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HiveIrghts

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Canadian Honey Council

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Canadian Beekeepers Association 1940-1972

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Canadian Honey Council 1972-2005

President				Secretary			
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1986-88	Dale Hansen	Farmington	BC				
1988-93	Roger Congdon	Cottam	ON				
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				
2005-05	Alain Moyen	Mirabel	QC				

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SECTION 1: Minutes of the 64th Annual Meeting of the Canadian Honey Council

2-5 February 2005, Saskatoon, SK

Business Meeting

The 64th annual meeting of the Canadian Honey Council opened at 7:00 PM, Wednesday 2 February, 2005 at the Sheraton Hotel, Saskatoon, SK
and continued on
Thursday 3 February 9 am-5 pm

Present: Wink Howland, Alain Moyen, Ed Nowek, Grant Hicks, Barrie Termeer, Ron Rudiak, John van Alten, Paul Kittilsen, and the National Coordinator Heather Clay

President Wink Howland opened the meeting. He introduced three new delegates Corey Bacon, John Van Alten and Barrie Termeer

Minutes of the 2004 meeting

Motion: Moved by Wink Howland, seconded by Alain Moyen.
To accept the minutes of the February 2004, Winnipeg MB meeting as printed in the proceedings

CARRIED.
There was no business arising from minutes.

2004 Financial Statement

Wink Howland

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

Motion: Moved by Barrie Termeer /Ed Nowek to accept the 2004 financial statement as presented.

CARRIED

Motion: Moved by Wink Howland/ Alain Moyen that Jack MacKay be appointed auditor for the year 2005

CARRIED

President's Report

Wink Howland

I am not going to review the work of the CHC this year, as our National Co-ordinator, Heather Clay will have already presented that material. Heather's day to day involvement with the CHC and her tremendous commitment to her position, place her in a far better position to comment on the activities during the year, than for me to do so.

This marks my tenth year as the Saskatchewan delegate to CHC. It has at times, been frustrating, exciting, draining, fulfilling, angering and pleasing. That is to be expected with a national organization, with a mandate to work collaboratively with all of the beekeepers in this land, and to deal with government on their behalf. In many ways, I have profited from the experience, having been able to travel from one end of this country to the other, attending conferences and meeting with fellow beekeepers. Our industry is a good one, and the people involved in it are there because they want to be. That makes our meetings positive and enlightening.

I leave CHC this year, and as I do so, I carry away some real concerns regarding the future of our national organization. During my tenure, I have seen membership gains, but never to the extent that has been able to relieve the financial pressure which we operate under. Few bee operations, let alone family households, can operate today on less that $100,000.00, and yet the CHC's total operating budget is substantially less than that. It is inconceivable to me, that our beekeeping populace does not recognize and support, to a far greater extent, the need for a national organization. All too often, regional differences over such matters as opening the US border, has caused membership to decline. At the same time, the CHC is continually being asked to do more and to gain a higher profile. We have been very fortunate during the past seven years, to have Heather Clay serving the CHC and in giving it her all, despite the lack of recognition on the part of many beekeepers. As a result of her diligence, the CHC has become the best source of overall information regarding our industry, that exists in Canada. That didn't happen accidently, but only came about through careful planning and hard work.

Our Hivelights magazine has evolved to a recognized national publication that rivals any other world publication, including ABJ. Again, this has come about because of the work that Heather has put into it, and the skills that Rudy Gelderblom has been able to add. Rudy's skills in helping to develop the CHC website are legend, and the site we have is world class. If there has been a disappointment regarding this publication, it is that there has been little support from CAPA in terms of article submission. This is Canada's bee magazine, and it is where Canadian beekeepers should be learning about what is being done - not only in Canada

but throughout the world. CAPA could be more helpful in forwarding articles, or at least forwarding information regarding other research news that would be pertinent. It is asking a lot of Heather to take on this responsibility by herself.

I am pleased to have been associated with the Canadian Bee Research Fund since its inception some 7 years ago. The fund has sponsored excellent research and has filled a void in that regard. I am disappointed that it has not been better supported financially in some provinces, but I am optimistic that contributions will continue to be made.

In closing, I would like to thank everyone for their sharing of information and knowledge over my 10 year tenure. I look forward to monitoring the progress that the CHC will, I'm sure, continue to make, in the years to come.

CHC members thanked Heather Clay at annual

National Coordinator's Report

Heather Clay

The Canadian Honey Council has achieved national status and international recognition this past year.

Council of State Governors

We were invited to Newport Rhode Island by the Council of State Governors to participate in a conference on bees as indicators of the environment. Since our association has been influential in raising the awareness of systemic pesticides and their effect on bees, we have attracted the attention of environmentalists and researchers. We hope that the authorities will begin to consider pollinators when making decisions about the use of pesticides.

Mission to Australia

In February 2004 I participated in an On Farm Food Safety delegation on a fact finding mission to Australia. It was very interesting to see the how the Australian industry has implemented the B-Qual programme. One major recommendation from the mission was that we should consider the possibility of using a similar form of vendor declaration sheets for tracking and tracing product.

Oxalic Acid Registration

After a year of fund raising for oxalic acid, the donations received from beekeepers and industry reached a total of $26,000 by December 2004. The support was clear and the need vital so the CHC contracted to produce the documentation required for registration by Pest Management Regulatory Agency. The application was submitted to PMRA January 10, 2004.

US Queen imports

The CHC convened a meeting of stakeholders to work on the issue of US queen importation. It was held in Kelowna in October 2003 and the outcome was a unanimous decision on a set of recommendations for queen importation protocols. The Canadian Food Inspection Agency used these as a basis for determining the conditions for importation of queens under permit from continental USA. The regulation was changed May 19, 2004 to allow importation of queens from continental USA. The first shipment of queens arrived in Alberta in June 2004

Honey Labeling Regulations

The CFIA has consulted with our industry over the past two years regarding honey labeling regulations. The CHC is supportive of having country of origin on the front of the label and we have urged changes to the use of the grade name "Canada No 1" when it is used for grading imported honey. A number of resolutions have been brought forward to show our support for labeling changes.

Changes to structure of CHC

The Canadian Honey Council acts on national concerns and achieves all the good things noted in this report with one full time staff member. A part time assistant helps one day a week but we rely heavily on volunteers for help with the On Farm Food Safety program, producing Hivelights and mailing out invoices and magazines. There is no office, no copy machine, no filing cabinets. Everything is stored in cardboard boxes in the basement or garage. Our membership has increased about 10% per annum but we do not receive as much in fees as it costs to run the association. It is time to reassess the situation and work out a plan. If a national association is important then all beekeepers must share the cost. The directors are considering some alternatives. You are urged to get involved in determining the future of our association.

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

CANADIAN ON FARM FOOD SAFETY

Heather Clay

The CHC received funding in 2004 to continue developing a Canadian On Farm Food Safety program for honey. The steering committee chose the title C-BISQT which stands for Canadian Bee Industry Safety Quality Traceability for the name of the program. It 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. After the program passes the Technical Review it will be rolled out at the farm level.

The cost of annual audits and certification is under review. Affordability is extremely important or there will be no buy in to the C-BISQT program. The current plan is for a full audit on an eight year cycle with partial audits in between. The committee is examining the feasibility of using a national certification body called "Certifarm" to keep the expense of on farm inspections to a minimum. Information on the progress will be posted on the CHC website www.honeycouncil.ca as the program is developed.

Delegates' Reports

Maritimes

Paul Kittilsen

The Year of 2004 will go down in history as a year with no spring in the Maritimes. Winter loss in PEI and Nova Scotia was slightly higher than the average of 16 - 20 % however in New Brunswick the loss was a devastating 63%. Poor weather continued throughout the Blueberry pollination season. Nova Scotia Beekeepers continue to meet the demand for pollination in Nova Scotia. New Brunswick blueberry growers rented bees from Ontario but bees were still in short supply. PEI was also short of honey bees for pollination.

New Brunswick's 224 beekeepers had the services of a provincial inspector for the first time in several years. He noted an unusually high incidence of brood diseases. He thought this was due to a lack of province wide inspection over the past several years. There are approximately 5435 producing colonies in New Brunswick.

Several beekeepers are reluctant to use coumaphos resulting in very high mite loads. New Brunswick has fluvalinate as well as coumaphos resistance in various apiaries of the province. The 2003/04 winter losses in New Brunswick were higher than usual in response to the high losses beekeepers did more splitting than normal in the summer of 2004 to regain their hive numbers. The amount of splitting done had the effect of lowered honey yields for 2004.

Nova Scotia honey yield was variable with some beekeepers exceeding their five year average and other well below. The current number of beekeepers in Nova Scotia stands at 375 which is down slightly from previous years, however the total number of hives seems to be remaining constant at 18,500. Resistance testing for fluvalinate shows that it is still effective for controlling mites. Tracheal samplings show there are no tracheal mites in the province. Bears are an increasing problem in the spring, summer and fall. Over 500 colonies were attacked this year at considerable financial loss to our beekeepers. Bear damage was noted in areas that were previously not prone to attacks and even fenced and palletized bees were attacked.

Québec

Alain Moyen

In the spring of 2004 Quebec lost 50% of their colonies. The count was brought up to around 30,000 through the year. The government announced an aid package of $1.9 million but only $600,000 was direct assistance. The rest was interest free loans. Accessing the funds has been difficult so help is still coming. Many colonies went into winter 2004 in a weak condition.

Pollination was good but there is a serious shortage of hives. There is no provincial apiarist and no extension services to assist beekeepers in Quebec. The industry is served by veterinarians who have little experience with honeybees. Consideration is being given to mandatory registration with fees to generate funds for a provincial apiarist.

Ontario

John Van Alten

Ontario Beekeepers have eagerly anticipated the arrival of our new University of Guelph researcher. Dr. Ernesto Guzman finally arrived in the fall of 2004. He brings with him a wealth of knowledge and experience in the field of queen breeding and practical research.

The O.B.A. has committed $20,000 per year to the University, as our input to the position. We will also be contributing an assortment of in-kind involvment.

Our Tech Transfer Team, more commonly known as the 'bee girls', have had a very full schedule over the past year, and it looks like next year will be a very busy one as well. Last year, in addition to their

research on oxalic acid, and organic beekeeping, they have been called upon, sometimes at a moments notice, to take samples of bees and mites suspected of having resistance. They did find Comophous resistant varroa in the far eastern part of the province. In addition to their ongoing research, they will be putting out an Ontario Beekeeping and Queen Rearing manual. They hope to start working on that this winter. Through cooperation between the university of Guelph, and the tech transfer team, it looks like we could be seeing some very valuable research results in the very near future.

Dr. Peter Kevan and Ab Safari are very near to the marketing stage of their special bee diet. It should be available soon through various bee supply outlets.

Another project that seems to be well on its way is the Mead Melomel project presented by Oakville's Trafalgar Breweries. This project was funded by a Agricultural Adaptation Council Grant and supported by the OBA. They have committed to using Canadian Honey, and to developing mead making technology that could be used at the beekeeper level.

Several commercial beekeepers in the province spent a lot of time working on being able to access offshore, unskilled labour through the HRDC Mexican and Caribbean Seasonal labor program. We have been accepted into that program and will be able to apply for offshore labour this season. This initiative has produced a recruiting video, describing commercial beekeeping in Ontario to be shown to potential employees. This video is available through the OBA office.

Katrina Brudzinski, a professor at Brock University, is very interested to test Canadian Honey for its possible therapeutic and medicinal properties. She has asked for and received OBA support in this endeavor. This is an area of honey consumption and marketing that is largely unexplored in North America. One need only observe the tremendous success of Manuka honey by our New Zealand friends to realize the potential in this type of research.

