

**CANADIAN ASSOCIATION
OF**



PROFESSIONAL APICULTURISTS

L' ASSOCIATION CANADIENNE DES
PROFESSIONNELS DE L' APICULTURE

Proceedings 2004

**WINNIPEG, MANITOBA
JANUARY 2004**

CAPA PROCEEDINGS 2004

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**CANADIAN ASSOCIATION OF PROFESSIONAL APICULTURISTS
ANNUAL MEETING
WINNIPEG, MANITOBA
JANUARY 27 - 28, 2004**

MINUTES

Members present

C. Boucher, R. Currie, D. Dixon, J. Gruszka, H. Higo R. Lafrenière, A. Melathopoulos, D. McRory, J. Moran, M. Nasr, S. Pernal, C. Scott-Dupree, A. Skinner, P. vanWestendorp, R. Underwood

Guests & Speakers

B. Ballard, H. Clay, S. Belaissaoui, G. Hicks, W. Howland, P. Kittilsen, F. Makki, A. Moyen, E. Nowek, N. Specht,

MEETING CALLED TO ORDER BY President R. Currie.

R. Currie welcomed everyone to the CAPA and CHC joint morning meeting and conducted a round-table introduction. Rob announced that the AIA/AAPA report would be moved to Wednesday to allow Sue Cobey to attend.

**Motion: Moved by J. Gruszka and seconded by S. Pernal to accept the agenda as presented
CARRIED**

President's Report

Rob Currie

It has been over a year since our joint meeting with the Ontario Beekeepers Association, Canadian Honey Council, the Apiary Inspectors of America and the American Association of Professional Apiculturists. I would like to thank all of those who were involved in organizing that meeting including the Ontario Beekeepers Association and Jeff Pettis, the President of the American Association of Professional Apiculturists. Special recognition should go to Cynthia Scott-Dupree for organizing what was the best bee research symposium in Canada since Apimondia. Our members and all in attendance thoroughly enjoyed the meeting and are looking toward planning another joint meeting at some point in the future. Thank you Cynthia.

I would particularly like to thank our committee chairs and committee members who have been busily working on a number of issues that arose from last years annual meeting and new items that have come to our attention. Perhaps the most significant was a request from Canadian Honey Council to work with Medhat Nasr to develop an import protocol for queens. The goal was to develop a feasible protocol to use in the event that the industry made a decision to import queens into Canada. I chaired an ad-hoc committee on the issue that consisted of the President of CAPA and the members of the import committee. The committee worked to come up with a workable protocol that could then be forwarded to Provincial Beekeeping Associations for comment. I would like to thank Medhat, John, Gard, Chris and Doug for the tremendous amount of effort that was put into examining this issue on very short notice.

Another significant achievement this year relates to CAPA's role in fostering the dissemination of apicultural knowledge. Adony has done a tremendous job developing our website www.capabees.com. This asset will enhance our extension efforts and I hope that all of you will contribute when Adony calls upon you for your assistance in developing content.

A number of our members have retired or shifted career paths since November of 2002. Thanks go to Don Nelson, John Gates and Don Dixon for the tremendous contributions that these individuals have made to our organization over the course of their careers. We hope that they will stay in touch.

The turnover in our membership will present us with additional challenges. To fulfil the void left by these departing members, I ask all of our members to encourage their colleagues to regularly attend CAPA meetings. I also ask our younger members to become active in chairing committees to ensure that CAPA remains a dynamic force to promote apiculture in Canada.

We have a busy meeting ahead of us. I hope that you all enjoy it and have a productive meeting.

Motion: Moved by P. van Westendorp and seconded by C. Scott-Dupree to accept the President's report as presented

CARRIED

CHC Report

Wink Howland & Heather Clay

During 2003, the CHC has spent a tremendous amount of time, energy and money, in working towards the establishment of a "Canadian On Farm Food Safety" Program. The aim of this program is to put in place, an on farm operating system that will ensure the safety of our honey production, handling, and packing procedures. This requires considerable co-operation with various government organizations and at the end of the day should put our honey producers among the best in the world in terms of quality assurance. There are problems, though, and that is in the heavy degree of bureaucracy involved in developing the protocols. There is a danger that the sheer weight of paperwork will cause the average producer to shun the program. There is also a concern, that the costs of putting the system in place and then paying for the audit will not be able to be recovered by the producer.

We have already taken substantial steps towards achieving my third goal for Council, and that is the development of Council as an industry reference. Primarily due to the diligent efforts of Heather Clay, our National Co-ordinator, we have an excellent website at www.honeycouncil.ca. As more and more beekeepers become computer literate, this site will become increasingly valuable as a tool for accessing the most up-to-date information about Canadian beekeeping. It will also provide links to a host of other related sites. In other words, it has the potential to become the one-stop shopping center for Canadian beekeeping. The site already offers a massive amount of information, and will only get better as Heather continues to add links and information. The second instrument in achieving this information goal is our Hivelights magazine. In three short years, again under the directorship of Heather Clay, this magazine has become recognized internationally, for the quality of its production and articles. I would encourage those of you receiving it to share it with your fellow beekeepers, in an effort to encourage them to take out a membership. We know that this magazine is desirable, and it was with this knowledge, that our Board decided that, library copies excluded, only CHC members would be entitled to receive a copy. As this magazine gains in circulation through member support, hopefully it will gather greater membership numbers.

Comments:

Questions revolved around registration of oxalic acid, such as what additional information will be need with regard to efficacy in different geographic regions. CHC is also working with the Bar Code Association to explore ways of reducing the financial burden of bar coding for small honey packers. The discussion also included comments about the importance of CHC and CAPA work with PMRA on registration issues and to continue tot strengthening their relationship with the federal government and agencies like PMRA.

R. Currie thanked Wink and Heather for their report and wished them the best with the remainder of their meeting.

Motion: Moved by C. Scott-Dupree and seconded by J. Gruszka to accept the CHC Report as presented

CARRIED

CFIA Report

Samira Belaissaoui

At this time, the CFIA is continuing the legal process towards amending the current regulatory prohibition in a manner that would allow the import of honeybee queens and their attendants with the use of an import permit issued pursuant to Section 160 of the Health of Animals Regulations. Any proposed regulation will be published in Canada Gazette 1 for a comment period of thirty (30) days. It is imperative that we receive a definitive position from each province on its position on the proposal, recognizing that there are certain issues around the proposed importation which cannot be addressed to the satisfaction of all.

We are seeking the position of each province on the proposal while taking into consideration the following points:

- Should a decision go forward to amend the regulations and allow importation, the conditions of the import permit will be based primarily on those developed at the October 2003 meeting in Kelowna.
- Relative to provincial requests that information be shared on the identities of the holders of federal import permits, the issue is complex and remaining time frames are inadequate for a mechanism for sharing information to be put in place prior to the 2004 import season. However if it is requested, the CFIA can identify to provincial apiculturists the town or municipality where import permit holders reside, provided that there is more than one beekeeper in an area.

Following the provinces' request for a Memorandum of Understanding (MOU) for the sharing of importer information, in regards to the importation of honeybee queens from the continental U.S, the Canadian Food Inspection Agency (CFIA) suggests that the Legal Services of each province provide the following information to CFIA legal counsel Mrs. Gloria Mintah, ((613) 225-2342 ext. 4440, e-mail: mintahg@inspection.gc.ca).

- clear and detailed description of the information requested;
- with respect to what laws administered and enforced by the province is the information required;
- the reason why the information is needed and the use to be made of the information; and
- how the information will be protected by the province.

While this information has been provided previously to CFIA officials by some provinces, it would be appreciated if the provincial legal departments would contact CFIA Legal Services directly in this matter

Comments:

Questions revolved around when the regulation change was going to be published in the Canada Gazette. Dr Belaissaoui was not able to give a definitive answer but that before the regulation would come into effect it would also have to be published in the Canada Gazette II.

Minutes from 2003 AGMs – Niagara Falls, Ontario, December 4, 2003

Motion: Moved by J. Gruszka and seconded by C. Scott-Dupree to waive the reading of the minutes and accept the minutes with the following correction: CFIA Report - 25 km instead of 25 miles.

CARRIED

Financial Report

Rhéal Lafrenière

CAPA 2003 FINANCIAL STATEMENTS

		<u>11/29/02</u>		<u>01/01/03</u>
Opening balance		9,244.55		10,889.13
	Nov 29-Dec 31		Jan 01-Dec 31	
	2002		2003	
REVENUE	\$		\$	
2002 overdue Memberships (1 Full + 1 Assoc)			60.00	
2003 Membership (27 members)				
22 Full @ \$40	680.00		200.00	
5 Assoc @ \$20	20.00		80.00	
2003 Meeting registration (Niagara)				
20 @ \$50 + \$3.50	963.00		107.00	
Breakfast Meeting - (Brian Jamieson)	12.00			
Publication sales	25.00		6,307.21	
Interest				
Bank account	0.03		6.51	
GST Rebate				
	<u>1,700.03</u>	<u>10,944.58</u>	<u>6,760.72</u>	<u>17,649.85</u>
EXPENDITURES				
Proceedings				
Printing				
Mailing				
Publications				
Printing				
S/H charges (Uof G)			1001.22	
IBRA membership			136.02	
Awards				
Student award (Robyn Underwood)			200.00	
Merit award				
CAPA website (Adony)				
Sympathy card - Maurice Smith				
GST remittance			298.20	
Apimondia'99 GST rebate (CBRF)	50.45			
Niagara Falls Meeting				
S/T Expenses				
Misc. (postage, receipt book, cheques)				
Bank charges	5.00		30.00	
	<u>55.45</u>	<u>55.45</u>	<u>1,665.44</u>	<u>1,665.44</u>

		<u>10,889.13</u>		<u>15,984.41</u>
Closing balance	12/31/02	10,889.13	12/31/03	15,984.41
		-		-
EQUITY				
Term Deposit		16,273.00		16,380.97
Bank account		<u>10,889.13</u>		<u>15,984.41</u>
	TOTAL	27,162.13		32,365.38

Motion: Moved by M. Nasr and seconded by D. McRory to accept the 2003 Financial Report as presented

CARRIED

Motion: Moved by C. Scott-Dupree and seconded by D. Dixon that CAPA send IBRA \$200 for sponsorship rather than membership.

CARRIED

Motion: Moved by J. Gruszka, seconded by S. Pernal that the registration fee for the CAPA business meeting in Winnipeg be set at \$50 + GST(\$3.50) and that membership fees for 2004 remain the same as the previous year (i.e. \$40 for Full membership and \$20 for associate membership).

CARRIED

Budget Committee

Rob asked Cynthia Scott-Dupree, Steve Pernal, Heather Higo, and Rhéal Lafrenière to prepare the 2004 proposed budget for presentation on January 28, 2004.

CAPA 2004 PROPOSED BUDGET

Opening balance(01/01/04)		15,984.41
		Nov. 29, 2002 - Dec. 31, 2003
REVENUE		<u>\$</u>
2004 Membership (27 members)		
22 Full @ \$40		880.00
5 Assoc @ \$20		100.00
2004 Meeting registration (Winnipeg)		
25 @ 50		1,250.00
Publication sales (1500 units)		4,500.00
Interest		
Bank account		5.00
GST Rebate		2,000.00
		<u>8,735.00</u>
		<u>24,719.41</u>

EXPENDITURES

Proceedings (2003 + 2004)		
Printing	500.00	
Mailing	140.00	
Publications		
Printing	6,000.00	
S/H charges (Uof G)	600.00	
IBRA membership	250.00	
Awards		
Student award ()		
Merit award	2,500	
CAPA website (Adony)	600.00	
Centennial Reception (Winnipeg)	200.00	
Slessor Symposium	200.00	
Misc. (postage, receipt book, cheques)	15.00	
Bank charges	35.00	
	<u>11,040.00</u>	<u>11,040.00</u>
Closing Balance (31/12/04)		<u>13,679.41</u>

EQUITY

Term Deposit	16,380.97	
Bank account	<u>13,679.41</u>	
	TOTAL	<u>30,060.38</u>

Motion: Moved by J. Gruszka and seconded by K. MacKenzie that the 2004 proposed budget be accepted as presented.

