Hivelights

CANADIAN HONEY COUNCIL

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Terry Huxter, commercial beekeeper and pollinator, Grand Forks, BC

Proceedings of the 60th Annual CHC-CCM Meeting

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Canadian Honey Council (CHC)

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 (CAPA).

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.

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Proceedings of the 60th Annual CHC-CCM Meeting

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OFFICERS OF THE CANADIAN HONEY COUNCIL

Canadian Beekeepers Association 1940-1972

	President				Secretary		
1940-41	William R. Agar*	Brooklyn	ON	1940	W.T Patterson	Winnipeg	MB
1942	Sam M. Deschenes*	Montreal	QC	1941-48	Roy M. Pugh	Tisdale	SK
1943	J.W. Braithwaite*	Brandon	MB				
1944	P.C. Colquhoun*	Maple Creek	SK				
1945	Allan T. Brown	Peterborough	ON				
1946	W.E. Phillips*	Dauphin	MB				
1947-49	Frank Garland*	Winnipeg	MB				
1949-51	J.N. Dyment	Smithville	ON	1949	W.G.LeMaistre*	Edmonton	AB
1952	Peter Kowalski*	Edmonton	AB	1950-59	Roy M.Pugh	Tisdale	SK
1953-54	W.H.Turnbull*	Vernon	BC				
1955-56	H.C. Allen*	Toronto	ON				
1957-58	Sid J. Lye	Oakville	MB				
1959-65	Victor Mesley	Kemptville	ON	1960-62	R.M.McKay	Ottawa	ON
1966-67	Earl J. Burnett	Roland	MB	1962-69	John E. King*	Ottawa	ON
1968-69	Robert. Asher	Brooks	AB				
1969-71	Lou Truscott	Creston	BC	1969-72	Hank R. Taylor	Ottawa	ON

Canadian Honey Council 1972-2000

	President				Secretary		
1971-72	Don F. Peer	Nipawin	SK				
1972-74	Robert Bird	New Westminster	BC	1972-75	Frank R. Garland*	Winnipeg	MB
1974-76	Jack M. Smith	Beaverlodge	AB	1975-82	Fred Rathje*	Bassano	AB
1976-78	Gerry Paradis*	Falher	AB				
1978-80	Tom Taylor	Nipawin	SK				
1980-82	Howard Bryans	Alvinston	ON				
1982-84	Merv Abrahamson	Pelley	SK	1982-85	Bob Douglas	MacGregor	MB
1984-86	Jerry Awram	Hines Creek	AB	1985-98	Linda Gane	Nipawin	SK
1986-88	Dale Hansen	Farmington	BC				
1988-93	Roger Congdon	Cottam	ON				
1993-95	Barrie Termeer	Rollyview	AB		**National Coordinator**		
1995-99	Wink Howland	Yorkton	SK	1998-	Heather Clay	Calgary	AB
1999-01	Merv Malyon	Brandon	MB				
2001	Dave MacMillan	Thornloe	ON				

MINUTES OF THE 60th ANNUAL MEETING OF THE CANADIAN HONEY COUNCIL
1 to 3 February 2001, Moncton NB

The 60th annual meeting of the Canadian Honey Council opened at 1.30 PM, Thursday 1 February 2001 at the Brunswick Hotel, Moncton NB.
The Mayor of Moncton Brian Murphy welcomed guests to Moncton.
President Merv Malyon invited members and guests to enjoy the program and the speakers scheduled to give presentations on research results and issues affecting beekeepers. Reports of the research symposium are found in Section II.

BUSINESS MEETING Saturday 3 February 2001
Present: Merv Malyon, David Macmillan, Wink Howland, Blaine Hardie, Chris Alen, John Pedersen, Alain Moyen, Paul Vautour, and the National Coordinator Heather Clay

MINUTES OF 2000 MEETING

Motion: Moved by Dave MacMillan, seconded by Wink Howland.
To accept the minutes of the 2000 meeting as printed in the proceedings **CARRIED**.
There was no business arising from minutes.

2000 RESOLUTIONS of SASKATOON MEETING

Progress of Resolutions from 2000 Merv Malyon

1 BE IT RESOLVED that the Canadian Honey Council opposes the use of fat-free and cholesterol-free wording on labeling of honey.
SUPPORTED no reports of labeling problems in 2000.

3. BE IT RESOLVED that Canadian Honey Council supports Ontari.o's request that the aerial application of Furadan be banned.
SUPPORTED. No reports of spray problems in 2000
4. BE IT RESOLVED that Canadian Honey Council supports the efforts of Bayer Co. Ltd. to register CheckMite (Coumaphos) in Canada.
SUPPORTED - met with Bayer to promote registration package. May be registered on emergency use basis if SHB is found in Canada.
5. BE IT RESOLVED **t**hat the Canadian Honey Council supports that the words "or shedding pollen" follow the word "bloom" on all insecticide use labels.
SUPPORTED no labeling change yet approved by PMRA.
6. BE IT RESOLVED that the Canadian Honey Council supports the University of Guelph's initiative to import, under strict Federal quarantine procedures, queen bees from collaborating researchers in France.
SUPPORTED- Gard Otis conducted research on French queens in 2000.
7. BE IT RESOLVED that the Canadian Honey Council supports the Ontario Beekeepers' Association's resolution to import Russian eggs and semen from the United States.
SUPPORTED- Medhat Nasr reared Russian queens and banked 96 for winter.
9. BE IT RESOLVED that the Canadian Honey Council presses for Registration for chemicals to control the African Small Hive Beetle.
SUPPORTED. Coumaphos may be registered when necessary on an emergency basis.
10. BE IT RESOLVED that Canadian Honey Council pursues independent testing of Imidacloprid by Agriculture and Agri-Food Canada and the Canadian Association of Professional Apiculturists research community to evaluate the effect of this product on honeybees.
AND BE IT FURTHER RESOLVED that Agriculture and Agri Food Canada co-operate with the Canadian Honey Council to ensure the results of experiments be made available.
SUPPORTED - Work sponsored by Bayer was completed by Cynthia Scott Dupree at Guelph and Marla Spivak at Minnesota.
12. BE IT RESOLVED the Canadian Honey Council asks the Canadian Food Inspection Agency to change its procedure to one of where the registration information is retained on file and the CFIA merely bill the beekeeper on a yearly basis.
SUPPORTED- John McCool will look after making the change.
14. BE IT RESOLVED that the Canadian Honey Council works with the provincial beekeepers associations, federal and provincial governments to develop a program to expedite access to the foreign Workers Recruitment Program.
SUPPORTED- Merv Malyon developed a template with Canadian Human Resources Dept, Brandon which could be used by each province.
15. BE IT RESOLVED that the Canadian Honey Council allocates $50,000 of the funds received from the Apimondia99 Organizing Committee, for Canadian Honey Council activities.
AND BE IT RESOLVED that the Canadian Honey Council allocates the balance of the funds received from the Apimondia99 Organizing Committee and future payments, to the Canadian Bee Research Fund.
SUPPORTED- $125,000 donated to CBRF and $50,000 placed in special project fund for CHC.
16. BE IT RESOLVED that Canadian Honey Council indicates its support for the Manitoba initiative to have Strychnine registered for Skunk control.

SUPPORTED Manitoba was not successful in obtaining the registration requested.

17. BE IT RESOLVED that the Canadian Honey Council pursues regulations that would require honey drums to be washed and clean before domestic return or international importation into Canada.
    SUPPORTED- CFIA will request that border crossing officials monitor drum washing.
18. BE IT RESOLVED that the Canadian Honey Council continues its efforts to have the African Small Hive Beetle named under the Animal Health Act.
    SUPPORTED- Animal Health is not willing to name SHB to category one but will make it reportable.
19. BE IT RESOLVED that the Canadian Honey Council makes plans to hold the next annual meeting in conjunction with the New Brunswick Beekeepers Association in 2001.
    SUPPORTED- Meeting is in Moncton.

2000 FINANCIAL STATEMENT Wink Howland

The financial statement Appendix 1 was presented to the delegates.

Motion: Moved by Wink Howland /Paul Vautour to accept the 2000 financial statement as presented.

CARRIED

Motion: Moved by Wink Howland/ John Pedersen that Jack MacKay be appointed auditor for the year 2001 **CARRIED**

PRESIDENTS REPORT Merv Malyon

The president discussed issues from the past year including meetings with Dow Agro Science regarding Lorsban and issues of foreign workers. He recommended that the national association is the best vehicle for dealing with these problems and beekeepers should continue to bring concerns to the CHC.

Motion: Moved by Paul Vautour/ John Pedersen to accept the President's report as presented.

CARRIED

NATIONAL COORDINATOR'S REPORT Heather Clay

One of the main functions of the Canadian Honey Council is developing and maintaining good relations between government and industry. Over the past year it has been very frustrating and increasingly difficult to liaise with the government in Ottawa.

When the Canadian Food Inspection Agency (CFIA) was formed in April 1997 the government assured industry and the Canadian public that it would be better served. This has not happened. The reorganization and deep cost cutting by the government has not improved the service to agriculture and the food sector. Despite these problems the CHC has maintained an active role in communication of beekeeping issues and in getting action on behalf of our industry.

Import Issues

News of the discovery of varroa mites in New Zealand reached CHC before we heard from the CFIA (Canadian Food Inspection Agency). We gathered information from importers and found that several shipments of honeybees, that were packed before mites were detected, were waiting for delivery. It also turned out that one shipment originating from an apiary with varroa mites had been sent to "mite free" PEI. We had to determine an industry response which protected the health of Canadian honey bees and yet allowed the safe delivery of bees in transit. A telephone conference with members of CHC, CAPA and the CFIA led to a win-win situation in which it was agreed that the remaining packages should be sent only to areas where varroa already exists. This was based upon the fact that varroa was not identified in the areas where these packages came from, and that the suppliers would provide fluvalinate treatment for each package.

Pesticides

Lorsban is an insecticide used to kill lygus bugs which are pests of canola plants. Thousands of honeybee colonies have been killed in previous years as a result of the misuse of this product when aerial applications have bee sprayed on flowering crops. The CHC is working with Pesticide Management Regulatory Agency safer alternatives to Lorsban. The good news is that Kerry Clark who was the apiculture specialist in BC and is now working in the BC crop development program has found promising evidence that lygus bug can be sprayed before the canola pollination season begins. We will be interested to follow the progress of research on this spray. It may save the bee industry thousands of dollars in lost stock.

Gaucho (Imidacloprid) is an insecticidal seed treatment used on sunflowers. In France it has been identified by beekeepers as the source of their problems with bee losses and dwindling colonies. Bayer AG manufacturer of imidacloprid, has conducted some research and presented their findings at our annual meeting in February 2000. They concluded that their results showed there is no effect on honey bees. There are other interpretations of this information and the August issue of Hivelights has a full report on Gaucho and honeybees in addition to the presentations found in these Proceedings.

Furadan is used in the control of corn borer in sweet corn. The aerial spraying of this pesticide has caused the death of thousands of honey bee colonies in Alberta and Ontario. This is an extremely toxic pesticide which kills mammals and insects indiscriminately. The CHC has asked the PMRA and the Minister of Agriculture to ban the aerial spraying of Furadan. No word yet on their response. We also encourage beekeepers to communicate with the aerial spray groups and work out local solutions.

Environment Assessment Act
Honeybees have been classified in the wrong category of animals and the Department of Environment requires an Environmental Assessment for each import of honeybees. We have requested that honeybees be correctly classified so that they can be "class screened" by the CFIA. The legislation is in review and it may take a year to the end of 2001 to be finalized. Policy changes are posted on the CFIA web site under the Acts and Regulations section. Once bees are correctly classified the Environmental Assessment fee will be reduced to zero in 2002.

Environmental Assessment Fee
We have been told on many occasions that the $150 Environment Assessment fee would be reduced to $40 while we wait for the reclassification of honeybees under the EA. The $150 fee was charged again in 2000.

Apparently there are three steps in the process to complete the remission of fees. The consolidation of fees notice has been completed, the fee amendment has been done and the remission order is waiting for action. The CFIA expect to have the process completed in the next few weeks. It should be in place for the 2001 import season.

African Small Hive Beetle (SHB)
The CHC requested that the SHB be named as a pest under the Animal Health Act.

There is a package of named diseases under revision and the SHB will be included in this list. There are two categories, 1. Reportable and 2. Immediately notifiable. SHB will be included in the second category but federal programs for control or eradication are unlikely. It will only be used for negotiating control programs with the provinces and for notifying internationally. It is not clear when the naming package will be submitted for regulation.

Honey drums
The CHC is concerned that honey drums should be washed to prevent the spread of SHB as well as oxytetracycline resistant AFB spores. John McCool, CFIA honey program officer, is working on a project of rewriting the inspection manual for honey and will add it to the inspection guidelines. He will also advise the process products people to lookout for unwashed drums at border crossings.

The CFIA has commenced a process to survey the used drum industry. Honey is one of the commodities under review. After the survey is complete there will be recommendations made as to the tracking of recycled drums. The intention is to protect the consumer from pesticide drums entering the food industry. This will involve a tracking process indicating when the drum was refired and what paint has been used in the process. The CFIA has assured CHC that we will be consulted before final recommendations are made.

Unpasteurized honey labeling
The CHC has been seeking clarification of the issue concerning labeling of unpasteurized honey.
The CFIA sought legal opinion on this issue and the advice is that the term pasteurized describes honey that has no sugar tolerant yeast, while unpasteurized honey must contain a measurable amount of sugar tolerant yeast. A third category will be acceptable if the honey is not labeled either pasteurized or unpasteurized. The honey advisory committee will work towards recommending a definition for describing unpasteurized honey such as natural, raw, minimally processed or producer packed.

Floral Source labeling
Apparently the Canadian position on floral source labeling has been taken to the international Codex Alimentarius meeting. The CHC does not know what CFIA has recommended. A report was circulated to members of the honey advisory committee in December 1999 for comments but we have not been told the details of the final version of the report.

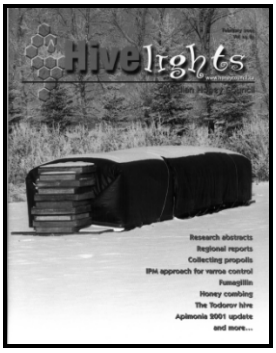
Honey Advisory Committee Meeting
The CHC executive decided not to attend any future advisory committee meeting until the concerns of the

last one are identified via minutes and addressed in some manner.

7000% increase in CFIA import fees
In the past five years the federal government has cut 4 out of 5 apiculture research positions and all the associated technical and support staff. They have challenged industry to fund and perform research. We are endeavoring to do that through the non-profit Canadian Bee Research Fund which operates on donations from beekeepers with matching funds from industry. But the Canadian Food Inspection Agency CFIA has decided to levy import permit fees on material for non profit research.

In February 2000, CAPA and CHC approved a non-profit research project by Dr Medhat Nasr that required the importation of honeybee eggs and semen of Russian stock from the USA. The CFIA refused to issue an import permit until fees amounting to almost $2,800 were paid. The new fees are for risk assessments ($1,000 for the eggs and $1,000 for the semen) as well as environment assessment ($150), issuance of the permit and several hundred dollars in pre and post facility inspections. The fees in 1998 for the same work were $40. This 7,000% takes a large percentage of the research budget. The CHC is lobbying to have these fees eliminated for non-profit university and industry sponsored research

New Look
Hivelights magazine is in transition to a newer expanded format. The change in revenue from 1995 to 2000 is presented in a graph appendix 3. We are doing a business plan and working on the possibility of providing space in each issue for information from the provincial associations. The present proposal is for Hivelights to provide a service for the smaller provincial newsletters and relieve the burden on volunteers for producing their newsletters.



The cost savings would be passed on to Hivelights to allow expansion of the subscriber list. The offer from Hivelights is that a province can buy space at a cost of $1000 per page and that a rebate of $20 will be given for every paid subscription. We hope that the provinces will opportunity to join in this new concept. Hivelights would then become an important magazine for the entire Canadian apiculture industry and should improve the member base of CHC.