Honey Crops for 2004 were mixed at best. Some producers reported bumper crops, others crop failures. The total crop came in at just under the provincial average. 2004 saw 6-7,000 Ontario colonies travel to New Brunswick for Blueberry pollination. This potentially could grow in coming years. Our provincial apiarists worked hard to develop a protocol that would allow the return of these hives for honey production in Ontario.

Our beekeepers are still uneasy about the potential negative effects of the border opening to allow the importation of American Queens into our province. We strongly feel that the addition of a metamorphics test would help to minimize the threat of Africanized genetics entering our gene pool.

Manitoba

Ron Rudiak

Early in 2004, Manitoba beekeepers noted that most of their colonies were going to come through the winter in good condition with only minimal losses. The slow melting of a heavy snow cover mixed with a few warm days was encouraging. However, continuous frigid temperatures, besides keeping the bees at home, erased any possibility of finding early pollen sources available. On May 11th cold northerly winds accompanied a heavy snow fall which stayed on the ground and added another week of winter. Even robust colonies were unable to raise enough brood to increase in size, weaker colonies dwindled and a few others perished.

In spite of a delayed start, late planted honey sources allowed smaller colonies to build up and produce a somewhat reduced crop of honey. Producers in Manitoba are disappointed with bulk prices for all grades of honey that hover around their costs for production making 2004 a very difficult year for most beekeepers.

Beginning in late June, a number of beekeepers were able to import some long awaited US queens. Reports on the performance of these queens was mixed possibly because of the late import dates and the unusually cold, wet summer which added a lot of stress to smaller colonies.

In an effort to contain rising costs, Manitoba Agriculture is seeking joint funding to maintain services to the industry. One of these services is the honey bee disease inspection program. This well established program provides a valuable service to the honey industry by identifying disease problems and providing current information for dealing with pests and diseases. Recently a resolution was approved by the Manitoba Beekeepers' Association supporting this request for cost recovery.

During routine inspection of colonies, resistant AFB has been found in four operations located in the Northwest region of the Province. In every case, each operation has some connection to all others, either through shared resources or the sale of equipment or bees. In addition to inspecting every colony in all four operations (i.e. approx. 500 colonies in total) the colonies were treated with Tylan, after the honey had been removed, under an off-label prescription from a Provincial Veterinarian.

For several years now, honey bee tracheal mites and varroa have been found in all beekeeping regions of the Province. To combat mite resistance, beekeepers who have been using fluvalinate (Apistan) exclusively are being strongly encouraged to go to an alternative product such as formic acid or coumaphos instead.

This past Fall, PMRA surveyed a small number of beekeepers about the use of acaricides and inspected some of the treated colonies. The goal of the survey was to assure that treatment applications were made in accordance with recommended procedures.

Saskatchewan

Wink Howland

Throughout the early part of 2004 Saskatchewan experienced drought conditions, with little runoff from the previous winter's snowfall. In August, it began to rain and beekeepers were delighted. However the weather did not warm up and the imagined bountiful honey crop was in reality, a poor one. Our provincial average was lower than expected. Initial prices for the crop have also been lower than in the past couple of years. Many beekeepers that I have spoken to, plan to hold onto most of their crops for a time, to see if the market improves.

At our Spring Field Day, a motion was put on the floor to approve the formation of a Honey Commission. It was approved by an almost 100% support vote. Our beekeepers endorsed the idea of a commission that could levy funds for research and promotion, as they could see the benefits that would accrue from those activities. The members also indicated that they wanted the levy to be based on hive counts. The commission could be in place in another year.

Saskatraz, our own Saskatchewan experiment to help identify colonies that show resistance to varroa and tracheal mites, has been established. Selected stock from all over Saskatchewan, including some of Russian origin will be inoculated with similar mite loads. The colonies will be carefully monitored to see how they handle those loads. Colonies indicating resistance will be genetically analyzed to determine the gene markers for resistance. That information will be used for breeding bees with even greater resistance. We feel that there is a very good possibility that the genes indicating resistance will be found.

Alberta

Grant Hicks

The honey crop in Alberta was in the average range for most of the province, with limited pockets with above average crops. The moisture and temperature regimes were not conducive to the propagation of grasshoppers, which was a change from the past several years.

Hybrid canola see acreage was approximately 20,000 acres and required 45,000 to 50,000 colonies. Projections are that acreage might be up slightly, with farmers planting intentions delayed until spring, at this point commodity prices are not bullish for any crops. The hybrid canola seed companies have been very supportive of our industry and participated in several research projects.

The Southern Alberta Beekeepers had an excellent meeting this fall at the farm of Reece Chandler. The guest speaker was bee hive broker, Joe Traynor, from Bakersfield, California who shared his experiences with pollination issues.

Queen production remained level for the province, with production estimated at 50,000 queens. Half that production is in the Peace, with the rest spread across the province. Six operations in the Peace are involved with Beaverlodge in a selection and monitoring program emphasizing selection for hygienic behavior. Queen importation was successful in that we know the process can work. We also know that there need to be changes to the importation protocol. There are logistical issues that the American producers would like to see changed, and some that the Canadian producers would like changed. For instance, battery boxes are the delivery package of choice for the majority of Canadian beekeepers. The inspection period for American producers would be more practical if it were 90 days, rather than 45. These are non-contentious issues that were changed by someone after the Kelowna meeting without consultation. Honey Council has now struck a committee to deal with importation issues. A structural review can now be implemented, rather than forcing interested parties to exercise political means to achieve regional interests. Congratulations to the incoming executive for implementing a committee structure within Council.

A Green Certificate program will be introduced in Alberta High Schools for next fall. This is a course with a structured curriculum that allows students to get credits while working part-time in the honey industry. The beekeeper involved must participate as a tutor. The curriculum for this program was developed by Lakeland College in Vermilion. The ABA is hopeful that they will extend this into their college program as a post secondary diploma program.

The Honey Council agenda is probably the only national commodity meeting at which farm financial safety net programs were

not on the agenda. The ABA does not have the resources to deal with this issue either. We do recognize it as a serious issue for our producers, however, and have joined the Wild Rose Agricultural Producers, who specialize in consultation and have expertise around this issue. I bring this up for discussion purposes.

The ABA is committed to encouraging our producers to participate in COFFS and will act to facilitate its inclusion in farm management.

Alberta beekeepers use a lot of offshore labour. We are finding tremendous inconsistency in the available programs. We have scheduled meeting to develop a standard across the country. Ontario will be participating in a program developed by the OBA and HRDC. We hope to use that work as a tool for something similar in Alberta.

The Alberta beekeepers support the change from an association format to a commission format. This change sees virtual no performance change in the services offered to our members. It does offer a more equitable method of fundraising for the industry. Funds will be collected with the mandatory registration of hives, but will be 100% refundable. We are moving slowly on this issue, as we want to be open to respond to suggestions that will make the end product practical and membership driven. Expenditures will continue to be based on resolutions from the AGM. The funds will be collected from producers with more than 100 hives, which accounts for 93% of the hives in the province

British Columbia

Ed Nowek

British Columbia beekeepers operate 43,000 colonies with just over 2,000 registered beekeepers. B.C. honey crops for 2004 were extensively variable. Farm gate prices for honey are generally being maintained at previous levels however considerable pressure is being exerted on wholesale prices. Beekeeping revenues were reported at $13.5 Million in 2004, up by 65% over 2003.

At our AGM in Duncan this year it was announced that the BCIAF (Investment Agriculture-Fund) will support the BC Beekeeping Industry Strategic plan and has approved funding of $200,000 over a 3 year period for industry development projects. A work plan was presented to cover an 18 month period ending Dec. 31, 2005.
Identified projects for initial priority include a series of 6 provincial workshops focusing on disease prevention, establishing an industry research committee, working with BCMAFF to assess the situation regarding bee inspection services and its future as well as initial work to improve the industry website.

A significant compromise was received from the Agriculture Farm Future Funding interpretation of allowing industry contributions to the cost sharing formula to come from “in kind” donations of trainings, facilitation and projects by individual clubs and the association. This is in addition to the use of our $60,000+ HURT fund has enabled our Strategic Planning Committee to adopt the plan for an operating budget of $50,000 coming 50% from AFFF, 25% from “in kind” contributions and 25% from industry resources.

Project approvals will be decided to generally reflect the following guidelines identified in the strategic plan. Research 15 – 20%, Marketing & Quality 20 – 25%, Industry Communication 20 – 25% Training & Education 20 – 30%. Administration and management costs are expected to require 15% over the three year life of the fund. A call for proposals has been made and all interested groups are encouraged to contact the Beekeeping Industry Development Committee. Contact information is available on the BCHPA website at www.bcbeekeepers.com

BeeMaid

Barrie Termeer

This past year saw very turbulent times in the Canadian Honey and Beekeeping industry. The price of Canadian honey dropped by over 40% in the past 12 months. Cheap imports are continuing to flow into North America driving down the premium price that Canadian honey has commanded because of its world-renowned quality. The safety of honey sold in Canadian grocery stores has been seriously challenged by the numerous recalls last spring by the Canadian Food Inspection Agency (CELA) because of health threatening contaminants being found in some offshore honey sold in Canada. This does not bode well for the future of the Canadian industry unless the entire Canadian industry can work together to restore the consumers’ confidence in Canadian honey and help them differentiate Canadian honey from imported or mixed origin brands.

For the last three years CFIA has been working on the establishment of new Canadian Honey Regulations. This process has taken far too long and while this endless task has been slowly proceeding, honey consumers are continuing to be misled in the honey they are purchasing. Country of Origin labeling must be brought to the front of the label in a predominant location so that consumers know they are buying imported or mixed origin honey. The Canada Number 1 Grade should only be used for 100% Canadian Honey.

Honey Blends, (a small amount of honey with a lot of sugar syrup) are becoming more and more of a threat to pure honey. Up until now, this problem in Canada has been primarily in the Portion Pac market however is now turning up in retail packs as well. CFIA has initiated a review of "Fair Labeling Practices" and Bee Maid has played a major role in a submission to this committee to protect the integrity of "Pure Honey". Again, however, the clock is ticking. Bee Maid's submission was made twelve months ago and still nothing has happened. As an industry, we must continue to pressure CFIA to move forward on amendments to the labeling act in a deliberate and speedy fashion.

The Canadian beekeeper must also play their part. Honey quality at the beekeeper level is the cornerstone of Canadian quality. Beekeepers are being challenged every day with new problems relating to bee diseases, and pesticides. It is imperative that beekeepers use only approved applications as determined by CFIA. This past year Bee Maid had all members sign a honey quality "Letter of Guarantee" and barrel labels are now being used for every drum so that the honey in the jar can be traced back to the beekeepers lot. The emphasis on quality control is an important approach to protect the international reputation of Canadian honey and this starts with the beekeeper.

Canada is a net exporter of honey. We will produce 75 million pounds of honey in an average year. We will consume 60 million pounds. However, Canada operates in a world market, with international trade in many commodities. While Canada has traditionally been an exporting nation of honey, imports of honey have increased steadily with upwards of 20 million pounds of honey per year being imported in the last few years. Between our 75 million pounds of production and the imports, Canada has an exportable surplus of 35 million pounds of honey.

We have to increase consumption of CANADIAN HONEY in Canada and abroad. There is a difference in Canadian quality and we have to tell the consumer and retailer that there is a difference. Canadian honey is famous for its mild flavor and consumers tasting the imported mixed origin honeys are not used to the stronger flavor. Some may not buy honey again after this different taste experience. Bee Maid supports the establishment of a 100% Canadian honey promotion program so that we can educate Canadian consumers that there is a difference between Canadian honey and the cheaper mixed origins. Canadian honey will compete in the market with imported honey, if we establish a level playing field that corrects misleading labeling and applies consistent quality controls to all origins of honey. This will allow Canadian consumers to better compare the differences in foreign and domestic honeys and then make their next purchase based on that experience.

The Canadian Grocery Industry and the Consumer must be educated and understand the quality assurance programs for domestic honey produced in Canada compared to international sources.