CARRIED

Bylaw Amendment Request

The following statement prepared by Kenna MacKenzie was read out loud:

“First, my apologies for not being there with you - with changes at AAFC and personal issues, it just didn't fit in. I wish you a great meeting. CAPA's bylaws haven't been revised for a very long time. Since then there have been many changes in the world of professional apiculture. Many government and university positions have been lost, others split their professional activities between apiculture and other disciplines, term contracts and consultants have become common, and other bees are now in more common use as managed pollinators. If the old bylaws were applied as written, our membership would become much smaller! Thus, Peter Kevan and I revised the bylaws to better reflect the new reality in Canadian apiculture. I urge you to vote in favour of these changes to ensure CAPA remains as the leader in Apiculture in Canada. Thank you very much.”

Motion: Moved by M. Nasr, seconded by D McRory to approve the bylaws as amended.

CARRIED

Nomination Committee

Rob Currie asked Alison Skinner and Medhat Nasr to act as the nomination committee.

Chemicals Committee Report

John Gruszka

1. Committee Members

John Gruszka (Chair), Doug McRory, France Desjardins, Rheal Lafreniere, and Steve Pernal, France Desjardins, Medhat Nasr.

2. Resistant American Foulbrood (rAFB)

Resistant American Foulbrood has been reported in B.C. and Alberta and for the first time in Manitoba in 2003 (one operation in the northwest region of the province).

3. Registration of Tylosin and Lincomycin

Tylosin and lincomycin have yet to receive registration for use in Canada or the United States. In the U.S.A., all studies submitted by USDA (residue, efficacy, target animal safety) have been approved by the Food and Drug Administration (FDA). However, a public master file must be published in the Federal Register (anticipated for May 2004). After this point, Elanco will submit a New Animal Drug Application (NADA) for tylosin, which will then be reviewed by the FDA and may take up to six additional months. In Canada, the honey bee program at AAFC Beaverlodge has generated sufficient residue and target animal safety data to work with Elanco and Pharmacia & Upjohn to make initial submissions to Health Canada during 2004. Continued efficacy work is planned for the summer of 2004 at Beaverlodge to support these applications.

Tylosin is available to Alberta beekeepers, via off-label prescription from a veterinarian, for fall use on hives with rAFB.

4. Emergency Registration of Coumaphos

Emergency registration for the use of CheckMite+ was granted by Pest Management Regulatory Agency (PMRA) under Reg. No. 27147 for use in 2003 in New Brunswick, Ontario, Quebec, Manitoba, Alberta and British Columbia to control Varroa mites resistant to Apistan (fluvalinate).

This was the second year of use for most jurisdictions and several provincial Apiculturists worked with PMRA to streamline the registration process. Full registration is still in limbo pending the Organophosphate review being conducted by PMRA.

5. Antibiotic Residues

Chinese honey continues to be banned from Europe and North America as a result of chloramphenicol residues in honey. During 2003, Argentine honey was found to contain residues of nitrofurans. The Government of Argentina is requiring residue testing before granting export documents and this has impacted exports during the year.

6. Registration of Oxalic acid

A pre-submission consultation was held between industry representatives and PMRA on September 30, 2003 to provide information and clarification on the data required for the registration of oxalic acid to control Varroa mites in bee hives.

This initiative is now being lead by the Canadian Honey Council which is attempting to raise the funds that will be required to conduct the field efficacy and residue trials and prepare the submission.

Import Committee Report

Doug McRory

Motion: Moved by D. McRory and seconded by S. Pernal to accept the Import Committee report as presented

CARRIED

Comment:

Doug McRory will be stepping down as chair of the Import Committee.

Non-apis Committee Report

Peter Kevan

No report

Research Committee Report

Cynthia Scott-Dupree

Cynthia Scott-Dupree circulated a copy of the 2003-2004 C.A.P.A. Research Reports. It was apparent that a lot of work had gone into compiling that information. On behalf of the association, Rob thanked Cynthia and her committee for pulling it all together.

Motion: Moved by A. Melathopoulos and seconded by D. McRory to accept the report as circulated.

CARRIED

Comment:

Discussion revolved around the possibility of relocating the AAFC Bee Research Lab from Beaverlodge to Edmonton.

Motion: Moved by J. Gruszka, seconded by C. Scott-Dupree to send a letter to AAFC Minister and Director of Sustainable Production Systems (Dr. Steve Morgan Jones) requesting that CAPA and CHC be consulted regarding the potential relocation of the bee research program from the Beaverlodge research station.

CARRIED

CAPA Publications Report

Cynthia Scott-Dupree

PUBLICATION INVENTORY REPORT (2003)

Honey Bee Diseases and Pests (2nd Edition Revised)

Inventory (as of October 25, 2002)

2,181

(November 18, 2002 - October 8, 2003) (Inv #'s 02-26 to 02-29/03-01 to 03-26)

Orders Filled

1)	November 18, 2002	Independent Study (OAC Access)	6
2)	December 19, 2002	Bees for Development, UK	10
3)	January 6, 2003	M. Olavegoya	2
4)	January 8, 2003	Biological Sciences, SFU	25
5)	January 20, 2003	Jim Walls	12
6)	January 21, 2003	Entomology, Oregon State U.	250
7)	February 5, 2003	Mann Lake Supply Ltd.	75
8)	February 17, 2003	Coop Extension, U. of Maine	25
9)	February 26, 2003	Honey Bee Centre	100
10)	February 26, 2003	Manitoba Agr. & Food	100
11)	February 26, 2003	Brushy Mountain Bee Farm	100
12)	February 26, 2003	Lloyd Gingras	10
13)	March 11, 2003	Ruhl Bee Supply	50
14)	March 31, 2003	Geoff Wilson	30
15)	April 8, 2003	Dadant and Sons Ltd.	350
16)	April 29, 2003	Rosanna Mattingly	100
17)	May 1, 2003	Paul Kelly (Intro. Beekeeping)	24
18)	May 1, 2003	Independent Study (OAC Access)	6
19)	May 7, 2003	Mr. Jim Aldridge	1
20)	May 2, 2003	IBRA, UK	10
21)	May 16, 2003	Walter T. Kelley Co. Inc.	100
22)	June 20, 2003	OBA	12
23)	June 24, 2003	Linden Apiaries	100
24)	July 15, 2003	CFIA	1
25)	August 11, 2003	Mann Lake Supply Ltd.	50
26)	August 22, 2003	Independent Study (OAC Access)	6
27)	September 12, 2003	J. Pritchard	1
28)	October 8, 2003	Kenny Williams	25
			<u>1,581.00</u>

2,181 (as of October 25, 2002)

1,581 (used from November 18, 2002 to October 2003)

600 (balance)

Inventory Remaining (boxed) = 600 (+ 20 copies loose from floaters)

Orders Filled - FRENCH

1)	March 4, 2003	APILAC, Saint Prime, QC	100
2)	April 30, 2003	Celine Gaulin, Rock Forest, QC	2

Motion: Moved by D. McRory and seconded by P. van Westendorp to accept the report as presented.

CARRIED

Comment:

Cynthia is stepping down as Publication chair and that her technician will also be stepping back from coordinating the distribution of the publication.

New Publication Report

Steve Pernal

Steve reported that progress has been slow but that the editorial committee is looking for photos for the new disease publication and that they will be contacting members to solicit participation. Digital photos are acceptable but must be high resolution – no jpegs

Motion: Moved by A. Melathopoulos and seconded by H. Higo to accept the report as presented.

CARRIED

Comment:

.Need ideas for new cover. What to do with the old editions once the new one is available - donate leftover inventory?

Communications Committee Report

Adony Melathopoulos

Adony reported on some of the changes to the website and the need for more information such as newsletter articles and reports, which could be posted on the site. Perhaps the Research Report and the summary table from the Provincial Apiarist Reports could also be posted on the website.

Comment:

Need to discuss what we are going to be doing with the Beekeeping in Western Canada manual.

CBRF Report

Rob Currie

Motion: Moved by A. Melathopoulos and seconded by H. Higo to accept the report as presented.

CARRIED

Awards Committee

Submitted by John Gates

Out standing Service Award

Production of the bronze statuette did not proceed as planned this summer. The artist will send a bronze “proof” of the award to the committee for approval or modification by the middle of February 2004. Email photos of the wax casting look promising. At least one nomination for the award has been circulated. If approved by the membership the award will be announced at the meeting in Winnipeg. At a later date the recipient will receive the statuette and an announcement with photo will be distributed to various media. Modifications to the nomination and selection process should be discussed. At present the parameters are:

- Awarded when deemed appropriate by CAPA members
- Nominations from CAPA members
- Decisions by membership as a whole
- Presented at the annual CAPA meeting
- Eligibility- no restrictions
- Award consists of a bronze statuette and letter of recognition

Motion: Moved by R. Lafrenière and seconded by J. Gruszka that Don Dixon be awarded the Outstanding Service Award.

CARRIED

Questions:

Should nominations be sent from members to the committee for approval then sent to the membership by the committee for discussion, or should members be free to canvass other members directly for support? Do we require unanimous consent from all CAPA members or a simple majority? Should the decision be made at the AGM or through a poll? What is the deadline for nominations? This is CAPA's premier award so careful consideration should be given to these and other questions.

Comment:

Discussion led to recommending that some of the members associated with universities, such as Cynthia and Heather, consult their University awards office to find out about what kind of selection criteria should be used for an award like this. The question about nomination procedure was never finalized

Student Award

The committee received no nominations this year. Requests for nominations are sent to all CAPA members, to Heads of relevant departments of Canadian Universities and many other post-secondary institutions in Canada. Are there other suggestions to publicize the award?

Motion: Moved by M. Nasr and seconded by C. Scott-Dupree that the Student Award purse increase from \$200 to \$500, contingent on its acceptance in the 2004 proposed budget.

CARRIED

Other

Do we have a policy on sending free educational material to deserving institutions? I recently visited the Oaxaca (Wah, Hah, Kah) State ethnobotanical garden in Oaxaca City, Mexico. It is a superb collection of native plant species used by indigenous peoples in the State, including parent species of a number of crops now grown commercially throughout the world. Archaeologists and anthropologists believe crops such as corn, squash, chile and beans were developed in this part of Mesoamerica. The 2.5 hectare garden, still partly under construction, is situated within the walls of a former monastery, now the State cultural museum. Part of the monastery houses the botanical library and offices. The garden has an outreach program to educate the public about the importance of maintaining bio diversity and protecting rare and endangered species. About 30% of their print resources are in English. Oaxaca State is very poor. Because of good public support and dedicated staff this project has been amazingly successful despite a severe shortage of funds. At present they have no beekeeping literature, something they wish to change. I was asked to suggest some titles. I suggest that CAPA consider donating a copy of the pollination and disease manuals and also a copy of Beekeeping in Western Canada to the library.

Comment:

The following beekeeping publications were to be sent to John Gates Need to be donated to the Oaxaca State ethnobotanical garden library on behalf of CAPA:

- Honey bee Disease and Pests – Cynthia
- Guide to Managing Bee for Crop Pollination - Paul
- Beekeeping in Western Canada – Medhat
- Beekeeping Guide – Joanne

Archives Committee

Submitted by Don Nelson

Over the last ten years or so I have been collecting reports of the annual CAPA proceedings as well as photographs and a few other items that have been sent to me to be part of the CAPA Archive Collection. I would like to know what should be done with this material now that I am retired. I will provide an inventory of what I have in the near future. I'm not sure if a 'CAPA Archive Collection' was set up at SFU or not?

In a related matter I still have most of the photos from Apimondia'99 that Mark Winston used to put together the Apimondia'99 Photo CD and also many that other people took before and during the event. As well, I have the foreign magazines that Gard Otis collected with ads for Apimondia'99. Many of the materials such as programs, photo CD, proceedings and the Apimondia'99 Event Book have been placed in the Archives at Simon Fraser University. I will do an inventory of what I still have so a decision can be made about the destination of the remaining materials.

