

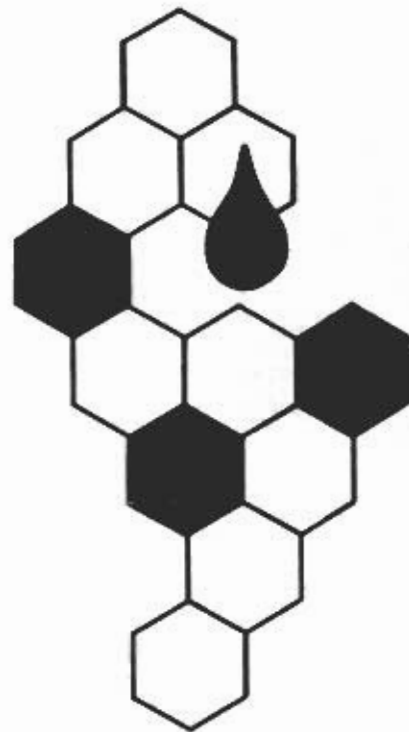


# Hive Lights

CANADIAN HONEY COUNCIL

Volume 12 Special Supplement  
December 1999

Minutes and Proceedings  
of the  
58th Annual Meeting  
Canadian Honey Council-  
Conseil Canadien du Miel  
Victoria Holiday Inn  
Victoria B.C.  
January 22-24 1999



[www.honeycouncil.ca](http://www.honeycouncil.ca)

**CANADIAN HONEY COUNCIL**

Special Supplement to Hivelights  
December 1999

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**Canadian Honey Council  
members include**

- \* Beekeepers
- \* Researchers
- \* Co-op Honey packers
- \* Bee supply establishments

**CHC is the national link between provincial beekeepers associations, government agencies and the Canadian Association of Professional Apiculturists**

**CHC's role is to**

- \* provide leadership
- \* serve as an advocate
- \* serve as a focus for information and communications
- \* provide liaison between beekeepers, government & industry
- \* raise national awareness of honey bees and pollination
- \* lobby on behalf of beekeepers in areas of national concern
- \* promote research through the Canadian Bee Research Fund

**CHC partners with the Canadian Association of Professional Apiculturists to provide valuable research information and professional beekeeping advice.**

**Our partnership with CAPA provides**

- \* Canadian Bee Research Fund
  - \* Annual research symposium
- CHC is also a member of the worldwide**
- \* Apimondia association.

**Publications Mail Agreement**

**# 1453688**

**Suite 236 234-5149 Country Hills Blvd NW  
Calgary AB T3A 5K8**

**CANADIAN HONEY COUNCIL-CONSEIL CANADIEN DU MIEL**

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**OFFICERS OF THE CANADIAN HONEY COUNCIL**

Canadian Beekeepers Association 1940-1972						
			1940	Secretary		
1940-41	President	Brooklyn	ON	W. T. Patterson	Winnipeg	MB
1942	William R. Agar*	Montreal	QC	Roy M. Pugh	Tisdale	SK
1943	Sam M. Deschenes*	Brandon	MB			
1944	J.W. Braithwaite*	Maple Creek	SK			
1945	P.C. Colquhoun*	Peterborough	ON			
1946	Allan T. Brown	Dauphin	MB			
1947-49	W.E. Phillips*	Winnipeg	MB			
1948-51	Frank Garland*	Smithville	ON	W.G. LeMaistre*	Edmonton	AB
1952	J.N. Dymont	Edmonton	AB	Roy M. Pugh	Tisdale	SK
1953-54	Peter Kowalski*	Vernon	BC			
1955-56	W.H. Turnbull*	Toronto	ON			
1957-58	H.C. Allen*	Oakville	MB			
1959-65	Sid J. Lye	Kemptville	ON	R.M. McKay	Ottawa	ON
1966-67	Victor Mesley	Roland	MB	John E. King*	Ottawa	ON
1968-69	Earl J. Burnett	Brooks	AB			
1969-71	Robert Asher	Creston	BC	Hank R. Taylor	Ottawa	ON
	Lou Truscott					

Canadian Honey Council 1972-1999						
				Secretary		
1971-72	President	Nipawin	SK			
1972-74	Don F. Peer	New Westminster	BC	Frank R. Garland*	Winnipeg	MB
	Robert Bird	Beaverlodge	AB	Fred Rathje*	Bassano	AB
1974-76	Jack M. Smith	Falher	AB			
1976-78	Gerry Paradis*	Nipawin	SK			
1978-80	Tom Taylor	Alvinston	ON			
1980-82	Howard Bryans	Pelley	SK	Bob Douglas	MacGregor	MB
1982-84	Merv Abrahamson	Hines Creek	AB	Linda Gane	Nipawin	SK
1984-86	Jerry Awram	Farmington	BC			
1986-88	Dale Hansen	Cottam	ON			
1988-93	Roger Congdon	Rollyview	AB	Executive Secretary		
1993-95	Barrie Termeer	Yorkton	SK	Heather Clay	Calgary	AB
1995-99	Wink Howland	Brandon	MB			
1999	Merv Malyon					

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Honorary Members Awarded	Honorary Members			1998 CHC Board of Directors
1950	Hon. J.G Gardiner	Ottawa	ON	President
1950	William R. Agar	Brooklyn	ON	Wink Howland
1950	Harry Jones	F.W. Jones & Son Bee		Saskatchewan Beekeepers Association Yorkton SK
1951	J.W. Braithwaite	Supplies Co.		Vice President
1950	G.H Pearcey	Brandon	MB	David MacMillan
1950	C.B. Gooderham	Kelowna	BC	Ontario Beekeepers Association
1950	Tom H. Shield*	Ottawa	ON	Thomloe ON
		Manager, Ontario Honey Producers Co- op, Toronto	ON	Executive Secretary
1951	P.C. Colquhoun	Maple Creek	SK	Heather Clay
1951	C.G. Bishop	Sherbrooke	QC	Suite 236 234-5149 Country Hills Blvd NW
1955	Harriet Grace	Director	WI	Calgary AB T3A 5K8
1955	J.N. Dymont	American Honey Institute, Madison	ON	Executive Director
1956	F.R. Armstrong	Smithville	ON	Walter Dahmer
		Dominion Honey Specialist, Ottawa	ON	Alberta Beekeepers Association
1956	W.H. Turnbull	Vernon	BC	Spruce Grove AB
1964	J.Percy Hodgson	Hodgson Bee Supplies, New Westminster	BC	Blaine Hardie
1964	H. C. Allen	Toronto	ON	(Replaced Ernie Fuhr at the Victoria meeting)
1963	C.F. Pearcey	Kelowna	BC	British Columbia Honey Producers Association
1965	Roy M.Pugh	Tisdale	SK	Duncan BC
1965	Frank Garland*	Winnipeg	MB	Merv Malyon
1973	F.L. Rathje*	Bassano	AB	Manitoba Beekeepers Association
				Brandon MB
				Hélène Prince
				Fédération des Apiculteurs du Québec
				St Agapit QC
				Paul Vautour
				Maritime Beekeepers Association
				Saint Philippe NB
				John Pedersen
				Bee Maid Honey
				Cutknife SK

## Proceedings of the 58th Annual CHC-CCM Meeting

### MINUTES OF THE 58th ANNUAL MEETING OF THE CANADIAN HONEY COUNCIL 22 to 24 January 1999 Victoria B.C.

The 58th annual meeting of the Canadian Honey Council opened at 1.30 PM on Friday 22 January 1999 at the Victoria Holiday Inn Victoria BC.

#### WELCOME REMARKS

**President Wink Howland** invited members and guests to enjoy the program of speakers slated to give presentations on research results and issues affecting beekeepers.

#### BUSINESS SECTION Saturday 23 January 1999

A call to order was made at 9.00 AM by Wink Howland.

Present.

Wink Howland, Merv Malyon, David Macmillan, Walter Dahmer, Ernie Fuhr replaced by Blaine Hardie, Paul Vautour, John Pedersen, Executive secretary Heather Clay

#### MINUTES OF THE 1998 MEETING Linda Gane (Past Secretary)

Due to problems of family health, Linda Gane resigned from the position of Secretary of the Canadian Honey Council at the annual meeting in Laval 1998. Linda was unable to arrange a compilation of the proceedings of the 1998 meeting. Following is a summary that she submitted as a report of the annual meeting.

#### Annual Meeting Report

January 31 - February 1, 1998

Attendance at the symposium and meeting was quite favourable, with well over 100 attending the symposium and banquet night.

The morning opened with I. Barton Smith Jr., State Apiary Inspector, Maryland talking on "The Bee Louse, Braula Coeca, a pest of honey bees".

Mark Winston, Professor, Simon Fraser University spoke on "Of Mites and Bee"

John Gruszka, Saskatchewan Provincial Apiculturist then spoke on "Beekeeping in Kashmir"

The last to speak was T. Sanford, University of Florida on "Varroa Resistance in Florida".

We had Mark Winston give us an update on the Canadian Bee Research Fund. We also took pledges and cheques during the meeting which raised \$2072 from this venture.

Hosting Apimondia 99 in Vancouver was addressed by Don Dixon, Chairman of the Committee in charge and Merv Malyon, the Canadian Honey Council delegate on the Committee. He is asking for volunteers to serve in the many areas during the Apimondia Meeting. If you can volunteer some of your time during this meeting, please give Don a ring at 204 945-3861. It is very crucial that we give of our time to help pull this meeting off.

Concluding the 1st day, the Quebec Federation held a banquet that was well attended by all that were at the meeting. At the banquet a presentation of the "Rathje Memorial Award" was given to Jean-Pierre Chapleau. Jean-Pierre has given his time and effort during the past 10 years to the Canadian Honey Council representing the Council at many functions and in specific his work towards promoting the Honey Industry to the Apimondia Executive in the hopes of bringing it to Canada in 1999.

On the Friday evening a tour was arranged by the Quebec Federation that went out to Intermiel, a well established company just on the outskirts of Laval. Those that went really enjoyed themselves. We had a tour of the facility, which was immaculate, including the classroom that they use to promote the honey industry to the school children. They have about 12,000 children tour this facility each year. In the classroom area were a number of observation hives that were used in their presentation to the students. This company also has an orchard and grows produce that it later uses along with honey in a wine making process. The meeting concluded with a business session on Sunday. The resolutions that were passed are as follows:

#### 1998 RESOLUTIONS - February 1, 1998

1. Moved by David MacMillan/ Phil Janz  
WHEREAS there is a need for additional genetic material to maintain the Ontario Buckfast Breeding-Programs; therefore

**BE IT RESOLVED** that the Canadian Honey Council endorse the importation of eggs from Buckfast Abbey in the 1998 season

**CARRIED**

2. Moved by David MacMillan/ Walter Dahmer  
WHEREAS Genetic Engineering of plants has many positive potential benefits to producers and consumers of agriculture products, and

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WHEREAS genetically modified plants may have lower nectar secretion and or attractiveness to bees, and

WHEREAS little testing for such negative effects on honey bees and other beneficial insects is being performed; therefore

**BE IT RESOLVED** that the Canadian Honey Council make representation to the seed companies and plant breeders and others to retain in their mandates honey secretion and pollen properties when genetic engineering is being done

**CARRIED**

3.Moved by Ernie Fuhr./ Merv Malyon

**BE IT RESOLVED** that the Canadian Honey Council Journal - HIGHLIGHTS - be a forum for informative articles without restrictions based on the Canadian Honey Council membership of any beekeeper that may be mentioned.

4.Moved by Walter Dahmer / Ernie Fuhr

WHEREAS the Canadian Honey Council has been working with the Alberta Beekeepers Association on the NAFTA/WTO review and  
WHEREAS addressing import concerns are a natural extension of this work; therefore

**BE IT RESOLVED** that the Canadian Honey Council, participate with Alberta in the process of developing a protocol to address mainland honeybee import concerns **DEFEATED**

5.Moved by John Pedersen / Walter Dahmer

WHEREAS most provinces have more or less stringent controls on the movement of live bees from other areas of Canada; and  
WHEREAS broadening the gene-pool could aid queen breeders in every area; and  
WHEREAS some areas notably Ontario have developed strains of tracheal mite resistant bees which could benefit beekeepers elsewhere in Canada; and  
WHEREAS ways could be found for moving queens which would reduce the danger of spreading mites or other diseases into areas which are at present free of such pests; therefore

**BE IT RESOLVED** that the Canadian Honey Council, in conjunction with CAPA, develop stringent protocols to facilitate the exchange of queen honeybee stock for experimental or breeding purposes within Canada

**DEFEATED.**

6.Moved by Merv Malyon/ David MacMillan'

**BE IT RESOLVED** that the Canadian Honey Council enter into dialogue with Agriculture and Agri-Foods Canada regarding the implementation of the Aims Program. **CARRIED**

7.Moved by Phil Janz/ Ernie Fuhr

**BE IT RESOLVED** that the Canadian Honey Council extend thanks to the Federation des producteurs de miel du quebec for hosting a very successful meeting in Quebec **CARRIED.**

**Motion:** Moved by Malyon/ Dahmer to accept the 1998 minutes and waive the requirement of reading the minutes. **CARRIED**

### 1998 FINANCIAL STATEMENT

**Wink Howland**

The financial statement Appendix 1 was presented to the delegates. The following motions were made.