Motion to accept the delegate reports moved by John van Alten Seconded by Ron Rudiak

CARRIED

Fred Rathje Award.

Each year the Canadian Honey Council awards its highest honour to the candidate who has made a significant, positive contribution of innovative, creative and effective effort to our industry. This year the Rathje award was presented to Wink Howland, outgoing President of the Canadian Honey Council

Wink is a tireless worker for the Canadian beekeeping industry and fully deserves the award. His support and enthusiasm for the many projects taken on by Canadian Honey Council have contributed to success of the national organization. The Canadian Honey Council is pleased to acknowledge Wink's work on the Board of Directors and his dedication to the betterment of the national industry.

Wink Howland receives the Fred Rathje award at annual banquet.

Government Reports

Outcome of Honey Regulations Consultation

Gail Daniels, Chief Dairy Honey Eggs Program, Canadian Food Inspection Agency, Ottawa

Responses

- 37 Responses received
- 8 Associations/Groups
- All assessed and proposals drafted

Definitions/Application

Codex definition and standard for honey
Revoke indication for "pasteurized" and prohibit opposite indicators
Add definition/standard for:

- Drained, extracted, comb and pressed honey
- Honey products
- Naming the flavour honey
- Honey with (naming the ingredient)

Grades/Standards

Main Panel: 3 statements
Same size, font and colour:

- Grade No. 1, 2, 3 + color;
- "Product of (one country)" or "Blended & packaged in (country);
- "Blend of (list countries by % to nearest 25%)

Grades/Standards

Revise colour standards (bulk & prepackaged)

• White	≤ 34 mm
• Extra light amber	35-50 mm
• Amber	51-85 mm
• Dark	≥85 mm

Grades/Standards

New federal standard of identity:

- Raw, unprocessed honey
- No grade declared

Other Sections

Health & Safety

- No significant changes

Registered Establishments

- Add minimum requirements for food establishments

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 registered establishment

Next Steps

- Any concerns with proposals? – need to achieve consensus positions
- Initiate detailed drafting of revised Honey Regulations
- Proceed with regulatory process
- Pre-publication in Part I of Canada Gazette not before 2006

Importation of Honey Bees

Clarice Lulai
Acting Veterinary Program Specialist- Import, CFIA, Ottawa

On April 2004, after years of negotiations, the proposed amendment to the legislation to allow the importation of honeybee queens from the continental United States was pre-published in Canada Gazette Part 1. We received a wide range of comments to the proposed amendment and reviewed all of them. Because no new scientific evidence was presented to preclude the opening of the border, on May 19, 2004, the amendment became law, thereby allowing the legal importation of honeybee queens from the continental USA.

During the negotiations leading to the re-opening of the border, a majority of provinces voted in favour of opening the border. This support was conditional, provided a mechanism for sharing importer information was instituted by CFIA, in order to allow provinces to carry out their surveillance programs. The Animal Health and Legal departments of CFIA have developed Memoranda of Understanding, which were offered as a template to each Canadian province. At this point, MOU's have been signed by the provinces of Alberta, British Columbia, Prince Edward Island, Manitoba, and New Brunswick. The MOU's with Ontario, Saskatchewan, Nova Scotia and Quebec are in development and should be in place for the 2005 importing season. Newfoundland is in the process of developing new bee legislation and will be in a position to have an MOU in place once the legislation is developed.

For the 2004 importing season, 32 permits were issued for importation of queens from the continental USA. It is difficult to estimate how many queens have been imported from the information on the permits, as many permits are for multiple entries and the numbers of queens imported are not identified. Despite the opening of the border, some bee keepers groups have been adamant that there is still a large shortfall of bees in the country, and are adding pressure to have more lenient import conditions, whereas other groups are asking for increased restrictions on the importation of queens from the USA. As the amendment to this legislation was the result of many years of very passionate discussions and a lot of hard work was put into arriving at the current import conditions, 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 is 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. Importers are advised to place orders early in order to guarantee supply.
Another important change for the 2005 import season is that the Environmental Assessment Agency has pre-published an exemption to the requirement of payment of environmental assessment fees for the importation of honeybees from Australia and New Zealand in Canada Gazette Part 1. Please note, however, that at the time this article went to press, the publication in Canada Gazette Part 2 was not finished, therefore the environmental assessment fees still apply at the present time (February 2005).

For the 2005 import season, CFIA is planning on ramping up our efforts to curb smuggling of packages of honeybees from the USA. Border lookouts will be put in place, and we hope that this will deter some unscrupulous individuals from attempting to smuggle packages of bees to Canada, which could compromise the health status of Canadian honeybees.

Due to the new American Rule, which prohibits bees in transit through Hawaii from changing airplanes on Hawaiian soil, CFIA, USDA and New Zealand MAF have worked diligently trying to establish new viable routing for the quick and safe movement of bees from New Zealand to Canada. At the present time Hong Kong seems to be a viable option, however we are studying the possibility of adding transhipment of bees in trucks through the USA. This is a controversial way of moving bees through the USA, however precautions are being taken to ensure that this route would be viable and at the same time not compromise the health status of New Zealand honeybees.

During 2004 CFIA has published a new Bee Products Importation Directive. The most significant change in the new directive is the regrouping of commodities as per their use i.e., any commodity that is used in bee feeding or the making of foundation, livestock feeding and industrial use is grouped in one large group which is separate than those commodities which are for human use. A Risk Assessment on the importation of beeswax to Canada has just been completed, and the protocol for importation of beeswax may be changed in accordance to the findings of the risk assessment.

Pesticide Risk Reduction

Luc Pelletier
Pest Management Regulatory Agency, Ottawa,ON

The issue of pesticide risk reduction is very important to the Pest Management Regulatory Agency. On Tuesday 1 February the PMRA in co-operation with the Canadian Honey Council convened a meeting of industry stakeholders d to discuss the concerns of the beekeeping industry and to determine ways in which a risk reduction plan could be implemented. Forty participants reviewed all aspects of the industry and decided on a list of priorities. The group will form a steering committee of 2 CAPA, 2 CHC and 2 industry suppliers to work towards the implementation of an action plan. The PMRA will provide secretarial assistance and work with industry to assist in the implementation of a national strategy for the risk reduction of pesticides in the honey industry.

Canadian Honey Production Situations and Trends

Farid Makki
Marketing & Industry Services Branch
Agriculture & Agri-Food Ottawa

There were fewer beekeepers in 2004, 7990 compared with 9,183 for the five year average.1994-98. The colony count of 582,346 is higher than 2003 with Alberta increasing 6%. Total Canadian honey production was estimated at 72 million pounds which is lower than average. There are more colonies per beekeeper at 73 per beekeeper in 2004 compared with 68 in 2003. The value of the 2003 crop was down to $156 million reflecting lower prices and a decreased crop.
Imports of honey amounted just over 20 million pounds with the majority coming from China and Argentina. Exports to the end of November were 25 million pounds with 89% going to the USA.
The production and import export statistics can be found in Appendix V.

In marketing honey producers should remember to emphasise the therapeutic values of honey

- Functional Food (contains trace amounts of vitamins C,B and sometimes A,D,K)
- Antioxidant (reduces the risk of heart disease)
- Active Anti-Irritant (for sensitive-skin products)
- Active Antimicrobial (against antibiotic-resistant bacteria)
- Gingivitis Prevention
- Honey is 25% sweeter than sugar, causing one to consume less sweetener

Resolutions

1

Whereas the term "honey" is frequently used to label & promote food products and, Whereas many of those food products contain little or no actual honey

Be it resolved that the CHC that the CHC work with the CFIA and any other pertinent consumer department (or group) to enact legislation that would prohibit the use of the word "honey" on any product whose sweetener contained less than 75% pure honey.
Moved by Wink Howland/ Seconded by Paul Kittilsen

CARRIED UNANIMOUSLY

2

Whereas our domestic honey markets are being flooded with imports of offshore (and often inferior honey and, Whereas, the labelling of these blends often highlights the "Canada#1" grade label and,
Whereas, the blend label is often displayed in such a manner as to be overlooked

Be it resolved that for blended honey, the country of origin be displayed in such a manner as to be prominent to the consumer.
Moved by Wink Howland/ Seconded by Ron Rudiak

CARRIED UNANIMOUSLY

3

Whereas many packages of honey contain imported honey that has been blended with Canadian Honey and, Whereas those containers give no indication of the proportions of honey contained in the blend by origin,

Be it resolved that packages of blended honey show in broad categories of at least 25%, the proportions making up the blend and, further, where Canadian honey constituted less than 25% of the blend, the word Canadian shall not be used on the contents label.
Moved by Wink Howland/ Seconded by Paul Kittilsen

CARRIED UNANIMOUSLY

4

Whereas packers use the "Canada #1" label prominently on containers of blended honey in an attempt to lead consumers to believing they are purchasing Canadian honey,

Be it resolved that labelling rules stipulate that the Canada #1 grade print be ¼ the size of the country of origin print.
Moved by Wink Howland/ Seconded by John van Alten

DEFEATED

5

Wheras countries supplying goods to Canada are required to meet the same standards as those set in Canada, under WTO/NAFTA regulations and, Whereas, by registering our honey produces with the CFIA, would make it possible to demand a similar registration of produces wishing to export to Canada,

Be it resolved that CHC as the CFIA to make registration and inspection of honey extracting facilities mandatory.
Moved by Wink Howland/ Seconded by Alain Moyen

CARRIED

6

Whereas chemical treatments of honey bee pests require clear instruction on existing products,

Be it resolved that CHC requests CAPA to review the Apistal label regarding information and extension.
Moved by Ron Rudiak/ Seconded by Grant Hicks

CARRIED UNANIMOUSLY

7

Whereas rAFB has been detected and acted upon in Manitoba in the spring 2004, Whereas fall inspection discovered disease remained and increased despite spring removal of frames,

Be it resolved that CHC requests registration of an additional product for treatment of AFB (i.e. Tylosin, etc.) for use by fall 2005.
Moved by Ron Rudiak/ Seconded by Ed Nowek

CARRIED UNANIMOUSLY

8

Whereas consultations are being held regarding modification of the federal honey regulations,

Be it resolved that the honey regulations be modified to include six categories of honey. Three would be "Canada No 1", "Canada No 2" and "Canada No3" which would apply to containers with 100% Canadian honey. Three further categories would be "Imported No 1", "Imported No 2" and "Imported No 3" which would apply to the container whose honey would not be 100%

Canadian.
Moved by Alain Moyen/ Seconded by Paul Kittilsen

CARRIED

9

Whereas Morphometrics will help ensure that Africanized Honey Bee genetics will not be imported into Canada

Be it resolved that the CHC recommends the addition of a morphometrics test to Canadaian Food Inspection Agency's importation protocols of queen bees from Mainland United States of America.
Moved by John van Alten/Seconded by Alain Moyen

DEFEATED

10

Whereas there is a need for a treasurer in our organization, Whereas Wink Howland has been performing th treasurer's role in our organization for a number of years.

Be it resolved that the Canadian Honey Council appoints Wink Howland as a member at learge and that he continues maintaining the accounts for CHC, CBRF and COFFS program including arranging for the end of year financial review. The payment for this service will be one hundred dollars per month to be negotiated annually.
Moved by Alain Moyen/ Seconded by John van Alten

CARRIED

11

Whereas donations have been received from members and no members for the oxalic acid fund,
Be it resolved that after all necessary fees and expenses have been paid, that any leftover funds be applied to a special project fund for research or registration of other low risk pesticides for beekeepers.
Moved by Wink Howland/ Seconded by Paul Killilsen

CARRIED

12

Whereas the PMRA is conducting consultation on the legal use of natural substances such as formic acid and formic acid is an unregulated product commonly available from many sources and used in many applications and whereas there is no monetary incentive for any commercial entity to sponsor the registration of formic acid,

Be it resolved that the CHC direct PMRA to release register or exempt from registration formic acid in liquid form at 65% dilution of technical grade formic acid for use in bee hives.
Moved by Ed Nowek/Seconded by Grant Hicks

CARRIED UNANIMOUSLY

13

Be it resolved that the Canadian Honey Council accepts the invitation of the Fédération des Apiculteurs du Québec to meet for their next annual meeting in Quebec City, February 2006.