Motion: Moved by A. Skinner and seconded by C. Boucher that Heather Higo inquire whether SFU would be willing to manage CAPA's archive material.

CARRIED

Election of Executive

Rob Currie and Rhéal Lafrenière let their names stand for President and Secretary/Treasurer for another term. Given that there were no other nominations Rob and Rhéal were re-elected to their previous positions.

Other Business

The criteria of membership was discussed with special reference to whether consultants were eligible for Full or Associate memberships? The Bylaws outline who is eligible for membership and it was agreed that consultants working in the area of apiculture extension or research would be eligible for membership.

Honourary Membership

Nomination of Dr. Don Nelson for Honourary membership – Moved by A. Melathopoulos, seconded by J. Gruszka

CARRIED

Nomination of Dr. Keith Slessor for Honourary membership – Moved by C. Scott-Dupree, seconded by J. Gruszka

CARRIED

Nomination of Dr. Vernon Vickery for Honourary membership – Moved by M. Nasr, seconded by J. Moran

CARRIED

Motion: Moved by C. Scott-Dupree and seconded by P. van Westendorp that CAPA contribute \$200 toward Keith Slessor's symposium.

CARRIED

Motion: P. van Westendorp moved that the meeting be adjourned.

PROVINCIAL REPORTS

Provincial Reports, 2003 Production Season

	<i>BC</i>	<i>AB</i>	<i>SK</i>	<i>MB</i>	<i>ON</i>	<i>QC</i>	<i>NB</i>	<i>NS</i>	<i>PEI</i>	<i>Totals</i>
<i>#beekeepers</i>	2,200	748	1,279	550	2,650	780	234	400	35	8,876
<i>#colonies</i>	42,194	220,000	100,000	80,000	71,000	16,000	5,917	19,000	2,190	556,301
<i>Av. Yld. lbs.</i>	74	115	192	182	104.5	70	45	43	52.5	97.6 - Av
<i>kg.</i>	34	52.3	87.3	82.7	47.5	32	20.4	19.7	23.9	44.4 - Av
<i>Total xK, lbs</i>	3,136	25,300	19,200	14,560	7,415	1,060	266	825	115	71,877
<i>kg.</i>	1,425	11500	8,727	6,618	3,363	480	120.6	374	52	23633
<i>Wint. Cols.-02-03</i>	45,000	226,205	100,000	78,000	75,000	24,000	7,500	20,000	1,713	577,418
<i>00-01</i>	45,000	225,000	110,000	92,000	75,000	35,000	7,500	20,350	1,702	611,552
<i>#Col.Insp.</i>	1,899	1,500	-	5,756	8,333	544	348	286	-	
<i>Inc. % AFB</i>	2.0	2.4	-	2.8	1.7	51	0	2.1	-	
<i>%EFB</i>	0	0	-	0	-	2	2	2.8	-	
<i>%Chalkbrood</i>	6.9	22	-	-	2.5	23	70	6.9	-	
<i>%Sacbrood</i>	0.3	-	-	-	0.3	-	0	-	-	
<i>HBTM Samples</i>	166	-	-	230	940	1,381	21	1,600	-	
	(apiaries)			(Bee Op)	(apiaries)					
<i>%Pos.</i>	75	-	-	43	76	6	0	0	-	
<i>VM samples</i>	1,022	-	-	225	See	697	348	682	-	
				(Bee Op)	Report					
<i>%Pos.</i>	18	-	-	35	-	80	See	95	-	
							report			

Note: - indicates information not reported.

British Columbia

Paul van Westendorp

A. Beekeeping Industry Statistics

. No. of Beekeepers	2,200
. No. of Producing Colonies	42,194
. Average Yield/Colony (lb/kg)	74 lb. / 34 kg
. Total Estimated Crop (lb/kg x1000)	3,136 (lb) / 1,425 (kg)
. Colonies Wintered Last Year	45,000
. Average winter mortality	26%

B. Diseases And Pests

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	1,899	218	2.0	60
. EFB	1,899	218	0.0	1.7
. Chalkbrood	1,899	218	6.9	53
. Sacbrood	1,899	218	0.3	0.4
. Tracheal Mite	166 (apiaries)	56	75	57
. Varroa Mite	1,022	194	18	83
. Other				

C. Comments

- Various commercial producers reported high colony losses last spring, attributed to Varroa infestations that had not been controlled with Apistan.
- Field trials carried out in the Fraser Valley and the Kootenays of south-eastern BC confirmed the establishment of Apistan-resistant Varroa. For the Kootenays study there was a positive correlation between proximity to the border and Apistan-resistance.
- Resistant AFB (r-AFB) has also been confirmed on Vancouver Island. A proposal to lift the import restriction to the Island has been strongly opposed by Island beekeepers. In response, MAFF will carry out further surveys in the spring 2004 to confirm r-AFB and Apistan-resistant Varroa.
- BC plans to apply for Coumaphos registration for the 2004 beekeeping season
- The *Bee Act* is expected for repeal in the coming year. Disease control provisions will be retained and placed under the *Animal Disease Control Act* and its regulations. The precise outcome is unknown at this time but significant changes are expected in the Apiculture Program delivery and its regulatory responsibilities.
- BC beekeeping industry is still working towards the establishment of an industry council under the auspices of the *Farming & Fishing Industry Development Act*. This will offer the opportunity for collecting annual registration fee and/or colony levies. The funds will be managed and controlled by the industry council for industry development.

Alberta

Medhat Nasr

A. Beekeeping Industry Statistics

. No. of Beekeepers	748
. No. of Producing Colonies	220,000
. Average Yield/Colony (lb/kg)	115Lb/ 52.3kg
. Total Estimated Crop (lb/kg x1000)	25.3 mil lb / 11.5 mil kg
. Colonies Wintered Last Year	226,205 ^r
. Average Winter Mortality (%)	22.8%

B. Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	1500	25	2.4	10
. EFB			0	0
. Chalkbrood			22	
. Sacbrood				5
. Tracheal Mite			N/A	
. Varroa Mite	Varroa spread through out the province Alberta			
. Other				

r= revised number at 2002 year end

C. Comments

- Beekeepers reported 22.8% winter mortality. Most of these colonies died due to parasitic mites drought and winter conditions. In Southern Alberta, several commercial operations had high winter mortality due to drought and lack of pollen for development of winter bees.
- Continued drought in several areas and out brake of grasshoppers affected the honey production in several regions in Alberta. Good moisture and favourable conditions through the summer resulted in excellent honey crop in South Alberta.
- Beekeepers reported shortages of bee packages and queens. The estimated short fall was up to 50,000 queens. Beekeepers attempted to increase their number of colonies to meet pollination demands and take an advantage of high honey prices, but bee packages were not available.
- Demand for honey bees for pollinating hybrid canola for seed production increased in 2003. Beekeepers rented 40,000 colonies, but there was a shortage of 10,000 colonies. Beekeepers from Saskatchewan and British Colombia moved 3,000 colonies to South Alberta for canola pollination. Contracts to pay based on colony strength were established to improve pollination services and colony rental fees. It is expected that 50,000 will be needed for 2004.
- Industry is working to form a commission to raise funds to support research and marketing. It is also developing vision, mission and strategic plans to 2010 and beyond.
- *Bee Diseases*: rAFB continues to be found in bee operations. Testing 36 AFB samples for resistance showed 72% were resistant to Oxy tetracycline. In 2002, there were 40 operation had rAFB and six more operations were added to this list in 2003.
- *Parasitic mites*: Varroa resistant to Apistan continues to spread throughout the province.

Beekeepers used 150,000 CheckMite strips in 2003 in comparison to 40,000 strips in 2002. Unexpected high levels of tracheal mites were found in the fall that could cause high winter mortality in 2004.

Saskatchewan

John Gruszka

A. Beekeeping Industry Statistics

. No. of Beekeepers	1,279
. No. of Producing Colonies	100,000
. Average Yield/Colony (lb/kg)	192 lb. (87.3 kg)
. Total Estimated Crop (lb/kg x1000)	19,200,000lb. (8727 tonnes)
. Colonies Wintered Last Year	100,000
. Average Winter Mortality (%)	15%

B. Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	_____	_____	_____	_____
. EFB	_____	_____	_____	_____
. Chalkbrood	_____	_____	_____	_____
. Sacbrood	_____	_____	_____	_____
. Tracheal Mite	_____	_____	_____	_____
. Varroa Mite	_____	_____	_____	_____
. Other	_____	_____	_____	_____

C. Comments

1. Tracheal mites

We continue to provide analysis for tracheal mites for beekeeper submitted apiary samples. In 2003 a total of 1410 apiary samples were analyzed. Tracheal mites are currently found in approximately 70% of the commercial operations in the province.

2. Varroa mites

Varroa mites continue to spread in the province. There were 6 new finds during the year in commercial operation. Varroa is now found in approximately 40% of the commercial operations.

3. R-AFB and R-Varroa

A limited survey was conducted during the summer and no indication of resistant AFB or Varroa was found.

4. 2003 Crop

Spring conditions were excellent for colony growth and development. Many producers took the opportunity to increase colony numbers by making splits and nucs. The summer was dry again (as in 2002) and this limited the crop. Grasshopper infestations were widespread and severe and many beekeepers in the central and northwest parts of the province sustained considerable losses of field bees and a reduced crop as a result.

Although drought affected large areas both in 2002 and 2003, with the record honey prices (~\$2.00/lb), the value of honey production approached \$40,000,000 (a historic record).

5. Russian bee stock

There are 3 producers in Saskatchewan that are offering pure Russian stock to the industry. There are high hopes that this stock will prove to be resistant to mites as reported by the USDA. There have been many breeder queens sold to beekeepers across the province who then raised queens for themselves and others. The SBA raised funds for research at a queen auction at their annual meeting (\$20,000). The first monies were spent to find DNA markers to try to identify markers for Russian stock. Of the 20 markers tested, four were found. The Association has applied for more funds from CARDS to test another 88 DNA markers. It is hoped that these markers can be used in the future to ensure that the stock remains pure as the breeding continues and Russian bees are spread across the province. In the near future we intend to monitor the mite-resistant performance of the Russian bee stock under our conditions.

Manitoba

Rhéal Lafrenière

A. **Beekeeping Industry Statistics**

. No. of Beekeepers	550
. No. of Producing Colonies	80,000
. Average Yield/Colony (lb/kg)	182 lbs / 82.7 kg
. Total Estimated Crop (lb/kg x1000)	14,560 lbs /6,618 kg
. Colonies Wintered Last Year	78,000
. Average Winter Mortality (%)	20%

B. **Diseases and Pests**

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	5756	230	2.8	23.5
. EFB	5756	230	0	0
. Chalkbrood	-	-	n/a	n/a
. Sacbrood	-	-	n/a	n/a
. Tracheal Mite	n/a	230	n/a	43
. Varroa Mite	n/a	225	n/a	35
. Other	fluvalinate-resistant Varroa mites and 1 case of rAFB			

C. **Comments**

2003 Production

- Despite what would be consider a relatively mild winter; colony losses were slightly higher than normal. Winter losses were generally higher in the regions that suffered drought conditions last fall. A cold and miserable fall also caught some beekeepers with insufficient stores in their colonies for winter.
- An early and warm spring allowed most beekeepers to make up their winter losses and in many cases increase their colony numbers. Despite a higher than normal demand for the sale of nucs most beekeepers chose to run the extra colonies instead of selling them.
- Honey production in most areas was considered average to above average. The Southwest region of the province and the Interlake region experienced lower than average production due to the

drought. Grasshopper populations were also extremely high in these areas and some beekeepers were reporting insecticide related losses.

Diseases

- During the apiary inspection period (i.e. May & June), 161 colonies tested positive for AFB. It is important to note that approximately 1/3 of these colonies came from two beekeeping operations. In these cases every colony in the operation was inspected for disease and working with the beekeepers the disease frames were removed from the colony during the inspection. The fact that we continue to find more operations with low levels of AFB indicates that although this disease does not appear to be out of control, it is still an important problem that requires close monitoring and effective control strategies.
- Similar to last year, we conducted antibiotic resistance testing on the positive AFB samples that have come through our lab. This fall, we did confirm our first cases of rAFB. At this time, we are unable to determine the extent of this disease in the infected operation and are planning an early spring inspection.