**Motion:** Moved by MacMillan and seconded by Vautour to accept the 1998 financial statement as presented. **CARRIED**

**Motion:** Moved by Pedersen / MacMillan that the liability of the Canadian Honey Council to the Rathje Memorial Fund be repaid from the general account. **CARRIED**

**Motion:** Moved by Pedersen and seconded by Dahmer that the funds accumulated in the project account, totalling \$5289.32 be transferred to the general account. **CARRIED**

**Motion:** Moved by Dahmer / Malyon whereas a motion to not assess the delgate fee increase of \$500 retroactively was voted by mail, then the \$3500 fee is for 1998/99 fiscal year.

**CARRIED**

### PRESIDENTS REPORT

**Wink Howland**

During the course of our annual meeting last year, Linda Gane submitted her resignation as Council secretary, and by doing so, set in motion a series of events that was to occupy a great deal of time during the following five months. As Council secretary, Linda had CARRIED the majority of the responsibility for all aspects of Council's business, and in order to accede to her wishes in terms of being relieved of responsibility, it became necessary to transfer the responsibilities of that office to the President until a new secretary could be hired. To properly advertise and interview for

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the position, advertisements were published in most of the Canadian Beekeeper publications. Since some of these publications are circulated quarterly, and since it was important that potential applicants in all provinces be given sufficient time in which to respond, the advertising process became a rather protracted affair. A number of excellent candidates presented themselves, and after a period of interview and consultation, the position of Executive Secretary was offered to Heather Clay. Heather accepted the position, but was unable to assume her duties until completing her own move from the Maritimes to Calgary. I was greatly relieved when I was finally able to start referring Council business to Calgary on September 1.

In February, David MacMillan and I met with the Canadian Food Inspection Agency (CFIA) in Laval, Quebec. Our agenda for that meeting included the discussion of current labeling requirements, inspection levels for imported honey, and registration of Canadian honey producers. At that meeting, attended by representatives of CAPA, CFIA, CHC and the Canadian Honey Packers Association, it became quickly and obviously apparent, that the discussion regarding labeling was not going to be simple. The most immediate concern had arisen from a threatened detention of honey processed by the Alberta Honey Co-op which was labeled as "unpasteurized." An Alberta inspector had examined the sample for viable yeasts, and finding none present, concluded that the product had been pasteurized and was therefore mislabeled. The ensuing discussion at our meeting concluded that unpasteurized honey could not be defined by assuming that it was the opposite of pasteurized honey and general consensus was reached, that the term unpasteurized should be dropped. Packers could continue to label product as pasteurized, but the term unpasteurized should not be used as the message given to the consumer was incorrect. It was felt that producers who labeled product as unpasteurized, were attempting to portray the product as being more healthful, when in actual fact, in most cases the product had been heated and was, for all intents and purposes, pasteurized. The discussions around labeling developed some other difficulties as well. National designations can only be applied if the producer or packer is registered. However, some provinces, notably Ontario and Quebec, have their own legislation governing labeling, and producers and packers may choose to use provincial standards, rather than national standards. The committee felt that it would be beneficial to our industry, if all provinces would adopt national standards and would, by doing so, ensure a consistency of standards

throughout Canada. This is unlikely to happen though, as changes in provincial legislation is difficult and costly to bring about, and there is also resistance from some beekeepers in those provinces, who wish to maintain their provincial standards.

There had been a dramatic decrease in the number of beekeepers registered with the CFIA. Now that export certificates are non-mandatory and now that there is a charge for registration, beekeepers have chosen to let their registrations lapse. The concern this creates, is one of facility inspection. Granting the registration meant that at least once a year, the registered premise was inspected by a CFIA inspector, who would note deficiencies in the health standards of the operation. Now that beekeepers are not registering, this inspection is not taking place, and there is a concern that there could be a reduction in our overall standards for production.

The second annual meeting with CFIA was held in Winnipeg in November. Discussions at that meeting centered primarily around the current "honey analog" problem. The analog is the biggest industry concern for Council and for our entire industry at present. It concerns the widespread marketing of a sugar cane product called a "honey analog." The company marketing the analog is Dhampur Invertos Ltd. of India, and they appear to have been very successful in selling this product as an adulterant for honey. Their web page advertises the analog as indistinguishable from authentic honey when mixed on a 50/50 bases. Moreover, they assert that their product is even healthier than authentic honey, as authentic honey contains large quantities of wax which can be bad for humans consuming lots of honey. It appears this product is widely available, and although laboratory testing can determine its presence in honey, the number of checks required to ensure that it is not occurring in shipments from producers, packers, or marketers of any kind, would be impossible to maintain. At present, CFIA is charging one large Canadian Packer with purposefully adulterating and marketing his product as pure honey, and I'm sure that there will be further charges laid against other producers and packers as the year progresses. Since the analog is available at about half the current market price for honey, it offers a strong incentive for anyone who is less than honest, to blend it with their honey in an attempt to increase their profit margin. Adulteration certainly isn't a new problem for our industry, but it can be a very damaging one, particularly if the message gets out to our buying public, that our product cannot be trusted.



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In March, CHC was made aware that the Greenpeace organization in Europe, was creating considerable controversy (how's that for alliteration?) over products that were transgenic. The product, in our case, was honey produced from genetically altered canola. Even though no opposition to these products was being created by government, consumers were being encouraged to boycott stores which carried transgenic products and some European honey buyers were asking Canadian producers for certificates guaranteeing that the honey they were buying had not been produced from genetically altered canola. Although there was a great flurry of activity in this area for a month or so, the sheer volume of products emanating from genetically altered plants seems to have overwhelmed the opposition, and recently there has been little heard regarding this problem.

In April, I assumed financial management of the Canadian Bee Research Fund. Since the fund operates on a calendar year, once of the first orders of business was to arrange for a "Review Engagement" for the year ending 1997. The financial statements indicated that the fund had done extremely well in 1997, having provided \$29,000.00 in research grants, while amassing over \$41,000.00 in the endowment fund. The "Review Engagement" has now been completed for the year ending 1998, and I'm pleased to report that the fund provided \$30,000.00 in research grants and that the endowment fund has not grown to over \$63,000.00. It will be exciting to hear reports from some of those researchers who have been able to access this fund for directed research for our industry.

In reviewing the past year, it would appear that Council has not been involved in a great number of issues. However, the business of maintaining a Council presence during a period in which there was no secretary, required a great deal of office correspondence, telephone commentaries, and accounting. Lurking in the background at all times, was the impending Apimondia conference, and as president, I really have left those details to our Apimondia representative, Merv Malyon. I commend that committee for the work they have accomplished during this past year, and hope that Council will be able to provide greater assistance during the next few months.

**Motion:** Moved by Malyon / Dahmer to accept the Presidents report as presented. **CARRIED**

### EXECUTIVE SECRETARY'S REPORT

Heather Clay

The change over from Linda Gane Through Wink to me was not without teething pains. Wink has done a great job in keeping things going this year. He has put in countless hours of unpaid work just to maintain a holding pattern for the association and fortunately for the CHC he has not put in a bill for his time .

In the four months that I have been in the position I can see the glaring need for a person who is responsible for running the CHC on a full time basis. At the meeting in Ottawa in 1996 Barrie Termeer said that

" CHC should consider creating an executive officer who will carry out all the office functions as well as act as CEO of Honey Council in communications with the federal government. The CEO would take direction from the executive and by CHC resolutions and would be an employee of the industry with a renewable contract. This would reduce the workload of the president and executive while encouraging more people to let their name stand for council and to make the office of the council more accessible to everyone".

With continually reduced government funding and greater pressure on industry the situation is more pressing than in 1996. My position with the CHC is part time 15 hours per week and this is not enough to aid industry, liaise with government and provide links for beekeepers and industry. The CHC needs a full time CEO who will liaise with the government, represent the CHC at meetings, provide service to the industry by accessing funds for promotional and educational materials, maintaining open communications with the delegates, and providing administration of the organization.

For the past four months I have been actively involved in many issues, including countering press reports of honey causing infant botulism, lobbying to keep the national honey survey, lobbying CFIA to identify adulterated honey, advising on import protocols for package bees, and working towards a national pesticide strategy.

There are many problems of national significance which are best tackled at the national level. We need one voice to the government and the CHC is in the best position to do that.

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The Canadian Honey Council - Conseil Canadien du Miel has a new website at [www.honeycouncil.ca](http://www.honeycouncil.ca)

It is under construction and will expand regularly as more information is added. At present there are French and English contact lists of

- Provincial apiculture specialists
- Provincial associations and the newsletters that they produce
- University researchers in apiculture
- Government personnel for the honey industry

Information in French and English on

- Honey facts
- Hivelights
- Fred Rathje award details, and a photo of this year's winner

Details of

- Canadian Bee Research Fund (current research & application details)
- Canadian Association of Professional Apiculturists
- CAPA Booklet -*Honey Bee Diseases and Pests*- how to purchase
- CAPA Booklet -*A Guide to Managing Honey Bees for Pollination* - how to purchase

Links in French and English to

- Apimondia
- Federal Government statistics
- Provincial government information
- Provincial Associations with web sites
- CHC Member webpages
- Great link sites

**Motion:** Moved by Dahmer / Vautour to accept the Executive secretary's report as presented.

**CARRIED**

### FEDERAL GOVERNMENT REPORTS STATISTICS CANADA

**William Parsons** of Statistics Canada presented a verbal statement that owing to overlap and duplication of the honey survey statistics collection and because the survey is considered faulty that 1998 will be the last year for publishing the national honey statistics. He claimed that the methodology does not support the published results. CAPA agreed to form a committee to investigate the options and they will report back by June. While the CHC understands the budgetary constraints our industry requested Parsons to take the message to Ottawa that we need consultation and a co-operative approach.

### CANADIAN FOOD INSPECTION AGENCY

#### Compliance program

**John McCool** presented a compliance report (Appendix 2) and discussed the work of the CFIA advisory committee. The members of the committee are John McCool (CFIA), Wink Howland (CHC), David MacMillan(CHC), David Sugarman (Billy Bee) Paul Belleisle(Bee Maid), Jean Marc Labonte(Labonte), Kern Tuckey (CAPA) and Doug McRory (CAPA)

The team has been working on honey labeling issues, especially the term unpasteurized which has been recommended to be dropped from the labels. The next issues are to protect the term honey through legislation and to look at the issue of labeling floral source.

#### Honey Adulteration Program

**Dr. Carla Barry** the chemist in charge of the Animal Health Laboratory in Ottawa, presented a report on the honey analog situation Appendix 3 showed that adulterated honey can be detected in levels as low as 7% dilution using the carbon isotope ratio method.

The CFIA is checking honey reported to them and so far at least one packer has been charged with selling adulterated honey. Monitoring of the situation will be stepped up this year.

The issue of honey adulteration has been addressed by the Canadian Food Inspection Agency in 1998. Laboratory testing of honey and honey adulterated with cane product (called "honey analog") and corn syrup has shown that honey adulteration can be readily detected.

The CFIA analytical testing uses three methods of analysis for detection of honey adulteration

- Carbon Isotopes Ratio Mass Spectrometry\*\*
- Retrograde sugars by Gas Chromatography
- Oligosaccharides by HPLC -PAD

The Carbon Isotope Ratio is accepted as a standard method of analysis by the Association of Official Analytical Chemists. Any addition of corn or cane protein to honey is readily identifiable using this method. Since carbon is present in nature in two forms, carbon 13 and carbon 12 isotopes, the ratio of these two isotopes of carbon can be used to determine which type of photosynthetic pathway was used to make food through CO<sub>2</sub> fixation.