Moved by Alain Moyen/Seconded by Paul Kittilsen

CARRIED UNANIMOUSLY

Canadian Bee Research Fund

Rhéal Lafrenière

The CBRF directors are pleased to announce the successful projects for 2005:

Currie R.W., University of Manitoba, $6,000 "Integrating Chemical Control and Host Resistance to Increase Treatment Thresholds for *Varroa destructor*."

Guzman, E. University of Guelph, $6,000 "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, $6,000 "Management of Honeybee Diseases Using Lysozyme."

Robertson, A. J., Saskatchewan Beekeepers Association, $7,000 "Evaluation of Varroa and Tracheal Mite Tolerance in Selected Honeybee Lines and Attempted Correlation of Tolerance with DNA Markers"

Elections

The nomination committee brought a slate of officers. Elections were held and the positions for 2005 **President Alain Moyen**
Vice President Ed Nowek
Executive Directors Paul Kittilsen and Corey Bacon

CARRIED

Adjournment

Motion to adjourn the meeting by Ed Nowek, seconded by John van Alten.

CARRIED

SECTION 2 Canadian Bee Research Reports

Indoor Winter Fumigation Of Honey Bees With Formic Acid

R.M. Underwood. R. Bahraini & R. W. Currie, University of Manitoba,Winnipeg,MB.

Formic acid is generally used as a fumigant in individual hives outdoors in spring or fall. This work tests the feasibility of fumigating indoors in winter using small experimental rooms housing up to 21 colonies each. Fumigating indoors in winter is advantageous because labor is reduced, the proportion of mites on adult bees is increased, and the applicator can control the ambient conditions. Indoor winter fumigation can be applied as either a long-term low concentration or a short-term high concentration of formic acid. Each has its advantages and disadvantages. Long-term low concentration fumigation is effective as a varroa mite control technique, bringing the mean abundance under 2 mites per 100 bees for the start of the subsequent honey production season. In addition, long-term low concentration fumigation does not harm workers or queens. However, fumigation must be carried out over a long period of time (i.e. a month or two). Short-term high concentration fumigation is also effective as a varroa mite control technique but worker and queen bees can be killed if the proper precautions are not taken. The use of temperature-dependent step-wise ventilation during fumigation with a high concentration of formic acid may prevent queen loss. Low room temperature (i.e. < 4ºC) also may be effective in queen loss prevention. Overall, whether a low or high concentration is used, the amount of formic acid per hive is approximately the same (i.e. 200 mL/hive) and is equivalent to the amount used outdoors.

Formic acid in the hive air is usually lower than in the room air. Our preliminary data show that the relationship between the concentration of formic acid in the room air and the hive air is due in large part to the amount of honey in the hive. The configuration of the hive entrance(s) may also be important in affecting in-hive formic acid concentration. Colonies with lids that had a top entrance had higher acid concentrations than colonies with standard telescoping lids. The type of frames used (wood or plastic) does not play a major role in affecting formic acid concentrations.

If the variability among hives can be reduced, possibly by standardizing equipment, using temperature-dependent step-wise ventilation, or manipulating acid levels during fumigation, the efficiency and efficacy of this method will be greatly improved. When this research is complete we will be able to develop sound treatment recommendations. While this method shows great promise producers should note that indoor fumigation of colonies with formic acid is currently not a registered method of treating for the mites.

Integrated Management of Oxytetracycline-Resistant American Foulbrood Disease in Honey Bees

Stephen Pernal and Adony Melathopoulos Agriculture & Agri-Food Canada, Beaverlodge, AB.

Oxytetracyclcine (OTC)-resistant American foulbrood (rAFB) poses a serious threat the Canadian beekeeping industry. Resistant strains of *Paenibacillus larvae* subsp. *larvae* (the causative agent of AFB) have been identified from British Columbia, Alberta and Manitoba with intermediate levels of susceptibility being found in other provinces. We are actively working on three objectives to provide Canadian beekeepers with new tools by which to manage OTC-resistant AFB: (1) evaluating different formulations of alternative antibiotics to maximize their efficacy while minimizing residue deposition in honey; (2) developing rapid and sensitive techniques to monitor AFB spores for the detection of OTC-resistance and disease hazard; and (3) selecting for increased levels of hygienic behaviour in commercial beekeeping operations.

Efficacy and Residues with Alternative Antibiotics

We are continuing to make progress toward our objective of ensuring adequate efficacy using the alternative antibiotics lincomycin and tylosin to treat AFB, while minimizing residue risk. In 2004 we conducted spring and fall experiments to evaluate drug efficacy and examined residues for fall-applied treatments.

In our efficacy experiments, infections of AFB were established by inserting single frames containing rAFB scale into the centre of the brood nest of colonies. After approximately three weeks, these frames were removed leaving 100 - 200 infected cells in the remainder of each colony. These infections were severe and if left untreated would result in eventual colony death. In our spring experiment, nine treatments were used: four contained lincomycin, four contained tylosin and one group was left untreated.

Analogous treatments for each drug were used, with colonies receiving a total of 600 mg of active ingredient (a.i.). Drugs were formulated either as sugar dustings or as pollen patties and were applied in three weekly applications of 200 mg of a.i. or as a single application of 600 mg. Irrespective of drug, our experiment showed that all treatments reduced the incidence of AFB symptoms three weeks after initial application, however those treatments formulated as sugar dustings were far superior at suppressing disease symptoms than pollen patties. Moreover, drugs applied as three consecutive applications of 200 mg a.i. provided better control than single applications of 600 mg. Colonies treated with pollen patties became as severely infected as untreated colonies by mid-summer, and are unlikely to survive the winter.

Our fall drug efficacy experiment consisted of colonies infected in a manner similar to the spring experiment, however only one dusting treatment was evaluated per drug, this being the tri-weekly application of 200 mg of a.i. Three different doses of tylosin and lincomycin were applied as pollen patties, in weekly applications of 200, 600 and 1000 mg a.i., for a total of 600, 1800 and 3000 mg of total antibiotic. Similar to the spring trials, this experiment demonstrated that all treatments suppressed the incidence of disease symptoms three weeks after initial application, but that treatments receiving a total of 600 mg of lincomycin in pollen patties did not have symptoms reduced to the same extent as the same dosage of the drug formulated as a sugar dusting. Nevertheless, all dosages of tylosin pollen patties were as effective as the 600 mg sugar dusting. A definitive evaluation of treatment success will be made during spring inspections of these colonies.

An experiment was also conducted to detect the presence of tylosin and lincomycin residues in honey resulting from fall-applied treatments, employing the same formulations as the spring efficacy experiment, but at 1.5X the dose structure (for regulatory approval). Colonies were treated during the first three weeks of September and were sampled each week thereafter until being prepared for winter. Colonies will be sampled again in the spring to determine residue levels after wintering. Residue profiles are being analyzed by LC-MS/MS.

Honey/Adult Bee Sampling

Similar to previous years, 14 co-operating producers from Alberta submitted honey samples to our laboratory for determination of the relative risk of AFB within their operation. In addition, each co-operator was asked to fill out a survey which outlined the number of colonies they inspected and the number of colonies found with visible symptoms of AFB. The honey samples were incubated on a selective microbiological medium for *Paenibacillus larvae* subsp. *larvae* (the causative agent of AFB). We determined the number colony forming units growing per plate; this number serves as a relative indicator of the number of spores per gram of honey. Samples of honey received from producers also permitted testing for oxytetracycline-resistant strains of AFB.

In 2002 and 2003, both the number of honey samples in which AFB spores were detected, and the average number of spores per gram of honey, had gross relationships with the disease history of honey bee operations. We found that the average number of spores per gram of honey was higher in operations with greater clinical incidence of disease, and that these numbers could be affected by major changes in the management of disease within such operations.

Isolates of *P. l. larvae* from honey samples were also used to carry out antibiotic resistance tests to tetracycline. In 2003, nine producers were confirmed to have highly resistant strains of AFB present in their operations; four of these producers had >90% of their isolates characterized as highly resistant, while the remaining producers had 72%,45%, 43%, 25% and 25% of their isolates classified in the same manner, respectively.

In 2003, we expanded our survey to include 19 producers from Manitoba. This allowed us to assay spore loads from honey as well as adult bees sampled within the same beekeeping operations. Moreover, the standardized disease inspections conducted by the Province of Manitoba permitted a more consistent disease rating standard against which our spore results could be compared.

Unlike the Alberta samples, we found that the proportion of samples in which spores could be detected was not a reliable indicator of disease status, however the average number of spores per gram of honey was more directly related to the disease history of a beekeeping operation. By contrast, the viable numbers of AFB spores from the digestive system of adult bees proved to be a sensitive technique with which to detect the presence of AFB. Bee samples, consequently, may prove more useful in identifying the level of actively cycling infections of AFB within an operation.

Antibiotic resistance testing for Manitoba producers showed that the average zone of inhibition for most samples was large (indicating susceptibility to oxytetracycline), however one beekeeping operation had an average zone that was < 30 mm, indicating that it harboured highly resistant strains. Another producer was found to have two of twelve isolates highly resistant to the drug, even though the average inhibition zone for all strains cultured was > 30 mm.

These are the first discoveries of antibiotic resistance from these beekeeping operations and are highly novel in being detected directly from honey samples.

Reporting of the 2004 data will occur after sample processing is complete this winter.

Hygienic Behaviour Selection

Our ongoing four-year trial has investigated whether the frequency of hygienic behaviour in prairie honey-producing operations could be increased using standard open-mated breeding practices used in Western Canada. To test this hypothesis we co-operated with four large commercial beekeeping operations in Alberta's Peace River District to select, propagate and mate their queen stock over successive generations.

To determine if the frequency of hygienic behaviour had increased over generations, the trait was compared among our co-operator's selected stock and against three benchmark stocks: (1) queens from a participating Peace River beekeeper (Wolfe) that had never selected for hygienic behaviour; (2) queens from commercial offshore stock widely used in Alberta; and (3) queens purebred for hygienic behaviour from the University of Minnesota. This evaluation was rigorously designed to uncouple the genetic and environmental components of the hygienic behaviour expressed by colonies headed by the daughters of each generation's selected breeder queens.

Selection appears to have increased the naturally high levels of hygienic behaviour in our Peace River queen stocks. Evidence for this can bee seen by the fact that three of our four co-operator's F_2 generation queens (Sanchez, Dickson and McKenna) had higher average levels of hygienic behaviour than the unselected Peace River stock (Wolfe) (Fig. 1). Although individual comparisons among unselected and selected Peace River stocks are not statistically different, we expect that continued selection efforts will further increase these margins. A collective comparison of all selected Peace River stock indicates that it is more hygienic than the stock being purchased and bred from outside the region (Offshore).

The highest level of hygienic behaviour among the sources of Peace River selected stock was seen from the co-operating producer McKenna. McKenna's stock expressed hygienic behaviour at level statistically greater than the offshore benchmark stock and similar to the purebred hygienic queens from the University of Minnesota, further suggesting that continued selection increases hygienic behaviour.

We are scheduled to assess the third generation of selected progeny (F_3) in May 2005. Our results to date suggest selection has increased the level of hygienic behaviour among our co-operators' and, consequently, we expect the F_3 generation to exhibit higher levels of hygienic behaviour compared with offshore or unselected Peace River benchmark queen stock.