Parasitic mites

- For several years now, HBTM and Varroa mites have been found in all beekeeping regions of the province. To date, there have been 12 beekeeping operations that have tested positive for the presence of Apistan-resistant Varroa mites. Beekeepers operating in the following 26 Municipalities were therefore eligible to use CheckMite+ (10% coumaphos) this year: Stanley, Pembina, Thompson, Rhineland, Montcalm, Franklin, Stuartburn, North Norfolk, Bifrost, Brokenhead, Hanover, Ste. Anne, Tache, Ritchot, MacDonald, Morris, Springfield, Whitemouth, Whitewater, Cameron, Winchester, Brenda, Arthur, Wallace, Morton, and Sifton

Small Hive Beetle

- The small hive beetle (SHB), *Aethina tumida* was found in Manitoba during August 2002. This is the first confirmed discovery of this pest in Canada. The pest was found in a wax rendering facility and nearby apiary located in MacGregor Manitoba. The SHB was apparently brought into Manitoba in late July 2002 with a load of beeswax cappings originating in Texas and delivered to the wax rendering plant.
- The Manitoba Beekeepers' Association has entered into a corporate working agreement with the wax rendering plant to minimize the risk of introducing pests, such as small hive beetles, which could damage Manitoba's beekeeping industry.
- Manitoba Agriculture, Food and Rural Initiatives staff have been monitoring the colonies in the MacGregor area for small hive beetle activity - To date, no signs of beetle establishment.

Ontario

Doug McRory

A. Beekeeping Industry Statistics

. No. of Beekeepers	2,650
. No. of Producing Colonies	71,000
. Average Yield/Colony (lb/kg)	104.5lb/47.4kg
. Total Estimated Crop (lb/Kg x1000)	7,415 lb/3.363 Kg x 1,000
. Colonies Wintered Last Year	75,000
. Average Winter Mortality (%)	19.76%

B. Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Bee Yards Inspected	Disease Colony Incidence (%)	Disease Bee Yards Incidence (%)
. AFB	8333	719	1.70	7.0
. EFB	8333	719	None Reported	
. Chalkbrood	7673	719	2.5	NA
. Sacbrood	7673	719	0.3	NA
. Tracheal Mite	(45% of bee yards) 940			76
. Varroa Mite	all areas except Thunder Bay – three areas of Apistan resistance – Cornwall, Kingston, Haldimand-Norfolk			
	No Small Hive Beetles have been found in Ontario			

C. Comments

Varroa Testing in Ontario in 2003

- In the spring of 2003 the bee inspectors looked though many colonies to find 12 in Haldimand-Norfolk to do the “Pettis Test” for Apistan resistance. Three showed >90% control. Three showed 80-89% control. Two showed 70-80% control. Four showed 40-51% control. There were definite problems in Haldimand-Norfolk Region with Apistan.
- This season the Tech-Transfer Team were doing some checking using the “Pettis test” for resistance to Apistan and Check-Mite on four colonies in Hastings County and three colonies in Wellington county. Apistan in Hastings was 85.7% - 97% effective. Check-Mite in Hastings was 91.6% - 100% effective. In Wellington County the Apistan was 50.7 - 99% and the Check-Mite was 95 – 97% effective.
- In the fall of 2003 the bee inspection program checked 314 colonies belonging to 9 beekeepers in 14 bee yards.
- Russell, Glengary: 22 colonies were tested and the survival rates after Apistan for two week was 37.5 % and for Check-Mite it was 0%. This is the original area that Apistan Resistance was first determined.
- Grenville, Leeds, Frontenac, and Lennox-Addington: 222 colonies were tested and the survival after two weeks was 36.6% for Apistan and 4.1% for Check-Mite. This is the Kingston area. Northumberland, Victoria and Prince Edward Counties: 70 colonies were tested and they had 15% survival for Apistan and 8% for Check-Mite. This area is moving towards Apistan resistance.
- The weather this past winter and spring made beekeeping rather frustrating. The price of honey went up to about \$2.00 per pound last season and it has stayed there this year. Beekeepers wanted to expand their colony counts but were not even able to maintain their numbers. About 20% of the colonies died over last winter. In 2002 there were 75,000 colonies in Ontario and in 2003 after much recovery effort there were 71,000 production colonies. The 2003 average is estimated at 104.5 pounds per hive. This is down from 142 pounds per hive in 2002. With the price at about \$2.00 per pound for bulk honey and the price in the store not catching up, many beekeepers in 2002 just put the honey in barrels and shipped it to packers. They gave up many of their traditional markets, as it was easier to sell the bulk product.
- The Varroa mites suffer form the backward spring. If there is a break in the brood cycle as there were several last spring, the Varroa do very poorly. In the fall of 2003 is very difficult to find significant levels of this mite. If beekeepers were set up to monitor the Varroa populations in each individual hive, they could have gotten away with treating very few colonies.

- The areas of resistance to Apistan® did not seem to have changed much this past fall but winter will tell the real tail. Everyone was encouraged to use Check-Mite™ in the fall of 2003. We know from sales that there was still a lot of Apistan® used. In discussions with Bayer is apparent that the review of coumaphos will not be completed in time to let them apply for a registration for 2004. Emergency Registration will be the only available route. Check-Mite™ is still needed. It is hoped to develop a strategy using Formic Acid in spring and fall followed by Oxalic Acid when the bees are broodless in late fall to replace either Apistan® or Check-Mite™ but this needs more testing to get a reliable and consistent treatment regime. Check-Mite™ will be recommended for everyone again next fall in Ontario.
- Resistance of American Foulbrood (AFB) to Oxytetracycline has not shown up yet in Ontario but some of the samples sent to the Beltsville, Maryland USDA Lab have come back with 45-50mm zones of inhibition in stead of the 55 mm zones indicating 100% susceptibility. These 45-50-mm zones are moderately susceptible to Oxytetracycline. Beekeepers need to be watchful for signs of AFB and completely destroy all combs from the infected colony or irradiate them. Obtaining a registration for Tylosin® and Lyncomycin® would be the best solution to this problem. Dr. Steve Pernal of Ag Canada Research Station at Beaverlodge Alberta is heading up this project and he will soon have all of his data ready to present to the two companies involved adding them to their labels. Hopefully this will be completed this winter.
- The breeding of the bees to be resistant to the Honey Bee Tracheal Mites (HBTM) and the Varroa mites is continuing to be of great interest to Ontario beekeepers and beekeepers elsewhere. Ontario queen bees are in demand. Dr. Tibor Szabo has sold over 3,000 queens of his stock this year. It is reportedly quite resistant to the Varroa. Francois Petit sold all the queens he could produce this year from the “Russian Bees” that have been brought into Ontario from the United States. The OBA Tech-Transfer Team worked with Francois to bring more of the lines in 2003 and it is planned to bring the latest lines in 2004.
- Tech-Transfer for the bee industry occurs through the OMAF Apiculture Program and field type research of the applied nature occurs through the OBA Tech-Transfer Team. Both programs complement each other. If something is going to be recommended in the OMAF disease control recommendation, often the Tech-Transfer Team will do practical field projects to test the procedure before it is recommended. Recommendations are continually being re-evaluated in light of new data from all sources. The Bee inspection program also complements the other segments. An example of that this year was the work on the side by side test to show that Check-Mite™ was working better than Apistan® in some areas. It took a lot of looking to find bee yards with high enough levels of Varroa to get reasonable tests but the bee inspectors persisted until we had a significant number of bee yard locations tested. The bee inspectors did the fieldwork and the OBA Tech-Transfer Team analyzed the data and prepared the report for PMRA. This should end the testing requirements from PMRA for resistance testing. We can now concentrate the resources on finding other control alternatives and communicating these methods to the general beekeeping population.
- Queen Breeders continues to work with their own stocks to develop resistant bees for their customers. Dr. Szabo has said that probably the best selection tool is to do a 24-hour, natural drop about the first of September. Those with the lowest readings should be used to breed from. The Tech-Transfer Team is doing a test on a sample of bees from each hive that is being considered for a breeder hive. The sample is shaken for Varroa mites. The breeder can select more resistant breeder colonies by using these tests. As the colonies that develop higher populations of Varroa are selected out of the breeding program, more resistant bees will result. The lists of who is developing these bees are circulated to beekeepers at each available chance and they are available on the OMAF and OBA web sites.

- Overall it was a good year for Ontario beekeepers as they currently have money in their pockets and they are purchasing some new equipment.

Québec

Claude Boucher

A. Beekeeping Industry Statistics

. No. of Beekeepers	780
. No. of Producing Colonies	16 000
. Average Yield/Colony (lb/kg)	70 lb/32 kg **
. Total Estimated Crop (lb/kg x1000)	1 060 lb/480 kg **
. Colonies Wintered Last Year	24 000

** : Statistique Canada

B. Diseases And Pests*

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	544	70	277 (51%)	18 (26%)
. EFB	544	70	9(2%)	4(6%)
. Chalkbrood	351	35	79(23%)	5(14%)
. Sacbrood	-	-	-	-
. Tracheal Mite	1,381	95	89(6%)	4(4%)
. Varroa Mite	697	99	561 (80%)	49 (50%)
. Other	101	11	51(50)	7(64%)

C. Comments

Coumaphos use in Quebec in 2003

- In October 2002, MAPAQ had petitioned PMRA for emergency registration of coumaphos, since we had reasons to believe fluvalinate resistance was already established. In March of 2003, PMRA agreed to allow coumaphos use for the 2003 season. A report on coumaphos use in apiculture was then forwarded to PMRA last December.

Formation of a coordination committee

- During the spring of 2003, Quebec beekeepers, especially those situated in the Montérégie area (bordering Ontario and the US), reported heavy colony losses, ranging from 30 to 100%. The MAPAQ thus created a coordination committee to evaluate and follow health status and management procedures among bee population, to measure the impact of the situation upon beekeeping and pollination, and to propose short and medium-range solutions to help preserve Quebec bee population and beekeeping industry.

Phone survey and Pettis tests

- To gain more knowledge of the situation, a large survey was undertaken by l'Institut québécois de santé animale (INSA), from MAPAQ, between May 12 and May 23, 2003. 115 beekeepers owning at least 45 hives each were surveyed. Results confirmed that beekeepers were facing more than 50% loss on average and that Varroa destructor did play a very important role in these losses.

- Fluvalinate resistance tests (Pettis tests) were done by MAPAQ personnel in apiaries reportedly suffering from abnormal hive losses. Although Varroa population is not very high at that time of the year, a resistance (or at least loss of efficiency) to fluvalinate by the Varroa mite was clearly demonstrated and was believed to be the main cause of the high mortality rate. Obviously, lower treatment efficiency forces the colonies to start their season harbouring many more Varroa mites and renders them unable to withstand the exponential mite development occurring during the summer.
- Heavy Varroa infestations present in the fall of 2002 had severely jeopardized the health and longevity of the last bee generation born in 2002, which would normally go through wintering. Depending on the infestation level, colonies then died in the fall, during wintering, or in early spring of 2003. The survey also points out that an exceptionally long foraging season in 2002 might also have allowed for the development of more Varroa generations, thus aggravating the problem.

Varroa population variations project

- The results of the spring survey led us to believe that a regular monitoring of infestation rates during summertime, using adequate testing methods, was necessary to obtain a precise view of the situation and to be able to establish what should be considered critical intervention levels.
- The INSA-generated project aimed (1) to increase our knowledge regarding Varroa population evolution within the hives, (2) to complete our spring survey on high bee mortality in fall 2002 and spring 2003, (3) to compare Varroa population evolution within apiaries reporting high and low mortality rates, and (4) to increase beekeepers' awareness towards regular monitoring.
- Results showed a very high variability of infestation rates (between apiaries and also between hives from the same apiary), a wide array of infestation thresholds, sensitivity and reliability differences among the various detection methods, and evidence of fluvalinate resistance. They also put forward the necessity of using adequate monitoring practices and keeping adequate records.

