2006 3

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Vol 19 # 3

Queen Hive Irghts

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Canadian Honey Council

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CANADIAN HONEY COUNCIL
Suite 236, 234-5149
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Join the CHC and support beekeeping in Canada

CHC is the national organization of the beekeeping industry. It is the vital link between beekeeper associations, governments and provincial apiculturists. Beekeepers in business can claim CHC membership and travel to the annual meeting as eligible business expenses for tax purposes.

Editor..... Heather Clay
Design and Production ..... Rudy Gelderblom

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CANADIAN HONEY COUNCIL
Suite 236, 234 -5149 Country Hills Blvd. NW
Calgary, AB T3A 5K8
chc-ccm@honeycouncil.ca
www.honeycouncil.ca
(403) 208 7141

HiveLights

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Cover picture is by Toronto artist Eric Field. The Rewards of Beekeeping recently appeared in the Globe and Mail and Eric agreed to let us reprint his wonderful artwork. See page 21 for more information.

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Canadian Honey Council Activities

Heather Clay, National Coordinator CHC

Future of CHC

The CHC is committed to forging a new direction, restructuring the organization and building a dynamic and prosperous Canadian Honeybee Industry. The work has begun. Funding approval has been received from Agriculture Agri-Food Canada to support this project. Over the next few months the committees will determine

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

The results will be brought to the annual meeting in Langley BC in January and implementation will begin after the action has been discussed and voted on by members.

Consumer Awareness

The funding received from the Advancing Canadian Agriculture Agri-Food program will help us with our long term committment to raise consumer awareness about the healthy qualities of honey. A communication plan will be developed and material produced to provide educational information for school children and consumers in the general public.

Anti dumping action

The directors of the CHC have decided to place the anti dumping action on hold while they monitor the import situation. Honey imports from China have been very low since January this year. This is good news for those in direct competition with these low cost imports. With the price of honey increasing to over $1 per pound it is apparent that the threat of anti dumping action has had an effect.

Promotion

One way to counter low cost imported honey is to promote Canadian honey as a premium product. The CHC has contracted Karo Design to develop a honey promotion program. They have prepared our new 100% Pure Canadian honey logo, radio scripts for a pilot program, billboard posters, in-store promotion with a focus on the Canadian story. Our mascot Pierre the Bear is ready for his debut at various trade shows and honey exhibits. Auditions have been held to find the best radio voice for his personality. He is the promoter and protector of Canadian bees because they produce the world's best honey. Stay tuned for the test project in Winnipeg followed by a national program as funds permit. We expect that consumers will be asking for Canadian honey. The new logo will be available to registered establishments to help promote our premium product.

Labelling

Hand in hand with promotion is the need for honest labelling. The CHC believes that the current labeling situation where Canada No 1 can be used for imported honey or blends of Canadian and imported honey is misleading to consumers. We believe that this gives a marketing edge to low cost imported honey. It is harming our industry over the long term and it interferes with our promotion of Canadian honey as a premium product. The CFIA has taken no action for years so the CHC decided to host a meeting in Calgary (see page 4) to find consensus on labelling issues. Agreement was reached within our commodity (defined as honey producers, producer graders, producer packers, queen breeders and pollinators) on the grade description Canada Number 1. Three food producers did not agree that there was a problem with the term. However we did have consensus from all industry stakeholders on removing the misleading term "pasteurized" from retail labels and for the creation of a new category for "raw unprocessed honey". The success of this meeting shows that difficult issues can be resolved within our industry. This is part of the new direction of CHC. ▶ pg 18

Pierre inspects some freshly drawn comb in one of his back yard hives.

CHC - CCM Delegates 2006 Canadian Honey Council Board of Directors

PRESIDENT Alain Moyen,
Fédération des
Apiculteurs du Québec
Les Joyaux de la ruche s.e.n.c.
15651 Petite Cote des anges
Mirabel QC J7N 2G5
tel : 450-475-1065
fax: 450-475-1066
email moyen@sympatico.ca

VICE PRESIDENT Ed Nowek
British Columbia Honey
Producers Association
5011 Bella Vista Rd
Vernon BC V1H 1A1
ph. 250-542-8088
beeworld@junction.net

EXECUTIVE DIRECTOR
Paul Kittilsen, Maritime
Beekeepers Association
RR 1
Debert NS B0M 1G0
ph. 902-662-4072
pl.kittilsen@ns.sympatico.ca

EXECUTIVE DIRECTOR
Corey Bacon
Saskatchewan Beekeepers
Association
B's Bee Ranch
Box 84
Kinistino SK S0J 1H0
ph. 306-864-3774
beeranch@sasktel.net

NATIONAL COORDINATOR
Heather Clay
Suite 236, 234-5149
Country Hills Blvd NW
Calgary AB T3A 5K8
ph 403-208-7141
fax 403-547-4317
chc-ccm@honeycouncil.ca

DIRECTORS
John Van Alten
Ontario Beekeepers
Association
Dutchmans Gold
Carlisle ON L0R 1H2
tel: 905-689-6371
fax; 905-689-7730
info@dutchmansgold.com