Acknowledgements: We thank the Canadian Bee Research Fund, Alberta Crop Industry Development Fund, Matching Investment Initiative Program (AAFC), Medivet Pharmaceuticals Ltd., Bee Maid Honey, the Alberta Beekeepers' Association and all cooperating beekeepers for supporting this research.

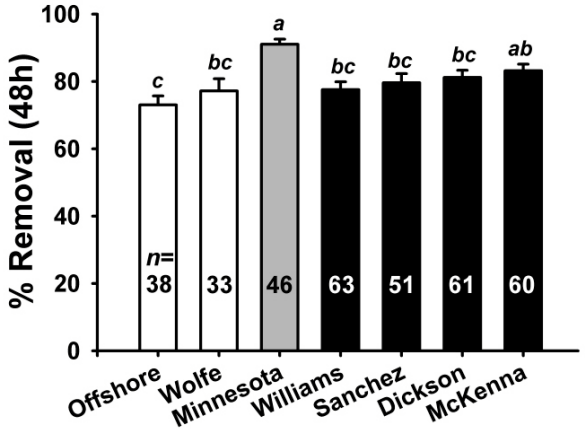

Figure 1. Mean level of removal of frozen cells among colonies headed by F_2 queen stock selected by co-operating producers (Williams, Sanchez, Dickson and McKenna) versus three benchmark stocks [offshore, Wolfe (Peace River unselected) and University of Minnesota]. For each colony, the results of two consecutive 48 h freeze-killed brood assays were averaged and arcsine transformed prior to analysis. Presented are the untransformed data. The percentage of cells removed differed among breeding stocks (F = 5.38, df = 6, 343; P < 0.001). Different letters above each bar indicate significant differences among means. (Tukey-Kramer HSD, α=*0.05)*

Saskatchewan Beekeepers Honey Bee Breeding Program: 2004-2005.

Albert J. Robertson
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Saskatoon, SK. S7K 3J9

Abstract.

The general objective of this project is to breed gentle, productive, honey bee colonies with tolerance to mites and brood diseases. Colonies showing mite tolerance and beneficial economic traits were selected from three different honey bee populations and established at an isolated yard site designated “Saskatraz” for further evaluation. Varroa and tracheal mite tolerance is being determined by introducing mites, removing all chemical treatments and allowing natural selection to identify tolerant phenotypes. All colonies will be genotyped using 20 informative microsatellite markers identified as being able to discriminate between Russian lines showing varroa tolerance and varroa sensitive Canadian populations. Our long term objective is to correlate mite tolerant phenotypes with a specific set of microsatellite markers, eliminating the laborious task of manually determining mite tolerant phenotypes. Early selections showing improved phenotypes will be released to queen breeders and commercial beekeepers on a yearly basis for further multiplication and evaluation.

Introduction

The most devastating threat to apiculture throughout the world has been the human mediated infestation of *Apis mellifera* with varroa. The natural host of varroa is *Apis cerana*. This asian honey bee is tolerant to varroa, but Apis *mellifera* is not tolerant to certain species of varroa. The exchange of honey bee colonies between Asia and Europe resulted in *Varroa destructor* infecting *Apis mellifera* in about 1960, varroa mites were found in North American honey bees in 1987. (cf reviews Sanford, M. 2001). Honey bees in North America having never been exposed to varroa showed little tolerance and died within 2 to 3 years after varroa infection. Chemical treatment with acaricides was initially effective at reducing varroa populations; however, the varroa mite soon developed resistance (Milani 1995, cf review Milani 2001). In addition, chemical treatment of mites prevented selection pressure for the development of natural tolerance to parasitic mites and likely made honey bees even more susceptible to secondary infections associated with mite infestations. Chemical usage is also expensive and introduces the risk of contamination of hive products. Reduction of chemical usage is attractive to both beekeepers and consumers. Recent reports from beekeeper association meetings throughout North America have indicated that varroa mites have developed resistance to licensed chemical treatments and extremely high winter losses are expected in the continental U.S., in 2005.

Tracheal mites (*Acarapis woodi*) when introduced to susceptible North American honey bees caused severe mortality during overwintering and a general loss of hive vitality and honey production. The effects of tracheal mite infestation is of great economic importance and often goes undetected until hive losses become severe. Chemical treatment methods are costly, labour intensive and can potentially cause injury to both the bees and beekeeper. The most attractive solution to losses caused by tracheal mites is through breeding by continued selection of more resistant lines. This approach has been well documented (cf review Danka. 2001) showing tracheal mite resistant is stably inherited and shows dominance with good penetrance of the resistant phenotype in the progeny of resistant sensitive crosses. Breeding bees resistant to varroa presents a greater challenge than breeding for tracheal mite resistance. *Apis cerana* tolerates varroa infestation without severe consequences in the absence of acaricide treatments. Many of the mechanisms (cf review by Bűchler.1994) thought to express this tolerance in *Apis cerana* also exist in *Apis mellifera* (grooming, hygienic behaviour, brood attractiveness, mite infertility and capped brood stage duration). The degree to which these characters are expressed in *Apis mellifera* is limited compared to *Apis cerana*, however *Apis mellifera* shows enough variability between populations to make it feasible to select for increased tolerance to varroa. The key to achieving sufficient increased expression of these traits needs to be pursued and may involve modulation at the molecular level. Some success in breeding honey bees with increased varroa tolerance has been made (Harbo and Harris, 1999; Rinderer et al.1997; cf. review Spivak and Boecking, 2001), but progress is difficult and labour intensive. Our long term objective is to breed gentle, productive honey bees with tolerance to mites and brood diseases. Our approach will be to establish a select gene pool from as large a population as possible, in an isolated yard sited designated “Saskatraz”. Phenotypes for mite tolerance will be identified by natural selection and other economic characters by standard methods. Release of selected stock will be made on a yearly basis to queen breeders for propagation and distribution to commercial beekeepers.

Molecular techniques for genotyping of desirable phenotypes will be developed in a parallel fashion. Successful identification of molecular markers for marker assisted selection would eliminate many years of phenotypic analyses. Currently our objective is to identify and characterize microsatellite DNA markers to distinguish between populations of honey bees with

varying degrees of resistance and tolerance to tracheal and varroa mites. This has been approached by screening for microsatellite markers which can distinguish between varroa sensitive Canadian lines, and Russian lines shown to have tolerance to varroa.

Part I. Establishing a diverse gene pool at "Saskatraz" and preliminary evaluation of phenotypes.

Materials and Methods.
(i) Construction and collection of test colonies.
In 2001 the Saskatchewan Beekeepers Association collaborated with the Ontario Beekeepers Association to import stock shown to have varroa and tracheal mite tolerance by the USDA, at Baton Rouge, La. This stock was originally imported from far eastern Russia, evaluated and reselected for mite tolerance, and other traits, by the USDA labs at Baton Rouge, (Rinderer et al.1997). From 2001 to 2004 four sets of Russian embryos, totalling 13 lines were imported into Saskatchewan for propagation by queen breeders. Attempts to reconstruct "nearly pure" Russian lines were made in the last three years by crossing virgin Russian queens to drone progeny produced by queens derived from Russian embryos received in the previous years. Queens from these crosses were used to establish "nearly pure" Russian colonies and were reselected (CanRu lines) for two years under Saskatchewan conditions prior to placement in "Saskatraz". Many of these lines have been released to commercial Saskatchewan beekeepers in the last two years. Twelve of the 35 hives placed at "Saskatraz" were either "pure" or hybrid CanRu selections. Twenty-three Canadian selections for "Saskatraz" were received from 14 Saskatchewan and Manitoba queen breeders. These colonies represent selections made from approximately 18,000 Canadian colonies. Colonies were received from beekeepers as 4 to 5 frame nucs over a period of approximately six weeks. Nucs were established and transferred to standard supers prior to placement at "Saskatraz" (July 17 to 28, 2004). The wide range of colony populations limited the experiments that could be performed during the summer of 2004. Honey production, hygienic behaviour, tracheal mite quick tests, and SMR tests will be performed in 2005. All colonies were thoroughly evaluated for visible phenotypes (brood pattern, temperament, colour, burr comb, pollen placement, queen characteristics, etc.) and placed on Apinovar bottom boards for convenient testing of varroa populations with sticky boards. Natural varroa drop was monitored from August 07 until September 15, 2004. Drones and drone pupae were sampled for DNA analyses from each colony on September 15, 2004. All hives were treated with Apistan (2 strips/colony) for 32 days (Sept 15 to Oct 15) to normalize varroa populations. Several hundred bees were sampled from each colony on September 15, and on September 29, 2004, and preserved in alcohol for both tracheal and varroa mite analyses. Samples were processed at the Crop Development Branch, Saskatchewan Agriculture and Food, Prince Albert, Sask., by John Gruszka. One hundred bees were analyzed from each hive, on both sampling dates for tracheal mite infestations.

On October 15, 2004 all colonies were infested with approximately 200 worker bees from an infected colony provided by John Gruszka, showing 58 to 60% tracheal mite infestation. Every colony was assessed for clustering behaviour (position, size, etc) and wrapped in standard winter 4 packs for outdoor wintering. A series of crosses using instrumental insemination were performed with 2004. Russian releases from the USDA, Baton Rouge (red-04, yellow-blue-04, blue-04 virgin queens) and semen collected from drones representing two lines of pure "*Carnica*" lines selected for varroa tolerance, hygienic behaviour, honey production, and temperament by Dr. Ralph Bűchler, in Germany. These crosses and their progeny will be reselected in the spring of 2005 for placement in "Saskatraz".

Results and Discussion: Part 1.

Thirty-five preselected colonies representing a diverse group of genotypes were successfully established at "Saskatraz" for further selection and evaluation by July 31, 2004. Twelve colonies of Russian origin, reselected for economic traits after two to three years of evaluation in Saskatchewan were placed into "Saskatraz". Twenty-three colonies from Canadian breeders were also placed into "Saskatraz" and represent Canadian stock selected for performance in Saskatchewan and Manitoba. Twenty-four colonies resulting from crosses of Russian and German varroa tolerant stock are currently being evaluated for introduction to "Saskatraz".

Repeated sampling in September 2004, and testing of all colonies placed into "Saskatraz" failed to detect any tracheal mites. This suggests that although most of the apiaries from which the colonies originate have a history of tracheal mites, their selection and management programs have resulted in a low or non-detectable level of tracheal mite infestations. This is consistent with the literature indicating tracheal mite resistance can be achieved by repeated selections and that this trait is stably inherited. All of the colonies were infested with tracheal mites on October 15, 2004 and monitoring for tracheal mite levels will begin in the spring of 2005. All colonies were equipped with Apinovar bottom boards for efficient sampling of varroa using sticky boards.

Varroa populations (Figure 1) per colony were calculated by multiplying the frequency of natural drop per day by 500. Natural drop was assessed in two sets between August 7 and August 18; and between August 18 and September 15, 2004. In the August 7 to 18 test, varroa was detected in 5 colonies, whereas in the August 18 to September 15 tests, varroa was detected in 13 out of the 34 colonies assayed. The varroa

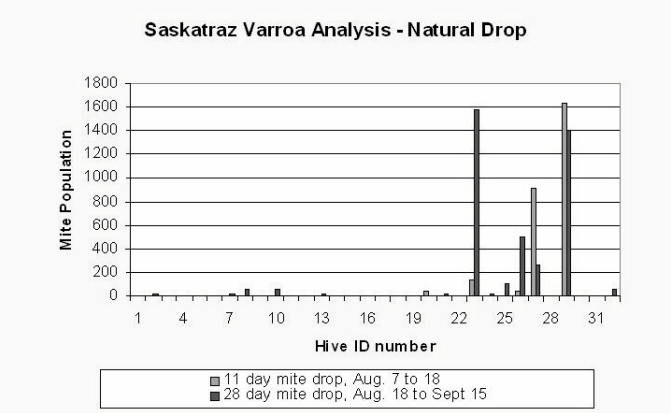

Figure 1. Varroa mites were monitored by natural drop using sticky boards placed on Apinovar bottom boards over the periods indicated.

populations increased from the first assay period to the second in hives 23, and 26, but decreased in colonies 27 and 29.