Information

- Through publications from the Réseau d'alerte et d'information zoosanitaire (RAIZO), information meetings and wet labs, MAPAQ has contributed to the diffusion of pertinent information among beekeepers. They have been made aware of the current situation and of the pertinent measures available to help them control the situation. They have also been asked to report any abnormal situation, including high mortality rates that might occur in their colonies.
- Recommendations have also been made regarding the following of manufacturer's advice when using any pesticide (such as coumaphos) and the principles of integrated pest management (IPM). A seminar on IPM organized by the apiary committee of the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ) was held in St Hyacinthe, Québec, in January 2003.

Requests for organic acids homologation

- Within an IPM context, MAPAQ has initiated contacts with PMRA, other provinces and the beekeeping industry, to pursue homologation of organic acids such as oxalic acid for use in the treatment of bee diseases.

Research

- MAPAQ has helped finance a joint research project (in collaboration with the U. of Montreal Faculty of Veterinary Medicine) which consisted in evaluating a short-term formic acid treatment and an oxalic acid-drip summer treatment, administered between two honey flows. Results will be submitted to PMRA to help obtain homologation of these products for the treatment of bee diseases.
- Other oncoming joint research projects will also benefit from financing by the MAPAQ. These projects will aim to improve our knowledge of host-parasite relation dynamics and of different approaches to Varroa control within bee colonies. Among these approaches are: fall treatments using formic acid, oxalic acid and thymol combinations; spring treatments using formic acid, oxalic acid and the use of drone frames; dynamics of the host-parasite relationship between *V. destructor* and *Apis mellifera* over a beekeeping season; implementation of IPM.

Regulatory aspects

- INSA is working towards a beekeepers registration regulation and mandatory declaration of certain bee diseases. It is also trying to make sure that possible American queen bee importation would not be detrimental to Québec beekeeping industry.

Strengthening of the Québec bee health network

- As it is doing with other animal productions, the INSA is working towards the strengthening of the bee health network. The goal is to achieve rapid detection and declaration of any threat to the Québec bee population sanitary status and to be able to react quickly and efficiently to any problem that could arise.

Disease surveillance

- In 2003, INSA has continued to implement its on demand inspection program in apiaries. No *Aethina tumida* has been observed so far, nor has oxytetracycline-resistant AFB been encountered.

Residue detection

- Tests have been run on honeys from Québec producers. These tests include adulteration (sugar), presence of phenol, pesticides and heavy metals.

Support for the beekeeping industry

- As an aid to the beekeeping industry which has been hit with severe losses for the past two years, the MAPAQ has come forward with different measures, including a financial package which could reach \$1.9 million, announced in September 2003. Financial help will also include support of research projects, strengthening of the apicultural network and implementing a registration system.

New Brunswick

Chris Maund

A. Beekeeping Industry Statistics

- | | |
|-----------------------------|-------|
| . No. of Beekeepers | 234 |
| . No. of Producing Colonies | 5,917 |

. Average Yield/Colony (lb/kg)	45 lbs/20.4 kg
. Total Estimated Crop (lb/kg x1000)	266 lbs/120.6 kg X 1,000
. Colonies Wintered Last Year	7,500
. Average Winter Mortality (%)	20%

B. Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	348	2	0	0
. EFB	348	2	2	50
. Chalkbrood	348	2	70	100
. Sacbrood	348	2	0	0
. Tracheal Mite	21	2*	0	0
. Varroa Mite	348	2	0	0
. Other				

C. Comments

- * Refers to a different set of two beekeepers.
- The 348 inspected colonies had just been imported into NB and, therefore, disease data does not necessarily reflect current disease/pest situations in NB. For example, 100% of NB beekeepers, or close to that, are expected to have Varroa mites, at some level. European foulbrood and chalkbrood were found at very low levels in inspected colonies.
- Tracheal mite tests were from local NB colonies (not imported). There was one reported case of AFB in NB (not listed above) which was due to neglect.

Varroa mite update:

1. Introduction: There are fluvalinate-resistant Varroa mites, *Varroa destructor* Anderson and Trueman, (previously known as *Varroa jacobsoni* Oudemans) in New Brunswick. Poor control of the Varroa mite with fluvalinate was first noticed in September 2001. In 2002, fluvalinate-resistant mites were present ten counties, where samples were received from for testing. These resistant mites are considered to be throughout the province.
2. 2003 update: There are coumaphos-resistant Varroa mites, *Varroa destructor* Anderson and Trueman, in New Brunswick from honey bee colonies tested in Westmorland county since a lack of control was observed in October 2003. All colonies tested came from one apiary, where there had been a higher than usual level of Varroa mites. A lack of control, using coumaphos, was observed in nineteen out of twenty colonies.
3. An additional set of twenty colonies were tested with fluvalinate for 42 days, with coumaphos strips added from day 21 through to day 42. (It had been forgotten to remove the fluvalinate strips on day 21.) On day 42, at the end of the experiment, thirteen out of twenty colonies had much higher Varroa mite populations. Five out of twenty colonies had roughly the same levels of mite populations and two colonies out of twenty had lower levels of Varroa mite populations. All Varroa mite populations were compared to levels at the start of the experiment.

Nova Scotia

Joanne Moran

A. Beekeeping Industry Statistics

. No. of Beekeepers	400
. No. of Producing Colonies	19,000
. Average Yield/Colony (lb/kg)	43 lb/19.7 kg
. Total Estimated Crop (lb/kg x1000)	825 lb/374 kg
. Colonies Wintered Last Year	20,000
. Average Winter Mortality (%)	15.2

B. Diseases and Pests

Disease/Pest	Number of Colonies Inspected	Number of Beekeepers Inspected	Disease Colony Incidence (%)	Disease Beekeeper Incidence (%)
. AFB	286		2.1	
. EFB	286		2.8	
. Chalkbrood	286		6.9	
. Sacbrood	286			
. Tracheal Mite	1600		0	
. Varroa Mite	682		95	
. Other				

C. Comments

- The 2003 year started out as a cold wet miserable spring with very slow build up for the bees. There was a period in May when the queens shut down and it was a job for beekeepers to get colonies ready for blueberry pollination. The quantity and quality of imported queens was below requirements adding to the beekeepers challenge to ready hives. Although the overwintering mortality was about average at around 15 % the number of colonies sent to blueberries was down 4 % with approximately 16,700 going to wild blueberries.
- The number of beekeepers is down 5 % and the number of colonies down 7 %. The later is due to a large number of colonies sold out of province. The industry structure of hobbyists and commercial beekeepers remains fairly constant with 90% in the hobbyist category managing 10% of the colonies.
- It is expected that the 2003 honey crop will be average to below average down over the excellent 2002 crop. Yields varied across the province with the central and northern parts recording higher yields.
- The province experienced a long warm late fall that benefited the bees and from all reports colonies looked good going into winter. Pollen was still being brought in the first week of November and brood was found in hives the first week of December.

Brood Diseases

- AFB continues to be a problem with a number of hobbyist beekeepers reporting colonies with signs of AFB. Educational material sent out to all registered beekeepers in 2002 has helped to reemphasize the importance of detection and control.

Parasitic Mites

- The Varroa mite levels appeared to be down in the fall of 2003 making it a challenge to find colonies with sufficient numbers for fluvalinate resistance testing. Hundreds of colonies were sampled to find 15 for the Pettis Test. Nine showed greater than 90% control, four showed 80-89% control and 2 showed 70-79% control. Testing will be done in 2004. It is expected that we will need Check-Mite before long.
- Tracheal sampling is an on going process in the province. All samples analyzed to date have been negative for the presence of tracheal mites.

Prince Edward Island

No report

RESEARCH REPORT

British Columbia

Project title: Determination of Apistan-resistant Varroa in south-eastern British Columbia – 2003.

Principle Investigator:

Lance Cuthill, Apiary Inspector t. 250-426-6049
 BC Ministry of Agriculture, Food and Fisheries
 Cranbrook, BC

Co-Investigators and supporters:

- Twelve commercial beekeepers in the Kootenays
- Material and logistical support, BCMAFF
 Paul van Westendorp t. 604-556-3129

Abstract: Beekeepers in Kootenays of southeastern British Columbia reported increased colony losses despite full Apistan treatments. Twelve producers were selected that made 40 honeybee colonies available for determining the efficacy of Apistan. CheckMite+ (coumaphos) was used as benchmark because it offers the highest efficacy of any Varroa control agents currently available in Canada.

Following the removal of the honeycrop, each two-supered colony was provided with two Apistan strips and a sticky board (SB). The SB was removed after 24 hours and a mite count was taken. Apistan strips were left in the colonies for 10 days and a second SB was installed for 24 hours. Then, Apistan strips and SB were removed and a single CheckMite+ strip and fresh SB were installed in each colony. After 24 hours, strips and SB were removed and mite counts were taken. (*Note: two colonies under Apistan treatment collapsed before the tests were completed.*)

Non-efficacy of Apistan was observed in all colonies. There was a positive correlation between Apistan-resistant Varroa and proximity to the Canada-US border.

Conclusions:

- Apistan is no longer providing effective Varroa mite control in southeastern British Columbia. It is recommended to discontinue its use at this time.
- The distribution of Apistan-resistant Varroa in southeastern British Columbia at this time suggests that the resistant strain may have been introduced into province from the United States.

Start Date: August 2003

End Date: August 2003

Total Funding for Project: \$750 (excluding wages and operational expenses)

Funding Sources: BCMAFF, with 'in-kind' contributions of supporters.

Project title: Efficacy of CheckMite+ (coumaphos), Apistan (fluvalinate) and Utresept in controlling Varroa mites in honeybee colonies

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Abstract: Honeybee colonies were randomly divided into three treatment groups of nine (9) colonies each and a control group of three (3) colonies. All single-supersed colonies were tested for Varroa infestation in early June using the sticky board (SB) test method for 24 hours. CheckMite+ and Apistan colonies were provided a single strip each for the full 42 days treatment period, while the Utresept colonies received a single dose of 150 ml solution applied to tissue paper on the top bars for 21 days. All colonies were tested weekly for mite drop using the 24-hour SB test. At the end of the treatments, all colonies received a 24-hour SB test. Then, all colonies received a fresh CheckMite+ strip and SB for 24 hours and mite drops counted and recorded.

CheckMite+ controlled Varroa mite infestations most effectively throughout the treatment period and was used as a benchmark in comparing the efficacy of Apistan and Untresept.

Apistan failed to control Varroa mites. There was no significant difference in the Varroa mite population levels at the end of the trial between Apistan-treated colonies and the non-treated controls.

Utresept-treated colonies experienced an increase in Varroa population but not nearly as significant as the controls and Apistan-treated colonies. Its future performance may be enhanced with a change in formulation and time of year of application. Utresept may eventually play a significant contributory role in an IPM-based management system. Further work is strongly recommended.

Conclusions:

- Apistan is no longer providing effective Varroa mite control in the Fraser Valley. Its use should be discontinued, at least for several years.
- Utresept is a citrus plant extract effective in controlling head lice in humans. While its efficacy is lower than coumaphos, it may play an important role in the future.

Start Date: June 2003

End Date: July 2003

Total Funding for Project: Minimal

Funding Sources: BCMAFF, with 'in-kind' contributions of supporters.

Project title: Summary of current and continuing bee research projects at Simon Fraser University, 2003-2004. For project details, please see individual research reports that follow.

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Abstract: The bee research program at SFU is multi-faceted, with research in 2003 in diverse areas including: the evolution of eusociality with respect to worker reproduction in the honey bee (S.E. Hoover); the effects of honey bee queen pheromone on colony defensive behaviour (N. Gervan); the interaction between wild bees and agroecosystems (L. Morandin, C. Ratti, V. Abbott, C. Scott-Dupree, A. King); lab studies on the effects of novel pesticides on bees (L. Morandin, M. Franklin, C. Scott-Dupree); and orientation and drift of bumble bees in tomato greenhouses (A. Birmingham).

In 2004, continuing research includes the honey bee projects investigating factors regulating worker reproduction and the effects of QMP on colony defensive behaviour. Also continuing in 2004 are projects investigating the interaction between wild bees and agroecosystems, and lab studies on the effects of novel pesticides on bees.

