Canada à partir de données provinciales, à l'exception des données pour le Nouveau-Brunswick et l'Île-du-Prince-Édouard, qui sont recueillies par Statistique Imported au moyen d'un sondage par la poste.

(2) Does not include Newfoundland and Labrador -Ne comprend pas Terre-Neuve-et-Labrador

(3) Beekeeper and colony numbers include pollinators that may not extract honey.

(3) Les chiffres pour les apiculteurs et les colonies incluent les insectes pollinisateurs qui n'extraient pas nécessairement le miel.

(4) Quebec production and value figures exclude inventory. Les chiffres pour la production et la valeur au Québec excluent les stocks.

r Figures are revised - Chiffres sont révisés

P Preliminary –Nombres provisoires

.. Figures not yet available - Chiffres pas encore disponible

Note: 1 Pound = 0.453 kilogram; 2,204,000 pounds = 1 metric tonne.

Nota: 1 livre = 0.453 kilogramme; 2 204 000 livres = 1 tonne métrique.

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Coast Hotel and Casino
Langley BC
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