Apistan treatment was initiated on September 15, 2004 to normalize varroa populations amongst colonies. Analyses of varroa drop after Apistan treatments showed all colonies were infected with varroa by September 15, 2004 (Figure 2).

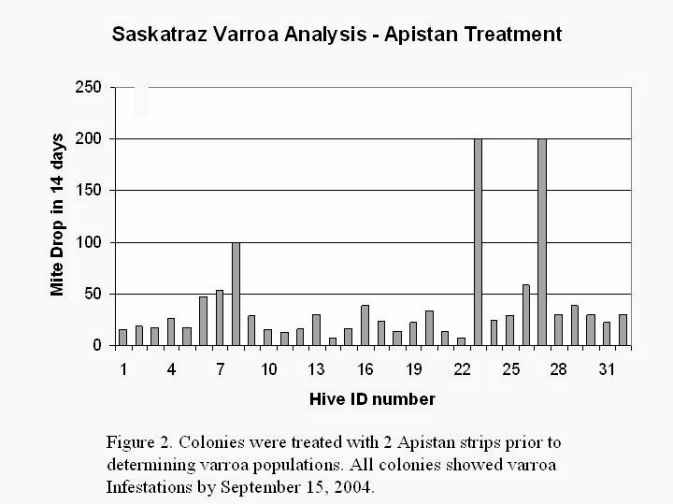

Figure 2. Colonies were treated with 2 Apistan strips prior to determining varroa populations. All colonies showed varroa Infestations by September 15, 2004.

Colonies initially detected as having the highest varroa population by natural drop showed the highest levels after Apistan treatment (hives 23 and 27) with the exception of hive 29 which showed a decrease in varroa population after September 15th. This hive superceded in late August and upon examination no adult or drone pupae could be found. This colony was of Russian origin and was subsequently requeened with a Russian virgin queen mated at the "Saskatraz" site.

Analyses for varroa in alcohol washes (approximately 300 bees) prior to September 15th detected varroa in hives 23 and 27, but after 14 days of Apistan treatment (September 29) no varroa could be found in the alcohol washes. Therefore, no Apistan resistant varroa were detected in the samples tested.

Preliminary evaluation of visible phenotypes was performed by four experienced beekeepers. In general all colonies were calm, showed good temperaments and good to excellent brood patterns. Only three colonies showed traces of chalkbrood and five colonies produced excess burr comb. Some variation in queen size was noted and colors varied between black and yellow with most being mixed. Populations were too uneven to meaningfully assess honey production during the honey flow. Clustering behaviour (bottom, top, centre, side) was assessed on October 15, 2004 and found to show considerable variability between colonies.

Seven Russian-German hybrid breeder queens were obtained by inseminating Russian virgin queens with semen from two lines of German drones obtained from colonies ("*Carnica")* selected for varroa tolerance and economic traits over the past ten years. The semen was obtained from Dr. Ralph Bűchler, Kirchhain, Germany. To increase the number of lines available for analyses and to maintain drone lines we grafted from 2 of each of the two breeder lines on September 15, 2004 and mated the 50 virgins in five frame nucs at three different commercial apiaries on September 24-25. On October 18, 2004 we identified 17 successfully mated queens which were put indoors to winter. These colonies will be evaluated in 2005, used for further crosses, and selections made for "Saskatraz".

Part II: Molecular Marker Analyses: Screening of 108 microsatellite DNA markers to identify microsatellites that can differentiate between Canadian and Russian origin in honey bee lines.

Methods and Materials

Many of the technical aspects (DNA isolation and analyses, PCR, marker analyses) of this project were carried out by GenServe Laboratories, Saskatchewan Research Council, 125-15 Innovation Blvd, Saskatoon, Sk. S7N 2X8 on a contract basis by Bruce Mann, in association with Dr. Gerry Brown and Dr. Yves Plante. General methods used are described In DNA MARKERS: Protocols, Applications and Overviews. 1998, Edited by Bretens-Anolles and Gresshoff. Only a brief description of materials and methods will be described here. A Qiagen Dneasy tissue kit was used to extract DNA from 50 mg of drone pupae or larvae.

The DNA markers used in the screening were selected from Solignac et al 2003 and GenBank. DNA was quantified by fluorimetry and assessed for quality by agarose gel electrophoresis (Figure 3). Initial PCR reactions were performed using a 55˚C annealing temperature and 1.5m M MgCl 2, DNA products were separated on polyacrylamide sequencing gels using the LICOR™ system and fragments scored using GeneImagIR (LICOR™).

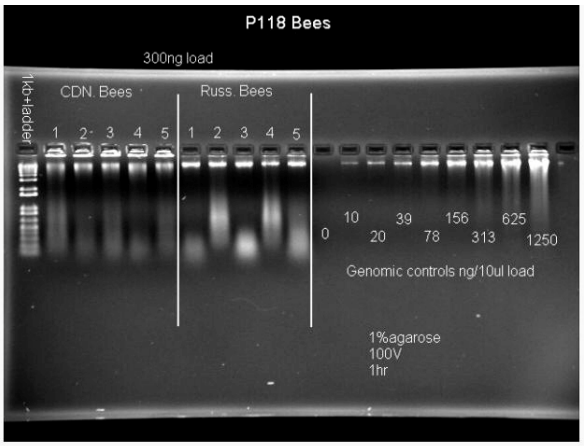

Figure 3. Quality analyses of DNA extracted from 5 Canadian and 5 Russian drone pupae. Both samples show good quality genomic DNA for PCR analyses.

DNA was extracted from 5 Canadian drone pupae randomly collected in 2001 from two colonies in one apiary operated by Meadow Ridge Enterprises Ltd. These colonies were never exposed to varroa mites. DNA was also extracted from drone pupae produced by a blue-40 line of a pure Russian queen obtained through the USDA, Baton Rouge La, USA, in 2001.These Russian lines were previously shown to have varroa and tracheal mite tolerance by USDA scientists (Rinderer et al 1997). Microsatellite analyses were performed using methods similar to those of De La Rúa et al. 2001 and Franck et al.2001. Dendograms were constructed using a TREECON software package (Van de Peer and Wachter 1993).

Results and Discussion: Part II.

Figure 3 shows the high quality of genomic DNA obtained by extracting DNA from honey bee drone pupae. One hundred and eight selected microsatellite sequences were initially screened with pooled samples of the 5 Canadian and 5 Russian drone DNA samples. Twenty informative microsatellite markers which clearly distinguish between Canadian and Russian bee populations were identified by these analyses.

Figure 4 shows the final results of one of the 108 different microsatellites screened. The satellite marker SRC 693 sequence is 16 base pairs shorter in the Russian “blue-40” line tested than in the Canadian drone samples. This is one of 20 informative microsatellite markers we can now use to discriminate between Russian and Canadian honey bee origin.

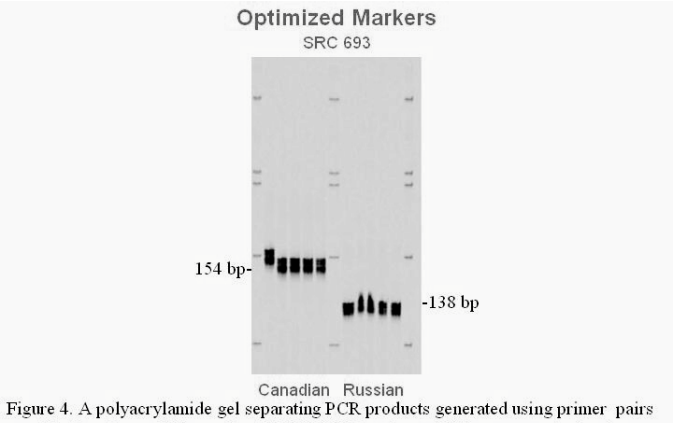

Figure 4. A polyacrylamide gel separating PCR products generated using primer pairs specific for microsatellite marker SRC 693. This microsatellite sequence is clearly different in the five individual Russian and Canadian drones tested, differing by about 16 base pairs (bp). This is one of 20 microsatellite markers which can be used to identify Russian genotypes.

These 20 informative microsatellite markers were used to generate the dendogram depicted in Figure 5, showing genetic relatedness between Russian and Canadian individuals. Since the thirteen Russian lines obtained through the USDA were previously shown to have some tolerance to varroa we are currently comparing these lines to sensitive Canadian lines using our microsatellite markers. The semen collected from drones originating from colonies selected in Germany for varroa tolerance and other economic traits was also used to construct lines for phenotypic testing at “Saskatraz” and for genotyping with microsatellite markers. It is our long term goal to identify varroa tolerant and tracheal mite resistant phenotypes using natural selection at our test apiary “Saskatraz” and use these phenotypes in addition to the Russian and German tolerant lines to correlate DNA molecular markers with varroa and tracheal mite tolerance.

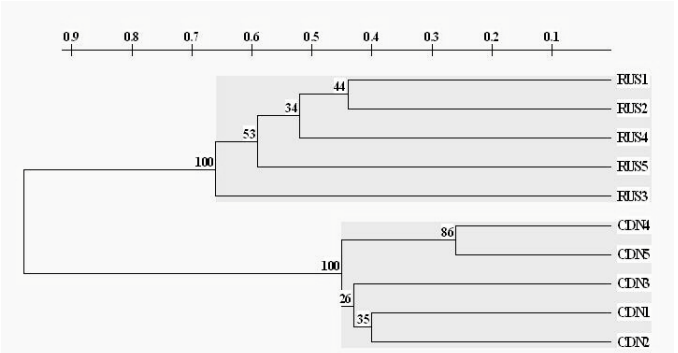

Figure 5. This dendogram was generated using a TREECON software package (cf Materials and Methods) showing the genetic relatedness of 5 individual Russian and Canadian drones. The values at the top of the figure indicate relative genetic relatedness. The Russian and Canadian bees are clearly defined as two genetically distinct groups using 20 informative microsatellite markers. The bootstrap values show relative relatedness between individuals within a group.

Acknowledgements.

The financial support of the Saskatchewan Beekeepers Association, the CARDS program, Meadow Ridge Enterprises Ltd, the Canadian Bee Research Fund and the assistance of our provincial apiculturist John Gruszka, in providing services, and materials for the project are gratefully acknowledged. We also thank 14 Saskatchewan queen breeders for donating selected colonies to Saskatraz, insemination services by Susan Cobey, importation of semen by Yves Garez, importation of 2004 Russian queen stock by Tim Wendell, and John Pedersen, Calvin Parsons and Christopher Warriner for supplying drone samples for testing. In addition without the dedicated assistance of Tom Robertson, Cecilia Robertson, Neil Morrison, Jennifer Robertson, Robert Peace and Cam Ferguson the initiation of the "Saskatraz" project would not have been possible.

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Fall Efficacy of Oxalic Acid

Alison Skinner, Janet Tam and Rachel Bannister
Ontario Beekeepers' Association
Technology Transfer Program, Guelph, ON

In 2001 varroa mites resistant to Apistan® were detected in Ontario. In the fall of 2004, varroa resistant to CheckMite+™ were identified. Populations of varroa mites that are resistant to both Apistan® and CheckMite+™ now exist. Oxalic acid has been investigated as an alternate treatment against varroa mites. In 2001, 2002 and 2003, the efficacy of oxalic acid, applied using the trickle method, was 95 to 97% in single brood chamber colonies and 93 to 95% in double brood chamber colonies. In the fall of 2004, the average daily varroa mite drop was monitored for nine days after a trickle treatment of oxalic acid. The highest mite fall was on day 2 (135 mites). On days 7, 8 and 9 the average daily drop was 5 or less mites per day.