Start Date: September 2000

End Date: January 2006

Total Funding for Projects, 2003-2004: \$153,300

Funding Sources: N.S.E.R.C. Research Grant (Behavioural and pheromonal factors influencing the organization and evolution of highly social insect colonies); N.S.E.R.C./AAFC Partnership Grant (Agroecosystems and wild pollinators), Monsanto Grant (Agroecosystems and wild pollinators), Bayer CropSciences (Agroecosystems and wild pollinators), B.C. Honey Producers Grant (Agroecosystems and wild pollinators; Ovary development in worker honey bees)

Project title: Behavioural and pheromonal factors influencing the organisation of social insect colonies

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Name: Ben Oldroyd (Professor)
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Abstract: We have developed a research program examining the behavioural and pheromonal factors that influence honey bee worker reproduction.

In 2001 we tested the effect of queen-produced pheromones on worker ovary development, clearly demonstrating that the queen mandibular pheromone is highly inhibitory. We have also surveyed ovary development in 2003 in queenless caged workers throughout the brood rearing season. We believe that the observed trend is likely due to the availability of stored pollen in the colonies, and plan to test the effect of larval diet on adult worker ovary development in 2004.

Anarchistic bees are a mutant line developed at the University of Sydney, Australia, in which workers frequently lay eggs in queenright colonies. In 2003, in collaboration with Dr. B. Oldroyd, we determined that anarchistic queens produce a 'normal' queen pheromone, and that anarchistic workers have a normal retinue attraction to queens.

We are also currently in the process (2002-present) of two-way selection for lines of bees with high and low levels of ovary development when queenless. In 2004/2005 we will be making a number of comparisons between these lines of bees, including the cross-fostering of larvae, behavioural comparisons, and comparing the total drone production of queenless colonies.

Start Date: September 2000

End Date: January 2006

Project title: The effects of honey bee queen mandibular pheromone on honey bee colony defensive behaviour

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Abstract: Honey bee queen mandibular pheromone (QMP) influences many aspects of worker behaviour and physiology, including the inhibition of queen rearing and juvenile hormone secretion, delay of swarming, and stimulation of pollen foraging and brood rearing. In addition, QMP applied in the presence of a queen increases the stinging threshold of worker bees in a holding box, and also has proved to be an effective queen substitute for shipping worker bees long distances due its calming effects on queenless packages of bees. We have repeatedly observed that even colonies with a queen appear to be calmer when experimentally treated with QMP, suggesting that a high dose of QMP may decrease a colony's defensive response. The purpose this research is to determine the potential effects of QMP on honey bee colony defensive behaviour. A preliminary study was done in 2003 in which defence levels were measured by colony response after the disturbance of repeatedly dropping a brick on colony lids. This project will be expanded in the summer of 2004 to include the effects of QMP on defensive behaviour of both queenless and queenright colonies.

Start date: July 2003

End date: August 2004

Project title: Agroecosystems and wild bees

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Abstract: This project investigates the interaction between wild bees and agroecosystems. The research has two main components, 1) laboratory studies on lethal, sub-lethal, and foraging effects of novel chemical and genetically modified protein pesticides on wild bees, and 2) field studies on the effects of farming practices on wild bee abundance, diversity, and pollination efficacy.

The effects of chitinase, Bt Cry1Ac, and imidacloprid were tested on two species of bumble bees from 2001 to 2003. Studies are continuing with new pesticides on bumble bees. In addition, studies will be conducted the spring of 2004 on the effects of novel pesticides on leafcutter bees.

Bee abundance, diversity, and efficacy, and habitat analyses were conducted in northern Alberta in the summer of 2002 in gm, conventional, and organic canola agroecosystems. Similar studies were done in canola agroecosystems, in northern and southern Alberta, in the summer of 2003. Research will continue in southern Alberta in the summer of 2004.

Start Date: Summer 2000

End Date: Fall 2004

Project title: Bee Diversity and Abundance in Berry Agriculture

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Abstract: The survival of wild bees is of growing concern for natural and agricultural ecosystems. Farming may be negatively affected by a lack of wild pollinators. In 2003, bee diversity and abundance were assessed in three berry crops in the Fraser Valley of British Columbia, Canada. Pan traps, sweep netting and visual observations were used to assess populations of honey, bumble and other bees in blueberry, strawberry and cranberry during crop bloom. Bee populations will be analyzed with respect to weed diversity, distance from the edge of the field, and surrounding land use. In 2004, the study will be repeated in blueberry and cranberry fields with the addition of fruit set and yield measurements to determine if bee diversity and abundance affect crop production.

Start Date: January 2003

End Date: December 2004

Project title: Effects of Clothianidin on *Bombus impatiens* (Hymenoptera: Apidae) Colony Health and Foraging Ability

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Abstract: We conducted laboratory experiments to investigate the lethal and sub-lethal effects of clothianidin on bumble bee (*Bombus impatiens* Cresson) colony health and foraging ability. Bumble bee colonies were exposed to 6 ppb clothianidin, representing the highest residue levels found in field studies on pollen, and a higher dose of 36 ppb clothianidin in pollen. Clothianidin did not affect pollen consumption, newly emerged worker weights, amount of brood, or the number of workers, males, and queens at either dose. The foraging ability of individual workers tested on an artificial array of complex flowers also did not differ among treatments. These results suggest that clothianidin residues found in seed treated canola and possibly other crops will not adversely affect the health of bumble bee colonies or the foraging ability of workers.

Start Date: May 1, 2002

End Date: May 31, 2003

Project title: Bumble bee drift in a greenhouse environment

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Abstract: We examined the orientation and drifting behaviour of *Bombus occidentalis* Greene and *Bombus impatiens* Cresson, the two major bumble bee pollinators of greenhouse tomatoes in British Columbia. The objectives were to establish the extent and frequency of bee drift into foreign colonies, examine the potential of nest entrance patterns and landmarks to reduce drift in commercial greenhouses, investigate characteristics of colonies that contained drifting bees, and determine behavioural and physical characteristics of drifting versus non-drifting bees. Colonies were composed of 0.3-34.8% foreign (marked) bumble bees. Simple black and white patterns and large landmarks did not reduce the number of drifting bees or the substantial loss of adult bees from colonies during their first week in a greenhouse. Bees showed a marginally increased rate of pollen input to colonies when landmarks were present. More drifting bees were found in colonies with higher worker and brood populations and greater pollen stores. Drifting bees had a significantly greater number of eggs in their ovaries than resident worker bees residing in colonies hosting drifters, suggesting that drifting could potentially increase individual worker bee fitness and may not be solely a function of disorientation and/or nectar robbing. Our results suggest that drifting of workers into foreign colonies may demonstrate a pre-adaptation to social parasitism.

Start Date: January 2001

End Date: April 2003

Alberta

Project Title: Integrated Management of Oxytetracycline-resistant American Foulbrood (AFB) Disease in Honey Bees: 1. Reduced Residue Risks with Alternative Antibiotics.

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Abstract: This study will develop optimal formulations and application methods for the antibiotics tylosin and lincomycin, to maximize their effectiveness against oxytetracycline-resistant AFB while minimizing their residue deposition in honey. Temporal patterns of residue deposition are being examined for each formulation prior to, during and following the honey production season. Fall and spring applications are also being evaluated for antibiotic withdrawal and treatment efficacy. In addition, novel chemical and microbiological techniques for detecting these drug residues in honey are being developed.

Based on spring applications of these antibiotics, our data to date have shown that target dosages (600 mg a.i.) of lincomycin and tylosin formulated in sucrose syrup leave hazardous residues in the brood nest and harvestable honey of colonies, which can be detected one year after application. Sugar dusting formulations produce residues in harvestable honey at levels of 100-300 ppb early in the summer, decreasing thereafter. Formulations of these drugs in pollen patties have shown great promise in that residue deposition is minimal, even at abusive dosages. At target dosages, residues in brood nest honey remain below 20 ppb during the honey flow and are near or below detection limits (by LC-MS/MS) in harvestable honey. Efficacy studies are continuing and will focus on the degree of control conferred by pollen patty formulations.

Start Date: 1 April 2002

End Date: 31 March 2005

Total Current Funding: \$119,500 (Gross/annum; For entire project, including studies 1,2 & 3).

Funding Sources: Cash: Alberta Crop Industry Development Fund .AAFC MII, Canadian Bee Research Fund, Medivet Pharmaceuticals, Alberta Honey Producers' Cooperative, Alberta Beekeepers Association. **In-Kind:** \$26,500.

Project Title: Integrated Management of Oxytetracycline-resistant American Foulbrood (AFB) Disease in Honey Bees: 2. Predicting AFB Infection by Examining *P. l. larvae* Spores in Honey and Adult Bees

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Abstract: This study will determine the incidence and abundance of *Paenibacillus larvae* subsp. *larvae* spores in honey from selected Western Canadian beekeeping operations. Data will be compared to the disease history of these operations to determine the optimum number and distribution of honey or adult bee samples that must be taken to predict the risk of AFB. In addition, several laboratory methods will be evaluated for their ability to discriminate among *P. l. larvae* strains and closely related microorganisms in honey. The number of spores present in each sample will be determined by culturing on a selective microbiological medium and examining the number of colony forming units per plate. Samples will also be tested for oxytetracycline-resistant strains of AFB.

Presently, this study involves the participation of 13 commercial honey producers from Alberta, and in 2003 was expanded to include 19 producers from Manitoba. Producers collect honey samples based on a predetermined protocol related to their total production and complete a disease history questionnaire. Manitoba producers additionally provide samples of brood nest worker bees. To date, our data have shown preliminary relationships between the disease history of an operation and the number of samples containing AFB spores or the density of spores present per sample.

Start Date: 1 April 2001

End Date: 31 March 2005

Total Current Funding: \$119,500 (Gross/annum; For entire project, including studies 1,2 & 3).

Funding Sources: Cash: Alberta Crop Industry Development Fund, AAFC MII, Canadian Bee Research Fund, Medivet Pharmaceuticals, Alberta Honey Producers' Cooperative, Alberta Beekeepers Association. **In-Kind:** \$26,500.

Project Title: Integrated Management of Oxytetracycline-resistant American Foulbrood (AFB) Disease in Honey Bees: 3. Selection for Hygienic Behaviour

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Abstract: Hygienic behaviour is a heritable character that confers resistance against AFB. Although hygienic behaviour occurs endemically among North American honey bee stocks, increasing the frequency of this trait within populations has been accomplished using instrumental insemination or isolated queen mating systems. We will evaluate the feasibility of increasing levels of hygienic behaviour using standard open-mating breeding practices used in Western Canada.

Research was initiated in May 2001 when colonies from several commercial beekeeping operations in Northern Alberta were evaluated for hygienic behaviour using a freeze-killed brood assay. Colonies expressing the highest level of hygienic behaviour were selected as breeding stock and mated with unselected drones from the same operations. In 2002 and 2003, colonies headed by mated daughters were again evaluated to select breeder mother queens for the succeeding generations. It was expected that an increasing proportion of drones sired from selected mothers would be available to mate with F₂ and F₃ virgin queens.

To date, we have documented an increase in the number of commercial breeder colonies testing positive for hygienic behaviour following selection. We have also attempted to separate genetic and environmental components of hygienic behaviour for each generation by establishing progeny apiaries in 2002 and 2003. Each progeny apiary in 2003 contained colonies headed by 20 F₃ queens reared from the stock of five participating Alberta beekeepers. To enable year to year comparisons, three highly selected benchmark stocks were also included in progeny apiaries. Progeny apiaries will be reassayed in May 2004 to evaluate the contribution of factors affecting the expression of hygienic behaviour in an unconfounded manner.

Start Date: 1 May 2001

End Date: 30 May 2005

Total Current Funding: \$119,500 (Gross/annum; For entire project, including studies 1,2 & 3).

Funding Sources: Cash: Alberta Crop Industry Development Fund, AAFC MII, Canadian Bee Research Fund, Medivet Pharmaceuticals, Alberta Honey Producers' Cooperative, Alberta Beekeepers Association. **In-Kind:** \$26,500.