Managing Risk
The Canadian Honey Council is actively lobbying to keep the issues of honeybee health on the agenda and a priority with the Canadian Food Inspection Agency. We support border closure to slow down the spread of pests that are not present in Canada such as Africanized Honey Bees, fluvalinate resistant varroa mites, the tropical mite Tropilaelaps and African small hive beetle. Illegal imports of honeybees and bad management practices have contributed to the increased rate of distribution of varroa mites and more recently antibiotic resistant American Foulbrood. It is essential that beekeepers cooperate to protect our industry and not grasp at what appears to be a cheap short term alternative. We can rely on the government to enforce the importation act but there are not enough resources to police the industry. Beekeepers have to decide the degree of risk that they are willing to take in order to protect Canada's multi billion dollar agriculture industry. The future of our industry depends on making the right choice.

Motion: Moved by Chris Alen / Wink Howland to accept the National Coordinator's report as presented. **CARRIED**

PROVINCIAL DELEGATE REPORTS

Maritime Beekeepers Association
Paul Vautour

Nothing in memory compares to the dismal season we had this past year throughout the Maritimes. The wet summer was responsible for slow build up of colonies and many losses in commercial bee yards.
In Nova Scotia, varroa continued to spread. Some beekeepers who tested in mid summer found numbers so high that they had to remove their honey supers and treat. As consolation, the honey crop was down anyway. Despite the loss of Dick Rogers as Provincial Apiarist, the newly restructured

Department of Agriculture intends to retain the service of Joanne Moran as bee health advisor.

The PEI and NS governments are considering the possibility of opening borders between the provinces to allow for movement of bees to pollination. No decision has been reached.

New Zealand packages brought into PEI in spring 2000 suffered high losses. Through summer European Foul Brood was a problem and pollinating units on hybrid canola suffered higher losses than those that were not moved.

The New Brunswick situation was similar to the other provinces in regard to weather and low harvest. Politically the Department of Agriculture, Fisheries and Aquaculture has renewed its commitment to apiculture for the next year. A recent Auditor's report recommended that administration of the apiary inspection act needed adequate funding.

Fédération des Apiculteurs du Québec

Alain Moyen

Blueberry pollination was hard on the hives this year. By the time that all the hives were redistributed for the honey flow and the boxes put on, beekeepers noticed that half of the hives were weak. They built up again by late summer but there are concerns that winter may not be good.

In general Québec beekeepers will be below average production for the year.

The animal act went through its second reading and on to the trial reading but it was halted by the agricultural sector. As for the beekeepers concerns, we were given a chance to review it and make suggestions but in reality we need a separate law.

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The next issue of concern to Québec beekeepers is the need for a Provincial Apiarist. We need good extension services. In our local and provincial meetings beekeepers mention the need for more information. The Fédération des Apiculteurs will attempt to convince the government why we need to bring back the services of a Provincial Apiarist.

Ontario Beekeepers Association report

David MacMillan

Heavy rains that lasted well into summer was the story for most of Ontario in 2000. The whole farming community suffered from the adverse weather. The provincial average of honey production was down to 70 lb total. Fall feeding was heavier and with higher sugar costs and increasing gas prices to transport syrup it was a generally discouraging season.

Honey prices were up slightly but not enough to counter the small crop. Some beekeepers reported over 80 cents per pound.

Trapping for Small Hive Beetle continued along the US border. So far the results have been negative. Doug McRory and Medhat Nasr investigated the SHB situation in New York and report that it is more of a honey house problem. A better trapping system is necessary to detect incursions along the border.
All samples of AFB analyzed for oxytetracycline resistance have been negative.

Stock selection has been an important area of research identified by the OBA. They are funding a project for production of Russian bee stock which may be resistant to varroa mites. Medhat Nasr raised 96 queens from Russian stock in 2000 and various combinations of these have gone into winter. Gard Otis used live queens from France which previously showed varroa mite tolerance. Early results from experiments on an island in Georgian Bay showed significant varroa levels. Next year he will assess the hygienic behavior of the bees. Ontario queens were sent in an exchange with France so it will be interesting to see how they fared with the French varroa mites.

Manitoba Beekeepers Association

Merv Malyon

Estimates of honey production suggest the amount was 140 pounds per colony. This was due to unusually wet conditions. There has been an increase in the impact of tracheal mites, which seem to do well in the wet weather. Reports of increased colony mortality have been attributed to honey bee mites, both tracheal and varroa. Any yards that missed varroa treatment in spring suffered unusual brood diseases as well as an increased mite load.

Saskatchewan Beekeepers Association

Wink Howland

Crops were down substantially in the more northern areas, but were normal and above normal throughout the central regions. Overall, the provincial crop was down a couple of million pounds, from the record harvest of 1999. To date, this shortfall has not created an increased demand from buyers, and prices seem to be staying in the 75-80 cent range,

Saskatchewan beekeepers were solid in their opposition to New Zealand imports, the vote was intended as a statement of position, rather than a binding resolution.

The SBA is concerned about the resistant AFB found in AB and BC. They met with the Provincial Agriculture Minister, in an effort to obtain enough

funding to allow the inspection of colonies throughout SK in 2001. The inspectors will work under the direction of John Gruszka, and would attempt to inspect as many colonies as possible, before the start of the honey flow. In addition, part of this year's SBA annual meeting, will be used to review beekeeper inspection procedures, particularly in the area of identifying foul brood. There has been so much attention focused on tracheal and varroa mites during recent years, it's easy to forget what a serious problem EFB and AFB can be.

Saskatchewan beekeepers have been very impressed with the new Hivelights magazine. Personally, and on behalf of Saskatchewan, I would like to publicly compliment Heather on the work that she has done, in making this such an excellent magazine. It will go a long way in promoting Canadian beekeeping, and in building CHC membership.

Alberta Beekeepers Association

Chris Alen

The overall crop expectations for the millenium were somewhat disappointing. Some small and fragmented beekeeping areas across Alberta did quite well but the most populated bee areas had hot and dry or cold and wet for too long. In southern Alberta the temperatures soared in the mid to high 30's for 4 to 5 weeks. The early heat gave us a very strong honey flow. Eventually the alfalfa dried up in areas outside of irrigation.

Canola pollination contracts were reduced due to a host of commodity issues and the 2001 season may well see more reductions in hive requirements as the hybrid canola industry rides out the down turn in prices and demand for the seed.

The most disturbing news was focused around the issue of AFB resistance to the antibiotic oxytetracycline (OTH). Eight operations in sixteen districts spread from north to south tested positive. It is estimated that close to 64,000 colonies may share forage space with infected hives. This is a problem of potentially vast proportions. We need an effective alternative to OTH immediately with the possibility of other emergency measures put in place to enable us as an industry to stop the spread of this strain of resistant AFB. It may affect all of us sooner than we think if we simply try to wait this one out.

The Peace River district of Alberta operates about 75,000 hives and has experienced many problems in the past number of years since the USA border closure. Due to their northern location they have been particularly hurt by the shortage of affordable quality bee stock. Spring comes three weeks to a month later and winter comes much earlier than in most areas across Canada. Packages cannot be installed until the end of April or the first of May and the development period is much shorter before. The beekeeping industry in Alberta is asking other Beekeeper Associations to support Alberta in its request to develop a protocol for the importation of queens from mainland USA into Alberta.

BC Honey Producers Association

Blaine Hardie

Honey production was variable around the province. The areas of the province that had excellent crops were the Caribou, north Okanagan and Central Vancouver Island. The Kootenays, South Okanagan and Peace River did not have good crops at all.

The good news is that honey prices have increased slightly. The price in the Peace River is $1.75 a pound for the customer container and others in the Fraser Valley and South Vancouver Island are getting up to $2.40 a pound.

The new President for B.C. is Jaquie Bunse from the Fraser Valley who is eager and enthusiastic.

The production data figures released by the government show that BC produced 11,833 queens, 5,571 nucs, and 1,441 packages. The total dollar value from stock production was $704.368. The provincial honey production average was 83 lb/colony, with total production of 47,968 lbs. At an average price of $2.16/lb. for a total of $8,089,486. BC also produced 49,097 lbs of wax with an average price of $4.32/lb.: 41,598 lbs of pollen were produced with an average price of $12.78/lb.; and no data was collected on the amount of propolis produced or the dollar amount generated on pollination contracts.

The total amount of money generated by the industry was $9,537,575 with an overall participation in the survey of 34% of registered beekeepers in the province (not a bad percentage of participation).

The number of beekeepers has gone down slightly to 2,293 but the number of colonies has increased to 47,968.

Motion to accept the delegate reports moved by Wink Howland/ John Pedersen. **CARRIED**

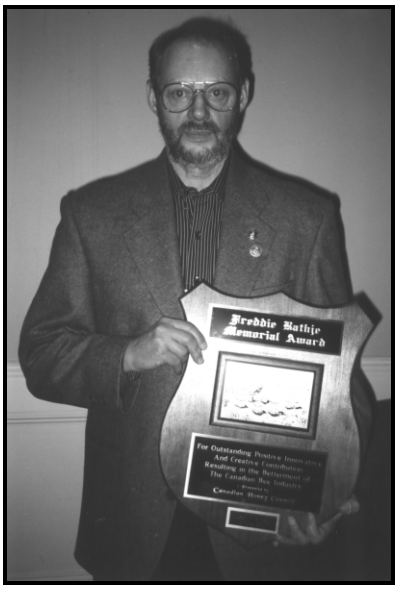
FRED RATHJE AWARD Wink Howland

Fred Rathje was an enthusiastic supporter of the beekeeping industry and secretary of the CHC for many years. When he died in 1984 a fund was set up in his honor. 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 **Dr. Don Nelson** from Beaverlodge, Alberta.

Don has been involved in apiculture research with the Federal Department of Agriculture and Agri-Food for many years. His work on indoor wintering of bees is considered landmark research in Canadian beekeeping. He has worked on numerous projects in tracheal mite research, ranging from studies of microorganisms associated with tracheal mite infested honey bees, evaluating indoor winter treatments, delivering formic acid with membrane-gel to a technique for testing for tracheal mite infestation in bulk bee samples. The valuable application of Don's research to the field of apiculture has been recognized with a grant from the Canadian Bee Research Fund for 2001 to investigate IPM for the management oxytetracycline resistant American Foul Brood.



Don Nelson, 2000 recipient of the Rathje award, at the 60th Annual Meeting of the CHC, Moncton, New Brunswick.

The who's who in Canadian beekeeping would not be complete with Don's name and the CHC is proud to acknowledge his contribution to the betterment of beekeeping in Canada.

Motion to accept the Rathje report moved by Wink Howland/ John Pedersen**.** **CARRIED**

RESOLUTIONS 2001

Moved by Dave MacMillan, Seconded by Blaine Hardie

1) WHEREAS beekeeping in Canada continues to face serious problems such as Varroa, Honey Bee Tracheal Mite, Small Hive Beetle and Oxytetracycline Resistant American Foul Brood and

WHEREAS there is now only one federally funded research position (Beaverlodge, Alberta)

BE IT RESOLVED THAT the Canadian Honey Council lobbies for a new federal research position for eastern Canada. **CARRIED**

Moved by Dave MacMillan, Seconded by Chris Alen

2) WHEREAS the Federal Government is moving towards better compliance in the rule governing the "Canada" prefix on honey grades and

WHEREAS the consumer is led to believe that off-shore honey is a Canadian product by the use of "Canada" in the grading

BE IT RESOLVED THAT the Canadian Honey Council lobbies to have only honey produced in Canada use the "Canada" prefix for the grade declaration. **CARRIED**

Moved by Dave MacMillan, Seconded by John Pedersen

3) WHEREAS the terms "pasteurized" and "unpasteurized" on honey labels have become marketing tools and

WHEREAS it has been suggested that some honey packers use both terms on honey that has gone through the same process and

WHEREAS there are recognized definitions for the terms "pasteurized" and "unpasteurized" as it applies to honey

BE IT RESOLVED THAT the Canadian Honey Council requests the Canadian Food Inspection Agency to vigorously pursue those who sell the same honey as both pasteurized and unpasteurized and enforce the existing labelling regulations and

BE IT RESOLVED THAT moisture content not be used as an indicator of either pasteurized or unpasteurized honey. **CARRIED**

Moved by Dave MacMillan, Seconded by Blaine Hardie

4) WHEREAS Ontario imported Russian bee eggs and semen from the U.S.A. to study resistance to Varroa in 2000 and

WHEREAS three more new lines have been released in the fall of 2000 to establish Russian stock resistant to mites and

WHEREAS bee stock developed by Dr. Harbo from the U.S.A. has shown resistance to Varroa mites and

WHEREAS these bee stocks can be useful in breeding bees resistant mites

BE IT RESOLVED THAT the Canadian Honey Council supports the importation of eggs and semen from new lines of Russian stock as well as Harbo lines. **CARRIED**

Moved by Chris Alen Seconded by Wink Howland

5) WHEREAS the queen bees supply currently available is not meeting the demands of the Canadian beekeeping industry;

BE IT RESOLVED THAT the Canadian Honey Council works with the government of Canada to secure the required regulatory changes to make available an alternate supply of queen bees to the Canadian beekeepers through the controlled importation of safe queen stock from the continental USA. **DEFEATED**

Moved by Chris Alen, Seconded by Dave MacMillan

6) BE IT RESOLVED that the Canadian Honey Council petitions the appropriate government agency and industry organizations for approval to import package bees and queens from New Zealand. **CARRIED**

Moved by Blaine Hardie, Seconded by Chris Alen

7). WHEREAS many Canadian beekeepers have been experiencing heavier winter losses than normal in the last several years, even with milder winters and

WHEREAS beekeepers from the United States have been having much better success in the spring after using Mite Check (Coumaphos),

BE IT RESOLVED THAT the Canadian Honey Council pursue with the Canadian Government the possibility of having Mite Check (Coumaphos) registered for use in Canada. **CARRIED**

Moved by Dave MacMillan, seconded by John Pedersen

8). WHEREAS the colonies of several stocks of bees in France maintain low, non-damaging levels of Varroa mites and appear to be resistant to Varroa, and

WHEREAS these bee stocks can be useful in programs to breed mite-resistant honey bees

BE IT RESOLVED THAT the Canadian Honey Council supports the importation of queen bees from France to a quarantined isolated apiary for evaluation of mite resistance. **CARRIED**

Moved by Paul Vautour, seconded by Wink Howland

9). WHEREAS, consistent standards for the naming of floral sources on packaged honey seem non-existent, and

WHEREAS the labeling of honey as Canadian may not mean 100% Canadian in all cases,

BE IT RESOLVED That the Canadian Honey Council work with the Canadian Food Inspection Agency to revise labeling standards for honey, in order to promote truthful dissemination of product information, particularly in respect to floral source and country of origin. **CARRIED**

Moved by Dave MacMillan, seconded by Wink Howland

10). WHEREAS Imidacloprid is an insecticide of international concern with respect to the beekeeping industry and for pollination and has been suspected of having negative sublethal effects on honeybees and

WHEREAS the results of various scientific investigations of the effects of Imidacloprid on pollinators have been inconclusive

BE IT RESOLVED THAT the Canadian Honey Council encourages PMRA and particularly the Food and Agricultural Organization under its International Pollinators Mandate to hold an expert consultation on Imidacloprid with a view to producing an objective review of existing information and to make recommendations to the beekeeping industry for a program of research. **CARRIED**

Moved by Dave MacMillan, seconded by Wink Howland

11). BE IT RESOLVED that the CHC recommends that the CFIA allows the use of the Canada Grade Name for all Canadian Honey Producers. **DEFEATED**

Moved by Merv Malyon, seconded by Blaine Hardie

12). WHEREAS the Canadian beekeeping industry requires research support and

WHEREAS a “center of excellence” model for research would achieve significant results

BE IT RESOLVED that CHC support the Center of Excellence proposal developed by the Manitoba Beekeepers Association and CHC provide a letter of support meant to be included in the Center of Excellence proposal package. **CARRIED**

Moved by Merv Malyon, seconded by Blaine and Chris Alen

13). WHEREAS current chemical disease control products have or will, become less effective because of development of resistance,

BE IT RESOLVED THAT CHC work with product manufacturers, the Government of Canada,

provincial governments and bee research scientists to encourage the registration of alternative chemical controls for AFB, varroa mite and small hive beetle. **CARRIED**

Moved by Merv Malyon seconded by Wink Howland
14). WHEREAS a current anti-dumping initiative in the USA has reasonable possibility of success and whereas a previous anti-dumping initiative resulted in benefits to Canadian beekeepers and WHEREAS the previous anti-dumping initiative may have resulted in foreign honey entering the USA via Canada and / or the perception that foreign honey entered the USA.
BE IT RESOLVED THAT the CHC takes the necessary steps to ensure that Canada is not used as a "back door" for off shore honey destined for the USA. **CARRIED**

Moved by John Pedersen seconded by Chris Alen
15). WHEREAS various countries are spending resources and efforts in developing honeybee stocks for specific genetic traits eg varroa resistant bees and
WHEREAS these bee stocks can be beneficial to the Canadian Beekeeping industry to advance selection and breeding programs for disease resistance and or economic traits and
WHEREAS researchers import these after approval by CAPA and CHC for research purposes
BE IT RESOLVED that the CHC supports the exemption of honey bees for research purposes from environmental assessment and risk assessment fees required by CFIA. **CARRIED**

Moved by John Pedersen, seconded by Wink Howland,
16). BE IT RESOLVED That the CHC expresses its gratitude to the Maritime Beekeepers Association, the NBBA and in particular Paul and Ann Vautour for hosting the excellent convention in Moncton. **CARRIED**

Moved by Chris Alen seconded by Wink Howland
17). BE IT RESOLVED THAT the CHC hold its next annual meeting in 2002 in Alberta . **CARRIED**

ELECTIONS

Scrutineers were Kenn Tuckey and Doug McRory.
President:
Dave MacMillan was elected by acclamation.
Vice President
Wink Howland was elected by acclamation.
Executive Member
Chris Alen was elected by acclamation.