Ron Rudiak, Manitoba
Beekeepers Association
Sunnybrook Bee Farm
Steinbach MB R5G 1N2
ph. 204-326-3763
manbeekr@mts.net

Barrie Termeer,
General Delivery
Rollyview AB T0C 2K0
ph 780-986-3040
fax 780 986-3040
btermeer@telusplanet.net

Ron Greidanus
Alberta Beekeepers Association
PO Box 1581
Stettler AB T0C 2L0
ph 403-742-8723
pattiron@telus.net

NON VOTING MEMBER AT LARGE
Wink Howland, Saskatchewan
Beekeepers Association
Howland's Honey
Box 55 RR #3
Yorkton SK S3N 2X5
ph. 306-783-7046
fax 306-786-6001
whowland@accesscomm.ca\

NON VOTING CAPA DELEGATE
Stephen Pernal, AAFC
Research Station, P.O. Box 29,
Beaverlodge AB T0H 0C0
Ph. 780-354-5135
Fax: 780-354-8171
pernals@agr.gc.ca

Canadian Honey Industry Stakeholders Meeting Hosted By Chc Summary Of Discussion

Calgary, Alberta June 8th & 9th 2006

The issue of misleading labeling has been a concern to beekeepers for many years. No action has been taken by the Canadian Food Inspection Agency because they claim that our industry does not have consensus. To resolve this impasse the CHC hosted a honey industry stakeholder meeting in Calgary on the 8th and 9th June, 2006 to try to find common ground on labeling issues and to develop consensus.

CHC delegates from each province representing honey producers across Canada attended the meeting. In addition several larger producer packers and a representative of the two co-op producer organizations were invited. Five food processors accepted our invitation to attend. It was felt that broadening the group to include these processors would be beneficial in allowing a frank an open exchange of views. Eight experienced resource people assisted in the work groups, providing advice and institutional memory.

There were many areas of agreement where consensus was reached.

The term pasteurized was agreed to be misleading by all stakeholders. A compromise was reached on removing this term from retail labels but retain-ing the name for use industrial bulk customers who require that there are no sugar tolerant yeasts in their purchased honey.

All participants agreed to accept the Codex definition of honey with modifications for Canadian regulatory conditions.

All agreed to align with international standards for colour classification of honey.

It was also agreed by all that a new category of raw unprocessed honey should be created for honey that has not been filtered.

Consensus was reached by our honey commodity group on several major points.

The most important issue was identifying that the grade name Canada No 1 is a misleading term and should only refer to Canadian produced honey. Three food processors did not agree with this proposal. They support the status quo as it suits their current marketing arrangements

It was agreed by all producers that country of origin should be placed on the front of the label where the consumer can clearly identify the source. Three food processors did not agree with this proposal and support the status quo.

It was agreed that there is a threat from honey substitutes. All agreed that it is important to maintain quality standards and promote the qualities of honey.

Our industry will be stronger and more unified if we retain the cohesion and spirit of co-operation that was evident at this meeting.

The following are the priorities for changes in labeling, identified by meeting participants:

GRADE STANDARDS:
Use of "Canada Number 1"

CHC Proposal: Not for blended imports, only for 100% Canadian honey

Stakeholder Response:

- Proposal acceptable to all producers and some packers because "Canada No 1" is misleading Canadian consumers regarding the source of the honey.

- Proposal not acceptable to some packers: maintain "Canada No 1" because it indicates the valuable accreditation of CFIA registered facilities in Canada. The packers stated that consumers are familiar with and understand CFIA accreditation and product sources can be listed elsewhere on the label.

GRADE STANDARDS:
Use of "Canada Number 1"

Stakeholder Proposal: During the concluding discussion it was proposed that when "Canada Number 1" is used, then "Blend of ..." should be in close proximity. If "Grade Number 1" is used, then "Country of Origin ..."/"Blend of ..." could remain on the back of the container. A letter will be sent to packers asking for voluntary compliance with this recommendation.

Stakeholder Response:

- Proposal acceptable to all producers and some packers.

- Not acceptable to some packers.

ORIGIN: "Product of" and "Blended and packaged in"

CHC Proposal: Countries of origin of honey and country where packed - order by percent composition

Stakeholder Response:

- Proposal acceptable to all (to list countries of honey origin in descending order of percent content, and country where packed).

- "Country of Origin" should mean 100% single source. If "Product of Canada" is retained it should mean 100% produced and packed in Canada.

- Acceptable to all producers and some packers that "Country of Origin" be on front of label in same font size as "Grade". ► pg 7

Provincial Reports

Maritimes

The 2006 season stated with a very mild spring bringing many sunny warm days which made for a very rapid spring build up resulting in swarming hives.


Paul Kittilsen

There were lots of hives for the blueberry pollination in Nova Scotia. Blueberry pollination was early two weeks ahead of last year. In New Brunswick several thousand hives were brought in from Ontario to meet the pollination demand. The pollination season in the Maritimes was very wet making it difficult for beekeepers to travel in the blueberry fields and their bee yards .

It is hoped that the abundant moisture will translate into good honey production during the summer.