Saskatchewan

Project title: Importation, Adaptation and Identification of Honeybee Breeding stock with Varroa and Tracheal Mite Resistance. Part 1. Feasibility Study on DNA Marker analysis

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Co-Investigators:

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- Tim Wendell and John Pedersen, Queen producers
- John Gruszka, Provincial Apiculturist - Saskatchewan

Abstract: Twenty microsatellite DNA markers were tested to determine the feasibility of pursuing DNA marker analysis for the identification of stock of Russian origin and eventually for use as markers for mite resistance. Five markers have been identified. Funding for phase II has been requested in which a further 88 markers will be tested.

Start Date: March 2003

End Date: December 2003

Total Funding for Project: \$10,000

Funding Sources: Canadian Adaptation and Rural Development Saskatchewan (CARDS) and the Saskatchewan Beekeeper's Association

Manitoba

Project title: Genotype evaluation and progeny selection for resistance to *Varroa destructor*

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 Linda Klymochko (Research Technician)
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Abstract: The objective of this project was to screen Manitoba honey bee stock and identify traits associated with *Varroa* mite resistance that can be incorporated into breeding programs to improve colony performance and reduce the input costs associated with disease control. In total the colonies from 17 different Manitoba producers were assessed and approximately 130 colonies were intensively sampled. We were able to identify stock within Manitoba from various producers that expressed hygienic brood removal, hygienic grooming of varroa mites, and the SMR trait. Colonies were selected from the various producers that either exhibited above average traits associated with resistance to varroa or were above average in terms of queen performance. Thirty seven of the colonies that were selected were obtained in the fall of 2002 and a further 20 queens and/or nucleus colonies were obtained in the spring of 2003. Colonies that were obtained in the fall of 2002 were assessed to measure changes in varroa abundance, tracheal mite prevalence, nosema abundance, colony population and food consumption over the winter. These colonies were compared to colonies that were headed by New Zealand queens (one of the most common imported stocks in Manitoba) that were maintained in the same wintering facility.

Start Date: June, 2002

End Date: March, 2005

Total Funding for Project: \$20,000/yr for 3 years

Funding Sources: Manitoba Queen Breeders Association, Manitoba Beekeepers Association, Manitoba Rural Adaptation Council

Project title: Environmental and Chemical control of varroa and tracheal mites in indoor wintering facilities.

Principle Investigator:

Name: Currie, R.W.

Address: Dept. of Entomology, University of Manitoba

Email: Rob_Currie@UManitoba.ca

Fax: (204) 474-7628

Telephone: (204) 474-6022

Co-Investigators:

Name: Underwood, Robyn (Ph.D. Student)

TBA (Graduate student)

Lisa Babey (Research Technician),

Ian Tremblath (Summer Research Assistant),

Linda Klymochko (Research Technician)

Tim Teetart (Student Research Assistant)

Heather Murphy-Klassen (Research Technician)

Address: See above

Abstract: The overall objectives of this research are to develop effective and economical methods to control the honey bee parasites, *Varroa destructor* and *Acarapis woodi* and the disease *Nosema apis* within indoor wintering facilities. This study will examine the possibility of using a combination of environmental manipulation and formic acid treatments to control varroa mite populations in indoor wintering facilities.

Start Date: April, 2003

End Date: June, 2005

Total Funding for Project: \$46,000/year for 2 years

Funding Sources: CBRF, NSERC, Manitoba Beekeepers Association

Project title: "Use of formic acid to control varroa and tracheal mites in indoor wintering facilities."

Principle Investigator:

Name: Currie, R.W.

Address: Dept. of Entomology, University of Manitoba

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Fax: (204) 474-7628

Telephone: (204) 474-6022

Co-Investigators:

Name: Robyn Underwood (Ph.D. Candidate)

Abstract: The long-term objective of this project is to develop effective and economical methods to control the honey bee parasites, *Varroa jacobsoni* and *Acarapis woodi* in indoor wintering facilities. The specific objectives of this project are to determine the exact dose and exposure time combinations, and number of applications, that are required to effectively control parasitic mite populations without causing significant damage to honey bee colonies and queens. Effects of different doses of formic acid, difference exposure times and different patterns of exposure were examined in colonies housed in an indoor-wintering facility. The results showed that formic acid can kill both varroa and tracheal mites with a high degree of efficacy providing the correct dose can be achieved consistently in the hive air. Queen loss can be a problem if the wrong dose/time combination is used. Queen losses of greater than 30% occur if high doses are applied in combination with a lack of proper ventilation control.

Start Date: March 31,2001

End Date: March 31, 2003

Total Funding for Project: \$40,000/year for 2 years.

Funding Sources: CBRF, ARDI, Manitoba Beekeepers Association

Ontario

PROJECT TITLE: Breeding and Maintaining Parasitic Mite Resistant Honey Bee Stocks In Ontario

PRINCIPLE INVESTIGATOR: Alison Skinner

CO-INVESTIGATORS: Janet Tam and Rachel Bannister

Address: Ontario Beekeepers' Association
Orchard Park Office Centre
5420 Highway 6 N, Suite 135
Guelph, ON N1H 6J2

Email: alison_bee@yahoo.com

Telephone: 519-836-3609

ABSTRACT: The Ontario Honey Bee Breeding Program is a continuous program to incorporate and maintain mite resistant characteristics in Ontario's honey bee stock. 2003 was the 12th, 6th and 2nd year of testing for tracheal mite resistance, hygienic behaviour and suppression of mite reproduction (SMR), respectively. This was the 4th year for the importation of Russian stock.

1. Maintenance of Tracheal Mite and Varroa Mite Resistant Honey Bee Stocks

Bee breeders in Ontario select colonies with economic characteristics to be tested for tracheal mite resistance, hygienic behaviour, and SMR. Newly emerged bees were placed into mite infested colonies to determine their susceptibility to tracheal mites. Bee breeders use the top 25% of the resistant lines in their breeding programs. The liquid nitrogen freeze kill method was used to test for hygienic behaviour. Colonies with >75% and 50-75% of killed brood cells removed can be used as breeders for varroa resistance. To test for SMR, cells containing tan stage pupae with purple eyes were uncapped until 30 cells containing mites were found or until 500 cells were opened, whichever occurred first.

2. The Importation of Russian Honey Bee Eggs into Ontario

The tech-transfer program is working with a bee breeder to establish a sustainable Russian breeding program in Ontario. Continued importation of Russian stock ensures genetic diversity. The Russian lines are maintained by the breeder in Ontario and further selected for economic and mite resistant characteristics. In 2003, two Russian lines were imported and the resulting queens were mated in an isolated mating yard to Russian drone stock.

FUNDING: Ontario Ministry of Agriculture and Food, Ontario Beekeepers' Association, Agricultural Adaptation Council-CanAdapt Program, Saskatchewan Beekeepers' Association

PROJECT TITLE: Improving the Efficacy of Formic Acid for Varroa Mite Control and Testing for Formic Acid Residues in Honey**PRINCIPLE INVESTIGATOR:** Alison Skinner**CO-INVESTIGATORS:** Janet Tam and Rachel Bannister**Address:** Ontario Beekeepers' Association
Orchard Park Office Centre
5420 Highway 6 N, Suite 135
Guelph, ON N1H 6J2**Email:** alison_bee@yahoo.com**Telephone:** 519-836-3609

ABSTRACT: A trial was conducted during the honey flow to determine the efficacy of Mite-Away against varroa mites in single brood chamber colonies with one honey super. The application method using a spacer rim to hold the Mite-Away pad between the brood chamber and honey super was evaluated. The treatments remained in place for 3 weeks, after which the Mite-Away was removed and CheckMite+, the finisher treatment, was applied to all colonies for an additional 3 weeks. Varroa mite fall was monitored with weekly sticky boards.

Honey samples were obtained from 2 frames placed in the middle of the honey super. One of the frames had a starter strip of foundation on the top and bottom of the frame. The second frame was drawn comb. Honey samples were collected after a 19 day withdrawal period. Intact frames were brought to the lab for formic acid residue analysis. The honey samples were tested by the Laboratory Services Division of the University of Guelph.

The average efficacies of Mite-Away treated and control colonies were 63.84% and 17.96%, respectively. Honey samples are presently being analyzed for formic acid residues.

START DATE: March 2003**END DATE:** December 2003**FUNDING:** Agricultural Adaptation Council -Ontario Agricultural Commodity Council (Canada-Ontario Research and Development Fund), Ontario Beekeepers' Association

PROJECT TITLE: Evaluation of Oxalic Acid as a Late Fall Treatment Against Varroa Mites and the Development of an Efficient Treatment Method**PRINCIPLE INVESTIGATOR:** Alison Skinner**CO-INVESTIGATORS:** Janet Tam and Rachel Bannister**Address:** Ontario Beekeepers' Association
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Guelph, ON N1H 6J2**Email:** alison_bee@yahoo.com**Telephone:** 519-836-3609

ABSTRACT: A late fall treatment of oxalic acid was applied to bee colonies at 3 different concentrations (1.75%, 3.5% and 7.0%) using the trickle method. The VARROX® vaporizer method was also tested. Application method practicality was evaluated, and efficacy and colony strength were monitored. Three weeks after application, CheckMite+ was used as the finisher treatment, for an additional 3 weeks. Weekly sticky boards were used to monitor mite fall. Two commercial beekeepers also participated in the evaluation of the trickle method.

The average percent efficacies of the treatments, 1.75%, 3.5%, 7.0%, VARROX® and control, were 32.8%, 95.8%, 96.5%, 82.9% and 4.7%, respectively. These results will be used in the procedure of registering oxalic acid for use in honey bee colonies.

START DATE: October 2003

END DATE: January 2004

FUNDING: Agricultural Adaptation Council-CanAdapt Program, Ontario Beekeepers' Association.

PROJECT TITLE: The Incorporation of Screened Bottom Boards as a Management Tool in an IPM Program

PRINCIPLE INVESTIGATOR: Alison Skinner

CO-INVESTIGATORS: Janet Tam and Rachel Bannister

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ABSTRACT: The effects of a screened bottom board on natural varroa mite levels and the efficacies of miticides such as CheckMite+, Apistan® and Mite-Away with screened bottom boards were investigated. Depending on the treatment, screened bottom boards can enhance the efficacy of miticide treatments, thus being a useful tool in an IPM program. The use of a screened bottom board increased the efficacy of CheckMite+ and Apistan® by 13% and 20%, respectively, when compared to treatment with a standard bottom board. The efficacy of Mite-Away decreased by 17% when used with a screened bottom board. There was no significant difference between a screened bottom with no treatment and control colonies, possibly due to the short amount of time that the screened bottom boards were in place.

START DATE: September 2003

END DATE: December 2003

FUNDING: Agricultural Adaptation Council-CanAdapt Program, Ontario Beekeepers' Association.

PROJECT TITLE: Monitoring for Apistan® Resistant Varroa Mites and CheckMite+ □ Efficacy Trials in Honey Bee Colonies in Ontario

PRINCIPLE INVESTIGATOR: Alison Skinner

CO-INVESTIGATORS: Janet Tam and Rachel Bannister

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ABSTRACT: Three projects were completed in 2003 to document the presence of Apistan® resistant varroa mites across Ontario. Two of these projects were completed in co-operation with the provincial bee inspectors to satisfy the conditions set by the Pest Management Regulatory Agency to confirm the need for the emergency use of CheckMite+ in Ontario.

1. In the spring and summer, honey bee colonies with high varroa mite levels in 2 counties were tested for fluralinate resistance using the Pettis test.

2. In the fall, a small scale field trial was conducted to test the efficacy of an Apistan® treatment on two bee colonies. A bioassay (Pettis test) was completed on a sub-sample of bees before the field trial to determine the percent mortality of mites from the source colony. Pettis test results were correlated to the treatment efficacy for each colony.

3. Provincial bee inspectors conducted a side-by-side field trial to compare the efficacies of Apistan® and CheckMite+ against varroa. The trial was conducted in the fall using 157 pairs of infested colonies in nine counties.