Merv Malyon introduced Phil Veldhuis as the new MBA delegate to CHC. He then handed the gavel to the incoming president, Dave MacMillan

FINANCE COMMITTEE

Table 1. Proposed Budget For Year 2000/2001

INCOME	**2000**	**2001**
Memberships	$19,695	$20,000
Delegate Fees	$28,000	$28,000
Apimondia sales	$277	0
Interest	$537	$2,500
Hivelights Advt.	$9,418	$13,000
Promotion Mtls.	$139	$250
Ann. Mtg. Reg.	$2,585	$1,200
Miscellaneous	$205	0
Total Income	$60,856	$64,950
EXPENSES	**2000**	**2001**
Annual Mtg.	$813	0
Apimondia	$3,120	0
Awards	$175	$187
Bank Charges	$87	$90
Credit card charges		$44
CBRF admin	$132	0
Hivelights	$13,565	$15,000
Memberships	$1,177	$200
Office expenses	$1,200	$1,200
Office (supplies)	$2,037	$2,200
President Honorarium	$2,000	$2,000
Professional fees	$1,243	$1,250
Telephone	$1,609	$1,700
Travel:	$3,527	$4,000
Wages , benefits	$38,470	$38,500
Total Expense	$69,199	$66,327
Income	$60,856	$64,950
	-$8,343	$-1,377

Motion Moved by John Pedersen/ Dave MacMillan to adopt the proposed budget subject to periodic review by the executive committee **CARRIED**

MEETING 2002

Jeff Pettis AAPA and Tony Jadczak AIA proposed that a meeting in December 2002 should be pursued with AIA and AAPA and AHP. The location would be Niagara Falls with meetings on both sides of the border and bus transportation between the two venues. Invitations will be issued by CHC and CAPA.

Motion by John Pedersen/ Wink Howland that the directors of the executive pursue this option **CARRIED**

ADJOURNMENT

The meeting was adjourned at 5.00 PM Saturday 3 February 2001.
Motion to adjourn the meeting by David MacMillan, seconded by Chris Alen. **CARRIED**

Field trip to BooBoo's Honey in PEI. The tour of Al Picketts' facility was an enjoyable interlude during the 60th Annual Meeting of the CHC held in Moncton, NB February 2001.

FEDERAL GOVERNMENT REPORTS

HONEY TESTING PROGRAM

John McCool
Canadian Food Inspection Agency
Ottawa ON

The results of laboratory testing for residues and adulteration of honey are presented in Appendix 4.

HONEY HOUSE MCAP PROGRAM

Howard Willems
Canadian Food Inspection Agency
Saskatoon, SK

CFIA has drafted a protocol for honey house inspections based on the HACCP standard (Appendix 4). The system will be implemented on a trial basis over summer and industry comments will be solicited.

MARKET & INDUSTRY SERVICE BRANCH

Dave Pearen
Agriculture and Agri-Food Canada
Ottawa, ON

Dave was unable to attend the meeting but submitted the following report.

The 2000 official honey statistics from Statistics Canada (Appendix 5) indicate that Canadian honey production fell 15% from 1999 and was down 6% from the previous five year average. All provinces showed a decrease in production from the previous year except British Columbia. The farm value for 2000 is not available until the end of the marketing year, but the 1999 figure was $70.4 million, down sharply from the record of $93.5 million in 1998. The number of beekeepers continued its downward trend in 2000 to stand at 9,913, down 10.6% from the previous five year average, while the number of colonies rose to 603,828.

Exports of Canadian honey reached nearly $30 million in 1999 and at time of writing it would appear that figure will be met or exceeded in 2000. Imports on the other hand remain relatively small, amounting to less than 8% of Canadian production in 1999 and will probably continue in the same range for 2000.

In the fall of 2000, the United States government announced initiation of antidumping duty investigations on honey from Argentina and China as well as an aid package for the 2000 honey crop. Both actions could impact on the Canadian honey market.

IMPORTED HONEY BEES

Brian Jamieson
Canadian Food Inspection Agency
Ottawa, ON

The importation of New Zealand honeybees was suspended when New Zealand announced an incursion of the varroa mite on April 11, 2000. At that time, the existing import permits were no longer valid because NZ had lost its varroa-free status. New Zealand agreed to suspend the export certification of further shipments pending Canada's review of the situation. The existing import permits were not canceled. Following two weeks of constant communication between New Zealand and Canada and extensive consultations between the Canadian Food Inspection Agency (CFIA) and Canadian stakeholders as represented by members of the Canadian Honey Council (CHC) and the Canadian Association of Professional Apiculturists (CAPA), including the Provincial Apiculturists, agreement was achieved on April 25, 2000 to allow the resumption of imports with additional certification and treatment requirements.

Following the detection of the varroa mite, New Zealand initiated extensive surveillance of its beekeeping industry to define the extent of the varroasis outbreak. The initial findings of the surveys indicated that the varroa mite had been introduced as a single focus in the area of South Auckland and had spread gradually from that site. Initially, there has been no indication that the mite has spread to areas from which honeybees are exported to Canada. As of April 26, 2000, the mite had been detected at 64 locations in the infected zone. Additionally, New Zealand honeybees that had entered into Canada during the current import season, were subjected to testing for the mite. In every case where the New

Zealand bees were imported into areas of Canada not known to be affected by the mite, all test results were negative for varroa.

Given that the source of introduction of the varroa mite into New Zealand remains unknown, the possible presence in New Zealand of fluvalinate-resistant varroa mites or the Asian mite (Tropilaelaps) was also of concern. Using methodologies prescribed by Canadian scientists, New Zealand was required to demonstrate to Canada's satisfaction that the varroa mites in that country are susceptible to treatment with Apistan (fluvalinate). Additionally, New Zealand was required to demonstrate to Canada's satisfaction that the Tropilaelaps mite had not been concurrently introduced into honeybee colonies that had become infested with the varroa mite.

Achieving consensus to allow the resumption of the importation of New Zealand honeybees was the result of very frank discussions. At the time of the suspension of importation, it was identified that there remained a significant need for additional honeybees in several parts of Canada including PEI for the pollination of blueberry plants, Alberta for canola pollination and Manitoba for honey production. Acceptable alternate sources of bees could not be identified. In addressing the issue, CAPA members continued to provide the necessary scientific expertise upon which to base appropriate import policies. The CHC executive provided liaison with provincial beekeeping associations. Provinces with areas free of the varroa mite indicated that their legislation provides the enabling authority to safeguard those areas from varroa-infested bees from out of the province and therefore agreed to allow importation from a varroa-infested country. Recognizing the needs of the beekeeping industry nationally, the participating stakeholders demonstrated the desire for cooperation which enabled agreement to reopen Canada's borders for New Zealand honeybee imports

Import Permit Modifications
The permit of any importer who wishes to import additional honeybees from New Zealand will be modified to reflect the following:

I. New Zealand will be required to certify that (i) the honeybees being exported have originated from apiaries not known to be infested with the varroa mite, and (ii) to the best of their (MAF's) knowledge, New Zealand honeybees are not infested with the Tropilaelaps mite.

II. Acceptable transit route options will include Hong Kong, Hawaii and Los Angeles. Any other transit port will have to be approved by CFIA, Camelot Court. Seoul, S. Korea will **not** be an acceptable transit port.

III. Upon arrival in Canada, at the time of the transfer of each package of bees or an imported New Zealand queen into a hive, one Apistan strip will be placed into the hive.

INFANT BOTULISM AND HONEY

John Austin
Health Canada
Ottawa, ON

Infant botulism is a neuroparalytic disease which affects otherwise healthy children less than one year old. It was first recognized in 1976. Early symptoms of infant botulism are constipation, generalized weakness and a weak cry. While most cases require hospitalization, fatal cases are rare.

Infant botulism is caused by the food poisoning bacterium *Clostridium botulinum*. This is the same bacterium that causes the food poisoning known as "botulism". Spores of these bacteria are ingested by the infant, grow and produce a neurotoxin (i.e. poison) in the infant's intestine.

The most common and earliest symptom is constipation. Other symptoms include generalized weakness, a weak cry, poor sucking reflex, irritability, lack of facial expression, and loss of head control. Paralysis of the diaphragm may result in respiratory collapse. While most cases require hospitalization, fatal cases are rare.

Spores of *C. botulinum* may be easily ingested as they are common in soil and dust. *C. botulinum* spores have been found in honey that was implicated in infant botulism. Random surveys of honey produced in Canada indicate that *C. botulinum* spores are rare. Spores *of C. botulinum* are present in less than 5% of honey and are typically found in very low numbers.

It is not known how honey becomes contaminated with *C. botulinum*. Spores of C. botulinum, which are commonly found in the environment, may be picked up by bees and brought to the hive. Other microorganisms found in the environment around honey (ie. bees, hives, pollen, soil, flowers, etc.) are also likely to occur in honey.

Infant botulism is rare in Canada. Only sixteen cases of infant botulism have been recorded in Canada since the first case in 1979. Three of these were associated with feeding honey to the infant. More cases of infant botulism may go unreported due to

misdiagnosis. In the United States, approximately 70 to 90 cases of infant botulism are reported every year.

If a baby develops this disease, he/she may need to be cared for in a hospital for days or weeks. Close attention is paid to proper nutrition and pulmonary aid. Approximately one in four infants affected requires mechanical ventilation. Neither antibiotics nor antitoxin are usually administered. A complete recovery is made in nearly every case.

Since honey is not essential for the nutrition of infants, parents and caregivers are reminded not to feed honey to infants less than one year of age. Honey should never be added to baby food or used on a soother to quiet a fussy or colicky baby. Concerned parents should discuss alternative methods for quieting their baby with their pediatrician or family doctor.

CAPA REPORTS

CAPA President **Cynthia Scott Dupree**

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.

CAPA CHEMICALS COMMITTEE

John Gruszka

Formic Acid Review

The Chemicals Committee was approached by Dr. M. Farkas of the Pest Management Regulatory Agency of Health Canada to review the use of formic acid. The committee reviewed document C94-05 (proposed scheduling of 65% of formic acid for the detection and control of honey bee mites).

The committee took this as an opportunity to formerly recognize a variety of application methods that have been developed over the last few years since formic was first scheduled. However, PMRA has taken the stance that any product development still needs to be authorized by the agency. Consequently, manufactures and distributors of a number of products have been advised to have their product submitted to PMRA for approval.

The only changes that will take place are that there will be an indication on the labels provided for bee use. that the minimum temperature has been lowered from 10^0C to 7^0C with the additional statement that read as follows: *"Adult bees that come into contact with liquid formic acid will be killed. To minimize bee mortality, use a smoker to drive bees from the bottom board before applying formic acid to the bottom board. Use a smoker to drive bees away from the top bars for upper hive placement and ensure that formic acid will not drip on bees below."*

Federal-Provincial Task Force

The Federal-Provincial Task Force Committee on Pest Management and Pesticides was recently asked by PMRA to review the aerial application of *chlorpyrifos* (Lorsban). This is a continuation of the organophosphate re-evaluation that PMRA is currently conducting. With the recent addition of Don Dixon to this committee, it has become much more obvious to the committee members that aerial application of insecticides in general and Lorsban in particular have been serious issues within the beekeeping industry.

As a consequence, CAPA and CHC have recently been asked to participate in this committee. These will be very beneficial additions for our industry as this committee tries to find solutions to the issues regarding Lorsban and other insecticides as pertaining to aerial application.

Coumaphos

In the summer of 2000, the Environmental Protection Agency (EPA) in the United States set tolerances for *coumaphos* in honey and bees wax. The tolerances were set at 0.1 ppm for honey and 100 ppm for bees wax. These tolerances remain in effect until December 31, 2002.

The Section 18 exemptions that were formerly provided to individual states in the United States for the use of *coumaphos* expired at the end of 2000. States that wish to have a Section 18 exemption for the use of *coumaphos* (Check Mite) for 2001 are currently in the process of reapplying.

As for the Canadian situation, a representative of Bayer informed the committee in June that PMRA has decided not to accept any applications for the registration of new organophosphate products before

their re-evaluation is completed. Consequently, the only alternative remaining, if resistance to fluvalinate manifests itself in Canada, is to apply for an emergency registration.

Until that time, Bayer will await the results of the organophosphate re-evaluation and continue to seek registration of their product in Canada.

Resistant American Foulbrood (rAFB)
Resistant AFB has been reported in British Columbia and Alberta. In British Columbia, rAFB has been found in widespread locations but at very low levels. Alberta conducted inspections in the fall of 2000 and found that 14 operations (of 45 inspected) have been found with resistant AFB. These beekeepers operate approximately 22,000 colonies.

Research has begun at Beaverlodge on prospective chemicals that have been shown to control the resistant strains. One of the promising antibiotics has been researched in the USA for the past 4 years. Approval for its use has still not been obtained in the United States. The problem with the candidate antibiotics is that they leave prolonged residues. Until a new product is registered, beekeepers should be advised to monitor their operations closely, remove and destroy any foulbrood, particularly that when it does not appear to respond to current antibiotic control methods.

Skunk Control
There has been no agreement reached in registering *strychnine* for the use of skunk control. The discussions with the parties involved seem to have come to a stalemate. Failing to come to some resolution, the problem still remains that skunks are a serious problem for beekeepers and that there is no legitimate control. There is maybe some urgency in Saskatchewan as there have been increasing reports of rabies.

Small Hive Beetle
As a result of discussions held last year, Rheal Lafrenière provided a chapter in the new issue of *The CAPA Disease Publication.* As well, copies of slides were made and distributed to members.

Although Small Hive Beetles have not been reported in Canada to date, the concern still exists that they may appear in the near future. There is no registered product in Canada for the control small hive beetle. *Mite Check* is available for control in those States that have applied for Section 18 from the EPA in the United States.

CAPZ IMPORTATION COMMITTEE

Doug McRory

Dr Otis and Dr Nasr imported French and Russian stock in 2000 to conduct research on varroa resistance. Three requests for importation of breeding stock from USA (Russian and Harbo) and France were approved by the committee.

Doug outlined the discovery of varroa mites in New Zealand in April 2000 and described the buffer zone in the North Island which was created to meet the needs of the export industry and to delay the spread of mites to South Island. No mites were found in any of the packages imported from New Zealand.

CANADIAN BEE RESEARCH FUND

Mark Winston

The Canadian Bee Research Fund is now in its fourth year of operation, and by February 2001 we had raised $600,000 towards supporting bee research in Canada (Appendix 3; audited financial reports). From these funds, grants have been awarded to support research important for the survival and prosperity of the Canadian beekeeping industry. Expenses have been minimal (about $2000 over four years for mailing, printing, registration costs, bank charges, etc.), and the remaining funds have been used to establish a long-term endowment that is now generating income to fund future projects.