The Carbon dioxide fixation process in plants occurs in one of three ways:

C3 or Calvin cycle used by maple, beet, and most fruit

C4 or Hatch Slack cycle used by corn and cane plants

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**CAM or Crassulacean Acid Metabolism** used by pineapple plants

The ratio of the carbon isotopes found in plants in these 3 categories falls into a well defined range.  
C3 plants : -22 to -30 parts per thousand  
C4 plants : -8 to -11 parts per thousand  
CAM plants: -11 to -13.5 parts per thousand.

**Carbon Ratio Analysis of Honey and of Protein in Honey**

Nearly all protein in honey originates from the bee in the form of enzymes that ripen the nectar. Therefore the carbon ratio of the honey and that of the protein isolated from that honey should be similar.

### **Detection of Cane Sugar Addition**

The addition of cane sugar and corn syrups to honey will change the carbon ratio of the honey but not of the protein. Therefore the difference between the carbon ratio value of the protein and that of the honey provides an unequivocal objective measure of the honey's C4 (cane or corn) sugar content.

The AOAC International Method accepts that a difference equal to -1 parts per thousand indicates addition of C4 sugars. This means that the addition of cane sugar to honey can be detected to level as low as 7% .

### **Results of Analytical Analysis .**

The results for the 1998 program are presented in Appendix 3. They were from a focused sampling of honey in regards to an investigation of honey adulteration. The numbers are not representative of the Canadian industry as a whole and do not indicate a widespread problem.

### **MARKET & INDUSTRY SERVICE BRANCH**

**Dave Pearen** presented a report on the trends in beekeeping for the 1998 season. (Appendix 4, 5 and 6). Honey imports from China have decreased from 10,000 in 1996 to 1,000 in 1998 and overall the market looks good for honey.

### **AGRICULTURE CANADA**

**Dr. Brian Jamieson**, veterinarian Animal Health presented a report on the border closure issues. The border closure ban will end in December 1999 and the beekeeping industry needs to present solid reasons to maintain the ban. With the occurrence of small hive beetle in the USA there may be a potential to have this named as a pest and to have phytosanitary restrictions on imports

from the USA. No new fees will be imposed on imported honey bees for this current year.

The asian bee *Apis cerana* was found in a port in Darwin Australia in June 1998. The colony was destroyed and analysis of the DNA showed that the bee strain was Java 1 which is not associated with the transfer of varroa mites. All *apis mellifera* in a 6 km area were eradicated and there is no concern that this will be a problem for the importation of honey bees from Australia this year.

### **CAPA REPORTS**

#### **CAPA President Cynthia Scott Dupree**

reported that fluvalinate tolerant varroa in the USA has become a big concern as it has become widespread throughout the USA. Recently the small hive beetle has become a problem in Florida and CAPA is monitoring the situation. Border closure is recommended to maintain the health of our industry while we determine more effective integrated pest management. Coumaphos although illegal in the USA is being used without regulation and this may become a big problem for Canada. CAPA will form a honey survey committee to discuss with CHC and government , some alternatives to the data collection problems of Statistics Canada. CAPA is concerned that our industry will become marginalized if we lose our status in agriculture.

#### **CAPA CHEMICALS COMMITTEE**

**Kerry Clark** presented a report from the committee.

#### **Medications against varroa**

The committee would still like to see more discussion toward a strategy for sustainable control of varroa in Canada.

#### **Fluvalinate tolerant varroa**

Canadian perspective: Following last year's meeting, 17 sets of materials and the procedure for accomplishing the USDA (Jeff Pettis) assay were distributed across Canada (more sets and replacement materials are available from KC). Results from other tests should be compiled (KC or other if interested). Some remarkably high-infested colonies in B.C. were checked in September. Results from 3 colonies at first indicated apparent resistance (nearly 100 varroa in a high dose jar, none in the low dose jar). The only clear deviation from the protocol was a larger than specified number of bees (about 170 rather than 120-150). Rechecking of the colonies (and large numbers of varroa dropping on the first day of treatment) indicated the varroa were NOT resistant. Persons doing the test are reminded that

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several colonies should be sampled, and that "high-dose percent mortality" as well as high dose: low dose ratio, should give consistent indications of tolerance.

### U.S. situation (AAPA Bill Wilson, Tom Sanford, AIA Blane White)

- In many and widespread U.S. apiaries resistant varroa are not responding at all to Apistan®. Field sign: if more than 1 mite per 300 bees (wash or ether roll) is present after 10 days of Apistan treatment, suspect resistance. Weslaco has a "vial test" alternative to the Pettis assay, that will work with even a few mites.
- Several states received FIFRA Section 18 (emergency use: users must be trained and have a letter of authorization) registration for Bayer bee strips (10 % coumaphos) in January 1999 and many other states are applying for the registration. Mann Lake Supply will be the sole distributor. The strips also control the small hive beetle (from South Africa, found in Florida in June 1998) which is reported to have caused the loss of 5,000 U.S. bee colonies.
- Formic acid gel: ARS has licensed Better Bee to produce 65% FA gel packs. Mann Lake has submitted a registration packet for a 90% FA gel pack. It is expected that the treatments will require periodic supplemental treatment with another material, for adequate efficacy against varroa.

### Amitraz

AgrEvo holds the North American registration. The company would allow Y-Tex Corporation to produce a hive strip product using amitraz from another source (U.K., Poland, China), but would want \$US 105 million for the data packet needed to support registration. A recent study (Patti Elzen) found low levels of resistance to amitraz in fluvinate-resistant varroa in one beekeeping operation. It is not clear if this is cross or multiple resistance.

### Formic Acid treatments for varroa

A PCP Act label revision to highlight some precautions and include prolonged release application methods has been considered desirable. PMRA has decided that a label change would require that the technical active ingredient and the related end use products must be registered (rather than regulated by schedule as now). Although registration could be quite expensive, especially for such generic product, Nod Apiary Products of Ontario (David Van der Dussen) is pursuing registration of Miteway, a

formic soaked absorbent board in perforated plastic bag. Are there other options to leaving the label as is? Suppliers (mainly Medivet Pharmaceuticals Alberta) could continue to sell 65 % formic acid liquid as labeled. Extra precautions regarding a) avoiding direct application to bees (a situation that comes up when beekeepers apply it to bottom boards in fall) and b) to apply the product only when it is cool (not while it has been heated), might be addressed by advice beyond the label. Slow release applications? The responsibility of the applicator?

Could the method be included in extension publications? Is there any action CAPA or others should take?

### Other prospective methods

- Mineral oil (or vegetable oil) against varroa. Anecdotal reports continue, pro and con. We have seen no reports from well controlled trials.
- Botanical oils. No results equivalent to Apistan® have been reported.
- Chris Lindberg (undergraduate, SFU) screened oils of clove, cinnamon and wintergreen, plus thymol and camphor in 1997, and will conduct a larger trial in summer 1998.
- APIGUARD (gel formulation based on essential oils) no new information.
- Neem: Adony Melathopolous (SFU) continues a thesis project assessing the potential uses of neem against bee diseases.
- Other organic acids: Weak oxalic or lactic acids (less adverse effects on bees) applied by spray to all frames of colonies with little brood in fall have given good results in Europe. Lactic acid has had. A winter trickle application system is being investigated in Sweden.
- Anti-varroa bottom boards. Passive systems allowing varroa falling from miticides or grooming, to drop out the hive. A few hives so equipped are reported thriving after 3 years no treatment in France, but other hives with similar bottoms have required usual varroa treatments. Kerry has started a trial.

### Brood Disease Medications

- OTC resistant AFB has been reported from several U.S. states. A 1998 survey of AFB cases in B.C. indicated that 3 samples from various regions (of 10 samples) showed reduced susceptibility to OTC. Although last year there were expectations that tylosin might be made available as an alternative in the U.S., Eric Mussen reports that E.I. Lilly (Dow Elanco), is no longer interested in expanding

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its label to cover bees. The patent is expired and a bee product could be produced by someone else. The committee recommends that members look for an opportunity for someone to do a screening of various possible alternatives and/or to develop a strategy for appropriate sustainable use of antibiotic in foulbrood management.

- OTC labels. Although Pfizer Canada no longer markets Terramycin® brand, at least 3 others are labeled for bee use. Registration of extender patties in Canada has been suspended by the applicant (Medivet) until resolution of the resistance issue.

### Bee Poisoning

- The amount of aerial insecticide application (chlorpyrifos (Lorsban®) and others) in the Alberta and B.C. Peace region was unprecedented in 1998, as a result of the large area of canola being grown and the high populations of lygus bug (perhaps related to the mild el Nino winter) and some Bertha armyworm. Usual mitigation practices such as avoidance of crops in bloom, evening applications, use of shorter residual materials and even communication with beekeepers, were sometimes neglected in the rush to get the area treated. Some beekeepers suffered extra costs and labour for moving yards in mid summer, bee losses (and resulting crop loss or possible contamination) and even direct injury from applications, but the damage is often accepted as unavoidable and may be poorly reported. With an increasing area of intensively managed canola and a carry-over effect from high insect populations, the area sprayed and the consequent spray problems could be worse in 1999. Efforts have been made to raise awareness of the problem potential (association meetings, better communication such as the brochure produced by Manitoba Beekeepers' Association. A 3 year research position (various funding, based at Beaverlodge) has been proposed to address the situation with an IPM approach.
- Imidacloprid (Gaucho®, Admire®) is expected to become much more widely used against insects on canola. The product has been identified as a source of honey bee poisoning in France where it is used on sunflowers. There are also indications of transport of the product to pollen and subsequent damage to bumblebee brood.
- Is there a need and desire for a coordinated gathering of pesticide impacts on bees?

### Other Issues

- Nosema, fumagillin. No concrete news, but the possibility of a Canadian manufacture still exists, as does the production of a new formulation for dry application (especially useful when fall honeyflows make fall syrup feeding difficult).
- Material for hive depopulation: calcium cyanide dust or other options (also refer to last year's proceedings); PMRA's 1 year "buffer" period during which this product's registration might have been renewed or taken over from Bee Maid by someone else, ended at the end of December, 1998. It is now an unregistered pesticide, possibly creating problems for the continued use or storage of the remaining product.

### CAPA IMORT COMMITTEE

**Doug McRory** reported that Buckfast egg imports were destined for Guelph and Nova Scotia. Class screening import protocols have been suggested by the import committee for meeting the environmental assessment requirements of the Environment Act.

### CANADIAN BEE RESEARCH FUND

**Mark Winston** reported on the progress of the CBRF. Since the CBRF started two years ago over \$150K has been donated by beekeepers and industry. Approximately \$67,000 has been committed towards the endowment fund and \$58,300 has been distributed towards six research projects across the country. The Weston Foundation has made a significant contribution to the CBRF and this has been extremely important in allowing the long term endowment to increase. The CBRF objective is to raise \$1 million over a ten year period. To reach that goal, it is suggested that each beekeeper donates \$0.25 per hive annually and that each provincial association contribute 10-15% of funds raised annually to support research within each province. Reports of CBRF funded research are presented at the annual Research Symposium and can be read online at [www.honeycouncil.ca](http://www.honeycouncil.ca) or found in Hivelights.

### HIVELIGHT REPORT

**Fran Kay**, publisher of Hivelights gave a verbal report to the CHC delegates at the delegate meeting on Thursday evening. She had a problem getting the figures for a financial report and will send one at a later date. She expressed concern at the delegates meeting that she is not getting sufficient articles and that delegates are not meeting her publication deadlines.

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### BYLAWS REPORT

John Pedersen has reviewed the bylaws and suggested a number of changes.

"Purposes and Objects" change to "**Purposes and Objectives**".

"Honey Industry" change to "... **Beekeeping Industry**.." wherever those words appear.

"To propose, obtain" change to "To propose and obtain" and to insert the word "of" after the word "support" in that line. The line now reads:

To propose and obtain the support of governmental legislation helpful to the Canadian Beekeeping Industry.

1 Interpretation(1) Add wording to read: "**Unless the context in which they appear indicates otherwise...**"

1(1)- the sentence reads "...and expressions and used". The word "and" should be "**as**". The sentence now reads:

Unless the context in which they appear indicates otherwise, the following words and expressions as used in the present bylaws shall have the following meaning

I Interpretation(1)(d) Delete section (d) as it refers to the now non-existent 300 club.

Remove from the paragraph following section (d), the reference to the 300 club delegate.

V Fiscal Year. Change the Fiscal Year end from the last day in July to "**the last day in October**." The sentence now reads:

The fiscal year of the Corporation shall terminate on the last day of October in each year

VI Members 1(e), change "nonvoting power" to "**non voting status**". The sentence now reads:

1(e)one delegate at large may be elected with non voting status.