Several oxalic acid application methods were investigated. The VarrEX and VARROX® vaporizers were tested. Efficacy in single and double brood chamber colonies ranged from 81 to 84 % in 2003. To improve the efficiency of the trickle method of application, drench guns were evaluated. The EUROPLEX® was the preferred applicator.

Honey Bee Resistance To Varroa: How Much Of The SMR Trait Is Due To Hygienic Behavior?

Marla Spivak
Department of Entomology, University of Minnesota, St. Paul, MN

Suppression of Mite Reproduction (SMR) is an important, heritable mechanism of bee resistance to *Varroa destructor*. How bees suppress the reproductive success of the mite had not been determined. In 2002, we noted that colonies from the SMR line bred by Dr. J. Harbo (USDA Baton Rouge) also displayed hygienic behavior (HYG) based on freeze-killed brood assays. This surprising finding led us to ask these questions: 1) Do bees bred for Suppression of Mite Reproduction (SMR) detect and remove mite-infested pupae? 2) If so, do SMR bees preferentially remove pupae infested with reproductive mites leaving pupae with non-reproductive mites? 3) What is the reproductive success of mites from SMR colonies when bees are not allowed to remove mite-infested brood? For each question, we compared colonies from the SMR and HYG line.

We found that SMR colonies removed significantly more mite-infested pupae than HYG colonies (82.3% $\pm$ 10.8 vs 63.7% $\pm$ 8.5). The remaining mites within SMR colonies had very low reproductive success (measured by fertility, fecundity and number of viable offspring) compared to mites remaining within HYG colonies. Finally, the reproductive success of mites on SMR brood that developed within an incubator was lower than mites on HYG brood (data submitted for publication).

In summary, bees bred for SMR do detect and remove mite-infested pupae, and tend to remove those pupae infested with reproductive mites, leaving pupae with mites that have low reproductive success. SMR colonies remove more infested pupae and are more selective about removing pupae with reproductive mites than are HYG colonies. In addition to this strong adult bee effect, there appears to be a physiological effect of SMR brood on mite reproduction because mites had significantly less reproductive success on SMR brood compared to HYG brood. Mites that develop for several generations on SMR brood come to have reduced reproductive potential due to the combination of the adult bees selective removal of reproductive mites and the brood effect, which limits mite reproduction in an unknown way.

Progress In Breeding Honey Bees For Resistance To *Varroa destructor*

Marla Spivak
Department of Entomology, University of Minnesota, St. Paul, MN

Since 1994, we have been breeding honey bees for honey production, winter survivorship, gentleness, and hygienic behavior (HYG). Our previous field trials demonstrated that HYG colonies have good honey production and disease resistance, but only partial resistance to the mites. To increase mite resistance, we began incorporating the trait, Suppression of Mite Reproduction (SMR) by crossing SMR and HYG queens and drones through instrumental insemination. In 2003 and 2004, we compared colonies from the HYG/SMR cross, colonies bred only for HYG, and unselected, control colonies. In both years we found that the HYG/SMR colonies had significantly lower mite levels on adult bees and in brood. Hygienic behavior of the HYG/SMR colonies was the same or significantly greater than the HYG colonies, which now we understand is due to the ability of SMR bees to rapidly detect and remove mite infested brood, particularly brood infested with reproductive mites. Therefore, incorporating the SMR trait into the HYG line increased the degree of hygienic behavior, and mite resistance. On the other hand, honey production in the HYG/SMR colonies was significantly less than the control colonies in 2003, and was less but not significantly so in 2004. We are currently selecting colonies from the HYG/SMR cross with highest honey production, most rapid hygienic behavior, and lowest mite levels (including lowest mite reproductive success) for the next generation of evaluation.

It is extremely important that beekeepers weigh the costs and benefits of routinely applying pesticides such as fluvalinate and coumaphos to their colonies. The short-term benefit is that the pesticides kill mites. The long-term cost is that the mites develop resistance to these compounds, rendering them ineffective, and leading to large scale colony collapses, such as what happened in the US in the winter of 2004-05. There are significant long-term benefits from breeding bees that can resist the mites on their own or with minimal beekeeper input. However, many beekeepers are not willing to suffer the short-term cost of losing some highly susceptible colonies to mites while building up the resistant bee population. I strongly urge beekeepers to think in the long run: breed and use bees bred for resistance to the mites!

Appendix I: Consolidated Balance Sheet and Statement of Income

2004 Financial Statement
General Fund Balance Sheet as at October 31, 2004
(Unaudited)

	2004	2003
Assets		
Current Assets		
Cash		4,378
Short-term investments	**110,605**	68,119
Accounts receivable	**1,227**	1,847
Inventory	**49**	210
Accrued interest receivable	**719**	294
	112,600	74,848
Fixed Assets, net book value		
Equipment	**1,017**	1,403
	$113,617	$76,251
Liabilities		
Current Liabilities		
Bank overdraft	**2,387**	
Accounts payable - note 5	**1,311**	2,452
Deferred income	**5,120**	4,941
	8,818	7,393
Members' Equity		
Reserves for Future Expenditures – note 6	**78,914**	5,440
Equity in Capital Assests – note 4	**1,016**	1,402
Unappropriated Retained Earnings	**24,869**	62,016
	104,799	68,858
	$113,617	$76,251

Canadian Honey Council
Consolidated Statement of Income
For the year ended October 31, 2004
(Unaudited)

	2004	2003
Revenue		
Membership fees	**63,675**	58,492
Annual meeting	**3,640**	6,350
Canadian on Farm Food Safety Program	**41,104**	63,686
Oxalic revenue	**24,463**	
Donations - Canadian Bee Research Fund	**11,460**	1,710
Hive lights	**16,528**	19,073
Interest	**841**	2,024
Promotional materials	**110**	127
Other	**3,143**	
	164,964	151,462
Operating Expenses		
Advertising and promotion	**336**	180
Annual meeting	**2,581**	3,989
Awards and donations		175
Bank charges	**199**	154
Canadian Bee Research Fund – Donations	**11,460**	1,710
Canadian on Farm Food Safety Program	**41,104**	63,680
Oxalic	**1,950**	
Credit card charges	**93**	43
Hive lights	**20,543**	19,772
Memberships and subscriptions	**1,003**	3,273
Office	**9,211**	1,624
President's honorarium	**2,000**	2,000
Professional fees	**1,351**	1,356
Rent – building	**1,200**	1,200
Telephone	**1,667**	1,798
Travel	**1,302**	3,833
Wages and benefits	**33,598**	41,027
	129,598	145,814
Net Income for the Year	**$35,366**	$5648

Canadian Honey Council
Notes to Financial Statements
For the year ended October 31, 2004
(Unaudited)

Note 4

	2004	2003
Capital Assets		
Cost		
Equipment	**9,309**	9,309
Accumulated amortization		
Equipment	**8,292**	7,906
Net book value	**$1,017**	$1,403
Equity in Capital Assets		
General Fund		
Balance, beginning of year	**1,402**	1,941
Amortization	**386**	539
Balance, end of year	$1,016	$1,402

Note 5

Accounts Payable

Accounts payable are comprised of the following items:		
Trade accounts payable	**1,311**	1,301
Wage deductions payable		1,151
	$1,311	$2,452

Note 6

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 99 Convention. These funds are to be used for research projects as decided by the board of directors.

	2004	2003
Investment income	**961**	
Allocation from Projects Fund	**50,000**	
Balance, end of year	**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

	2004	2003
Allocation from Projects Fund	**22,513**	
Balance, end of year	**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, 2004
(Unaudited)

	2004	2003
Assets		
Current Assets		
Short-term investments	**35,195**	20,000
Accounts receivable	**340**	
Inventory	**49**	210
Accrued interest receivable	**586**	289
	36,170	20,499
Capital Assets, net book value		
Equipment	**1,016**	1,402
	37,186	$21,901
Liabilities		
Current Liabilities		
Bank overdraft	**12,551**	7,755
Accounts payable – note 5	**424**	2,451
Deferred income	**5,120**	4,941
	18,095	15,147
Members' Equity		
Equity in Capital Assets - note 4	**1,016**	1,402
Unappropriated Retained Earnings	**18,075**	5,352
	19,091	6,754
	$37,186	$21,901

Canadian Honey Council
General Fund Statement of Income
For the year ended October 31, 2004
(Unaudited)

	2004	2003
Revenue		
Membership fees	**63,675**	58,492
Annual meeting	**3,640**	6,350
Donations – Canadian Bee Research Fund	**11,460**	1,710
Hive lights	**16,528**	19,073
Interest	**712**	648
Promotional materials	**110**	127
Other	**3,143**	
	99,268	86,400
Operating Expenses		
Advertising and promotion	**336**	180
Annual meeting	**2,581**	3,989
Bank charges	**199**	154
Canadian Bee Research Fund – Donations	**11,460**	1,710
Credit card charges	**93**	43
Hive lights	**20,543**	19,772
Memberships and subscriptions	**1,003**	3,273
Office	**9,211**	1,624
President's honorarium	**2,000**	2,000
Professional fees	**1,351**	1,356
Rent – building	**1,200**	1,200
Telephone	**1,667**	1,798
Travel	**1,302**	3,833
Wages and benefits	**33,598**	41,027
	86,544	81,959
Net Income for the Year	**12,724**	4,441
Unnappropriated Retained Earnings, beginning of year	**6,753**	2,852
Prior year's adjustment	**(1,402)**	(1,941)
Unappropriated Retained Earnings, end of year	**$18,075**	**$5,352**

Appendix III: Canadian Bee Research Fund Financial Statement

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

	2004	2003
Assets		
Current Assets		
Cash	**4,355**	16,542
Temporary investments	**81,203**	97,111
Accrued interest receivable	**210**	335
	87,768	113,988
Long-Term Investments (Fair Market Value $394,860)	**403,045**	396,537
	$488,813	$510,525
Liabilities		
Current Liabilities		
Accounts payable - note 5	**777**	777
Equity		
General Fund Balance	**28,693**	21,039
Endowment Fund Balance	**459,343**	488,709
	488,036	509,748
	$488,813	$510,525

Canadian Bee Research Fund
General Fund Statement of Operations and Changes in Fund Balances
For the year ended December 31, 2004
(Unaudited)

	2004	2,003
Revenue		
Donations	**7,160**	8,735
Investment income	**1,627**	95
		8,830
Less: Transfers to Endowment Fund	**626**	2,184
	8,161	6,646
Operating Expenses		
Bank charges	**3**	39
Office	**52**	68
Professional fees	**452**	435
Research grants		16,000
	507	16,542
Net Income for the Year	**7,654**	(9,896)
Fund balance, beginning of year	**21,039**	30,935
Balance, end of year	**$28,693**	$21,039

Appendix IV: Awards

Fred Rathje Award Winners
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, 1999 – 2003

Province(1) and year Province(1) et année	Beekeepers(3) Apiculteurs(3)	Colonies(3)	Honey Total Production Production totale		Valeur
	number nombre	number nombre	lb '000 liv '000	metric métriques	$'000
Prince Edward Island –Ile-du-Prince-Edouard					
Average/Moyenne 1999 – 2003	46	1,837	108	49	198
2003	35 r	2,190 r	115 r	52 r	225
2004 P	30	2,250	90	41	..
Nova Scotia - Nouvelle-Écosse					
Average/Moyenne 1999 – 2003	423	19,416	833	378	1,436
2003	405 r	19,080 r	825 r	374 r	1,650
2004 P	400	19,000	720	327	..
New Brunswick - Nouveau-Brunswick					
Average/Moyenne 1999 – 2003	247	5,609	258	117	495
2003	230	5,060 r	265 r	120 r	530
2004 P	225	4,470	197	89	..
Quebec - Québec(4)					
Average/Moyenne 1999 – 2003	245	30,051	2,892	1,312	4,911
2003	200 r	22,805 r	1,435 r	651 r	3,445
2004 P	190	25,000	1,505	682	..
Ontario					
Average/Moyenne 1999 – 2003	3,130	77,200	8,388	3,805	13,010
2003	2,650	71,000	8,605 r	3,903 r	17,505
2004 P	2,650	72,000	6,690	3,035	..
Manitoba					
Average/Moyenne 1999 – 2003	773	89,000	14,883	6,751	19,976
2003	550	80,000	14,560	6,604	29,100
2004 P	580	81,500	11,820	5,362	..
Saskatchewan					
Average/Moyenne 1999 – 2003	1,325	100,000	20,400	9,253	26,588
2003	1,285 r	100,000	19,500 r	8,845 r	39,000
2004 P	1,055	100,000	15,000	6,804	..
Alberta					
Average/Moyenne 1999 – 2003	733	219,400	26,652	12,089	36,510
2003	755 r	221,000 r	27,845 r	12,630 r	56,845
2004 P	750	235,000	31,725	14,390	..
British Columbia - Colombie-Britannique					
Average/Moyenne 1999 – 2003	2,262	45,865	3,226	1,463	6,927
2003	2,200	42,195	3,135	1,422	7,505
2004 P	2,110	43,126	4,465	2,025	..
Canada(2)					
Average/Moyenne 1999 – 2003	9,183	588,378	77,640	35,217	110,053
2003	8,310 r	563,330 r	76,285 r	34,603 r	155,805
2004 P	7,990	582,346	72,212	32,755	..