To date, the following projects have been funded:
Melathopoulos, Adony (Alberta): Field evaluation of the microbial acaricide *Hirsutella thompsonii* for the control of the honey bee mite parasite *Varroa jacobsoni*., $10,000, award year 2000.
Winston, Mark (British Columbia): Integrated pest management for Varroa mites, $10,000, award year 2000.
Daniels, R. Scott (Saskatchewan): Membrane-gel delivery of formic acid vapours, and a new, alternate treatment for honey bee mites with an environmentally friendly approach using menthyl formate, $9200, award year 1999.
Otis, Gard (Ontario): Evaluation of the efficacy and residues of Apiguard, a potential product for the control of parasitic mites of honey bees, $12,000, award year 1999.
Kevan, Peter (Ontario): Botanicals for mite control and novel means of administering them for greater efficacy and safety, $8800, award year 1999.
Clark, Kerry (British Columbia): Evaluation of mesh bottom boards for the management of Varroa mites, $6400, award year 1998 (declined).
Nelson, Don (Alberta): Evaluation of indoor winter treatments on bee colonies using oxalic acid, lactic acid, thymol, and formic acid, $7000, award year 1998.

Winston, Mark (British Columbia): A semiochemical trapping system for the parasitic mite *Varroa jacobsoni*, $15,000, award year 1998.

The Canadian Bee Research Fund (CBRF) was established to counteract the problems caused by severe reductions in federal and provincial funding for honey bee research. The Fund has been set up as a long-term endowment to support bee research, with interest generated by the CBRF available for annual grants. The current policy of the CBRF is to award approximately 75% of annual interest and beekeepers' donations towards research projects, and apply 25% of interest and any special donations towards increasing the endowment.

Decisions concerning what projects to support are determined according to the priorities set by the Canadian beekeeping community. With the grants awarded to date, the CBRF is fulfilling its mandate to stimulate and support research important for the beekeeping community. Our reach and impact are both national in scope and significant in attracting matching funding for projects. Grants have been directed towards projects identified as high priority by the beekeeping industry, and the partnership between beekeepers and researchers that is at the core of the CBRF has become a functioning reality.

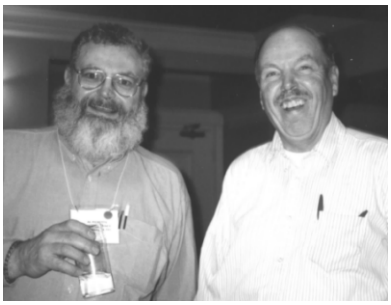
Another noteworthy aspect of the CBRF grants is that all recipients are required to submit a "beekeeper-friendly" report in the fall, to be published in *Hive Lights*, provincial newsletters, and other appropriate outlets. In addition, grant recipients must attend the annual CHC meeting to report on their projects.

The success of the CBRF has been due to a generous donation from the W. Garfield Weston Foundation, to funds generated by the 1999 Apimondia meeting held in Vancouver, and especially to the generosity of beekeepers across Canada who have banded together to build a legacy for our industry.

We can all be proud of what we have built to date, but there is still a long way to go. The financial support for the CBRF needs to grow if the fund is to reach its goal of self-sufficient, beekeeper-directed support for Canadian bee research. Our objective is to raise $1 million over a ten-year period. To reach that goal, we suggest that each beekeeper donates $0.25 per hive annually, and that each provincial association contributes 10-50% of funds raised annually to support research within each province.

I am pleased to recognize the dedicated service of the CBRF's Board of Directors, including Wink Howland, Merv Malyon, and Rob Currie. They have each spent countless hours evaluating grants, developing and overseeing responsible financial management, and promoting the goals of the Fund. In addition, I deeply appreciate the assistance of Heather Clay, National Coordinator for the Canadian Honey Council, who has administered the Fund. Her professionalism, discretion, organization, and sound advice have been an integral part of the Fund's success, and it is a pleasure to personally acknowledge the important role she has played in the development and implementation of the Canadian Bee Research Fund.

We deeply appreciate and need the support of the entire beekeeping industry. With your continued support, the CBRF will continue to grow and maintain its presence as an important instrument for bee research in Canada.



Two of the Maritimes larger beekeepers, Boo Boo's Al Picketts and Atlantic Gold's Ralph Lockhart.

SECTION 2 CBRF REPORTS

Making Varroa sick; Evaluations of a fungus, *Hirsutella thompsoni* for the control of Varroa mites.

Adony Melathopoulos[1], Bill Ruzicka[2], and John Gates[3]

1. Agriculture and Agri-Food, Beaverlodge,AB T0H 0C0
2. Bill's Honey Farm, Kelowna, BC V1V 2B6, and
3. Ministry of Agriculture and Food, Vernon, BC V1T 4K7

Fungi are a major source of disease among the mites of the world. The fungus *Hirsutella thompsoni* was among the first to demonstrate the ability to kill mites. Preliminary work suggested the fungus kills Varroa in the laboratory. Field experiments were conducted in 2000 to determine the dose and formulation required to kill Varroa in bee colonies. Colonies treated with *H. thompsoni* were evaluated in southern British Columbia and were compared to colonies treated with Apistan or colonies left untreated. Population growth through the summer for colonies treated with *H. thompsoni* was not significantly different from that observed in colonies left untreated, however growth

was higher than in colonies treated with Apistan. The fungus, however did not negatively influence the production of honey or bee populations. The results suggest continued improvement in the formulation and application technology of *H. thompsoni* is required before the fungus can be used to control Varroa in colonies.
{*Ed. Note: The full report of this project was published in Hivelights Vol 13 #4 and can be viewed online at* www.honeycouncil.ca }

Formic Acid Vapour Release And Varroa Mite Management With An Improved Delivery Device

K.E. MacKenzie[1], R.E.L. Rogers[2], J.P. Parkman[3], J.A. Skinner[3], R.S. Daniels[4] and D. Nelson[5]

1. Agriculture and Agri-Food, Kentville, NS B4N 1J5
2. Wildwood Labs, Kentville, NS B4N 3Z1
3. University of Tennessee, Knoxville, TN, USA
4. Trail, BC V1R 1E4, and
5. Agriculture and Agri-Food, Beaverlodge, AB T0H 0C0

Formic acid is an alternate treatment to fluvalinate for the control of Varroa mite. Yet, formic acid is a hazardous material that should be handled with great care. A membrane-permeation device for formic acid has been developed. Field trials in 1999 found that although formic acid vapors are released throughout the 28-day test period in honey bee colonies, the release rate reached only 5 g per day, somewhat less than is desired. Thus, further investigations of alternate packaging were carried out.

A texturized bladder was designed in the hopes of increasing permeation through a larger surface area. Problems in manufacturing meant that this approach was abandoned and instead larger non-textured bladders were produced. In addition, a laboratory comparison of liquid versus gel formulation found that the gel showed enhanced permeation. Larger bladders charged with formic acid gel were used for field trials during the fall of 2000.

Field trials were carried out in three locations in 2000: Beaverlodge, Alberta; Kentville, Nova Scotia and Knoxville, Tennessee. Varroa mites were present in low numbers at both Canadian sites while populations have been present in Tennessee for many years. Thus, both release rates and mite drop were monitored at all three sites. In Alberta, an Apistan treatment was compared to the permeation device. However, little comment can be made about bladder performance at the two Canadian sites because of low mite numbers there. In Tennessee, Apicure, Apicure 2X and Apilife VAR treatments were compared to the bladder method. Preliminary data analyses find the bladder to provide less Varroa control than the other methods. Formic acid permeation from the bladders under different temperature regimes is currently being examined.

The effect of formic acid treatment on residues in honey has received insufficient attention. We examined three techniques to assay for formic acid residues in honey: acid-base titration, spectrophotometry and ion-chromatography, for such an analysis. The latter, ion chromatography, was determined to be the technique of choice. Residue analyses of honey from a worst-case scenario formic acid trial run in Tennessee found mean residues levels to be 616 ppm. I.e. approximately 6 times the naturally occurring level in honey. This compares favorably to the World Health Organization allowable daily intake of 0-3 mg/kg body weight/day.

Integrated Pest Management for Mites

Mark Winston
Department of Biological Sciences,
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The objective of our CBRF-funded project was to determine if Integrated Pest Management methods could be used to reduce the frequency and amount of synthetic chemical pesticide use in bee colonies. We compared standard Apistan treatments to Apistan/Thymol and a full IPM system using hygienic queens, screened bottom boards, and thymol. After one year, all treatments produced the same amounts of honey and showed no differences in brood or adult populations. While the Apistan treatment had fewer mites, the mite levels in the other treatments were below an economically important threshold. If these results continue in the next year's research, they will indicate that pesticide reduction is biologically feasible, economically sound, and environmentally desirable.

SECTION 3 APICULTURE SYMPOSIUM

How Big is the Small Hive Beetle????

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The small hive beetle *Aethina tumida* Murray (Coletoptera: Nitidulidae) was identified from honey bee colonies (*Apis mellifera*) in St Lucie County, Florida by the Florida Department of Agriculture, June 1998. This was the first report of this insect pest in the Western Hemisphere. Adult beetles are 5mm long, dark brown to black and can be found within

honey bee colonies. Reports from South Africa suggest that the beetle is rarely a significant pest with African bees but the effects on European bees managed in the United States have varied from severe to little or no effects. So…..just how Big or small a problem is the small hive beetle?

Several years of beekeeper experience in dealing with this pest, along with research on biology and control measures, allow us to draw some conclusions about the severity of small hive beetles in North America. The small hive beetle is well established in several areas of the Southeast and has been associated with some colony mortality. However, the major impact of small hive beetles has been in honey houses where stored honey is awaiting extraction. Beekeepers report that honey stored for more than five days prior to extraction can be severely damaged by the feeding and associated slimy material deposited on honey combs. Once honey supers are pulled and thus removed from the protection of worker bees, larval small hive beetles develop quickly. Honey supers that contains cells of pollen and or bee brood are the first to be damaged but even pure honey can be damaged as beetle larvae move about from there feeding sites in pollen and brood cells and contaminate other nearby combs. Honey frames that have been fed upon by small hive beetle larvae are considered to be unsuitable for extraction and thus the beekeeper normally feeds the honey back to the bees. Beekeepers are already dealing with numerous management problems, so the small hive beetle/honey house problem simply adds to the stress and increased cost of beekeeping.

Treatments are available for both adult beetles in the colony and for treating the ground around infested hives. What is lacking is a means of reducing the impact of small hive beetles in the honey house. At the Bee Research Laboratory in Beltsville, Maryland we believe we have found a simple technique to reduce or eliminate beetle damage to stored honey awaiting extraction. During our studies on the basic biology of small hive beetles, we observed that beetle eggs did not hatch when the relative humidity was below 50%. While this observation did not seem to be useful in controlling beetles in the apiary, it did seem to hold promise in the honey house. Subsequently, we have tested - and are confident - that it is possible to reduce or eliminate beetle damage in stored honey by simply circulating air through the supers. This air movement reduces the relative humidity within stored honey and in turn, leads to egg desiccation (drying out).

Trials were conducted in Florida to test our ideas about protecting honey from beetle damage. In three honey houses, stacks of three medium-depth supers were stored “closed” (migratory covers, top and bottom), “open” (no covers) or “open” with a small fan capable of circulating air up through the stacks. Adult small hive beetles were intentionally introduced into all stacks, and the results were encouraging. In one location, more than 4000 larvae developed in the “closed” stack, about 40 larvae in the open stack*, but no larvae in the open stack with a fan*. The open stack with a fan at this location had no larvae present even on the one comb containing brood. At the second location, overall development was low in the open stacks – with and without the fan. Interestingly, the third location had no development in any of the stacks even though adult beetles were present. Upon careful observation, the combs at this location contained no pollen or brood, demonstrating the importance of brood or pollen for larval development. Small hive beetles should cause little damage in combs of pure honey.

Based on these results we established a larger study consisting of stacks of six medium-depth honey supers in each of three honey houses in Palm Beach, Florida. We established both closed and open stacks, and adult beetles were added to all stacks. All open honey supers had air forced down through the stacks by a box window fan set on the lowest setting. Additionally, open stacks were raised off pallets by two-inch wooden blocks, which allowed for airflow down and out of the stacks. The honey combs used in this study were from colonies infested with adult beetles and some combs contained brood and/or pollen. Thirteen days following this setup stacks and honey combs were examined for larval development. The results were dramatic. The movement of air down through stored honey *resulted in complete or nearly complete protection* from small hive beetle damage. The first location was quite dramatic with more than 50% of the combs from the closed stack having thousands of larvae, while NO combs in the open stack were infested. The other two locations yielded similar results, though a few developing larvae were found in open stacks. Live, adult beetles were still present on day 13 at all locations.

The use of circulating air across stored honey prior to extraction provides the beekeeper with an inexpensive and chemical-free method to protect honey from beetle damage.

Moving air over stored honey, even with brood and adult beetles present, provided protection from the beetles. One of the commercial beekeepers we worked with was so impressed with our results that he has mounted window fans in his storage area and simply places pallets of honey beneath the fans if he can't extract the honey immediately. He has also modified his pallets to raise the supers two inches off the base of the pallet to facilitate airflow. Beekeepers will invariably find their own way of modifying and adapting these findings to their operations. In areas with high relative humidity it may be necessary to use a dehumidifier or air conditioner to reduce the relative humidity. Keep in mind you must provide a means for the air to circulate in the stacks of honey by removing the covers and raising the stacks off the pallet or floor. Small hive beetles will force us to maintain clean efficient honey house operations. What we have shown is that regardless of the presence of adult beetles on combs, the movement of air across stored honey allows protection against small hive beetle damage.

So How Big Is The Small Hive Beetle?

The small hive beetle cannot be ignored but don't live in fear of it. Temperatures below 10^0C have been shown to halt beetle development and thus the further North you keep bees the fewer problems you should have. Keep in mind that honey houses are often heated and will promote beetle development. Additionally, the impact of small hive beetles in indoor-wintering buildings is unknown but when temperatures go below 10^0C beetle development should be arrested. We are finding ways to limit beetle damage and beekeepers will continue to find innovative ways to keep bees even in the presence of new pests such as the small hive beetle.

Integrated Pest Management for Parasitic Mites: Efficacy and Miticides' Residues

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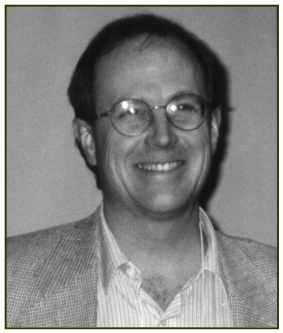
3. Crop Technology, OMA FRA,1 Stone Road W. Guelph, ON, N1G 4Y2

Integrated Pest Management (IPM) is a long term strategy to control pests. An IPM program was adopted by Ontario beekeepers 1995 to control the parasitic varroa and tracheal mites. In Ontario the IPM program consists of a combination of mite control methods. Beekeepers use Tracheal Mite Resistant - Hygienic honey bee stocks, Mite-Away pads (single application of 250mL of 65% formic acid), Apistan®. Additional tools for IPM such as drone removal, more varroa resistant bees (Russian bees and Harbo's bees), and other management techniques are being studied and adapted to fit beekeepers' management systems. Mite levels are monitored to determine the proper time to treat. MiteAway is used in the spring to control Varroa and Tracheal mites while Apistan® is used in the fall to protect the wintering bees from Varroa mites. By alternating the use of MiteAway and Apistan® and the use of the IPM strategy, the development of mites resistant to miticides is reduced. The risk of increased residues of Apistan® in bee products (wax and honey) is decreased. Bee colony annual mortality decreased to 10% with the application of IPM from 50-70% when bees were untreated. Fewer bee colonies need to be replaced every year, saving a substantial amount of money for beekeepers.

In Europe and the USA, resistance has developed to miticides used to control Varroa. This has led to using chemicals with higher toxicity, such as Coumaphos. However, proper use of miticides in the IPM program of Ontario has resulted in not finding Apistan® resistant Varroa mites. Beekeepers do not have to resort to chemicals such as Coumaphos.