1(g), add after C.A.P.A. the words "**who shall be**" nonvoting. The sentence now reads:

1(g) One member from CAPA who shall be non voting.

Add a new section, section V111, entitled "**Delegate Appointment**", that section to read:

**Each provincial organization, Honey Packer organization, Producer Packer organization, Bee Supply organization, Co-ops, or any other organization who is**

**at present, or may in the future become a member of the Corporation, is responsible for appointing or electing their own delegate to the Corporation. Those persons who are appointed as delegates by their respective organizations shall remain delegates as long as those organizations shall desire, subject to the provisions of Article 1X below.**

1Xto **XXX** renumber to adjust for addition of new section V111,

IX Meetings of the Corporation (1)(b)2 Correct number sequence. Number 2 is duplicated.

IX. Meetings of the Corporation (2)(b)(e), add the words "**The holder of**" any office may.....The sentence now reads The holder of any office may be dismissed at any special meeting, by a majority of the delegate members present at such meeting.

X11 Quorum, reword as follows: "**At all meetings of the delegate members, whether annual or special meetings, the requirements of a quorum shall be met if the delegates present at such a meeting, do in fact represent a majority of all the delegates, or delegate positions, whether filled or not, of the Corporation.**"

XIII Voting at General Meetings (3)(c), President's Casting Vote, insert after "...at the time of voting, **but if he chooses to exercise this option, he may not then cast another vote to make or break a tie.**" The sentence now reads:

The President my vote on any question at the time of voting but if he chooses to exercise this option, he may not then cast another vote to make or break a tie and in the case of an equality of votes, the motion shall be declared defeated, unless it is a negative motion.

XIII Proxies(4) (a), adjust wording to read: "**Any member of the Corporation, not represented.**"

XV111 The Executive (1) Insert "**of the Corporation**" after the phrase "a fourth member".

XV111 The Executive (1) The word "Executive Director" should read "**Executive Secretary**". The sentence now reads:

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The affairs of the Corporation shall be administered by the Executive which shall be made up of the President, the Vice President, the Executive Secretary and a fourth member of the Corporation if deemed advisable by the Corporation, who shall be elected at the annual general meeting.

XV111 The Executive(4) Terms of Office. After the words "annual general meeting shall", add the phrase "**subject to Article X, clause 2, subsection (e), and subject to subsection 5 below,**" hold office for one year (~~delete ending "or until they are duly replaced"~~ as it is not redundant. The sentence now reads: The officers elected at the annual general meeting subject to Article X, clause 2, subsection (e), and subject to subsection 5 below shall hold office for one year.

XX111 Meetings of the Executive (3) Calling of Regular Meetings. Add the sentence "**Notwithstanding anything in these Bylaws to the contrary, such a meeting may take the form of a telephone conference call in place of an actual physical meeting.**"

XXV Officers of the Corporation 3 The Secretary and Treasurer(b)ix Bond - Replace the word "shall" with the word "**may**". The sentence now reads:  
He may be bonded with a recognized bonding firm the amount of such bond shall be determined by the Executive.

**Motion:** An omnibus motion was moved by Pedersen and seconded by Vautour to accept the bylaw changes as presented

**Amendment:**

**Motion:** Moved by Malyon and seconded by MacMillan that the bylaw changes be accepted as circulated with exception of XIII(4)(a) where member will be member delegate. **CARRIED**

### PROVINCIAL REPORTS

#### Maritime beekeepers association

Paul Vautour reported that the new executive for 1999 is President John Burhoe, P.E.I., Vice President Bruce Golenec, N.B., 2nd Vice President Don Amirault, N.S., Secretary Edith Thomas, Treasurer Linda Donovan, CHC delegate Paul Vautour

Apart from regular business the only motion put forward was one to keep the USA-Canada border closed for the importation of bees as a measure to

protect against various and environmentally deleterious hazards to beekeeping. The motion was carried unanimously and CHC delegate was instructed to vote against any motion to re-open the border at the CHC annual meeting.

Prince Edward Island beekeepers number 48 with 1700 colonies which produced 140,000 lb. of honey in 1998 (a bumper crop). Fortunately varroa and tracheal mites have not yet reached the island and its borders are legally protected against importation of honey bees. The newly constructed Confederation Bridge may facilitate the importation of the mites.

New Brunswick has approximately 400 beekeepers with 7,000 colonies plus nucleus colonies being raised for crop pollination under the New Brunswick Wild Blueberry Pollination incentive program sponsored by the provincial government. Honey production was almost double the provincial average as 1998 proved to be the most productive year in memory. Wholesale prices held fairly stable at approximately \$1.10 to \$1.25 per pound.

Nova Scotia has approximately 450 beekeepers with approx. 15,000 colonies- 10,000 of which are in production. The average yield per colony was near normal at 22 kg (50 lb.). 17,391 colonies are overwintered this year and 15,806 were wintered last year. New varroa mite finds were made both east and west of the 1997 infested zone. The infested zone now includes all of central Nova Scotia from Wolfville to Antigonish.

#### Ontario Beekeepers Association report

David MacMillan reported that a good year has made some positive growth a reality here. Colony counts are up about 10,000 across the province. The record crop has filled our honey houses with surplus product. More beekeepers than ever have taken advantage of the "Advanced Payment Program" and it is reported that many improvements are being made or considered. With prices dropping back to the .75-.85/ lb. range, some of the above mentioned plans may never see fruition.

The bankruptcy of Beetown Honey has left bulk producers here with not many options as to where to sell their crop especially the golden or darker honey. It may be possible for Ontario to become a member of the Co-op and John Pedersen will take this matter back to their board.

Prices on the store shelves are still holding although just this past week Billy Bee was offering 500g. squeeze containers for \$2.79 in the Loeb chain.

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It is hard to predict what over wintering losses will be like this year. Everyone heard about the big storm that hit Toronto but since then we've had a fairly mild winter. Large losses are not foreseen.

The OBA has received funding from the provincial government that will allow us to keep the HTM breeding program going and also keep Medhat Nasr employed. This project continues to excel as was evident by the recent award that Medhat received. (Ministry of the Environment 1998 Award of Excellence in Research and Technology.)

### Manitoba Beekeepers Association Report

**Merv Malyon** reported that the crop last year was 20 million lbs from approximately 10,000 hives with an average of 230 lb honey per colony. It was a generally good year and tracheal mite and varroa mite pest problems appear to be under control

### Saskatchewan Beekeepers Association

**Wink Howland** reported that 1998 was a good year for the Saskatchewan beekeeper. A mild winter contributed to low wintering mortality, and the colonies were strong in the Spring. Spring was also early and warmer than usual, allowing for greater colony build-up. Some areas experienced minor drought conditions in the spring, but this was alleviated by a 3 day major rainfall which dumped from 5 to 14 inches of rain on most areas of the province in the third week of June. The warm weather following the rain allowed for a heavy nectar flow and as a result of the ideal conditions, Sask. produced one of the largest, if not the largest, honey crop ever recorded here. Provincial production averages appear to be about 225 lbs. There has also been an increase in the number of colonies being operated.

An increasing number of Sask. beekeepers are becoming proficient in maintaining their stock and increasing their numbers, by developing their queen rearing and nuc production techniques. As many of these nucs are made up later in the season than normal, it has become more common to see indoor wintering here in order to ensure the survivability of the nucs.

In 1998 there was a greater demand for colonies for pollination, particularly in the development of new canola varieties. There was also an increased seeding of borage, again requiring pollination. Saskatchewan continues to promote crop diversification and development, and these trends are assisting to create opportunities for beekeeping in parts of the province which had not

been particularly good for nectar production. This, coupled with the improved prices during the past few years, has resulted in a small surge of new beekeepers. Hopefully, the current dropping of the bulk honey price, will not dampen this trend, as our industry needs new and younger members.

One of the biggest gains this year, was the continued control of mite spread within the province. John Gruszka, provincial apiarist for Saskatchewan, has really attempted to stay on top of the infestation situation, and by continually monitoring those areas where mites exist and by ensuring that those bees are not moved into mite free areas, we still remain, for the most part, mite free. Just how many more years we will be able to make that claim, is difficult to determine, but one thing is for sure, and that is that each year we gain will benefit us financially. As well, each year gained allows for more time for the development of new and possibly more effective, controls.

So far, the winter of 1998-99 is proving to be a replica of the previous one, and should that trend continue into the spring, we may be looking at another super honey year. We can only hope!

### Alberta Beekeepers Association Report

**Walter Dahmer** reported that Alberta's average production was 232 lb per colony. A strong El Nino gave Alberta beekeepers a year to remember. The winter, a very mild and dry one, resulted in very populous hives and very low losses for spring. The warm and dry spring gave beekeepers the opportunity to split hives thereby utilizing equipment which in most cases had been in storage for some time. The honey flow started early and ended late, resulting in a record production for most producers. A few isolated areas did experience drought conditions and disappointing yields. The warm extended fall allowed ample opportunity to feed and prepare colonies for winter.

Mites, while still spreading, are becoming less of a concern as beekeepers are becoming familiar with control measures available.

Hybrid canola pollination continues to demand more hives and has created opportunities for a number of new beekeepers to enter the industry as well as the expansion of existing operations. With over 65,000 projected, Southern Alberta claims the title of "Pollination Capital of Canada".

Lygus bug infestation also increased with the favourable weather patterns resulting in widespread aerial spraying of Lorsban. This caused some bee kill, however cooperation between farmers, applicators, beekeepers and provincial agriculture officials kept this a minimum.



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Honey prices and sales have been slow and now reminding most producers life is not always a bed of roses. Overall it was a strong year of growth for our industry in Alberta.

### B.C. Honey Producers Association

**Blaine Hardie** reported that the discovery of antibiotic resistant American Foul Brood bees in the Fraser Valley is shocking news to the beekeeping industry of the province.

The provincial average honey production was 94 lb. per colony, with below average honey crops on Vancouver Island, Fraser Valley and the Kootenays with above average honey crops in the Okanagan, Cariboo, Peace River and Terrace areas of the province.

There continues to be an increase in the numbers of bees being overwintered in the Fraser Valley and Okanagan Valley area of the province. We are currently meeting the demands for pollination in the southern half of the province, the total number of colonies in the province-wide being 45,700. There continues to be a small increase in membership of the B.C.H.P.A. annually.

Tracheal mite was discovered on Vancouver Island in June 1998 and further fall testing confirmed that it is in 4-5 apiaries around Nanaimo. There is a meeting on Feb. 13 1999 to discuss this problem further. This will probably eventually mean the end to the Vancouver Island Quarantine.

The BCHPA has decided to vote for maintaining the current border closure between Canada and the United States.

Bee stock prices have maintained their current levels with a small decrease in honey prices.

Bears have been a problem province wide. Due to the long hot summer there was a shortage of wild berries for the bears to eat so they changed their diet to bees and honey.

### FRED RATHJE AWARD

This fund was set up in 1984 as a dedication to the memory of Fred Rathje who was an enthusiastic supporter of the beekeeping industry and secretary of the CHC for many years.

It is awarded annually to a candidate who has made a significant, positive contribution of innovative, creative and effective effort for the betterment of the bee industry of Canada during the past year.

The recipient this year was Doug McCutcheon from Armstrong, British Columbia.

Born and raised in Napanee, Ontario, Doug became interested in beekeeping while working with a local commercial beekeeper. He attended the Ontario Agriculture College (now University of Guelph), Guelph, where he studied apiculture. After a stint with the Ontario Government, he accepted the position of Provincial Apiarist in Saskatchewan in 1956 where he worked for 10 years. In 1966 he left the provincial government to operate a commercial beekeeping operation, running from 600 to 900 colonies. His keen mind led him to complete a degree in teaching at University of Regina, majoring in Science and Biology. From 1970--74 he taught school in Kitscoty, Alberta. In the fall of 1974 Doug became an Apiary Specialist with the British Columbia Dept of Agriculture. Later he became Provincial Apiarist for British Columbia when John Corner retired in 1984. Since Doug's retirement from the government in 1990 he has maintained a keen interest in beekeeping, operating around 30 hives as well as running his business Mc Cutcheon's Books, with his wife Eileen, and his other business Pherotech which sells bee management supplies. Through his involvement with researchers at Simon Fraser University, the product Queen Mandibular Pheromone is now commercially available to Canadian beekeepers for swarm control and queen rearing success.

Doug is a worthy candidate for the award and the CHC thanks him for his contribution to the betterment of beekeeping in Canada.