This years Maritime Beekeepers tour is in Prince Edward Island and is scheduled for late July. Wishing you a good season.

Until next time.

Québec

So far we are off to a good start in Québec. For most beekeepers, spring gave us healthy colonies and average losses of 10%. Some may be higher but in general it was a good season. Maybe we have learned how to manage the varroa and tracheal mites but we still have a lot of work ahead of us.

March and April were beautiful months where the orchard trees developed well until May came around. Early May is time to pollinate apples. The blossom period is over a period of 7 to 10 days. We had plenty of rain during that week which was not so good for pollination but the bees still managed to do their job.


Alain Moyen

Blueberries follow apples at the beginning of June. They need three weeks to pollinate and this year the season was excellent. In the past there were times that the blueberries froze and we had to feed our bees and others where the colonies just simply held their own. But this year we can say that blueberry pollination was profitable for producers. For beekeepers some colonies produced one full super of honey which is a nice start to the summer season.

At present, our bees are strong and healthy plus with all the rain we received there are flowers of all kinds and in abundance. For now we are not getting the heat needed but will cross our fingers because it is looking good.

The Québec federation of beekeepers is still in the process of forming a commission but some beekeepers are still reluctant. Most members on the board assume that a commission is vital to our survival. Our task is to convince our colleagues.

Québec beekeepers have voted in favor of having a joint meeting with Ontario beekeepers in 2007. The first meeting is to be held in Ontario then if we see that we can get along, Ontario will be invited to Québec. We have noticed over time that Québec and Ontario have similarities in the beekeeping industry. Who knows maybe in the future this will expand. Ihe meantime I wish everyone a good season with lots of honey.

Ontario

Beekeepers in Ontario have been reporting a high swarming rate this spring season. Our spring started off quite warm and advanced, followed by some below normal temperatures during our dandelion flow. When the weather warmed up again in June, the bees were anxious to swarm.


John van Alten

I've been calling our queen producers about sourcing some mated queens, and they all seem to be operating at capacity for June, with the promise of having surplus stock for July, just in time to requeen the bees that come back from Blue Berries in Eastern Canada. There seems to be quite a bit of interest from our American neighbours for Ontario Stock. Because of changes in American border regulations, we aren't quite sure at this point in time (mid June), how shipping to the U.S. will transpire. We have some assurances that they should be able to cross with the proper paperwork. Time will tell. Some nuc producers have reported lower than normal sales this spring. Low honey prices and good overwintering probably had a large effect on nuc sales.

Our tech transfer team has been busy running

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From left to right: Alain Moyen, Doug McRory, Ken Bruce, Ron Greidanus, Ed Nowek, Tim Townsend, John van Alten, Brian Burke, Ron Rudiak, Herb Isaac, Paul Kittilsen, Medhat Nasr, Tony Lalonde, Corey Bacon, Wink Howland, David Sugarman,Gordon Marks, Rick Belt, Peter Scott. Missing from photo, Debbie Fishbein, Paul van Westendorp and Heather Clay (photographer).

- Unacceptable to some packers (who prefer the status quo) to dictate location and font size.

- Stakeholders proposed that a new grade for imported honey be added.

DEFINITIONS: "Honey"

CHC Proposal: Codex Alimentarius Standard

Stakeholder Response:

- Proposal acceptable to all as this in keeping with a move to international standards.

- Stakeholders suggested that 3.1 be clarified (e.g. by removing final sentence).

- Stakeholders questioned use of "filtered" in 6.1.12 as the US has removed this term.

PROCESS: "Pasteurized"

CHC Proposal: Delete term from label

Stakeholder Response:

- Proposal acceptable to all - to delete for retail - because it is an improper term and not used internationally.

- Stakeholders agreed to allow the term "pasteurized" on the label for industrial honey.

Process: "Raw Unprocessed"

CHC Proposal: New category for honey that has been extracted and minimally filtered

Stakeholder Response:

- Proposal acceptable to all but "minimally filtered" should be replaced with e.g. "settled" (for bulk and packed honey, with standards defined for both).

Process: "Filtered"

CHC Proposal: Codex Alimentarius Standard

Stakeholder Response:

- Proposal acceptable to all - to create a separate classification for unfiltered/unprocessed or "raw" honey.

Colour classification:

CHC Proposal: Align honey colour classification with international scale and names.

White < or equal 34 mm

Extra light amber 35-50 mm

Light amber 51-85 mm

Amber 86-114 mm

Dark amber> or equal to 115 mm

Stakeholder Response:

- Proposal acceptable to all (international scale and names to be confirmed).

Honey substitutes

There was consensus that honey substitutes pose a substantial threat to the honey industry. It was proposed that the industry take ownership of the name "honey" and there should be enforcement to protect against labeling that is "unfair" to honey and consumers. Under no circumstances should other sweeteners or honey blended with sweeteners be called "honey". Labeling of these other products should clearly indicate the blend in descending order of percent content

Peter Scott, Capilano Labonte, happily accepts his prize for correctly identifying various meads during an evening break in the stakeholder meeting.