In 1999 beekeepers in Ontario provided 85 samples of honey and wax to analyze for residues of 9 miticides used throughout the world. Samples were extracted and subjected to GC-MS analysis. Apistan® residues were not found in honey for sale to consumers. Wax from honey supers had an average of 1.04 ppm of Apistan®. Wax from brood chambers had average residues of 2.41 ppm of Apistan®. No samples taken exceeded the maximum allowable limits. One sample of wax from a brood chamber was found to contain 0.07 ppm of Coumaphos. This sample was from plastic frames coated with wax which was imported from the US. High levels of Apistan® and Coumaphos were found in honey and bees wax from Europe.



Prof. Rob Currie, University of Manitoba is Chair of the CAPA Research Committee. This year he has also taken over the responsibility as chair of the CBRF from Prof Mark Winston of Simon Fraser University.

Comparative Resistance of French and Ontario Bee Stocks to Parasitic Mites

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Personal observations of beekeepers and bee researchers in France indicate that *Varroa destructor* no longer has damaging effects on some stocks of bees. We have established a collaborative project to evaluate the degree of resistance of these French bees to Varroa mites. In 2000, research apiaries in Ontario and southern France containing colonies headed by the same stocks of bees from the two countries were established and intentionally infested with approximately equal numbers of local strains of Varroa (e.g., in Ontario, colonies headed by queens of French and Ontario origin received Ontario Varroa; in France, the hives were infested with French mites).

Bees from the hives were sampled in October, 2000, after brood rearing had ceased and all bees had emerged from cells. In our first assessment of relative resistance, the numbers of Varroa mites per bee in the October samples did not differ between the two geographic stocks. Additional analyses will be conducted during 2001 to further quantify the changes in Varroa populations in the two stocks, compare tracheal mite levels, assess hygienic and grooming behavior, and elucidate the factors underlying the apparent resistance to Varroa observed in France.

AFB Antibiotic Trials on Colonies with Oxytetracycline Resistance

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Widespread colony loss to AFB in Canada is prevented by prophylactic treatment of colonies with antibiotics, coupled with routine colony inspection and destruction of infected bees and equipment. Presently one antibiotic is registered for use in Canada, oxytetracycline hydrochloride (OTC). OTC has been used for the successful prevention of AFB since the early 1950s (Shimanuki and Knox 1994), however recent widespread resistance to OTC by *P. l. larvae* has occurred throughout the Americas (Alippi 1996, Miyagi 2000), including Alberta and British Columbia (CAPA 2000, Colter 2000). The size of the industry impacted by OTC-resistant AFB in Canada not only includes the $93 million generated by Canadian bees from the sale of honey (Statistics Canada 1998), but more importantly the $420 million generated from the pollination of oilseeds, tree fruit, berries, and cucurbits (CAPA 1995).

Proposed Project

Immediate and severe losses to AFB, particularly in Alberta and British Columbia, cannot be overcome without the development and registration of new antibiotics. Consequently, an objective of this project will be to evaluate 3 new antibiotic products for their ability to control rAFB (resistant AFB) with minimal undesirable side-effects.

An alternative strategy of managing AFB that may address the problems associated with relying on antibiotics would involve integrating a variety of non-antibiotic disease management tactics with reduced antibiotic use. The aim of an integrated disease management strategy would be to reduce the risk of bee disease outbreak by monitoring disease hazard and responding to the hazard with a combination of disease management tactics most appropriate to the hazard.

Three elements are required for an integrated AFB management strategy: 1) sensitive, precise and cost-effective surveillance of AFB hazard, 2) a diversity in control tactics that manage AFB at multiple stages of the disease cycle and 3) thresholds and guidelines to direct appropriate control tactics. The major objective of this proposal is to develop each of the three elements of an integrated AFB management strategy and integrate them into a simple, effective and efficient system that can be used by beekeepers to manage AFB with reduced levels of antibiotic.

Single Application Formic Acid Pad: an Evolved One Step Treatment for Mites in Honey Bee Colonies

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By the early 1990s', Formic Acid, although proven effective in controlling Varroa and Tracheal mites in honey bees, had not proven itself to be practical for the commercial beekeeper. A multiple application technique, using absorbent pads, had been developed, superceding spraying liquid formic acid. However, with three and six applications being required to control tracheal and varroa mites respectively, beekeepers were often unable to complete the full treatment regimen and had correspondingly poor results.

On the initiative of Ontario beekeeper Barry Davies, a single application pad method for delivering formic acid vapors, in surges, over the duration of the broods' post capping period, was developed by the Ontario Beekeepers Association technical transfer program scientist, Dr. Medhat Nasr. Beekeepers found that handling the extremely corrosive formic acid in liquid form continued to be a problem, as did sourcing out the proper materials, shipping and storing charged acid pads. Bee supply companies were unwilling to manufacture charged pads, so some beekeepers got together, formed NOD Apiary Products and the *Mite-Away*® Single Application Formic Acid Pad was developed. After just four years *Mite-Away*® is now being widely used as part of the IPM tool box.

The Impact of Gaucho® and TI-435 Seed Treated Canola On Honey Bees, *Apis mellifera* L.

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[Editor's note: This is an abridged version of the final paper made available after the Research Symposium. The full report can be obtained from either the senior author or Bayer AG.]

In the past few years there has been concern raised by beekeepers in Europe and Canada regarding the potential impact of GAUCHO® (a chloronicotinyl insecticide = Imidacloprid) seed-treated canola on honey bee behavior. In an effort to determine whether these concerns are justified a large–scale field demonstration was initiated in southern Ontario and Minnesota during the 2000 field season.

The objectives of this research were: 1) to determine the effect of GAUCHO® (Bayer Corp.), TI-435 (new chloronicotinyl product, unregistered – Bayer Corp.) and Vitavax RS Flowable (industry standard – Uniroyal Chemical Co.) on the behavior of honey bees in colonies placed near canola fields; and, 2) to determine whether hive products (nectar and pollen) collected by honey bees from seed-treated canola contained residues of the insecticides.

The results of the demonstration indicate that there was no impact of any of the seed treatments on measurements of sealed brood, nectar and pollen foraging activities, bee mortality, honey production, and general bee behavior (ie. aggressiveness, convulsions, other erratic behavior) at either the southern Ontario or Minnesota sites (Table 1).

Table 1. Mean values of results (V = Vitavax RS Flowable; G = Gaucho ®; T = TI-435) (ON = Grand Valley, Ontario for V and G and Elora for T; MN = Rosemount, Minnesota).

	Sealed Brood (cm^2)		Number of foragers ($no/m^2/min$)		Bee Mortality No of bees (rounded)		Honey Yield (kg) (rounded)	
	ON	MN	ON	MN	ON	MN	ON	MN
V	3285	5368	2.4	3.7	14	148	43	9
G	2735	5200	4.0	4.8	20	112	41	11
T	2939	5536	7.0	2.7	19	101	38	8

Average annual honey production in:
Ontario – 5yr average (1995-99) = 51.2 Kg
Minnesota – annual avg. (approx.)= 40.0 Kg

Although some samples of pollen and nectar collected from seed treated with Gaucho contained residues (Table 2), all levels detected were below the NOAEC (No Observed Adverse Effect Concentration) of 20 ppb. The fact that the residue levels were below the NOAEC supports our results that indicate no negative impact on bee behavior and hive variables (sealed brood, honey yield) for any of the colonies exposed to canola seed treated with the test product.

Table 2 Residue results for imidacloprid (I) and associated hydroxy (h) and olefin(o) metabolites in canola pollen and nectar (ON = Grand Valley, Ontario; MN = Rosemount, Minnesota; Con. = Control in location above).

Site	Days after Placement	Analyte	Pollen (ppb)	Nectar (ppb)
ON	7	O,H,I	<1.0	<1.0
ON	14	O,H,I	<1.0	<1.0
Con.	/	O,H,I	<1.0	<1.0
MN	7	O,H	<1.0	<1.0
"	"	I	7.6	<0.81
MN	14	O,H	<1.0	<1.0
"	"	I	4.4	<0.60
Con.	/	O,H,I	<1.0	<1.0

Imidacloprid and Bee Problems in France

Peter Dillon
Commercial Beekeeper
Concremiers, France

What is Imidacloprid?

It is a molecule (Figure 1) belonging to the class of the "chloronicotinyls" that was first synthesised in Japan in 1985 by Nihon Bayer Agrochem. It is used in a new class of pesticides referred to as systemic pesticides, Imidacloprid is the active ingredient used in the formulation of many products including: Gaucho® in addition to Admire®, Advantage®, Confidor®, Marathon®, Merit®, Premier®, Premise®, Polyaxe®, and Provado®.

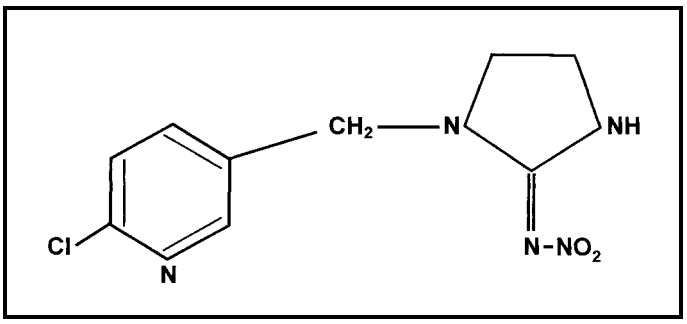


Figure 1. This is the representation of a molecule of Imidacloprid, the active ingredient used in the pesticide Gaucho® and the following pesticides: Admire®, Advantage®, Confidor®, Marathon®, Merit®, Premier®, Premise®, Polyaxe®, and Provado®.

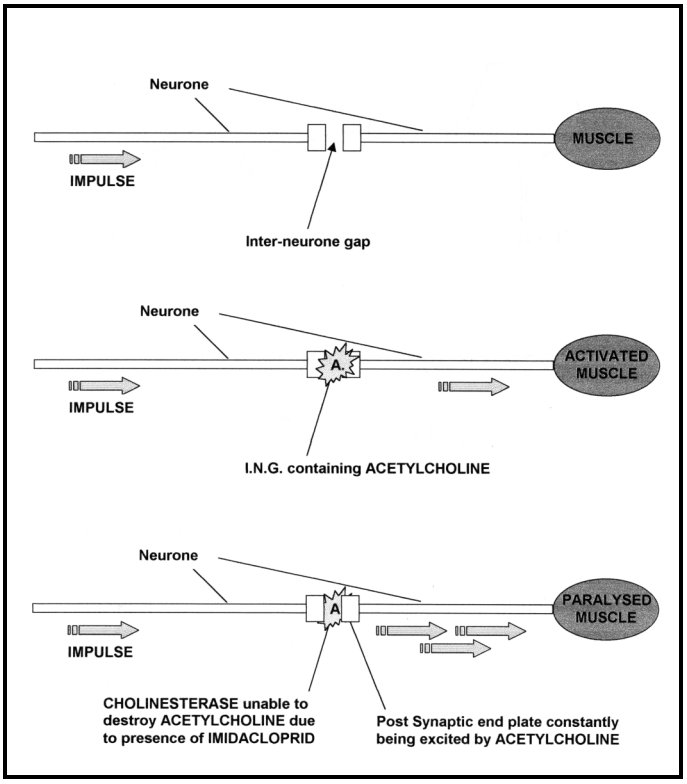


Figure 2. Imidacloprid works by disrupting the normal path of nervous impulses along the neurons to the muscles. Eventually the muscles no longer respond to the bee and she can not fly.

Imidacloprid –
how does it work?

It interferes with the transmission of the stimuli in the insect's nervous system by blocking the neuron pathway (Figure 2). This results in a build up of the neuro transmitter acetylcholine resulting in constant muscle stimulation which leads to paralysis in the insect - causing death. It is effective both on contact and through ingestion.

what does it control?

It targets insects that pierce plant tissue, eat plant tissue, or suck plant sap. In addition it is effective against termites, other soil pests and even mammalian pests such as fleas and ticks. In addition to target species many non-target species are effected in a similar manner.

Imidacloprid is highly systemic. When applied to a selected area of a plant tissue the Imidacloprid molecules are transported to all other parts of the living plant, usually through the sap, which becomes toxic.

Metabolically active areas (meristems) of the plant are usually favored as destinations, eg. apical tips (responsible for primary plant body growth), developing flower heads, plant reproductive sites such as anthers where pollen is produced, and internode areas (allowing growth in stem length in areas other than the tips).

This movement of the molecules allows the pesticide to provide the desired protection to the entire plant. It can be accomplished by foliage drench, soil application, or seed coating.

Imidacloprid –
the advantages

- A very stable molecule that is soluble in water (*0.51g/l*).
- All parts of the vegetation are impregnated permanently with the pesticide, thus only relatively small amounts of active material are required – highly toxic.
- This high toxicity removes the need for regular field surveillance and the need to work field in adverse conditions.
- Allows an economy of 1 to 3 foliage pesticide treatments depending on crop and conditions.
- Gives reasonable protection against aphids.
- Gives indirect protection against viral damage.
- Replacement for Lindane.

the application sequence in France

France was the first country in the world to accept the commercialization of Imidacloprid, data were first presented to the "Commission des Toxiques" – (Commission of Toxins) and approved in 1990. With the first use on:

- Beet – 1992 – as GAUCHO®
- Maize – 1993 – as GAUCHO®
- Sunflower, wheat, barley – 1994 – as GAUCHO®.

Use has since been expanded into:

- Orchards (foliage treatment) – as CONFIDOR®
- Market garden applications – as POLYAXE®

- Amateur garden use – as CONFIDOR®
- Flea and tick control in pet collars – as ADVANTAGE®

Bayer noted that *"6 years were sufficient between creation and commercialization, whereas normally it requires 10 years*" (ref. Bayer document: D6/8002739).

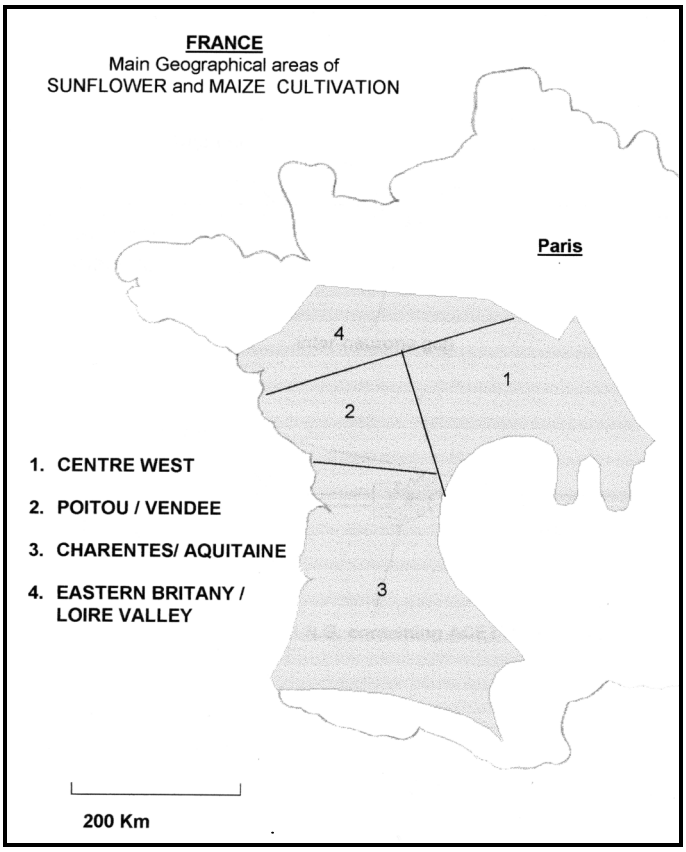


Figure 3. The location of the initials areas of concern in western France.

Where did this problem first occur?

Beekeepers in west central France were presented with unexplained problems with the sunflower honey harvest in 1994. The main geographical areas of sunflower and maize cultivation in France (Figure 3) are: Centre-west (1), Poitou/ Vendee (2), Charentes/ Aquitaine (3), and Eastern Britany/ Loire Valley (4). In 1994 the first appearance of Gaucho® treated sunflower seed and the routine use of bee hives in the sunflower areas resulted in the appearance of problems with bees in these sunflower areas.

A Chronology of Events

1994 autumn

Sunflower seeds are coated with Gaucho® prior to planting. The active ingredient, Imidacloprid, enters the plant tissue – is transported by the sap – which has by this point become toxic. It is transported to the metabolically active areas of the plant.