### 1999 RESOLUTIONS

Combined motion from Alberta Beekeepers' Association, Saskatchewan Beekeepers' Association and Ontario Beekeepers' Association

1. Moved by Dahmer, seconded MacMillan

WHEREAS Statistics Canada has indicated it is discontinuing its collection and publishing of beekeeping statistics;

**BE IT RESOLVED** that the CHC makes representation at the federal ministerial level to resume publishing annual statistics on this important aspect of Canadian agriculture.

**CARRIED**

2. Moved by MacMillan, seconded by Hardie

WHEREAS the problems of Africanized bees, small Hive Beetle and Terramycin tolerant AFB, and Apistan resistant mites have not been resolved in the US;

**BE IT RESOLVED** that the Canadian Honey Council request that the Federal Minister of Agriculture maintains existing border closure for the years 2000 and 2001. **CARRIED**

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3. Moved by MacMillan, seconded Vautour  
WHEREAS the African small hive beetle is a serious pest not found in Canada  
WHEREAS the African small hive beetle can cause a serious economic damage to the Canadian beekeeping industry.  
WHEREAS there are no registered and effective control measures to control the small hive beetle.

**BE IT RESOLVED** that the Canadian Food Inspection Agency investigate naming the small hive beetle as a pest under the Animal Health Act.

AMENDED to read :

**BE IT RESOLVED** that the Canadian Food Inspection Agency name the small hive beetle as a pest under the Animal Disease and Protection Act. **CARRIED**

4. Moved MacMillan, seconded by Dahmer  
WHEREAS the Canadian Honey Council accepted in principle the code of Good Manufacturing Practices (GMP) developed by Ontario,

**BE IT RESOLVED** that the Canadian Honey Council pursue with CFIA (Canadian Food Inspection Agency) the implementation of these principles in the Canadian Honey Grading Regulations as it affects Canadian honey house standards. **CARRIED**

5. Moved by Malyon seconded by MacMillan  
WHEREAS there is a need to develop a national strategy to prevent pesticide damage to honeybees

**BE IT RESOLVED** that CHC work with CAPA and the Federal Government to review Federal regulations regarding pesticide use, registration and labeling and coordinate educational programs to promote the safe use of pesticides.

**CARRIED**

6. Moved by Malyon seconded by Pedersen  
**BE IT RESOLVED** that the CHC initiate lobbying activities to encourage the government of Canada to create new apicultural research positions within Agriculture Canada. **CARRIED**

7. Moved by Howland, seconded by Vautour  
WHEREAS nectar secretion is not always shown as a desirable attribute when developing new varieties of flowering plants; and  
WHEREAS good nectar secretion characteristics are extremely important to our industry;

**BE IT RESOLVED** that the Canadian Honey Council recommend to those companies engaged in developing new plant varieties, to add nectar secretion to their list of desirable plant qualities. **CARRIED**

8. Moved by Pedersen, seconded by Hardie  
WHEREAS the amounts of honey being imported into Canada vary greatly in amount from year to year; and  
WHEREAS it is important that a standard of inspection be maintained on these imports that is consistent regardless of quantity;

**BE IT RESOLVED** that the Canadian Honey Council continue to work with the Canadian Food Inspection Agency to develop a workable and meaningful standard of import inspections. **CARRIED**

9. Moved by Dahmer, seconded by Pedersen  
WHEREAS honey analogs are currently being offered by an active distributor to Canadian honey packers as undetectable adjunct to honey,

**BE IT RESOLVED** that the CHC make immediate petition to federal regulatory agencies demanding action plans to prevent fraudulent use of this product as a contaminant in Canadian honey. **CARRIED**

10. Moved Dahmer, seconded by MacMillan  
**BE IT RESOLVED** that the CHC explore alternatives to Lorsban for the control of Lygus bugs and Bertha Army Worms and communicate with manufacturers of such products so as possibly encourage registration of such products and further to market such "Safer" alternatives to Lorsban in locations where damage to honeybees could occur.

**CARRIED**

11. Moved Pedersen, seconded by Dahmer  
**BE IT RESOLVED** that the CHC express thanks to BCHPA and Capital Region Beekeepers' Association for hosting our annual meeting **CARRIED**

12. Moved Pedersen, seconded by Malyon  
**BE IT RESOLVED** that the CHC make plans to hold the next annual meeting in conjunction with the Saskatchewan Beekeepers' Association meeting in 2000.

**CARRIED**

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### FINANCE COMMITTEE REPORT

The finance committee presented a budget (Table 1) which included extra allocations for Apimondia and increases in office expenses and payroll to support the cost of maintaining a national office on a 30 hour a week basis.

**Motion:** Moved by Dahmer and seconded by Hardie

To reward Wink Howland for past years work with an additional \$1000 bearing in mind the workload.

**CARRIED**

**Motion** Moved by Malyon and seconded by Dahmer to accept the budget as presented

**CARRIED**

### ELECTIONS

#### President:

Wink Howland and Merv Malyon were nominated by the Nomination Committee. No further nominations were received. Merv Malyon elected by ballot.

#### Vice President

David MacMillan was nominated by the Nomination Committee. There being no further nominations, David MacMillan was elected by acclamation.

#### Executive Member

Walter Dahmer nominated by the Nomination Committee. There being no further nominations, Walter Dahmer was elected by acclamation.

**TABLE 1**

Proposed Budget For Year Ending October 31/99

INCOME	1998	1999	CHANGE
Memberships	10,860	13,000	2,140
Delegate Fees	25,000	27,000	2,000
Interest	258	500	242
Hivelihoods Advt.	6,028	6,000	(28)
Apimondia	0	4,500	4,500
Hivelihoods Subs.	80	80	0
Promotion Mths.	601	300	(301)
Ann. Mtg. Reg.	3,165	0	(3,165)
Miscellaneous	201	200	(1)
<b>Total Income</b>	<b>46,193</b>	<b>51,580</b>	<b>5,387</b>
EXPENSES	1998	1999	CHANGE
Audit - CBRF	375	0	(375)
Audit - CHC	1,177	1,177	0
Annual Mtg.	7,151	1,500	(5,651)
Apimondia	2,000	5,500	3,500
Bank Charges	68	75	7
Hivelihoods	6,063	6,100	37
Insurance	55	55	0
Memberships	1,304	1,300	(4)
Supplies/Post	4,631	4,500	(131)
Office	150	1,200	1,050
Phone & Fax	2,757	3,500	743
Storage Rental	210	480	270
Travel	1,593	4,000	2,407
Honorarium	2,000	2,000 + 1,000	1,000
Payroll	10,949	32,000	21,051
<b>Total Expenses</b>	<b>40,483</b>	<b>64,387</b>	<b>23,904</b>
<b>Net Surplus</b>	<b>5,710</b>	<b>(12,807)</b>	

### ADJOURNMENT

The meeting was adjourned at 11.45AM Sunday 24 January 1999.

Motion to adjourn the meeting Merv Malyon seconded David MacMillan **CARRIED**

**REPORT OF APICULTURE INFORMATION SESSION**

Friday 23 January 1999

**APISTAN RESISTANCE**

Kerry Clark

The plastic Apistan strip formulation of fluvainate is the main chemical defense against varroa. In parts of Europe and now the USA, fluvainate resistant varroa populations have developed and Apistan is no longer effective. It is important to know whether there are early indications of resistant varroa in Canada.

A simple technique to measure fluvainate sensitivity can be applied. The test should be conducted when the temperature is above 15 deg C and when 2 days of equal bee activity are expected. The test requires a comparison of the mite fall without Apistan and the number of mites killed after Apistan is applied for 24 hours. The ratio of mites obtained with Apistan to the mites obtained the day before should be greater than 10 to 1. This is a novel approach to the resistance measurement problem. While it may not be sensitive enough, it is simple tool and a good indication of whether the varroa are less susceptible to Apistan.

**NON CHEMICAL CONTROL OF TRACHEAL MITES**

John Gates

Since 1995 we have employed management techniques only (no chemical use) to control tracheal mites in our research apiary. Techniques employed have been selecting breeder queens based on mite level, breaking brood cycles and splitting hives. Selecting on the mother side only has resulted in low average mite levels in the splits but does not seem to have worked in the parent hives. Breaking brood cycles may have contributed to lowering mite levels in the splits but does not seem to have worked in the parent hives. Splitting hives and leaving splits in the same yard as the parent hives consistently results in low mite levels in the splits with no need for other controls. These techniques are entirely feasible for commercial beekeepers to control

tracheal mite levels in splits, mating nucs and to reduce mite levels overall in their operations.

**IMPACTS ON APICULTURE IN WASHINGTON STATE USA**

Jim Bach

An interesting synopsis of the problems facing the apiculture industry in Washington was given by the State Apiarist, Jim Bach. Cutbacks in his department have forced a loss of inspection service and his job is now only part time. It was food for thought for our Canadian industry as we progress toward less enforcement and inspection.

**TAX INCENTIVES FOR BEE RESEARCH**

Dr. Douglas Clay

Revenue Canada has a "Scientific Research and Experimental Development" (SR&ED) program which provides a cash refund or tax incentive for eligible research. In order to qualify, a beekeeper must be in the business of beekeeping, must have the research conducted in Canada. An eligible project must have a well defined question that requires research to find an answer, it must advance the field of science or technology and must involve a systematic investigation or development of a prototype. Only projects that pose a question and test the hypothesis with a well documented series of trials will be considered for the tax incentive. The beekeeper can seek prior approval for his or her project to make sure that it qualifies. This incentive program provides 35% refund of the eligible expenses.

**DRONE CELL CAPPINGS OF APIS CERANA AND HOW IT INFLUENCES THE BIOLOGY OF VARROA MITES**

Art Davis

University of Saskatchewan

Research earlier this decade by Rath, Boeking and Drescher(Bonn,Germany) suggested that the key to successful reproduction of the ectoparasitic mite, *Varroa jacobsoni* on its natural host, *Apis cerana* was the protection from worker inflicted damage (removal, grooming behaviours) that the mite

received while reproducing underneath the tough drone cell capping. Experiments that directly tested the ability of captive workers and drones to penetrate the drone cell cappings of isolated brood cells of *Apis cerana* and *A. mellifera* were conducted in Bangalore India in August 1993. Indeed our results demonstrated a major difficulty in uncapping sealed drone-cells by workers of *A. cerana*, fully confirming the earlier conclusion.

**BOTANICAL PESTICIDES FOR HONEY BEE PEST MANAGEMENT: HOW DO BOTANICAL OILS STACK UP AGAINST OUR CURRENT ARSENAL OF CONTRAOL AGENTS**

**Adony Melathopoulos**  
Simon Fraser University

Neem oil and extract were evaluated for the management of key honey bee pests in the laboratory and field. Neem pesticides inhibited the growth of *Paenibacillus* larvae White in vitro but had no effect on the growth of *Ascophaera apis apis* (Massen ex Claussen) Olive and Spiltoir. Azadirachtin-rich extract (neem-aza) was 10 times more potent than crude neem oil (neem oil) against *P. larvae* suggesting that azadirachtin is a main antibiotic component in neem. Neem-aza, however, was ineffective at controlling the honey bee mite parasites *Varroa jacobsoni* Oud. and *Acarapis woodi* Rennie in laboratory bioassays. Honey bees also were deterred from feeding on sucrose syrup containing > 0.01 mg/ml of neem-aza. By contrast, neem oil applied topically to infested bees in the laboratory proved highly effective against both mites. Approximately 50-90 percent *V. jacobsoni* mortality was observed 48 h following treatment with associated bee mortality lower than 10%. Although topically applied neem oil did not result in direct *A. woodi* mortality, it offered significant protection of bees from infestation by *A. woodi*. Other vegetable and petroleum-based oils also offered selective control of honey bee mites, suggesting neem oil has both a physical and a toxicological mode of action.

Experiments in colonies showed that spraying neem oil on bees was more effective at controlling *V. jacobsoni* than feeding oil in a sucrose-based patty, feeding neem-aza in syrup, or spraying canola oil. Neem oil sprays also protected susceptible bees from *A. woodi* infestation. Only neem oil provided *V. jacobsoni* control comparable to the known varroacide formic acid, but it was not as effective as the synthetic product Apistan (fluvalinate). Neem oil was effective only when sprayed 6 times at 4 d intervals and not when applied 3 times at 8 d intervals. Neem oil spray treatments had no effect on adult honey bee populations, but treatments reduced the amount of sealed brood in colonies by 50% and had a positive dose dependent effect on queen loss. Taken together, the results suggest that neem and canola oil show some promise for managing honey bee parasitic mites, but the negative effects of treatments to colonies and moderate efficacy against *V. jacobsoni* compared to synthetic acaricides remain as obstacles to their use by beekeepers.