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beekeeping and queen rearing courses across the province. I sent a new employee to the course that they put on in Guelph and he was very impressed with the level of instruction he received. Their new Queen rearing and Beekeeping manuals have been selling briskly. Please contact the OBA office if you would like to purchase a copy.

The beekeepers who switched to formic acid and oxalic acid, drizzle treatments last fall seem to have had good results with overwintering. Our mite scouting in April showed very low levels of varroa and tracheal mites in our colonies, and in conversations with some other producers who have used these treatments, this seems to be fairly consistent with their observations.

I stopped in at the University of Guelph, Bee Lab earlier this week. I couldn't help noticing what looked like several hundred Styrofoam mating nucs spread out all around the propery. Paul Kelly said that they are working on making recommendations for using these nucs in Ontario conditions, to help our queen breeders efficiently produce mated queens when they are needed by the beekeepers. We are very fortunate to have such an enthusiastic research team at Guelph.

Ron Rudiak

The OBA summer meeting is scheduled for July 8 in Bala Ontario. It promises to be a great day in Cranberry country with talks by Dr. Guzman, Alison Skinner, and a special guest from USDA research entomologist Pamela G. Gregory. As well as our ever popular Doug McRory, whose auctioneering skills are able to pull dollars out of our tightly held fists at the queen auction.

I hope your summer of beekeeping is the best yet.

Manitoba

In Manitoba, honey bee colonies came through winter with minimal losses except for a small number of operations that may have had higher than normal mite levels. Because of record setting warm spring weather, populations in the strong colonies built up rapidly. Having large numbers of young bees made it easy to produce the required replacement colonies. Presently beekeepers have expressed concern that many of the stronger colonies could swarm before the main honey flow begins in mid June.

This year, across Manitoba, grain farmers have increased the number of acres seeded to canola possibly with the anticipation of seeing a higher price for oilseeds this fall. As well, a stronger market for Canadian honey has made producers somewhat optimistic about their future. The promotion program for Canadian honey is being viewed as a necessary and a positive step that should have long term benefits for producers and buyers looking for high quality honey.

The annual Manitoba Beekeepers' Association and Red River Apiarists' Picnic was held on June 14. Thirty beekeepers gathered at the Food Development Centre in Portage la Prairie for a tour of their recently expanded facilities. The FDC houses a state-of-the-art pilot plant facility equipped with brand new technology that is used by staff and clients to conduct research and development in the food, beverage, feed and ingredients processing industry. The FDC and Manitoba Agriculture Food and Rural Initiatives (MAFRI) combine resources to assist in the development and testing of food products. During the tour many honey producers asked questions concerning possible new uses for honey and the development of new products with honey used as an ingredient. We were also able to get a first hand look at the lab where food materials may be fractionated into individual components. Within this section of the facility these individual parts may be isolated to undergo further testing.

Corey Bacon

Then everyone travelled a short distance to Don Kitson's honey house for a delicious dinner of fresh pickerel served with all the trimmings followed by a tour of their efficient extracting facility. During the bear pit session Rhéal Lafrenière and David Ostermann (MAFRI) and Robert Currie (U of M) provided updates and answered questions on research in Manitoba and the disease inspection program. For the final part of the field day we travelled another short distance to see a privately owned log house, in a beautiful setting, which has been attractively restored to include many of the household items used in the very early 1900's.

Saskatchewan

One word would sum up the last half of spring - RAIN! Many parts of the province, especially the northeast where many of the colonies in Saskatchewan are located, has received substantial amounts of rain from mid May until mid June. Some areas are still not 100% completely seeded and are as low as only 40% complete. The crops that are seeded are reported to be coming along nicely. Beehive strength this spring is phenomenal for many beekeepers and there was a good spring flow up until the rain. Though there ► pg 9

have been some reports of abnormally high levels tracheal in some operations. In spite of the excess rain, many feel we have the makings for a bumper honey crop. In June honey prices paid to Saskatchewan beekeepers continued to firm. Some beekeepers reported selling loads in the $0.96 - $1.00/lb range, up from the lows of $0.69/lb in late winter. The SBA is hosting its annual field day this coming Saturday (June 17th). The SBA is also currently undergoing an updated cost of production study with the provincial apiculturist. As with most agriculture commodities, we will not be surprised to the sharp rise in operating costs since our last study five years ago. The web site for the SBA is now going to be hosted with the CHC website. Our site can be accessed by clicking on the Saskatchewan flag on the left hand side of the CHC home page. It will soon also be updated regularly and hopefully accessible through our old address as well. Saskatraz is in its third year of operation. There are some very promising lines that seem to be showing possible signs of tolerance/resistance to mites. The project team has been extremely busy putting out cells and breeders to commercial beekeepers throughout North America.

Alberta

It's Spring time in Alberta and this year it seems to have lasted longer than two days! The weather is beautiful, the grass is green and the bees have ensured that there will be a bumper crop of dandelions next year. My hives are full of honey from the dandelions and the caraganas. While I am sitting here writing this, Its raining outside and I am thinking that this period of cool wet weather is going to push a lot my hives to want to swarm. I need to get my Honey supers on.