The product is a systemic neuro-toxin with long persistent properties working by either contact or ingestion – resulting in the death of the insect, possibly in this case, our bees.

These concerns were put to BAYER: The response: Nothing to do with their product!

Visible indicators of the problems observed within a honey bee colony during and after the sunflower nectar flow were identified. They included: loss of harvesting bees from bee hives, foraging bees hanging on to sunflower heads, slothal movement of bees, disorganised nectar collection behaviour on flowerheads, agitated and constant hind leg rubbing by bees, antennae grooming, excessive guard activity at hive entrance, lack of bee hive beard, increase in pollen collection by remaining bees, and large reduction in total honey harvest.

What could have been the cause of this phenomenon? Many possible factors were considered: Varroa, Varroa treatment, climate/weather, type of sunflower (variety, cultivar), ability and knowledge of affected beekeepers, virus infection, etc. - etc. moving on to some exotic ideas! And the traditional "never to be blamed" old enemy phytosanitary treatment (preventative crop protection).

1995

The same problems were repeated in this year, with the following difference: the affected area increased in size and the area of Gaucho® treated sunflower plants increased in size. At this time beekeepers realized that winter losses of stocks were increasing from the usual 5 to 10% to 25 to 40%. These symptoms led to serious consideration of sub lethal poisoning being the cause of the losses. After investigation it became obvious that the one common factor in all the affected areas was the presence of a particular pesticide – Gaucho®. In response to these concerns, in 1995 Bayer proposed to undertake some investigations.

1996

Again, the same problems arose during and after the sunflower crop. Bayer conducted studies in Germany between the 17th -19th of September in 1996. The resulting paper: "The *reaction of bees under the influence of the insecticide imidacloprid*" was presented to the international commission for plant-bee relationships, by Dr. H.W.Schmidt. The general findings indicate that:

"bees are badly affected by Confidor® from spray applications on flowers, and Gaucho® is mainly used on non-flowering crops … (eg. maize) or in flowering crops which are not visited by bees such as potatoes.

Those crops are of minor importance regarding exposure to bees. Regarding flowering crops, Gaucho® is registered for sunflowers, oil-seed rape (canola) and broad-beans. There remains the question whether there may be traces of Imidacloprid in the nectar or in the pollen."

Points raised by this study include the effects of the use of maize pollen, which is collected by bees in substantial amounts as provisions for over-wintering of the colony. The general questions of residues shows a lack of basic information regarding Imidacloprid and its persistence.

1996 Studies by **Dr. H.W. Schmidt:**
Results and Conclusions

This report, conducted early in the investigation period found *"the mortality in front of the 6 hives was slightly higher [in the treated area] than the untreated field, but was still considered normal."* With sub-lethal considerations, mortality in front of hive is only part of the required information. There was no indication of a search being carried out to see if bees were dying in the field and not returning to the hive to be observed.

The report found *"the flower visitation was unaffected. Compared with the untreated fields…..that means, that at the flowering stage residues of Imidacloprid after seed dressing (if there are any) must be so low, that they do not cause any reaction of the bees."* There is no mention of the control situation applied to this untreated field, ie. Its history of treatment.

The report stated there was *"no reaction in bees".* But then followed this comment by: *"Imidacloprid triggers among the bees the tremble dance, which is the message to protect the colony from suffering damage."*

The "tremble dance" is a reaction to some form of stress - what are these symptoms? Dance! Signs of poisoning!
This report convinces few especially in the beekeeping world of the harmless nature of Imidacloprid to honey bees.

1997

Same problems with bee colonies during sunflower nectar flow and again colony losses during winter and early spring.

In January Bayer concluded that Gaucho® used as a seed treatment for sunflowers was not the cause of our problems. Their findings indicate *"The domestic bee manifests its first behavioral symptoms from a concentration of 5000 ppb"* under laboratory conditions. But – under field conditions?

The first meeting with the Association de Co-ordination Technique Agricole (A.C.T.A.) was held on 24/Oct/97. The conclusion was that Bayer was unable to supply guarantees that its product was free from suspicion. The "Commission des Toxiques" asked its experts to investigate all known elements.

Their report was presented on 11/Dec/97 and concluded that there was an urgent need to study each side of the case.

1998

The use of Gaucho® treated sunflower seed was prohibited in the 3 Départements: Deux-Sevres, l'Indre, and la Vendee.

On 26/Jan/98 a steering committee was created, they designed the initial survey plans for a program of multi-disciplinary studies. The research program, included: field trials, controlled trials under tunnels, and laboratory trials for a total estimated cost of 6.6M FF (C$1.3M). The research program was presented to European Union for financial support on 17/Mar/98 – it was accepted with the EU supporting 50% of the costs.

A technical meeting was held in Luçon, Vendée on 31/Jul/98. Observations were presented on colony disturbances in both Gaucho® treated and untreated areas. Bayer produced a report:
"Les Dépopulations de Ruches: Aucun rapport avec Gaucho®" [Depopulation of hives: no effect with Gaucho®].

On 18/Nov/98 the preliminary report of the 1998 studies were presented: "Effects des produits Phytosanitaires sur l'abeillie - *Incidence du traitement des semences de tournesol par Gaucho® sur les disparations de butineuses".* [Effects of phytosanitary treatment on the honeybee – effects of treatment of the flower heads of sunflower by Gaucho® on the behavior of the foragers.]

This report results in the apparently contradictory conclusions: 1) laboratory trials indicate that there is a danger for bees from Imidacloprid at low concentrations (in the range of parts per billion (ppb)), residue analysis indicates these may be possibly encountered by bees in natural conditions, and 2) this risk is not observed or corroborated in field conditions. *(this conclusion was not validated by Drs. Bonmatin and Colin).*

From the results of these investigations, "The Commission des Toxiques" did not wish to take a definative position and proposed to undertake further studies in 1999.

The key information gained from research undertaken in 1998 resolved that during and after the maize and sunflower flowering period, (July/August) contamination by Imidacloprid was found in: i pollen, ii nectar, iii honey, and iv bees.

The pollen was particularly prone to contamination. All samples from treated sites were found to contain measurable quantities of Imidacloprid and 30% of the "control sites" were also found to contain Imidacloprid. Thus the new and possibly significant factor of soil persistence or accumulation was introduced.

1998 Studies:
Results and Conclusions

Imidacloprid could not be disproved as being the major cause of loss of the sunflower honey harvest as it was present in flower heads and pollen of treated and non-treated plants. (Bonmatin – C.N.R.S).

Control areas were contaminated by Imidacloprid (Bonmatin – C.N.R.S).

Bees showed abnormal behavioral patterns at concentrations of Imidacloprid found in sunflower flower heads and pollen (Colin – I.N.R.A).

Acute toxicity of Imidacloprid in bees (from LD 50) is in the order of a few nanograms (ng) per bee (L. Belzunces - I.N.R.A.).

Existence of biological effects (sub-lethal) at concentrations of 4 ppb (4 µg/kg) Imidacloprid. (Pham-Délègue, 1998), or at 6 ppb (Colin, 1998).

Minimum threshold value for NOEC (No Observable Effect Concentration) for Imidacloprid was not attained in 1998 (Colin - I.N.R.A.).

Observation of abnormal bee behavior on "control site" treated with Regent® – the active ingredient being fipronil (Colin – I.N.R.A).

Higher than usual harvesting levels of honeys (nectars) other than sunflower, whilst sunflowers were in flower. (Introduction to Final report No.3 June 2000 re-calling data from 1998).

Laboratory trials show bees affected at levels from 1 to 20 ppb Imidacloprid. (see assorted refs).

No difference between treated and control areas in observed bumble bee colonies. (J.N. Tasei – I.N.R.A.).

No significant difference between Gaucho® treated and control areas for other insect populations – confusion for population sources as data are limited and there are possible effects of fipronil (F. Faivre-d'Arcier *et al*. I.N.R.A.).

Numerous bee colony moralities during winter to early spring period whilst bees use their previous years pollen reserves. (General comment from Final report introduction).

Questions raised:

i Sub-lethal effects by pollen treated with Gaucho®?

ii Presence of Imidacloprid in other cultures not treated with Gaucho® (from soil residues)?

iii Effects from other cultures treated with Gaucho® (eg. Maize) from which pollen has been collected?

Points of particular significance to beekeepers (from the 1998 studies)

According to "Technical Information–Gaucho®" supplied by the manufacturer (Bayer): *"The toxin application method in seed treatment excludes all risk for bees".* However, this relates only to part of the toxicological studies – those uniquely relating to the bees' death i.e. Lethal Dose 50 (LD50) by ingestion measurements.

These LD 50 measures have changed over time as follows: **08/Jan/91**: Complementary Information No.1 of the Imidacloprid report, presented to the "Commission des Toxiques" in support of its application for "Authority for Sale" mentioned the LD50 was less than 1,500 ng/bee (nanograms per bee) (Drescher, 1990).

17/Dec/97: Bayer reports to Belzunces and Tasei, of the "Commission des Toxiques" that: the LD50 for honey bees is now 3.7 ng/bee. In addition '*It is also interesting to note that to reach the NOEC level the dose must descend to a level less than 0.1 ng/bee.* Such a dose of contaminate in the volume of syrup taken up into the bees honey sac (about 75 mg) corresponds to a concentration of 1.3 ppb of Imidacloprid. From these observations it can be concluded that the lethal concentration is in the range of few ppb. Such a value could be encountered by foraging bees in arable crop areas.

Sub-lethal toxicity of Imidacloprid for bees and their colonies may be a more important issue that short term lethal effects. These sub-lethal effects are often referred to, as the NOEC. The estimated values for these NOECs have also changed significantly over time. In Jan 1997 Bayer reported that "the domestic bee manifests its first … symptoms from a concentration of 5000 ppb." By 14/Jan/1998 Bayer restated the value before the "Commission des Toxiques" as a NOEC determined at 100 ppb. By the end of the year (16/Dec/1998) the NOEC presented to "Commission des Toxiques" was determined to be 4 ppb. Therefore the NOEC has fallen from 5000 ppb. to 4 ppb. in less than two years.

1999

On 22/Jan/1999 the Minister of Agriculture and Fisheries took the decision to suspend Gaucho® treatment of sunflower seed until results from 1999/2000 studies are received. This was the first time the "Precautionary Principal" had been applied to such an environmental issue. Bayer challenged this ministerial decision and three French Beekeeping unions intervened in the procedure, on the side of the Minister of Agriculture and Fisheries.

A meeting was held at Ministry of Agriculture and Fisheries on 24/Feb/99. Key points to be verified in further research during the 1999/2000 season were identified: metabolism of Imidacloprid in plants, toxicity of Imidacloprid with regard to bees, and persistence of Imidacloprid in soils. A significant point was made that all research to be undertaken by independent bodies.

On 02/Feb/99 the proposal for scientific protocols for the 'PROGRAMME 1999/2000', were completed under the direction of
CNEVA (C. Fléché): The three guiding principals were: 1. Research into sub-lethal effects of Imidacloprid on bees. – INRA (Institut National de la Recerche Agronomique),
2. Research into the persistence of Imidacloprid and its metabolites in soil planted with sunflower, maize, cereals and rape (canola) – CNRS (Centre National de Recerche Scientifique), and
3. Research into the bio-availability of Imidacloprid in vegetation and pollen - CNRS.

The Dutch government decided to withdraw all authorization for the field use of Imidacloprid on 13/Aug/99, it was to be effective from 01/Jan/00. The reasons given included: too long a persistence in the soil with regard to E.U. regulations, unacceptable toxicity for birds, and a 'non-conforming' toxicity to bees. Bayer responded, and blocked the process by submerging the Dutch administration with "new scientific data". A new decision is expected on 01/Nov/00.

On 29/Dec/99 the French State Council rejected Bayer's appeal relating to the suspension of Gaucho® as a sunflower seed treatment.

1999 Studies by **Dr..M. Colin, INRA, Avignon:**
Results and Conclusions

Frequency of feeding

1. Number of bees increases over first twenty minutes.
2. After 20 minutes the number of bees stops increasing and varies over time.
3. When compared with uncontaminated syrup the results show a significant effect for:
i Imidacloprid at 1, 2, and 3 ppb from the third day,
ii Olefin* 1.5 ppb from the third day, and
iii Olefin* 0.75 ppb after the fifth day.

Time spent at the feeders

For syrup contaminated with 3ppb Imidacloprid the average time spent at the feeder was 62 ± 5.1 seconds. For non-contaminated syrup the average time spent at the feeder was 99 ± 4.6 seconds.

No control bee spent less than 50 seconds at the feeder, while more than a third of the bees feeding at the contaminated syrup were present for less than 50 seconds (Figure 4).

For monohydroxy-imidacloprid* (3ppb) and Olefin* at 1.5 ppb and even at 0.75 ppb effects are seen in later stages of the trials. The NOEC threshold was not reached .Therefore the detrimental effects on bees (absence or reduction of foraging) was demonstrated at concentrations of 1 to 3 ppb.

***** *breakdown metabolites of Imidacloprid*.

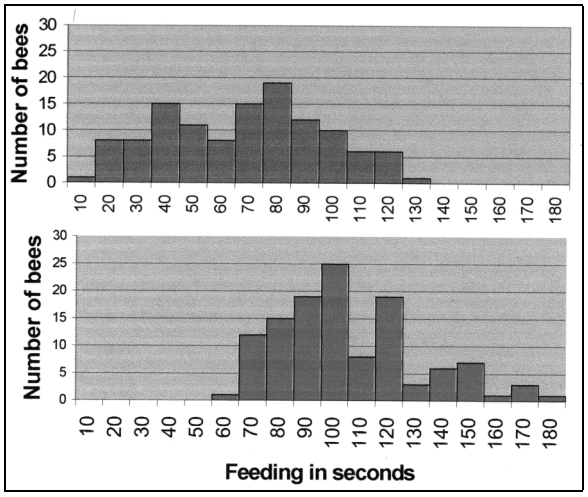


Figure 4. The frequency of feeding times for contaminated syrup (3 ppb Imidacloprid – upper graph) and un contaminated syrup – lower graph). (after Dr. Marc Colin, I.N.R.A., Avignon).

1999 Studies by **Dr. J-M. Bonmatin. CNRS, Orléans:**
Results and Conclusions 1999

The molecule Imidacloprid is found in all parts of the sunflower and maize plants. This is especially so in the flowers - an increase takes place as the flowers form, most probably allied to increased metabolic

activity. The soil surrounding a crop treated with Imidacloprid, contains the molecule at a level of tens ppb (and in some cases hundreds).

One year later, the Imidacloprid persists in the soil at on an average of 5 ppb. It is still present two years after treating a crop. It cannot be ignored that successive crop treatments will result in an accumulation of Imidacloprid.

Crops that are not treated with Imidacloprid are capable of absorbing residual material from the soil. Thus, weeds are capable of becoming contaminated with the pesticide and then visited by bees.

This residual characteristic of Imidacloprid most probably explains why in 1998 control areas in the trials showed little difference from treated areas.

The environmental safeness of Imidacloprid at the recognized dose is in doubt. There appears to be no safety factor (usually in the order of 10 times) between doses of Imidacloprid resulting in sub-lethal effects and its recommended use in field conditions.

A survey of 68 soil samples was carried out. Only 10 samples came from soils treated with Gaucho® during the survey year. Thus it was expected that

only approximately 15% of samples would have shown detectable levels. It was detected in 91% of samples, Imidacloprid was omnipresent in soils from treatments in previous years. In over half the samples, the contaminant occurred at levels over 10 ppb.

Imidacloprid was found to be present in 97% of samples of analyzed soils (78% quantifiable). Imidacloprid was found in non treated plants growing on soils treated with Gaucho® 1 to 2 years previously (Table 1). This is found for a wide collection of crops - sunflower, maize, wheat, rape and alfalfa. Comparisons of obtained average values indicate there is a possibility of Imidacloprid accumulation.

The results shown in Table 2 do not distinguish between different crops, however, they do indicate the possibility of accumulation of Imidacloprid in the soil.

2000 - A year of worry for beekeepers

Many beekeepers are giving up their business by choice (retiring, tired of current production climate). Others are being forced out of business due to financial constraints including loss of stock, loss of production, and an inability to maintain hive numbers. My losses in production hives from autumn 1999 until spring 2000 was, as my insurance expert certified, due to un-explained causes. These losses totaled 27% - no claim was possible as the cause was "inexplicable!"