**APIMONDIA 99 REPORT**  
**Don Dixon**

The Canadian Apimondia'99 Organizing Committee is pleased to present this brief progress report to the Annual Meetings of the Canadian Honey Council and the Canadian Association of Professional Apiculturists. During 1998 the Organizing Committee had another busy year as we continued to develop the organization for Apimondia '99 and began to increase promotional efforts.

The Canadian Apimondia Organizing Committee was created as a joint working group of the Canadian Association of Professional Apiculturists and the Canadian Honey Council. The Organizing Committee is currently comprised of the following individuals:

- Mr. Jean-Pierre Chapleau, Commercial Beekeeper, Quebec
- Mr. John Gruszka, Provincial Apiarist, Saskatchewan Department of Agriculture

## Proceedings of the 58th Annual CHC-CCM Meeting

- Mr. Merv Malyon, Commercial Beekeeper, Manitoba, Board of Directors, Canadian Honey Council
- Dr. Don Nelson, Research Scientist, Agriculture and Agri-Food Beaverlodge, Alberta
- Dr. Card Otis, Professor, University of Guelph
- Dr. Cynthia Scott-Dupree, Professor, University of Guelph
- Mr. Paul van Westendorp, Provincial Apiarist, British Columbia Ministry of Agriculture and Food
- Dr. Mark Winston, Professor, Simon Fraser University
- Mr. Don Dixon (Chair) Provincial Apiarist, Manitoba Agriculture

In addition, during 1998 we elicited the assistance of From Kay to help with promotion and advertising activities.

### **Congress Theme.**

The theme for Apimondia'99 is: "**Beekeeping in the New Millennium**".

We hope that this theme captures the excitement and challenges associated with beekeeping, throughout the world, as we enter an important new era. As much as possible we will attempt to incorporate this "forward looking" theme in the development of key note presentations, symposia topics and workshops during Apimondia'99

### **Congress Venue - The Vancouver Trade and Convention Centre.**

The Apimondia'99 Congress will be held in the Vancouver Trade and Convention Centre. The Centre is located in downtown Vancouver on the shoreline of Burrard Inlet - an important entry point to the Port of Vancouver. Both the size and layout of this world class convention centre will provide an excellent venue for the Congress.

The main level of the Convention Centre has over 10,000 sq. metres of column free space. We intend to use Exhibition Hall C for ApiExpo displays and the rest of the space for Congress meeting functions. In addition, there are many smaller rooms located on the second level of the Centre which may be

used for smaller meetings and offices. All of the Ballrooms and Exhibition Halls can be opened up or partitioned, as required to accommodate program needs and attendance numbers, with maximum flexibility.

### **Rooming, Hotel Accommodations.**

We have reserved a block of about 2000 hotel rooms plus accommodation for about 150 people in hostels. The headquarters hotel for Apimondia '99 will be the Hyatt Regency with a confirmed rate of \$208.00 single or double per night. We have also reserved space in a wide range of other hotels close to the convention centre. This range of accommodation should be able to meet the location and budget preferences of all participants to Apimondia '99.

We will also be making information available on camping locations and trailer parks for individuals who wish to take advantage of these facilities.

Since our main objective in supplying accommodation is to keep costs to a minimum and thus encourage participation, all of the hotel rates are without commission and the lowest rates that we could negotiate.

### **Congress Promotion and Attendance Building.**

The Canadian Organizing Committee has developed an aggressive and ambitious promotion plan to ensure that Apimondia '99 will be well attended. We will be using direct mail out of the first circular to interested individuals and organizations. In addition we will publish display advertisements in select beekeeping journals and magazines. We have also developed a schedule of carefully timed news releases to build information and excitement about Apimondia '99 over the next 18 months.

The Organizing Committee will be particularly targeting beekeepers in North, Central and South America in an effort to increase the profile of Apimondia and ensure strong participation from these areas. The Committee has had displays and speakers to

promote Apimondia'99 at major beekeeper meetings in Canada the U.S. and Mexico.

The 2nd Circular, containing information on Congress registration and accommodation is now available in 4 languages.

#### **Congress Website.**

The Internet has become an important vehicle to deliver information on Apimondia '99 and communicate with individuals who wish to receive more information on the Congress or tourist opportunities in the surrounding area. The Congress website provides detailed information on all aspects of the Congress, including: Program, Pre and Post Conference Tours, Technical Tours, ApiExpo, Hotels, Registration etc. In addition, the website will link to other Home Pages that will offer a broad base of information on Vancouver, British Columbia and Canada in general. Since starting the Web site it has received more than 5000 "hits" from individuals looking for information on Apimondia '99. The address of the Apimondia '99 Website is: [www.apimondia99.ca](http://www.apimondia99.ca)  
The Congress email address is: [congress@apimondia99.ca](mailto:congress@apimondia99.ca)

#### **Congress Registration.**

We have entered into a contract with a highly respected and experienced Professional Conference Organizer in Vancouver to handle all aspects of the Congress registration, including hotel registration, ApiExpo, early registration and on site registration. Having all of these services centralized through Venue West should make the entire registration process efficient and "user friendly" for the participants.

The early registration deadline is June 1, 1999

#### **Congress Commercial Displays - ApiExpo '99.**

The response to the display space has been most encouraging. To date we have sold more than 70 % of the display space to approximately 62 displayers representing 21 countries.

To assist commercial interests from outside Canada who wish to sell items during the Congress we have chosen LEP International as the official custom broker for ApiExpo.

#### **Congress Tours and Special Events.**

The traditional day of Technical tours will be held on Wednesday, September 15, 1999. We have developed a broad range of options available for technical visits. These tours have been developed with the assistance and input from local beekeepers, provincial beekeepers' associations and Simon Fraser University. The Organizing Committee has also arranged to offer several non-beekeeping related tour options for those interested in visiting some of the many interesting locations in the Vancouver area. We will also be putting offering several pre and post conference tour options. Some of these will be technical and provide the opportunity to visit beekeeping industry points of interest across Canada and some will provide the opportunity to visit important tourist destinations in North America.

#### **Congress Program.**

The Organizing Committee views the Congress Program as the most important and challenging part of our organizational responsibilities. If we can build a strong program we are confident that this will ensure a well attended Congress, not only in 1999 but also at future Apimondia Congresses. The program has been designed to incorporate the traditional formats used by Apimondia while providing some minor modifications that we believe will ensure a high level of satisfaction by those in attendance. The program will be global in scope, but with a slight emphasis on North American topics in order to both educate participants about beekeeping in the host region as well as attract the North American audience that has not participated as actively in Apimondia.

To date more than 200 speakers from around the world have confirmed their attendance and participation at Apimondia '99 - and this does not include the presented paper and poster sessions.

**CANADIAN BEE RESEARCH FUND  
PROJECT REPORTS**

**Apiculture Research Symposium  
Saturday 23 January 1999**

**EVALUATION OF INDOOR WINTER  
TREATMENTS ON BEE COLONIES USING  
OXALIC ACID, LACTIC ACID, THYMOL  
AND FORMIC ACID.**

**Don Nelson and Kerry Clark**

**Introduction**

The purpose of this project is to evaluate the control potential of oxalic acid, lactic acid, thymol and formic acid used on indoor wintered colonies with and without varroa mites. Wintering buildings do not provide the conditions (temperature, access for timely removal) required for Apistan treatment, and there is a concern that extended Apistan use through the winter might contribute to fluvalinate tolerant varroa. Alternatives including some organic acids and essential oils are at least partially effective against varroa, and their efficacy might be increased when varroa are more vulnerable.

While essential oils show promise, their application usually requires an appreciable amount of labour. It is sometimes difficult for a commercial beekeeper to fit the required schedule into a summer management schedule. Thus, it would be an advantage to be able to apply treatments in late fall or winter when the beekeeper is less busy. Another good reason to apply late in the year is that varroa require bee larvae in order to reproduce. In late fall and winter, honey bee brood rearing declines in temperate climates and, during this period of little or no sealed brood, all the mites in the colony are on the adult bees, leaving them exposed to treatment. Thus, the rate of infestation remains low and the colony has a much better chance of surviving the winter.

What effect does the use of essential oils and other treatments have on bees treated during the winter? This preliminary test evaluated colonies that had neither varroa nor tracheal mites at the time of the experiment, therefore, it is possible to assess the effects of the

treatments without the influence of mite activity. We hope to determine whether these compounds can be applied in an overwintering facility after the bees have been brought in for the winter.

**Experiment Outline**

The treatment groups in 1997/98 were twenty-four, single chambered colonies divided into the following six treatment groups:

- 1) 40 ml 65% formic acid applied to an absorbent pad on the top bars
- 2) 20 ml 2% oxalic acid drizzled between frames from a syringe
- 3) 50 ml 15% lactic acid drizzled between frames from a syringe
- 4) one strip of Apistan hung between the middle frames
- 5) 20 g thymol powder in a Petri dish on the top bars
- 6) untreated control colonies

As well, wintergreen and mineral oil were applied to each of two colonies. All treatments were applied through a hole in an inner cover. Dead bees were caught in a tray attached to the entrance board of each colony and emptied approximately every three days. Estimations of adult bees were made the following spring (May 13/98) by removing each frame from the super and giving a value between 0.1 to 1.0 for a rating on each frame side and these ratings were summed to obtain a colony total.

**Preliminary Results**

Dead bee counts (Table 1) were similar except for the mineral oil group, which was substantially higher. After some treatment applications, notably the formic acid treatment, some agitation was noticed (bees crowding the entrance), but this was for a limited time period. Very little, if any, of the thymol evaporated during the experiment.

The adult populations in the spring following treatment were quite variable (Table 1). The effect of mineral oil and formic acid may have impacted the colony populations. However, with limited number of colonies, the variation within a group is often high.



**Discussion**

In the preliminary year (1997/98) only uninfested colonies were treated. This year (1998/99) colonies have been selected and treated that have varroa mites, although with levels lower than desirable for evaluation.

**Acknowledgements**

The authors wish to acknowledge a grant from the Canadian Bee Research Fund/Garfield Weston Foundation, and the technical assistance of Paul Gatién.

Table 1. Mean Dead Bee Count and Adult Population

Treatment	Bees/ colony/day 10 Nov - 31 Dec/97	Frames of adult bees May13/98
Control	7.0 (4)*	10.7 (4)*
Oxalic	10.5 (4)	8.4 (4)
Lactic	10.5 (4)	9.5 (3)
Thymol	13.3 (4)	7.8 (4)
Apistan	10.7 (4)	10.6 (4)
Formic acid	11.6 (4)	6.0 (4)
Wintergreen	12.3 (2)	13.4 (2)
Mineral Oil	26.8 (2)	5.6 (2)

\* (n) number of colonies

**EVALUATION OF MESH BOTTOM BOARDS FOR THE MANAGEMENT OF VARROA MITES.**

**Kerry Clark**, Apiculture Specialist  
B.C. Ministry of Agriculture and Food  
Dawson Creek, B.C.

**Background**

Mesh bottom boards for bee hives use instead of a solid wood surface, a mesh that allows fallen varroa mites to pass through the board and out of the hive. The supposed increased loss of varroa may increase the effectiveness of any miticide, or might give adequate reduction of varroa without added chemicals, if the bees were good enough at removing the mites from themselves.

In varroa-infested bee hives, some of the mites fall or are groomed off their adult bee host, to the bottom of the hive. During

chemical treatments against varroa, sometimes half of the mites which fall are able to survive for hours to days, and return to infest a bee if one comes close enough (Wilson, personal communication). Beekeepers in France have reported stable low varroa levels and survival without varroa treatment, of a few colonies equipped with bottom boards which allow fallen mites to drop out of the hive. Calderone (personal communication) found that 25 to 60 % of varroa in untreated colonies were caught by sticky boards over a four week period, suggesting mesh bottoms might add a similar percentage reduction to chemical treatments. He kept sticky boards in colonies throughout the summer, and found 40 % fewer varroa in such hives in one apiary, but no difference in varroa infestation in hives with or without the boards, in another apiary. Researchers in Switzerland and Germany who have worked with many hives equipped with mesh bottoms for monitoring, also report the boards make little to no difference to a varroa population (Imdorf, personal communication).