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

(1) Les chiffres sont compilés par Statistique Imported 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

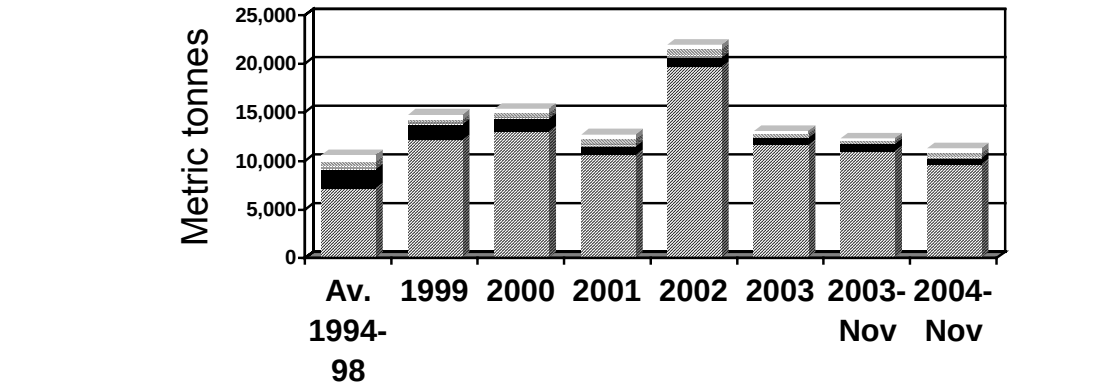
P Preliminary -Nombres provisoires

.. Figures not yet available - Chiffres pas encore disponible

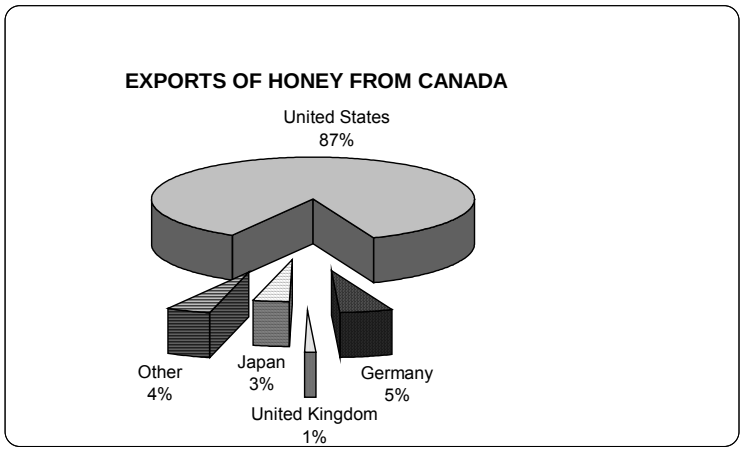
Note: 1 Pound = 0.453 kilogram; 2,204,000 pounds = 1 metric tonne.

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

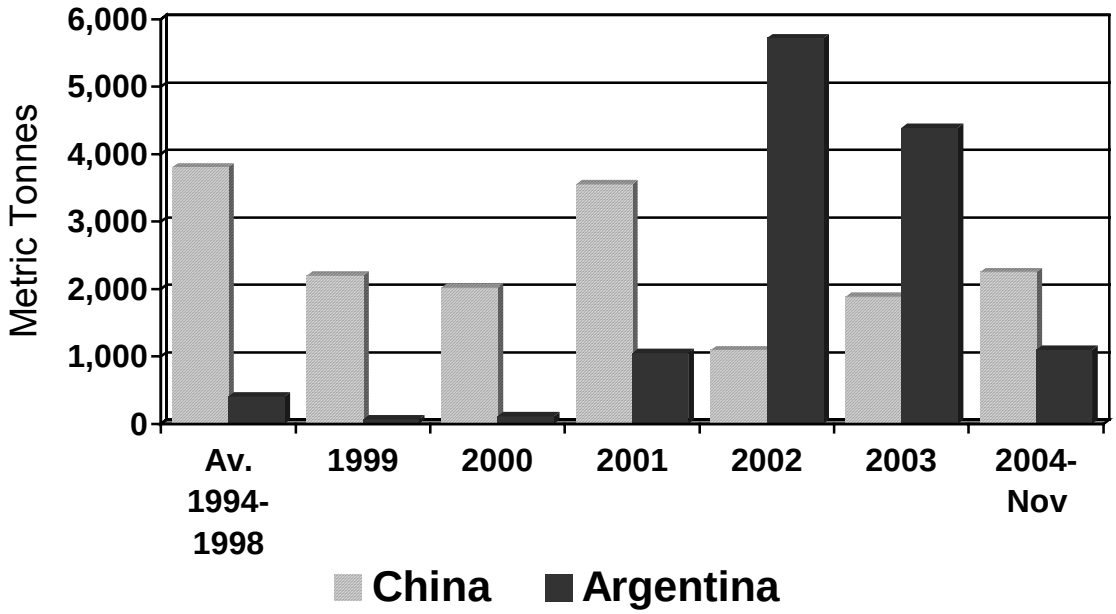
Canadian Export Honey



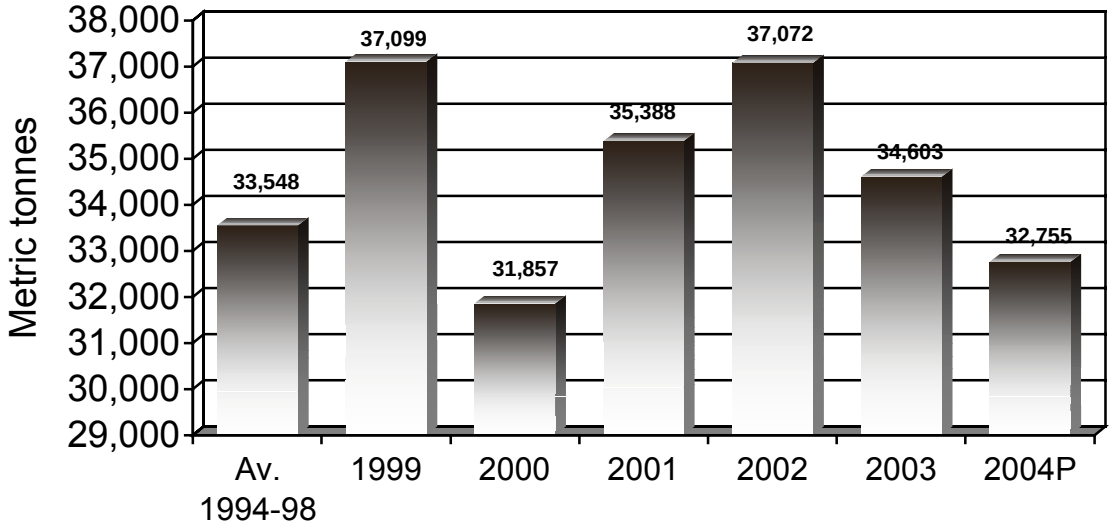
United States Germany United Kingdom Japan

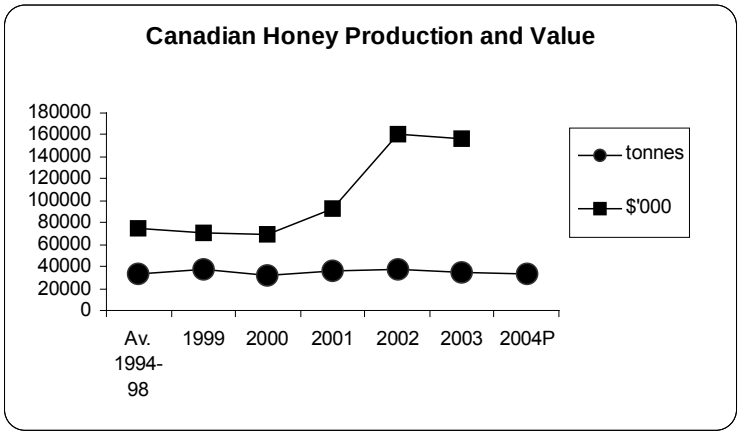


Imports of Argentine and Chinese Honey

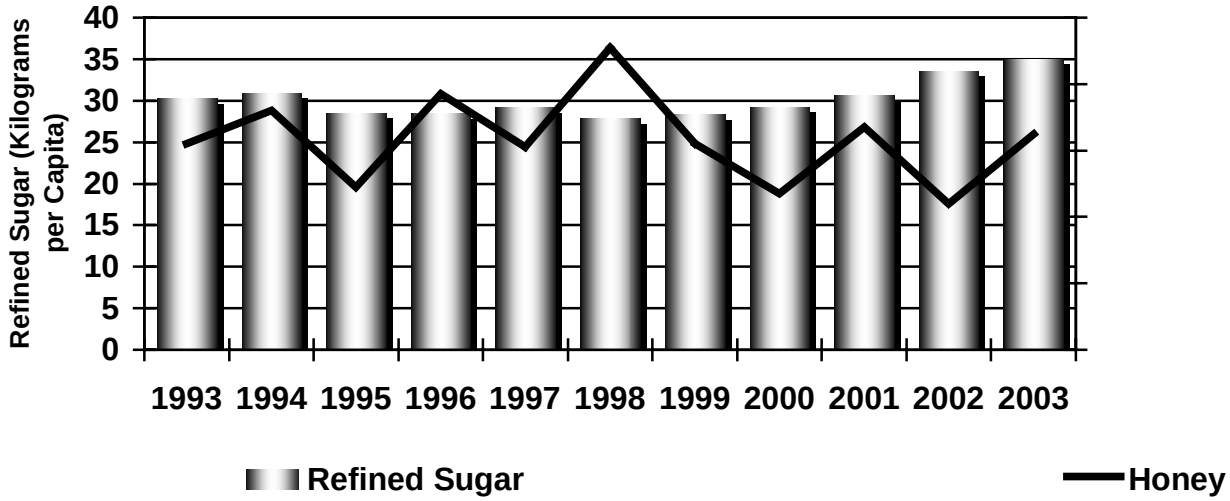


Canadian Honey Production





Honey & Sugar Consumption



65th Canadian Honey Council Conference
together with
Canadian Association of Professional Apiculturists
La Fédération des Apiculteurs du Québec
Annual Convention
will be held
Hôtel Palace Royal, Quebec City
Quebec
January 24-28, 2006