The long awaited reports from studies carried out in 1999 began to arrive. In March 2000 two reports were presented (see references #1, 2) and in June 2000 two more reports were completed (references #3, 4). An additional three reports were completed in the second half of the year (references #5, 6, and 7).

Table 1. Data indicating the persistence of Gaucho® in soils on non-treated crops (after data from Colin and Bonmatin, 2000).

Crop growing on soil treated with GAUCHO® in previous year	Concentration of Imidacloprid in soil (ppb)			Number of Samples
	Lowest	Highest	Average	
Maize	< 0.1	5.7	/	4
Sunflower	1.6	9.5	5.4	6
Wheat	0.1 - 1	16	/	11
Rape (Canola)	0.1 - 1	22	7.7	11

Table 2. Persistence of Imidacloprid in the soils (after data from Bonmatin *et al*., 2000).

	Number	Concentration of Imidacloprid in soil (ppb)		
		Min. (ppb)	Max. (ppb)	Ave. (ppb)
Gaucho (year+1)	22	0.1< 6 samples < 1	15.2	4.8
Gaucho (year+2)	8	1 sample < 0.1	22 .	8.6

Bio-availability of Imidacloprid in vegetation

Control samples are extremely important as they act as an indicator of the true effects of a contaminant. From samples of mature sunflower growing on various "organic farms" no detectable measure of Imidacloprid was ever found. These samples may be considered as true controls. The use of "organic parcels of land" overcame the problem of false control references encountered in field trials during 1998. This validates the sampling protocol used in the 1998 collection of soil and vegetation samples.

Samples taken from Gaucho® treated sunflower at Baziéges, France show a steady decline in the concentration of Imidacloprid from 19 June until 15 July. The next measurement taken 21 July shows a near 5 fold increase in concentration, this timing corresponds to the development of the flower head. Measurements were taken for different sunflower

varieties – in all cases the time before the development of the flowerheads is considered the low point of Imidacloprid concentration in the vegetation. Analysis of samples from a variety grown in Isére, France, showed levels from 2.6 to 7 ppb - nearly a factor of 3 between the two values, indicating the wide range of concentrations that can occur and the necessity of adequate sampling to obtain accurate estimates of the pesticide present.

The same experiment undertaken in the Centre of France showed levels 2 to 5 times greater than those grown in Isére. The final result was similar, Imidacloprid was found in all parts of the sunflower plant at all stages of growth (Table 3). A significant increase in concentration of available pesticide in the flower heads, at levels damaging to foraging bees, were observed.

Table 3. Concentration of Imidacloprid in sunflowers growing on soil treated with Gaucho® in the previous year (after data from Bonmatin *et al*., 2000).

	Number of Samples				
	Total	**Imidacloprid concentration in Sunflowers (ppb).**			
		<0.1	0.1 to 1	1 to 10	10 to 100
Roots	2	0	1	1	0
Stems and Leaves	33	19	4	3	7
Flowers	24	21	1	2	0

Similar observations were recorded in maize, having over 10 ppb in the male flowers suggesting that increased metabolic activity during the flowering period concentrates the pesticide in the pollen.

Non-treated crops grown on soils treated with the pesticide in the previous year were investigated. Sunflower is capable of absorbing soil residues of Imidacloprid – the vegetation contained up to 10+ ppb. Such absorption of residual Imidacloprid occurred from soils treated two years before present crop.

In wheat low levels (>0.1 ppb) of Imidacloprid were detected. Rape (canola) samples resulted in 14 cases out of 18 showing a presence of the pesticide with one sample showing 5.1 ppb in the flowers. Maize, showed pesticide levels from 1.1 to 7.4 ppb.

The crops mentioned above are capable of absorbing residual Imidacloprid from the soil. Wheat appears to the least susceptible, followed by rape, maize and sunflower. In addition to planted crops, weeds are also capable of absorbing residual Imidacloprid - to levels comparable with those found in maize.

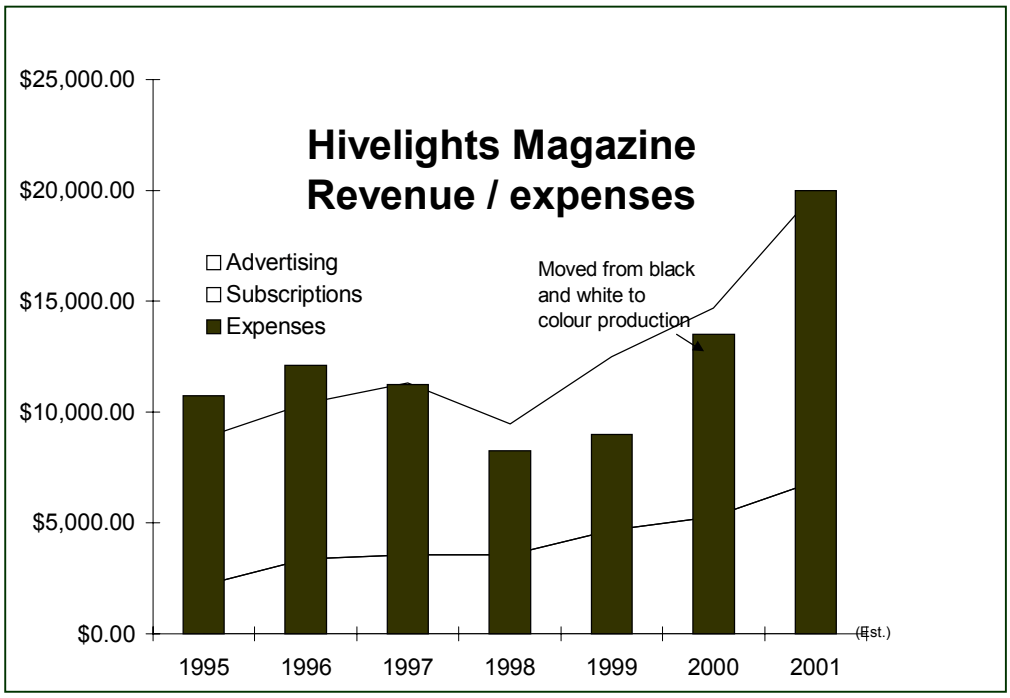
Questions arising from this work

- Wouldn't it be a grave error of judgement not to correlate the sub-lethal effects of Imidacloprid, which have been observed at low concentrations in the laboratory with those recorded near hive depopulation in the field?
- As the honeybee is considered as an indicator of the environment's state of health, does not the apparent danger for bees suggest that other beneficial insects and even other organisms (such as earthworms) are being threatened?
- If with the domesticated bee, other insects are being affected, does it not inevitably lead to a lack of pollination?
- Does not the persistence in the soil lead to a fear of accumulation of Imidacloprid and its metabolites in soil?

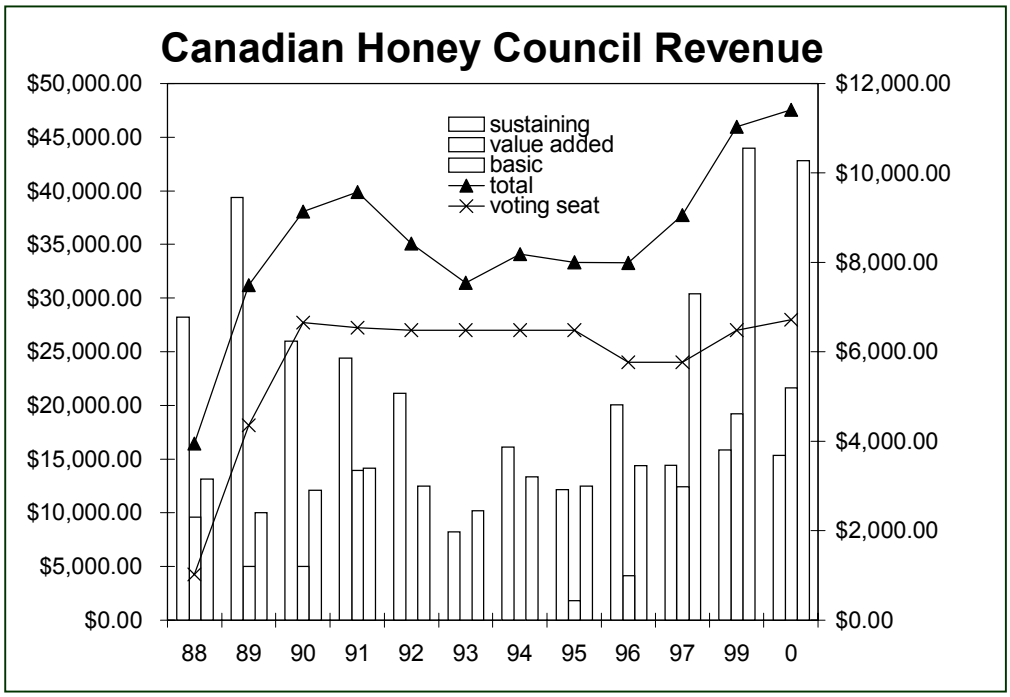
References

1. Intermediate Report No.1 - I.N.R.A./ C.N.R.S./ A.F.S.S.A. by Dr. M. Colin (I.N.R.A.) Avignon and Dr. J - M. Bonmatin (C.N.R.S.) Orléans. Mar. 2000.
2. Report "Impact de Imidaclopride et ses principaux métabolites sur l'abeille domestique *Apis mellifera* l.: Effets d'expositions chroniques sur la mortalité et apprentissage" by Minh-Hà Pham-Delègue (I.N.R.A.) Bures-sur-Yvette. Mar. 2000.
3. Intermediate Report No.2 -I.N.R.A./ C.N.R.S./ A.F.S.S.A. by Dr. M. Colin (I.N.R.A.) Avignon and Dr. J - M. Bonmatin (C.N.R.S.) Orléans. Jun. 2000.
4. Report No.3 "Effets des produits phytosanitaires sur les abeilles ". -I.N.R.A./ C.N.R.S./ A.F.S.S.A. by Dr. M. Colin (I.N.R.A.) Avignon and Dr. J - M. Bonmatin (C.N.R.S.) Orléans. Jun. 2000.
5. Report "Résumé des études sur l'Imidaclopride" by L. Belzunces (I.N.R.A.) Avignon. Aug. 2000.
6. Results of analysis of soils and vegetation. Maize and Rape (Canola) by Dr. I. Moineau (C.R.N.S.) Orléans. Oct. 2000.
7. Results of radioactive tracing of Imidacloprid using C_{14} in sunflower plants. Dr. F. Laurent (I.N.R.A.) Avignon. Nov. 2000.
8. "L'ensemble des données analysées par la commission ne permit pas d'incriminer formellement et exclusivement les traitements de semences de tournesol par la preparation GAUCHO, ni de conclure à leur absence de risque pour l'abeille." Publication of formal advice to Minister of Agriculture and Fisheries by "Commission des Toxiques". Dec. 2000.
9. The reaction of bees under the influence of the insecticide imidacloprid. Proceedings of the 6th International Symposium on Hazards of Pesticides to Bees. International Commission for Plant-Bee Relationships. By Dr. H.W. Schmidt. Sept. 1996.

Appendix 1: CHC Financial Activities



Graph 1. Hivelights costs and revenue from 1995 to 2001. – (Data for 2001 is an estimate. The move to full color increased the costs in 2000. The solid bars represent expenses while the striped and stippled sections represent subscription and advertising revenue respectively.



Graph 2. General revenue for CHC. Sustaining, value added, and basic individual memberships are represented by the bars and the Y-axis to the right. The voting seat membership and the total revenue from all sources are represented by the lines and the Y-axis to the left.

Appendix 2: Consolidated Balance Sheet and Statement of Income.

2000 Financial Statement
Consolidated Balance Sheet as at October 31, 2000
(Unaudited)

	2000	1999
Assets		
Current Assets		
Cash	3,660	
Short-term investments	61,329	21,570
Inventory	560	2,986
Accrued interest receivable	1,985	71
	67,534	24,627
Fixed Assets net book value		
Equipment	2,456	845
	$69,990	$25,472
Liabilities		
Current Liabilities		
Bank overdraft		508
Accounts payable	2,238	5,636
Deferred income	5,540	
	7,778	6,144
Members' Equity		
Reserves for Future Expenditures		
Capital reserve	5,440	5,440
Unapropriated Retained Earnings	56,772	13,888
	62,212	19,328
	$69,990	$25,472

Consolidated Statement of Income
For the year ended October 31, 2000 (Unaudited)

	2000	1999
Revenue		
Membership fees	47,695	46,705
Annual meeting	2,585	
Apimondia profit share	50,000	
Apimondia sales	277	
Donations - Canadian Bee R. Fund	1,588	1,080
Hive lights	9,418	7,849
Interest	2,421	581
Promotional materials	139	1,435
Other	205	30
	114,328	57,680
Operating Expenses		
Advertising & promotion		1,637
Annual meeting	813	1,729
Apimondia committee	3,120	507
Awards and donations	349	339
Bank charges	87	91
Canadian Bee Research Fund - Admin.	132	
Canadian Bee Research Fund - Donations	1,588	1080
Credit card charges	44	
Hive lights	13,565	8,827
Memberships and Subscriptions	1,177	1,137
Office	2,037	3,013
Other		134
President's honorarium	2,000	3,000
Professional fees	1,243	1,204
Rent- building	1,200	1,250
Telephone	1,609	1,419
1,594 Travel	3,527	2,875
Wages and benefits	38,470	29,033
	70,961	57,275
Net Income Before Amortization	43,367	405
Amortization	483	210
Net Income for the Year	$42,884	$195

Appendix 2 con't: General Fund Balance and Statement of Income.

2000 Financial Statement
General Fund Balance Sheet as at October 31, 2000
(Unaudited)

Assets	2000	1999
Current Assets		
Cash	3,790	
Cash Short-term investments	5,000	15,241
Inventory	560	2,968
Accrued Interest receivable	165	56
	9,515	18,283
Fixed Assets net book value		
Equipment	2,455	844
	$11,970	$19,127
Liabilities		
Current Liabilities		
Bank overdraft		473
Accounts payable	2,236	5,634
Deferred income	5,540	
	7,776	6,107
Members' Equity		
Unappropriated Retained Earnings	4,194	13,020
	$11,970	$19,127

General Fund Statement of Income
For the year ended October 31, 2000 (Unaudited)

	2000	1999
Revenue		
Membership fees	47,695	46,705
Annual meeting	2,585	
Apimondia sales	277	
Donations - Canadian Bee R. Fund	1,588	1,080
Hive lights	9,418	7,849
Interest	537	417
Promotional materials	139	1,435
Other	205	30
	62,444	57,516
Operating Expenses		
Advertising & promotion		1,637
Annual meeting	813	1,729
Apimondia committee	3,120	507
Awards and donations	175	175
Bank charges	87	91
Canadian Bee Research Fund - Admin.	132	
Canadian Bee Research Fund - Donations	1,588	1,080
Credit card charges	44	
Hive lights	13,565	8,827
Memberships and subscriptions	1,177	1,137
Office	2,037	3,013
Other		134
President's honorarium	2,000	3,000
Professional fees	1,243	1,204
Rent- building	1,200	1,250
Telephone	1,609	1,419
Travel	3,527	2,875
Wages and benefits	38,470	29,033
	70,787	57,111
Net Income Before Amortization	(8,343)	405
Amortization	483	210
Net Income for the Year	(8,826)	195
Unappropriated Retained Earnings beginning	15,020	12,934
Prior year's adjustment	(2,000)	(5,398)
Transfer from Projects Fund	0	5,289
Unappropriated Retained Earning, end of year	$ 4,194	$ 13,020

Appendix 3: CBRF (Canadian Bee Research Fund) Financial Statement.