After an unusually mild winter, most beekeepers in Alberta realized, at worst, an average winter loss. To quote one beekeeper, "the live ones look good and the dead ones don't look so good. Fortunately, there aren't too many of 'em." As of the first of June, most Alberta beekeepers have managed to get every piece of equipment out in the field.


Ron Greidanus

The high cost of queens has pushed a lot of beekeepers to start rearing nucs for the first time in the latter half of spring and early summer. This year we saw queens top $20 a piece even on large orders. Order for queens this year were projected at topping 65 000 queens for the province from all sources.

The Alberta Beekeepers is now officially a commission. This is has a been a long arduous process however with a stamp of approval and a couple of signatures by a legislative committee, the deal is done! The trick now is to demonstrate that the additional expense the commission poses to the individual beekeeper will come with a return that pays bigger dividends than his hives.

Speculating about a crop in Alberta is always a risk. Today, the hives look like they are poised for a bumper crop. However this can change literally over night. In 2003 during the worst drought that I can ever remember. I was sure that we would not get more than 100 pounds average per hive. But snow in August made all the canola bloom in September and we ended up with 170 pounds per hive. The bees look good. There is every reason to expect at the very least an average crop. However, this is Alberta and anything can happen. With apologies to Kenny Rogers, "You never count your barrels while your hauling honey, there'll be time enough for counting when the extractings done." Or something like that.


Ed Nowek

A number of beekeepers have managed to clear out inventory of hives carried over from previous years and sold it for the $1.00 per pound FOB farm gate. Most of these sales have been to US packers. Local and domestic packers have been offering a price slightly below the $1.00cdn/lb. By all expectations, Honey prices are perceived to remain stable. The appreciation in price is welcomed by all – it gives everyone some breathing space.

This is where I wrap things up by offering a blessing: May your honey boxes be so full, you will need two men to lift each one. My your truck sink down to the axles in the dry earth because of the weight that is loaded on it, and may the packers be so desperate for your honey that your tax bill eclipses your payroll. Don't lose your hive tool.

British Columbia

An abundance of late spring moisture seems to bode well for extending the 2006 honey flow. Colonies are generally in good condition with swarming now very evident. Imported queen supplies were delayed this spring and this coupled with poor early mating conditions locally has caused extra challenges for pollinators getting there numbers up to take advantage of the increased demand for bees. Blueberry honey was flowing nicely in Richmond with a 40 lb average as well as a few other areas of the Fraser Valley.

The value of honeybees to pollination is now more appreciated than ever by growers and prices are firming up. Price cutting for no apparent reason

▶ pg 21

Tony Lalonde Sales Prt.

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Wax
Propolis

Sell
Beekeeping Supplies
Extracting Equipment
Used Equipment

Bentley extractors
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Saskatchewan
Tony Lalonde Sales..... 306-931-0155
tonylalondesales@sasktel.net

Tony Lalonde Sales Prt.
Box 42, Clavet Sk,
Canada S0K 0Y0
Ph: 306-931-0155
fax: 931-1646

The Dyce Process for Making Crystallized Honey

Nicholas W. Calderone, Associate Professor
Dyce Laboratory for Honey Bee Studies
Cornell University, Ithaca, NY 14853

Professor Elton J. Dyce was born and raised in Meaford, Ontario. After graduating from the Ontario Agricultural College (OAC and now the University of Guelph), he studied at McGill University where he received a Master's degree. In the fall of 1929, Dyce came to Cornell University in Ithaca, NY to study with Professor E. F. Phillips. After receiving his Ph.D. in 1931, he returned to Guelph, where he was named Professor of Apiculture. While at Cornell, Dyce studied the processes of crystallization and fermentation, two serious problems facing honey producers and packers in the early 1900's. He published his dissertation research in Cornell Bulletin 528: Fermentation and Crystallization of Honey (1931). His research not only increased our understanding of the many factors affecting honey quality, it also led to the patented Dyce Process for producing the highest quality crystallized honey. In 1944, Dyce returned to New York to become the first manager of the Finger Lakes Honey Producers Cooperative in Groton, NY (just north of Ithaca). In 1946, he joined the faculty at Cornell, where he served until retiring in 1965. The Dyce Laboratory for Honey Bee Studies, named in his honor, was built in 1968 with funds generated from his patent and with matching funds from USDA.

Crystallized honey (also known as creamed, granulated, spun or whipped honey) is one of the finest hive products available. It has a mild flavor, spreads easily at room temperature, and unlike liquid honey, it doesn't drip. Well-made crystallized honey possesses a creamy texture because the crystallization process has been precisely controlled. Unfortunately, crystallized honey is usually one of the least promoted products in a beekeeper's product line. Here, I discuss the basic principles of the Dyce Process.

Honey Crystallization: Nearly all honeys crystallizes, some while still in the comb, others within a few days, weeks or months after being extracted. A few, like Tupelo, remain in the liquid state for years after being extracted. Natural crystallization is an uncontrolled process that usually results in a coarse product with a high tendency to ferment. Unfortunately, this is also the type of crystallized honey with which many people are familiar. Successful marketing of crystallized honey requires that the final product consist of very fine crystals. Therefore, if you wish to produce high quality crystallized honey, you must understand the crystallization process.