If such boards are effective, the bee industry could expect a reduction or possible elimination of miticide usage. Even if the boards are only partly effective, their use could make some "less effective, but otherwise attractive" methods available, providing more options, enabling a better match between methods and users, and reducing the opportunity for mites to develop resistance to one predominant chemical miticide. With a reduction in miticide use, a reduction in the risk of hive product contamination from miticides could also be expected.

The goal of this study is to measure the amount of improvement to current Canadian varroa treatment methods, to be expected from the addition of mesh bottom boards.

**Study design:**

Several mesh bottom designs were considered, including some used in Europe. The design chosen for the study uses 2x4 inch boards on edge for the sides, and 2x2

boards for the front and back. It has a ¾ inch high entrance similar to a regular bottom board, but with 8 mesh per inch galvanized mesh for the whole bottom. Two inches under the mesh is a metal sheet that can slide forward or back and can limit air flow through the mesh. Debris including varroa can be seen on the metal sheet or on any other sheet (such as paper) placed on it.

### Treatments

The study plan was to select four treatment groups of colonies for spring treatment with conventional treatments

(formic acid or Apistan) and measure any difference in efficacy between those with and without mesh bottoms. The warm, early spring of 1998 resulted in an unexpected, intense work load for the beekeeper in the Fraser Valley who had planned to do this work, and the study was postponed. In the fall, the plan was carried out in the Dawson Creek area, on colonies to be wintered indoors. One hundred hives were sampled to get a baseline varroa population, by washing varroa mites from a sample of about 300 bees taken from a brood comb. Bees and mites were counted and a percentage infestation calculated for each colony. Thirty five colonies with a similar range of infestations were assigned to the following treatment groups:

formic acid. 250 ml in a prolonged-release bag on the top bars

as # 1 except hives were equipped with mesh bottom boards

No treatment

as # 3 except hives were equipped with mesh bottom boards

Apistan strips.

The average infestation of the treatment groups ranged from 3 to 6 % (3 to 6 varroa from each 100 bees). Freezing weather began only a few days after treatments were applied in September, and based on the rate of formic acid evaporation, it is expected that those treatments may be less than adequate. In the spring of 1999, Apistan strips will be installed in all the colonies, and the first day's drop of mites will be counted to assess the efficacy of each treatment.

The experiment will be repeated in southern B.C. in the spring of 1999.

### Acknowledgments

I appreciate the support of the Canadian Bee Research Fund, the Garfield Weston Foundation, and the cooperation of Van-Han Apiaries, Farmington, and Dr. Don Nelson and Paul Gatien, Agriculture and Agri-Foods Canada, Beaverlodge.

### A SEMIOCHEMICAL-BASED TRAPPING SYSTEM FOR THE PARASITIC MITE VARROA JACOBSONI

Mark L. Winston,

Department of Biological Sciences

Keith N. Slessor, Department of Chemistry

Simon Fraser University

Following is a report on our Canadian Bee Research Fund grant, "A Semiochemical-Based Trapping System for the Parasitic Mite *Varroa jacobsoni*." This is a three-year project (1997-2000), and the first year's research has been funded in part by the CBRF, through a grant from the W. Garfield Weston Foundation. With the help of the seed money provided by the Weston Foundation, we now have obtained additional funding from an industrial partner, IPM Technologies Canada, and also a substantial grant from the Natural Sciences and Engineering Research Council of Canada, for a total budget of \$255,000 spread over three years.

### Objectives of project during the first year

The overall goal of this project is to develop a semiochemical-based trapping system to use against the varroa mite, a parasitic species that is causing considerable damage to the beekeeping and pollination industries worldwide. Our approach is to identify attractants that the mite uses to orient to brood and/or adult bees, and to design and test a trap based on using these odours to attract the mites. The goals of the first year's research were to 1) develop an appropriate bioassay for chemical identification, 2) test brood and adult bees for attractiveness in the bioassay to determine the primary target for extraction and identification of semiochemicals, 3) begin

extraction and chemical identification, 4) develop and manufacture preliminary trap designs, and 5) test traps in hives for compatibility with bees.

### Progress made to date

1) Bioassay: We initially developed an easy-to-use petri dish bioassay, in which a mite was placed in the centre of a dish and allowed to choose between either a target and a blank, or two target choices. We developed methods of rearing large numbers of mites in colonies, catching the mites and bringing them into the laboratory, and preserving them alive for a few days to allow rapid access to mite populations for tests. The first studies determined the environmental conditions under which the mites would orient properly, and indicated that tests should be run at hive temperatures (30-35°C), and in the dark. Then, we used this bioassay to test attractiveness to worker and drone brood and adults.

The initial bioassay was useful for testing whole bees as orientation cues, but proved inadequate for testing extracts, apparently because the odours were quickly dispersed throughout the dish, making it difficult for mites to orient. Consequently, we then developed two airflow bioassays, one using a Y-tube method and the second a flattened chamber with four choice outlets. The mites orient well, moving up the airflow in both chambers, and we are using these bioassay devices for subsequent work.

2) Brood and adult bee tests: The next stage of our project was to determine whether worker or drone larvae or adults were the most attractive to mites. Varroa mites spend part of their life cycle in brood cells, and part on adult bees, so either could potentially be emitting odours used as orientation cues by the mites, although research to date has focussed more on brood. To our surprise, adult bees of nursing age (approximately 5-10 days old) proved the most attractive in all tests, even when varroa mites were provided with a choice of larvae vs. adult nurse bees. Worker larvae were more attractive than

drone larvae, and nurse bees more attractive than drone bees. Mites of any age or reproductive condition preferred nurse bees to larvae. These results are novel, and indicated that our primary focus for extracting and identifying compounds should be from adult nurse bees, although we intend to also work with brood-produced odours, as these also are attractive.

3) Extraction and chemical identification: Once the bioassays had been developed and the preliminary tests suggested that we focus on adult nurse bees to identify attractants, we moved on to developing extraction procedures. We refined a number of methods for extraction, including rapid washes with solvents such as hexane and dichloromethane, long soaking in solvents, and trapping airborne volatiles from chambers in which live bees were kept. We now have a range of extracts prepared, which we will begin testing in March when the weather again permits access to mites and bees for testing.

4) Trap designs: We developed eight different trap types, each of which includes a central attractant board coated with a sticky substance, and various materials that provide complex physical orientation cues for mites, similar to what they would face in a bee hive. The materials used include plastics, metal, and various fibers, all of which are resistant to damage from bees chewing at them and provide a barrier between the sticky board and the bees, but also through which mites can orient. Each of the traps could be mass-produced at competitive prices, an important consideration if these traps are ever to become commercially useful. This component of the project was conducted in close collaboration with our industrial partner, IPM Technologies.

5) Trap testing in hives: The traps initially were put into hives for one week to determine their compatibility with beekeeping, as well as whether mites could be trapped on the sticky surfaces. A few of the designs were not appropriate, but at least five of the traps worked well in hives and further testing is being pursued. These prototype traps will be

left in hives all winter to determine long-term trap wear in hives. In the spring, 5-10 of each of the best traps will again be placed into colonies to examine wear during a period of increased worker bee activity and colony growth.

#### **Acknowledgement**

We deeply appreciate the support of the Canadian Bee Research Fund and the Garfield Weston Foundation, and are pleased with the progress of the project. We look forward to the second year of research.

#### **EVALUATION OF THE EFFICACY AND RESIDUES OF APIGUARD A POTENTIAL PRODUCT FOR THE CONTROL OF PARASITIC MITES OF HONEY BEES**

**Gard Otis,**

Department of Environmental Biology,  
University of Guelph, Guelph, Ontario

Ever since the introduction of the varroa mite and the tracheal mite to honey bee colonies in North America, beekeepers have experienced serious economic loss, both in terms of colony mortality and the cost of treatment. Beekeepers in Canada have limited options to manage these pests: The situation is complicated by reports of Apistan-resistant varroa in the US, a result which can be expected after long-term use of one chemical miticide. It is only a matter of time until resistance develops in Canada, which makes the registration of an alternative method of control an immediate priority for beekeepers.

Thymol, a natural oil derived from thyme plants, has been shown to effectively control varroa populations, but application can be difficult because its vapourization is temperature-dependent: if temperatures are too low, efficacy is reduced, and if temperatures are too high, it can become toxic to bees and brood. We will use the Weston foundation funding to test a gel formulation of thymol called Apiguard, which was designed to provide a more controlled release of thymol inside the hive. European trials with Apiguard have demonstrated >98%

varroa mortality, but its efficacy against tracheal mites is unknown.

#### **BOTANICALS FOR PROTECTING HONEY BEES FROM PARASITIC MITES**

**Peter Kevan**

University of Guelph

Funding through the Canadian Bee Research Fund has allowed work to continue in investigating novel ways to administer botanical treatments to honey bees to protect them from mite parasites. Based on the success of microencapsulated menthol as a designer medicament in helping to protect overwintering bees from the ravages of tracheal mites, other materials are now being tested. It is too early to report on results but the first candidate botanicals being investigated are Neem Thymol and clove oil.

## Proceedings of the 58th Annual CHC-CCM Meeting

### Appendix 1 1998 Financial Statement

Consolidated Balance Sheet as at October 31, 1998  
(Unaudited)

Consolidated Statement of Income  
For the year ended October 31, 1998 (Unaudited)

	1998	1997		1998	1997
<b>Assets</b>			<b>Revenue</b>		
<b>Current Assets</b>			Membership fees	39,060	36,420
Cash Short-term investments	17,007	13,427	Annual meeting	3,163	4,366
Accounts receivable	6,750		Donations - Canadian Bee R. Fund	400	300
Prepaid expenses	3,000	989	Hive lights	5,908	7,756
	<u>53</u>		Interest	263	3
	26,810	<u>14,416</u>	Promotional materials	601	1,288
			Other	<u>1</u>	<u>515</u>
<b>Fixed Assets net book value - note 3</b>				<u>49,400</u>	<u>50,648</u>
Equipment	1,055	1,510	<b>Operating Expenses</b>		
	<u>\$27,865</u>	<u>\$ 15,935</u>	Annual meeting	7,151	128
			Apimondia committee	2,000	3,200
<b>Liabilities</b>			Awards and donations	155	544
			Bank charges	68	33
<b>Current Liabilities</b>			Canadian Bee Research Fund - Admin.	375	300
Accounts payable - note 4	3,336	766	Canadian Bee Research Fund - Donations	400	128
Accrued liabilities	1,303	1,303	CAPA meeting	64	128
Deferred income	3,000	3,000	Hive lights	8,246	11,235
	<u>3,336</u>	<u>5,071</u>	Insurance	55	266
			Interest- short-term	113	113
<b>Members' Equity</b>			Memberships and subscriptions	1,304	1,029
<b>Reserves for Future Expenditures</b>			Office	1,498	4,737
Capital reserve	5,440	5,440	Other	231	231
Project reserves	5,289	5,424	President's honorarium	2,000	2,000
	<u>10,729</u>	<u>5,440</u>	Professional fees	1,100	1,161
			Promotions	200	753
<b>Unappropriated Retained Earnings</b>			Rent- building	324	
	13,800	5,424	Rent- equipment	2,757	
	<u>24,529</u>	<u>10,864</u>	Telephone	1,002	
			Transfer Research Fund to Projects	1,594	1,900
	<u>\$27,865</u>	<u>\$15,935</u>	Travel	10,616	19,281
			Wages and benefits	<u>40,909</u>	<u>47,039</u>
				<u>8,491</u>	<u>3,609</u>
			<b>Net Income Before Amortization</b>	264	380
			Amortization	(380)	(380)
			<b>Net Income for the Year</b>	<u>\$ 8,227</u>	<u>\$ 3,229</u>

**Appendix 2 Canadian Food Inspection Agency Compliance Summary For Honey**

**5-Year Progression of Chemical Residues**

Domestic Honey	1997/98		1996/97		1995/96		1994/95		1993/94	
	n	% ok	n	% ok	n	% ok	n	% ok	n	% ok
Antibiotics: *	88	100.00	146 **	100.00	297	100.00				
Metals:	0	-	42 ***	97.61						
Phenol:	83	98.80	53	94.33	92	94.56	66	92.42		
Pesticides:	102	100.00	75	100.00	88	100.00	63	100.00	90 *	100.00
Sulfonamides:	87	100.00	50	96.00	100	100.00				
<b>Domestic Total</b>	<b>360</b>		<b>366</b>		<b>577</b>		<b>129</b>		<b>90</b>	<b>100</b>