Canadian Bee Research Fund
2000 Financial Statement
Consolidated Balance Sheet as at December 31, 2000
(Unaudited)

Assets	2000	1999
Current Assets		
Cash	1,105	2,795
Short-term investments	419,791	107,199
Accounts receivable	560	9,730
Accrued Interest receivable	260	1,671
	$421,156	$121,395
Liabilities		
Current Liabilities		
Accounts payable	30,396	30,350
	7,776	6,107
Equity		
General Fund Balance	20,913	18,705
Endowment Fund Balance	369,847	72,340
	390,760	91,045
	$421,156	$121,395

Canadian Bee Research Fund
General Fund Statement of Operations and Changes in Fund Balances
For the year ended December 31, 2000
(Unaudited)

	2000	1999
Revenue		
Grants		30,000
Donations	312,190	8,030
Investment Income		316
Other	5,065	8,025
	317,255	46,371
Less transfers to Endowment Fund	284,185	6,455
	33,070	39,916
Operating Expenses		
Bank charges	32	7
Office	411	209
Professional fees	420	725
Research grants	30,000	20,270
	30,863	21,211
Net Income for the Year	2,207	18,705
Fund Balance beginning of year	8,976	0
Prior years adjustment	9,730	0
Balance, end of year	$ 20,913	$ 18705

Appendix 4: Honey Inspection Program, Canadian Food Inspection Agency (CFIA)

Residue testing for honey (fiscal year) 1999-2000

	Amitraz	Antibiotic	Pesticides	Phenol	Sulfonamide	Total
Domestic	0	12	0	1	0	13 of 297
Imported	0	0	0	11	12	23 of 317

Sampling for honey adulteration (fiscal year) 1999-2000

	Canada	China	USA	Saudi Arabia	Egypt	Greece	Hungary	New Zealand
Satisfactory	57	5	6	1	0	1	2	2
Unsatisfactory	0	8	6	0	1	1	0	0

Registered Establishments

	Pasteurizers	Packers	Producer/Graders
Atlantic	0	5	5
Quebec	3	6	5
Ontario	2	8	10
West	3	25	134
Total	8	44	165

Honey Facility Inspection and MCAP

(Multi Commodity Activities Program)

It is a multi purpose inspection system designed to incorporate all aspects of food production/processing (facility, product, import and export inspection).

Who is affected?

Persons who ***import, export or interprovincial trade*** in honey as food must ensure honey is

- is prepared in a sanitary manner; and
- meets all other requirements of the Food and Drugs Act and the Food and Drug Regulations(section 4.1Honey Regulations.)

Persons who ***market*** in ***export trade*** any honey for which grades or standards are prescribed by these Regulations must ensure that

- a) the honey was prepared in a registered establishment in accordance with these Regulations; and
- b) the honey meets the requirements of the appropriate grade or standard prescribed by these Regulations.

The MCAP system will

- Record and report all results obtained from CFIA inspection and audit activities.
- Capture all types of data, for example: facility sanitation activities, product info.
- Make results and reports generated from these activities available all CFIA levels.
- Link to other CFIA Information Systems

Highlights

Establishment operators take responsibility for the products that they market. Increased emphasis is placed on food handling procedures, food safety programs and record keeping.

Emphasis is now on:

- Record keeping
- Employee training, cleanliness and conduct
- Recall capability
- Non-food chemical use and storage
- Water quality

Contacts

- John McCool - Honey Program Specialist Ottawa, ON.
- James Muir - Network Program Officer - Western Area.
- Linda Billey - Senior Inspector - New Westminster, B.C.
- Howard Willems - Inspector - Saskatoon, SK.
- Sam Barlin - Inspector - Winnipeg, MB.
- Sal DeMonte - Network Program Officer- ON.
- Yin Lee - Network Program Officer – ON.
- Huguette Robichaud - Network Program Officer – QC.
- Ann Fillmore - Network Program Officer - Atlantic Region.

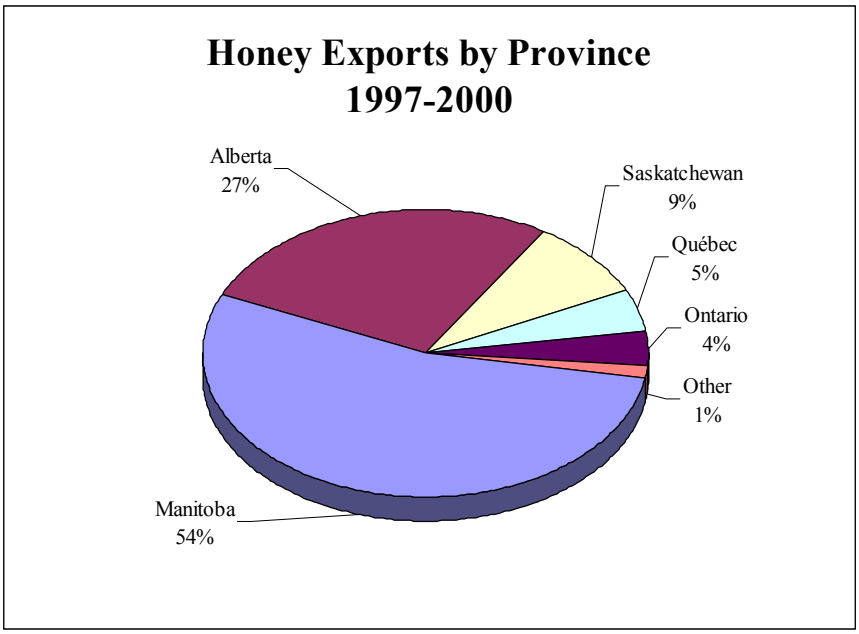
Appendix 5: Canadian honey production, Statistics Canada.

Estimates of the Number of Beekeepers, Colonies of Bees, Production of Honey and Value in Canada[1] by province[2] , 1999 and 2000 with Five-year averages, 1994 – 1998

Province and Year	Beekeepers number	Colonies number	Honey Production Total '000 lbs.	tonnes	Value '$'000
Prince Edward Island					
Average 1994 – 1998	64	823	83	38	119
1999	35	1,580	111	50	155
2000 P	35	1,775	80	36	
Nova Scotia					
Average 1994 - 1998	472	13,700	799	363	1,234
1999	440	17,500	1,155	524	1,825
2000 P	450	19,000	855	388	
New Brunswick					
Average 1994 - 1998	445	5,852	344	156	489
1999	275	6,000	270	122	354
2000 P	275	7,585	265	120	
Québec					
Average 1994 - 1998	619	28,388	3,091	1,402	5,363
1999	324	34,129	4,072	1,847	4,830
2000 P	325	32,500	3,283	1,489	
Ontario					
Average 1994 - 1998	4,200	80,800	7,998	3,628	8,570
1999	3,600	85,000	8,245	3,740	8,059
2000 P	3,600	85,000	6,375	2,892	
Manitoba					
Average 1994 - 1998	828	82,000	14,299	6,486	13,362
1999	855	92,000	16,560	7,511	12,420
2000 P	860	95,000	13,300	6,033	
Saskatchewan					
Average 1994 - 1998	1,400	87,100	16,668	7,560	15,053
1999	1,350	100,000	24,000	10,886	18,000
2000 P	1,350	100,000	18,000	8,165	
Alberta					
Average 1994 - 1998	741	177,800	26,897	12,200	24,853
1999	725	205,000	24,805	11,251	20,158
2000 P	725	215,000	23,220	10,532	
British Columbia					
Average 1994 - 1998	2,319	44,293	3,782	1,716	5,432
1999	2,357	47,615	2,571	1,166	4,561
2000 P	2,293	47,968	3,981	1,806	
Canada					
Average 1994 - 1998	11,088	520,756	73,961	33,548	74,475
1999	9,961	588,824	81,789	37,099	70,362
2000 P	9,913	603,828	69,359	31,461	

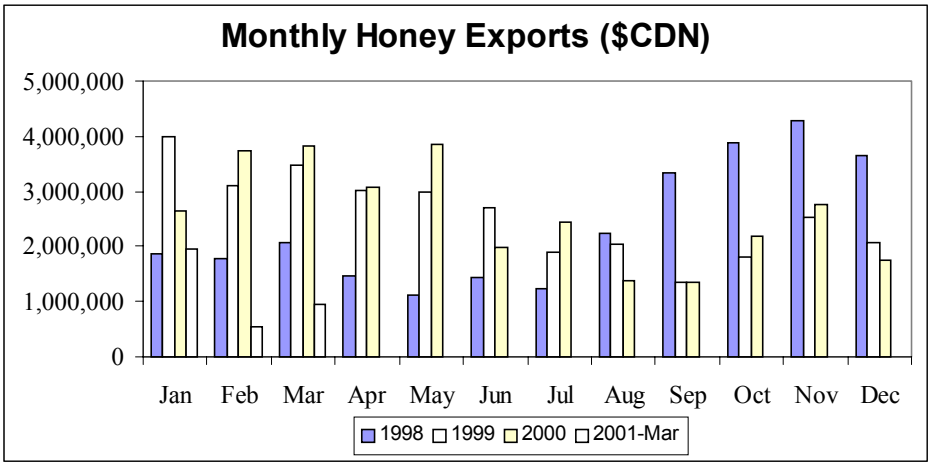
[1].Figures compiled by Statistics Canada from provincial data with the exception of NB and PEI where data are collected through a Statistics Canada mail survey.
[2] Does not include Newfoundland
Note: 1 pound = 0.453 kilogram; 2,204 pounds = 1 metric tonne.
P Preliminary

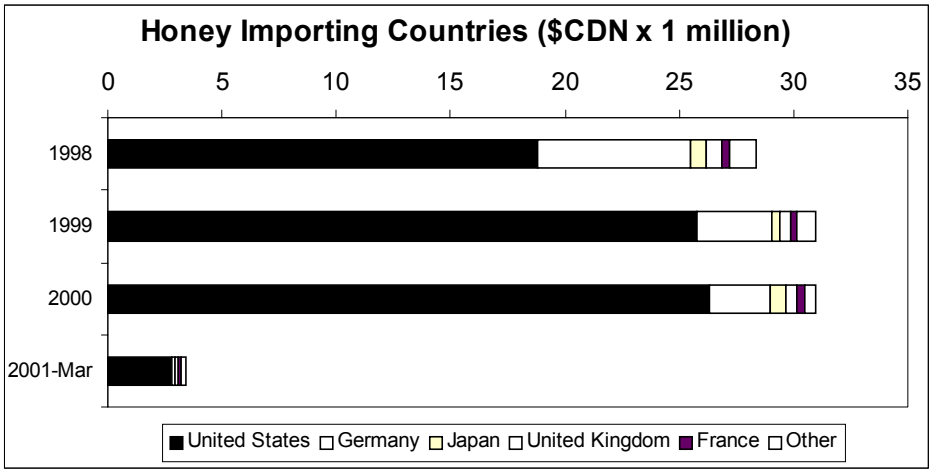
Appendix 5: Value of Canadian honey production, Statistics Canada. Con't.



Graph 1. Percentage of honey exports by province for the past 4 years.

Graph 2. Value of monthly Canadian honey exports for 1998, 1999, 2000, and January to March 2001.





Graph 3. Value of exports of Canadian honey by major importing country for 1998, 1999, 2000, and January to March 2001.

CHC is active in
Providing advice on honeybee import protocols to maintain healthy stocks of honey bees.

- Lobbying to eliminate Environmental assessment fees from imports of honey bees.
- Lobbying to enforce labeling of pure Canadian honey.
- Pursuing a national strategy for a program of safer application of pesticides.
- Lobbying to have apiarists included in farm support programs.
- Establishing a national code of Good Management Practices.
- Lobbying for the use of safer chemicals for horticulture.

Benefits of Membership in CHC

- **N**ational representation at government level
- **H**ivelights magazine published 4 times per year
- **C**urrent information on the apiculture industry
- **T**eachers kits and recipe brochures
- **W**eb listing on the CHC web site

CHC needs your support
through your annual
membership to carry out its role**.**

Canadian Honey Council
E-mail: CHC-CCM@telusplanet.net
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Join the CHC
and support beekeeping in Canada

Membership categories

❒ Basic (0-99 hives)	$ 40
❒ Value added (100-499 hives)	$ 75
❒ Sustaining (500+ hives)	$ 150
❒ Industry	$ 200
❒ Voting delegate	$3,500

_____
Name

_____
Company

_____
Address

_____
City Province

_____
Postal code

_____
Telephone No Fax No.

_____
E-mail address

Beekeepers in business can claim CHC membership and travel to the annual meeting as eligible business expenses for tax purposes.

Make cheque payable to (we also take VISA)
Canadian Honey Council
and mail to:

Canadian Honey Council
Suite 236 234-5149 Country Hills Blvd
Calgary AB T3A 5K8

Donations to the CBRF are tax deductible and welcome at any time.

For more information
www.honeycouncil.ca

Honorary Members

Awarded	Honorary Members		
1950	Hon. J.G. Gardiner	Ottawa	ON
1950	William R. Agar	Brooklyn	ON
1950	Harry Jones	F.W. Jones & Son	
1951	J.W. Braithwaite	Brandon	MB
1950	G.H Pearcey	Kelowna	BC
1950	C.B. Gooderham	Ottawa	ON
1950	Tom H. Shield*	Manager, Ontario Honey Producers Co-op, Toronto	ON
1951	P.C. Colquhoun	Maple Creek	SK
1951	C.G. Bishop	Sherbrooke	QC
1955	Harriet Grace	Director American Honey Institute,Madison	WI
1955	J.N. Dyment	Smithville	ON
1956	F.R. Armstrong	Dominion Honey Specialist, Ottawa	ON
1956	W.H. Turnbull	Vernon	BC
1964	J.Percy Hodgson	Hodgson Bee Supplies, New Westminster	BC
1964	H. C. Allen	Toronto	ON
1963	C.F. Pearcey	Kelowna	BC
1965	Roy M.Pugh	Tisdale	SK
1965	Frank Garland*	Winnipeg	MB
1973	F.L. Rathje*	Bassano	AB

Fred Rathje Award

This award was established as a memorial to Fred Rathje, a honey buyer and plant manager at Bassano, AB.
Fred was secretary of the Canadian Honey Council from 1975 to 1982. He took great pride in adding fun to all the conventions and meetings that he attended.

This fund was set up in 1984 as a dedication to his memory.
It is awarded annually to a person who has made a significant positive contribution of innovative, creative, and effective effort for the betterment of the bee industry of Canada during the previous year.

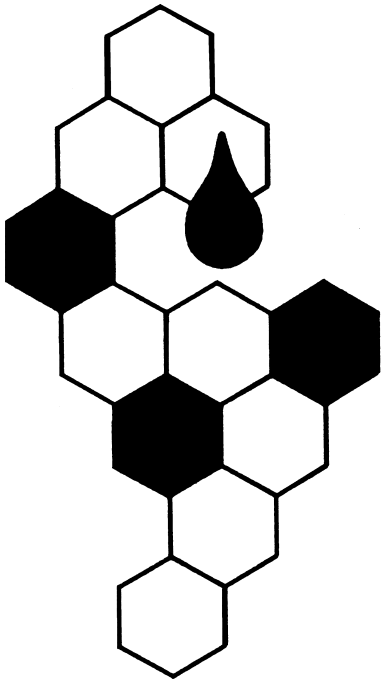
- 2001 Don Nelson (Alberta)
- 2000 John Gruszka (Saskatchewan)
- 1999 Doug McCutcheon (British Columbia)
- 1998 Jean Pierre Chapleau (Quebec)
- 1997 Merv Malyon (Manitoba)
- 1996 Lorna and Jack Robinson (Ontario)
- 1995 Gordon Kern (British Columbia)
- 1994 Kerry Clark (British Columbia)
- 1993 Linda Gane (Saskatchewan)
- 1992 Babe and Charlie Warren (British Columbia)
- 1991 Gerry Paradis (Alberta)
- 1990 Cam Jay (Manitoba)
- 1988 Don Dixon (Manitoba)
- 1987 John Corner (British Columbia)
- 1986 Gerry Smeltzer (Nova Scotia)
- 1985 Paul Pawlowski (Alberta) First year of the award

Canadian Honey Council
Conseil canadien du miel
Suite 236, 234-5149 Country Hills Blvd
Calgary, AB T3A 5K8

To:

61th Annual Meeting of the Canadian Honey Council is to be held in Banff, Alberta (January 31 - February 2, 2002) in co-operation with the Calgary Beekeepers Association.

62nd Annual Meeting of the Canadian Honey Council is to be held in Niagara Falls (4-6 December, 2002) in co-operation with CAPA and the Ontario Beekeepers Association and in association with AAPA, AIA and AHPA.



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