Crystallization is affected by several factors:

a. Floral origin of the nectar: Honey consists of two principal sugars – glucose (dextrose) and fructose (levulose) – in solution with water. Crystallization is a process in which the glucose molecules form crystals with some of the water molecules. Generally, honeys with a high glucose/fructose ratio, like goldenrod and goldenrod-aster blends, crystallize more rapidly than honeys with a low glucose/fructose ratio, like Tupelo and Locust. Since glucose crystals are white, even dark honeys produce a relatively light crystallized product.

b. Quality of seed (starter) crystals used to initiate the crystallization process: The best seed crystals are very fine, being undetectable to the tongue. The use of coarse seed crystals, or insufficient quantities of very fine crystals, will yield a coarse product that is unsuitable for market. Crystallization can also be initiated by pollen grains, dust particles, or air bubbles that contain dust particles. You must protect your honey from these contaminants because they are sources of uncontrolled crystallization. Honey pumps running too fast are a common source of air bubbles in honey.

c. Quantity of seed crystals: The finest-grained crystallized honey is produced using 8% or more very fine seed crystals, with 10% being a good working average. Somewhat coarser crystals are produced when only 5% seed crystal is used. Using more than 15% is wasteful.

d. Temperature during the crystallization process: One of Dyce's major discoveries was that the temperature of honey during the crystallization process affects both the rate of crystallization and the texture of the final product.

   1. The finest-grained crystals are produced at a temperature of 12.8° C (55° C), although very fine crystals are produced between 10° C and 15.6° C (50° F and 60° F).

   2. Crystallization of honey of average consistency proceeds most rapidly at 13.9° C (57°F), not with fluctuating temperatures as is commonly claimed. This temperature

reflects the joint effects of moisture content and viscosity on crystallization. Honey with low moisture content (high viscosity) crystallizes faster at 15° C (58 - 59° F) and honey with higher moisture content (low viscosity) crystallizes faster at slightly lower temperatures. Few honeys crystallize at temperatures greater than 16° C (60° F), and crystallization is greatly retarded at temperatures below 10° C (50° F). At temperatures below 4.5° C (40° F), there is almost no crystal growth.

3. Seed crystals need not be added to the main batch of liquid honey at 13.9° C (57° C). The finest-grained honey is produced when seed crystals are added to honey that is between 15.6° C and 23.9° C (60° F and 75° F, respectively) with 21.1° C (70° F) being a good working average. This is due to the fact that the seed crystals can be more easily and more evenly distributed in the liquid honey at temperatures within this range. However, mixing is much more difficult at the colder end of this range and requires special equipment.

Honey Fermentation: Another process that can affect the quality of your crystallized honey is fermentation. You should assume that all honeys contain sugar-tolerant yeasts that can cause them to ferment or spoil if their moisture content is too high. The moisture content of well-ripened honey is 18.6%, or less, and this usually suppresses the growth of yeasts. Honeys with higher water content are more susceptible to fermentation, and substantial loss from fermentation° Ccurs in years when bees have difficulty ripening nectar. The relation between moisture content and fermentation was determined by Lockhead (1933) and is presented in Table 1.

Table 1. Relation between moisture content (MC) and the risk of fermentation.

MC (% water)	Risk of Fermentation
< 17.1	Safe regardless of yeast content
17.1-18.0	Safe if yeast count < 1,000/g
18.1-19.0	Safe if yeast count < 10/g
19.1-20.0	Safe if yeast count < 1/g
> 20.0	Always in danger

Storage conditions can dramatically affect the moisture content of honey (White 1975). Honey is hygroscopic, meaning that when exposed to the atmosphere, there may be a gain or loss in its moisture content, depending on the relative humidity (RH). For each honey, there is an equilibrium RH at which no change in moisture content° Ccurs when it is exposed to the atmosphere (see Table 3; after White 1975). To prevent honey from gaining or losing moisture, it should be stored in airtight containers.

Table 3. Approximate equilibrium between relative humidity of the atmosphere and moisture content of a clover honey.*

RH (%)	MC (% moisture)
50	15.9
55	16.8
60	18.3
65	20.9
75	28.3
80	33.1

RH = Relative humidity MC = Moisture content
**Interpolated from data of Martin (1958)*

Fermentation is also affected by temperature. The optimal temperature for fermentation is between 12.8° C and 21.1° C (55° F - 70° F, respectively) (Wilson and Marvin 1932). At temperatures above 26.7° C (80° F), fermentation proceeds slowly in unripe honey, and probably not at all in well-ripened honey (Wilson and Marvin 1928). Therefore, to prevent fermentation, Wilson and Marvin (1931, 1932) recommended that honey be stored below 11.1° C (52° F) or above 21.1° C (70° F). However, long-term storage at elevated temperatures will result in heat damage and is not recommended.