\* includes 48 amitraz

\*\* Only tetracyclines

\*\*\* Exceeds a guideline only, there are no official maximum residue limits for metals est. in Canada

Imported honey	1997/98		1996/97		1995/96		1994/95		1993/94	
Antibiotics	60	98.33	74 **	100.00	190	100.00				
Pesticides	84	100.00	68	100.00	90	100.00	77	100.00	16 *	100.00
Phenol	47	91.49	95	92.63	121	88.42	101	85.15		
Sulfonamides	47	95.74	92	96.74	133	100.00				
<b>Import Total</b>	<b>238</b>		<b>329</b>		<b>534</b>		<b>178</b>		<b>16</b>	<b>100</b>
* includes 9 amitraz										
** Tetracyclines only										
<b>Total honey</b>	<b>598</b>		<b>695</b>		<b>1111</b>		<b>307</b>		<b>106</b>	<b>100</b>

**Chemical Residues in Domestic Honey, April 1997-March 1998**

Program	Number tested	Residue found	No. Found	Mean	Minimum	Maximum	Violations
Sulfathiazole	87	No Residue	87				
Tetracyclines	88	No Residue	88				
Pesticides	102	No Residue	101				
		Chlorobenzilate	1	0.060	0.060	0.060	0
Phenol	83	No Residue	82				
		Phenol	1	0.550	0.550	0.550	1

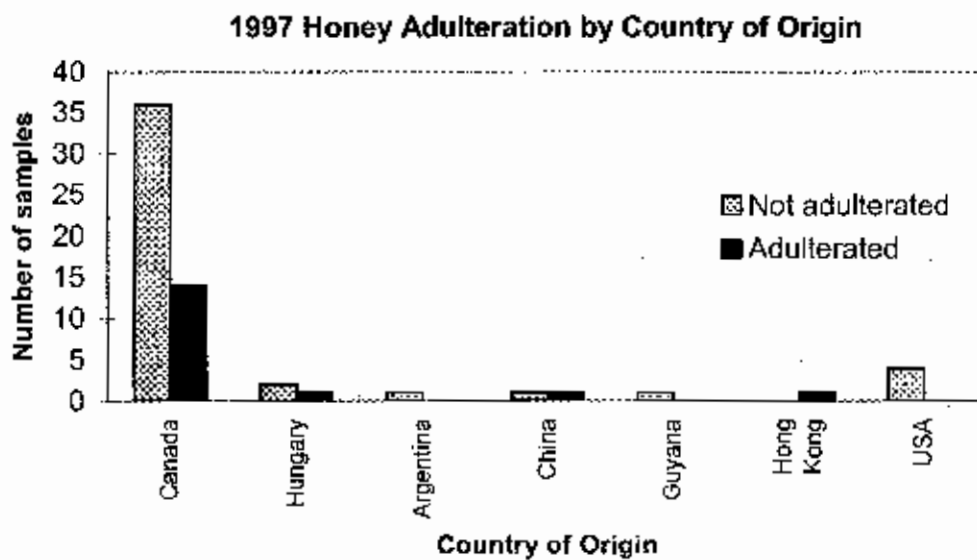
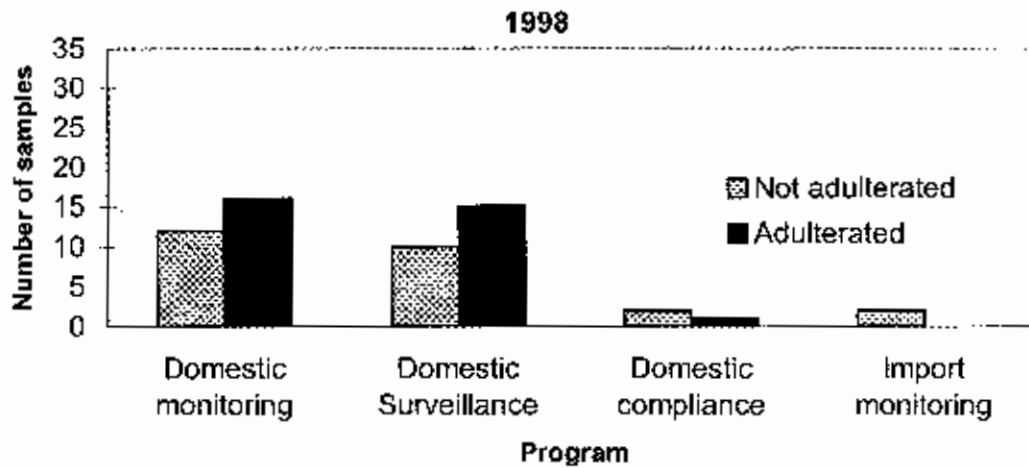
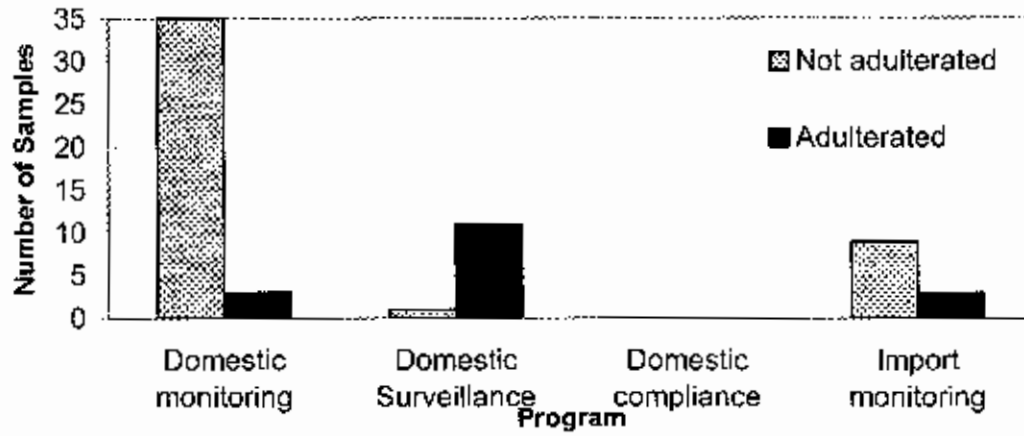
**Chemical Residues in Imported Honey April 1997-March 1998**

Origin	Tetracyclines			Mean	Sulfathiazole			Mean
	Number tested	Residue found	Number Found		Number tested	Residue Found	Number found	
Unknown Origin	1	No Residue	1		1	No Residue	1	
Australia	3	No Residue	3		3	No Residue	3	
China	20	No Residue	19		13	No Residue	13	
		Tetracycline	1	0.0400				
Cyprus	1	No Residue	1		1	Sulfathiazole	1	0.8500
Germany	2	No Residue	2		2	No Residue	2	
Greece	8	No Residue	8		7	No Residue	7	
Hong Kong	1	No Residue	1		1	No Residue	1	
Hungary	6	No Residue	6		6	No Residue	6	
Italy	1	No Residue	1		1	No Residue	1	
Poland	1	No Residue	1		1	Sulfathiazole	1	0.2300
Switzerland	1	No Residue	1		1	No Residue	1	
Taiwan	1	No Residue	1		1	No Residue	1	
United States	14	No Residue	14		9	No Residue	9	

No Pesticide Residues were found in any samples from the above countries.

All above countries plus Argentina, Mexico and Saudi Arabia were tested for Phenols. Four of nine samples from the USA were positive for Phenol at a mean of 3.25.

**Appendix 3- Summary CFIA Honey Adulteration Analytical Program 1997**



**Appendix 4**

**Estimates of the Number of Beekeepers, Colonies of Bees, and Production of Honey in Canada by province, 1997 and 1998 with Five-year averages, 1992 - 1996**

Province and Year	Beekeepers number	Colonies number	Honey Yield per colony	
			pounds	kilograms
<b>Prince Edward Island</b>				
Average 1992 - 1996	72	718	98	44
1997	70	950	90	41
1998	70	1,100	110	50
<b>Nova Scotia</b>				
Average 1992 - 1996	495	11,160	63	29
1997	455	14,700	65	29
1998 P	440	5,000	55	25
<b>New Brunswick</b>				
Average 1992 - 1996	476	5,320	56	25
1997	480	6,500	60	27
1998P	460	7,000	80	36
<b>Québec</b>				
Average 1992 - 1996	761	30,121	101	46
1997	800	29,317	99	45
1998P	800	29,317	150	68
<b>Ontario</b>				
Average 1992 - 1996	4,380	87,600	90	41
1997	4,100	77,000	95	43
1998P	4,000	81,000	130	59
<b>Manitoba</b>				
Average 1992 - 1996	811	79,900	154	70
1997	830	83,000	160	73
1998P	855	88,000	230	104
<b>Saskatchewan</b>				
Average 1992 - 1996	1,410	85,500	182	83
1997	1,400	89,000	185	84
1998 P	1,450	91,000	240	109
<b>Alberta</b>				
Average 1992 - 1996	762	161,000	148	67
1997	725	175,000	135	61
1998 P	725	160,000	200	91
<b>British Columbia</b>				
Average 1992 - 1996	2,754	43,899	78	35
1997	2,020	44,521	83	37
1998 P	2,392	44,813	75	34
<b>Canada</b>				
Average 1992 - 1996	11,921	505,219	133	60
1997	10,880	519,988	131	60
1998 P	11,192	517,230	181	82

<sup>1</sup> Does not include Newfoundland

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

P Preliminary



**Appendix 5**

**Estimates of the Production and Value of Honey and Wax in Canada <sup>1</sup>, by province, 1997 and 1998 with Five-year averages, 1992 - 1996**

Province and Year	Honey		Value	Value of honey
	Total production lb '000 tonne		of Honey \$'000	and wax \$'000
<b>Prince Edward Island</b>				
Average 1992 -1997	70	32	113	113
1997	86	39	130	132
1998 P	121	55	...	...
<b>Nova Scotia</b>				
Average 1992 - 1996	703	319	1,032	1,066
1997	640	290	1,016	1,045
1998 P	552	250		
<b>New Brunswick</b>				
Average 1992 - 1996	296	134	436	445
1997	390	177	590	605
1998 P	560	254		
<b>Québec</b>				
Average 1992 - 1996	3,028	1,374	5,084	5,140
1997	2,892	1,312	6,058	6,127
1998 P	4,396	1,994		
<b>Ontario</b>				
Average 1992 - 1996	7,905	3,586	8,466	8,680
1997	7,315	3,318	8,593	8,883
1998 P	10,530	4,776		
<b>Manitoba</b>				
Average 1992 - 1996	12,297	5,578	9,771	10,054
1997	13,280	6,024	15,250	15,675
1998 P	20,240	9,181		
<b>Saskatchewan</b>				
Average 1992 - 1996	15,520	7,040	12,291	12,636
1997	16,465	7,468	17,275	17,725
1998 P	21,840	9,906		
<b>Alberta</b>				
Average 1992 - 1996	23,872	10,828	18,809	19,345
1997	23,625	10,716	26,039	26,688
1998 P	32,000	14,515		
<b>British Columbia</b>				
Average 1992 - 1996	3,428	1,555	3,862	3,954
1997	3,673	1,666	6,859	6,975
1998 P	3,361	1,525		
<b>Canada</b>				
Average 1992 - 1996	67,119	30,445	59,863	61,433
1997	68,366	31,010	81,810	83,855
1998 P	93,600	42,456		

<sup>1</sup> Does not include Newfoundland,

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

**Appendix 6**

**Export of honey from Canada <sup>1</sup>, by province, Quantity and Value, 1997 and 1998 with Five-year averages, 1993 - 1997**

Province and Year	Quantity of Honey tonnes	Value of Honey \$'000
<b>Québec</b>		
Average 1993 - 1997	1,070	\$ 2,146
1997	679	\$ 1,644
1998	643	\$ 1,458
<b>Ontario</b>		
Average 1993 - 1997	1,657	\$ 3,660
1997	862	\$ 2,260
1998	330	\$ 980
<b>Manitoba</b>		
Average 1993 - 1997	3,591	\$ 8,537
1997	2,684	\$ 8,903
1998	5,318	\$13,702
<b>Saskatchewan</b>		
Average 1993 - 1997	622	\$ 1,327
1997	574	\$ 1,323
1998	623	\$ 1,330
<b>Alberta</b>		
Average 1993-1997	2,970	\$ 6,579
1997	2,343	\$ 6,369
1998	4,155	\$10,256
<b>Canada</b>		
Average 1993 - 1997	9,996	\$22,500
1997	7,413	\$21,383
1998	11,203	\$28,341

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

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