Bioassay results as well as the side-by-side field trial results demonstrate that Apistan® is no longer a consistently effective treatment in Ontario. CheckMite+ is required control varroa mites. There have been no cases of CheckMite+ resistance in Ontario, but it is being monitored.

START DATE: April 2003

END DATE: December 2003

FUNDING: Ontario Ministry of Agriculture and Food, Agricultural Adaptation Council-CanAdapt Program, Ontario Beekeepers' Association.

PROJECT TITLE: Enhancing the Food Safety of Honey Bee Hive Products Through the Use of Organic Beekeeping Practices and Effective Monitoring of Pests and Diseases

PRINCIPLE INVESTIGATOR: Alison Skinner

CO-INVESTIGATORS: Janet Tam and Rachel Bannister

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Email: alison_bee@yahoo.com

Telephone: 519-836-3609

ABSTRACT: This project is being completed in conjunction with Paul Kelly of the University of Guelph. Forty-five honey bee colonies have been established on a 350 acre organic farm and are being managed organically. Different combinations of organic treatments (formic acid, oxalic acid) and cultural techniques (screened bottom boards, drone brood removal, brood cycle interruption) for varroa mite control are being evaluated. There is a large emphasis on monitoring techniques used for varroa mites. Different monitoring techniques (ether roll, alcohol wash, sticky board, sugar dust, uncapping drone brood) will be compared and evaluated.

START DATE: July 2003

END DATE: August 2005

FUNDING: Ontario Ministry of Agriculture and Food-Food Safety Research Program.

Project title: Efficacy of alternative sweet corn pest control agents and their impact on honey bees.

Principle Investigator:

Name: Cynthia Scott-Dupree

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University of Guelph, Guelph, Ontario N1G 2W1

Email: cscottdu@uoguelph.ca

Fax: 519 837-0442
Telephone: 519 824-4120 ext. 52477

Co-Investigators:

Name: Janisse Bailey – M.Sc. – This was Janisse’s M.Sc. research project. Successfully defended Jan. 21, 2004.

Address: above

Email: jbailey@uoguelph.ca

Fax: above

Abstract: European corn borer (ECB), *Ostrinia nubilalis* (Hübner), is a serious pest of sweet corn. Corn flea beetle (CFB), *Chaetocnema pulicaria* Melsheimer, which vectors Stewart’s wilt (*Erwinia stewartii* Smith) is another pest of sweet corn. Concern of Ontario sweet corn growers and beekeepers over the impact on honey bees (*Apis mellifera* L.) of insecticides, carbofuran and imidacloprid, used for ECB and CFB control led to investigation of alternative pest control agents. Efficacy and impact on honey bees of recently registered insecticides, spinosad, clothianidin and Bt-sweet corn were evaluated to determine their suitability for use in ECB and CFB IPM programs.

Field efficacy trials demonstrated that spinosad and Bt-sweet corn provided ECB control equivalent to commonly used insecticides, carbofuran and lambda-cyhalothrin. Clothianidin proved more effective than imidacloprid at reducing CFB feeding.

Laboratory bioassays indicated that ECB control agents, spinosad and Bt-sweet corn, have reduced risk to honey bees. The ECB insecticide, lambda-cyhalothrin, was also found less toxic to honey bees relative to the industry standard, carbofuran. Results indicate that CFB insecticidal seed treatments, imidacloprid and clothianidin, pose minimal risk to honey bees.

Start Date: Sept. 1, 2001

End Date: April 1, 2004

Total Funding for Project: \$140,000.00

Funding Sources: Canadian Bee Research Fund, NSERC- Industrial Postgraduate Scholarship, Dow AgroSciences, OMAF- Special Research Fund, Ontario Food Processors, Ontario Beekeepers’ Association.

National Study Title: Agroecosystems and Wild Pollinators (Winston and Scott-Dupree)

Project title: Comparison of the impacts of conventional and genetically modified herbicide-tolerant cropping systems on wild bees in spring canola.

Principle Investigator:

Name: Cynthia Scott-Dupree

Address: Dept. of Environmental Biology
University of Guelph, Guelph, Ontario N1G 2W1

Email: cscottdu@uoguelph.ca

Fax: 519 837-0442

Telephone: 519 824-4120 ext. 52477

Co-Investigators:

Name: Amanda King – M.Sc. Candidate – This is Amanda’s M.Sc. research project.

Address: above

Email: aking@uoguelph.ca

Fax: above

Name: Mark L. Winston
Address: Dept. Biological Sciences, SFU, Burnaby, BC V5A 1S6
Email: winston@sfu.ca
Telephone: (604)268-7894
FAX: (604)268-7892

Abstract: The objectives of this research are to:

1. Compare the abundance, diversity, and pollination efficacy of wild bees in genetically modified herbicide-tolerant and conventional spring canola cropping systems.
2. Investigate the effects of new chemical pesticides proposed for, or newly registered for use in canola on wild bees.

There are two components to this research, a field component, and a laboratory component. The field component will satisfy Objective 1 and will take up most of the time allotted for this project. The laboratory component will satisfy Objective 2 and represents a minor time commitment compared to Objective 1.

This research will test the overall hypothesis that the genetically modified herbicide-tolerant (GMHT) canola cropping system has no effect on wild bees when compared to conventional spring canola cropping systems.

Start Date: Sept. 1, 2002

End Date: August 31, 2005

Total Funding for Project: \$90,000.00

Funding Sources: NSERC-AAFC Partnership Fund, NSERC- Industrial Postgraduate Scholarship, Bayer CropSciences, OMAF-UofGuelph Plants Program

Quebec

Project title: Mid Summer Treatments against *Varroa destructor* using Formic Acid and Oxalic Acid

Principle Investigators:

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Co-Investigators:

Émile Houle

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Project title: Comparison of selected performance characteristics between three lines of Primorsky bees and seven selected lines from Quebec queenbreeders

Principle Investigator:

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Co-Investigators:

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Project title: Comparison of the efficacy of Apistan strips and CheckMite strips

Principle Investigator:

Pierre Giovenazzo
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CAPA BYLAWS

CANADIAN ASSOCIATION OF PROFESSIONAL APICULTURISTS
L'ASSOCIATION CANADIENNE DE PROFESSIONNELS DE L'APICULTURE

BYLAWS

Objectives of the Association

1. To promote, develop and maintain good fellowship and cooperation among professional apiculturists (individuals whose work in government, university, or similar professional capacity involves managed bee species)
2. To create a meeting of administrative and research professionals for the purpose of discussing common interests related to bee management and effectively coordinating, where possible, their activities.
3. To aid in the dissemination of information regarding the beekeeping industry in all its forms.
4. To maintain a consultative rapport with the Canadian Honey Council and other organizations concerned with managed bee species.
5. To maintain a rapport with professional in apiculture and related fields in other countries.

ARTICLE I - Membership

- I(1): Full membership, with voting privileges is open to personnel employed by Canadian Federal and Provincial governments, universities or college, and consultants who are employed in the field of apiculture or other related fields as:
- federal apiculturist
 - provincial apiculturist
 - full-time or part time extension apiculturist
 - full-time or part time teaching and/or research apiculturist
 - full-time or part time apiary inspectors
 - full-time or part time apicultural technicians
 - full-time or part time professionals in any other capacity whose work involves managed bee species
- I(2): Non-voting, associate membership in the association may, upon receipt of an application, be granted to persons who are:
- Part or full-time graduate students involved in projects involving managed bee species
 - Part-time technicians associated with personnel or projects involving managed bee species
 - Part-time disease inspection staff
 - Representatives of appropriate programs within federal government agencies such as Agriculture and Agri-Food Canada, the Canadian Food Inspection Agency and the Pest Management Regulatory Agency
 - The representative of the Canadian Honey council and a representative of any other organizations concerned with managed bee species.
 - Members of the American Association of Professional Apiculturists
 - Members of the Apiary Inspectors of America.
- I(3): Membership or associate membership may be extended to persons other than those defined in Clauses I and II upon ratification by a majority of the membership.
- I(4): The privileges of membership in the Association shall terminate when a current member resigns or retires from the position which established his/her eligibility.
- I(5): Membership fees shall be prescribed by the members in general meeting.
- I(6): Every member shall receive a copy of the bylaws annually.
- I(7): Privileges of membership shall be restricted to those holding current membership.
- I(8): The decision to grant life memberships, honorary memberships, and awards of merit shall be made by a 75% majority of the members present at the general meeting.

ARTICLE II - General Meeting

- II(1): The annual meeting shall be held at a time and place designated by the executive.
- II(2): The secretary shall send all members a notice of a general meeting sixty (60) days in advance of the date of such a meeting unless a majority of the members waive the sixty day requirement.
- II(3): A quorum of a duly called general meeting shall be six (6) members.
- II(4): Attendance at the Association's meeting shall be limited to members and guests invited by the executive.
- II(5): Minutes of the general meeting shall, when printed, be of a confidential nature and permission to use the information presented must be obtained from the executive.

ARTICLE III - Finances

- III(1): The fiscal year of the Association shall be from January 01 to December 31 of the calendar year.
- III(2): All monies and securities held by the Association shall be in the name of the Canadian Association of Professional Apiculturists.
- III(3): All money transactions made by the Association shall be made by cheque signed by the secretary-treasurer and the president.

ARTICLE IV - Officers of the Association

- IV(1): The members shall, at the general meeting, elect a president, vice-president and secretary- treasurer and the executive may appoint such other officers and committee members as may be required.
- IV(2): All officers shall be elected for a two year term of office.
- IV(3): The president shall preside over all meetings of the Association and shall be ex-officio, a member of all committees.
- IV(4): The vice-president shall perform the duties of the president in his/her absence or inability to act.
- IV(5): The secretary-treasurer shall:
 1. Record the minutes of all meetings of the Association and distribute copies of these minutes to the membership sometime during the sixty (60) days following a meeting, and,
 2. Send information and notices of motions and meetings etc. to the membership as required, and,
 3. Collect the annual fees from each member and maintain an up-to-date membership list, and,
 4. Look after all financial matters of the Association and maintain accurate records relating to same.

ARTICLE V - Amendments of Bylaws

- V(1): Bylaws may be amended only by a recognized quorum at a general meeting and all members must be notified by the secretary-treasurer of any proposed changes in the thirty (30) days in advance of the meeting date.

The foregoing are the Bylaws of the Canadian Association of Professional Apiculturists as amended at the annual meeting held in Winnipeg, Manitoba, January 27 and 28, 2004.

COMMITTEES & MEMBERSHIP LISTS

2004 CAPA EXECUTIVE & COMMITTEES

Executive

Rob Currie	President
Stephen Pernal	Vice-Pres.
Cynthia Scott-Dupree	Past-Pres.
Rhéal Lafrenière	Secr/Treas

Standing Committees

Chemical	John Gruszka Doug McRory, Claude Boucher Medhat Nasr, Rhéal Lafrenière Stephen Pernal	Chair
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Importation	Medhat Nasr Doug McRory, Gard Otis John Gruszka, Chris Maund John Gates, Alison Skinner	Chair
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Research	Cynthia Scott-Dupree Don Nelson, Kenna MacKenzie	Chair
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Awards	John Gates Don Dixon, Paul van Westendorp Kenna MacKenzie, Chris Prouse, Robyn Underwood	Chair
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CBRF Directors	Rob Currie Cynthia Scott-Dupree	
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Ad-Hoc Committees	Publications	Stephen Pernal Cynthia Scott-Dupree, Don Dixon, Rhéal Lafrenière	Chair
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Archives	Adony Melathopoulos, Don Nelson, Mark Winston Heather Higo	Chair
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Non-Apis Pollinators	Peter Kevan John Gates, Dick Rogers Art Davis, Rhéal Lafrenière Kenna MacKenzie	Chair
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Honey Working	John Gruszka Medhat Nasr Doug McRory Rhéal Lafrenière	western representative eastern representative
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Editorial Disease Publication	Stephen Pernal Adony Melathopoulos Paul van Westendorp	Chair
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Communications	Adony Melathopoulos Rob Currie, Cynthia Scott-Dupree Kenn Tuckey, Rhéal Lafrenière	Chair
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