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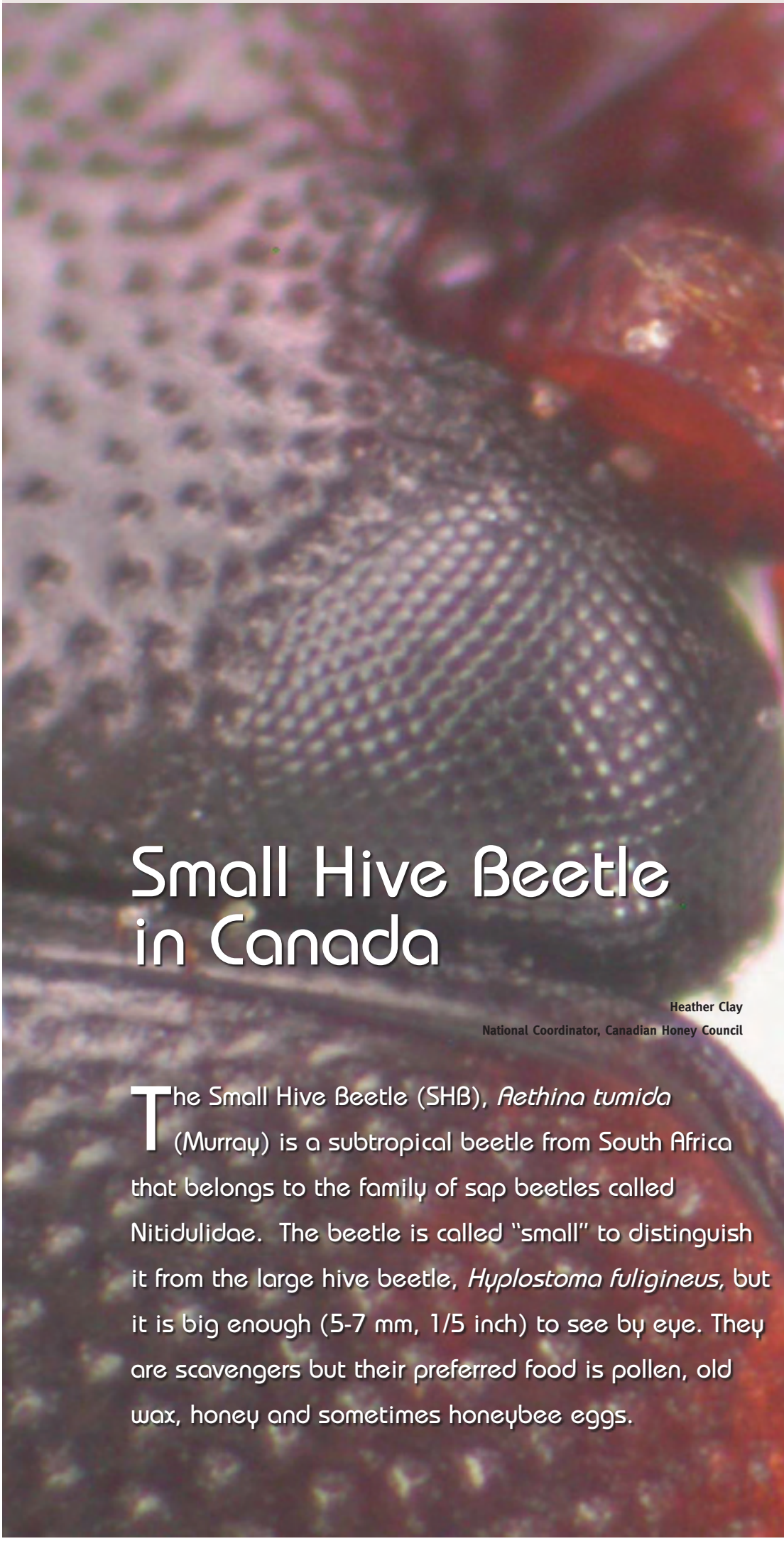

Small Hive Beetle in Canada

Heather Clay
National Coordinator, Canadian Honey Council

The Small Hive Beetle (SHB), *Aethina tumida* (Murray) is a subtropical beetle from South Africa that belongs to the family of sap beetles called Nitidulidae. The beetle is called "small" to distinguish it from the large hive beetle, *Hyplostoma fuligineus*, but it is big enough (5-7 mm, 1/5 inch) to see by eye. They are scavengers but their preferred food is pollen, old wax, honey and sometimes honeybee eggs.

The first reports of SHB outside of their home range was 1998 in the USA, followed by a new find in Australia in 2000. A single source outbreak was discovered and eradicted in 2002 in Manitoba. The beetle arrive in a shipment of wax cappings from Texas to a wax rendering facility in MacGregor. Prompt action was taken to contain the beetle in a nearby apiary. Until recently there have been no other reports in Canada.

On May 24. 2006 a second report emerged of a single SHB at Beaverlodge Research Farm in northern Alberta. The finding has been confirmed by the Canadian National Collection of Insects at the Central Experimental Farm in Ottawa. It is not clear how the SHB arrived in Beaverlodge but the stock in the apiary of 37 colonies originated with a 2005 shipment of package bees from Australia. The specimen was sent to the USDA-ARS Bee Research Laboratory in Beltsville, MD for genetic sequencing. Dr Jeff Pettis reported that the beetle is NOT one of the two US haplotypes. It matches a South African samples (SAJ3) fairly well. He is not sure where this one was from but it was not the USA.

Dr Steve Pernal, Research Scientist, Agriculture Agri-Food Canada conducts research on honeybees at Beaverlodge. His team found the beetle because these colonies are scrutinized on a regular basis. The beetle is difficult to spot and could easily be overlooked by the average beekeeper. Although it is not certain where the beetle originated, the circumstantial evidence is that the beetle arrived in a package of honeybees from Australia. It is possible that the beetle could be more widespread in Canada. However given that only one beetle was found, it is hoped that reproduction must be limited by the northern climate.

Beekeepers in northern states of the USA report that the SHB beetle will overwinter with the colony. The biggest problem, they agree, occurs in the honey house. Beetles mate when disturbed especially when beekeepers move or vibrate honey supers. Within hours, larvae hatch out in the humid warm temperatures of the honey house and immediately begin to cause damage to the honeycomb.

Beekeepers can often overlook the presence of this scavenging small hive beetle because it can co-exist for weeks with bees, hiding from light and tucking into dark corners on the bottom board of the hive. The damage caused to the honeycomb is usually the first clue. As

the larvae chew through the comb, uncapped honey runs down the through the stack of supers and onto the floor. If not cleaned up immediately, warm temperatures in the honey house and microorganisms can cause the honey to ferment and smell like burnt oranges.

What Can be Done?

The Canadian Honey Council is working with the Alberta Provincial Apiculturist to request Emergency Use Registration of CheckMite+™ (coumaphos strips) from the Pest Management Regulatory Agency. The strips are an effective method for monitoring and treatment if placed in cardboard traps where beetles cluster. The active ingredient is toxic to SHB.

It is known that:

- freezing temperature (below zero celsius) will kill all stages of the SHB
- low humidity limits SHB survival (Pettis, 2002)
- a strong colony of bees selected for hygienic behaviour will control SHB
- a clean apiary limits the spread to uninfested sites
- washed honey drums reduce the attraction to SHB
- honey should be stored below room temperature
- moving bees from their stand will reduce reinfestation of SHB (Lundie. 1940)

Research

Given the nature of Canada's climate there may be a possibility of manipulating temperature and humidity to gain a non-chemical control. Research is necessary to establish which non chemical controls can be employed in Canada and it is important to provide this information in extension programs.

Canadian beekeepers have the advantage of time to learn how to deal with SHB. Keep a watchful eye on you pollen trap. Vigilance is important. If you are concerned about SHB contact your provincial apiarist for more information.

References

Lundie, A.E. 1940. "The Small Hive Beetle, Aethina tumida". Union of Sth Africa, Science Bulletin 220: 30pp.

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Sanford M.T. Small Hive Beetle. University of Florida Factsheet EENY 94 http://creatures.ifas.ufl.edu/misc/bees/small_hive_beetle.htm

Small Hive Beetle Found in Alberta

Medhat Nasr, Provincial Apiculturist
Alberta Agriculture Food and Rural Development
Edmonton, AB

The small hive beetle (SHB) was discovered in one of the research colonies at Agriculture-Agri-Food Canada – Honey Bee Research Farm, Beaverlodge, Alberta. A single live adult beetle was found by Dr. Pernal and his staff on May 24, 2006. There has been no indication of reproduction of this beetle in the infested bee colony. The confirmation of the scientific identification of the beetle was performed by Anthony E. Davies, Taxonomist from the Canadian National Collection in Ottawa on June 9, 2006.

The SHB has been listed by the CFIA under "immediately notifiable diseases". In general, immediately notificable diseases are diseases exotic to Canada for which there are no national control or eradication programs. The response to an incursion of this exotic pest in Canada is under the responsibility of the Disease Control Section of the Animal Health Division of the CFIA. Provincial governments are also responsible for taking action to control newly introduced exotic pests when deemed necessary.

The Apiculture Program- Alberta Agriculture, Food and Rural Development (AAFRD) has immediately initiated an investigation to find possible sources of the beetle. In our investigation, we are focusing on three sources of bees that might have risks of introducing SHBs into Canada: 1) imported package bees and queens from Australia, 2) imported queens from the continental USA and 3) bees moved annually between B. C. and Alberta.

In Alberta, beekeepers use 10 000 – 15 000 package bees per year (1 kg of bees/package) imported from Australia. These bee packages are sold across Alberta. Current regulations allow importing bees from Australia and the USA where the SHB has been established. To reduce the risk of introducing any beetles, health conditions have been established for imported bee packages and queens. Health certificates issued by the exporting countries that accompanied the shipped bees showed that imported bees and queens met the import conditions. Although the proper procedure was followed, there is a possibility that the packages originated from SHB infested hives that were not known to the Australian authority. AAFRD requested the CFIA to investigate the possibility of beetles arriving in imported packages from Australia.

Alberta beekeepers import 20 000-30 000 queens per year from the continental USA. On June 16, 2006, after

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SHB from pg 16 ▶

reporting the finding of the SHB in Alberta, the Apiculture Program staff visually inspected 324 queens imported from the continental USA for the presence of the SHB. No SHB was found in inspected queen cages. Regarding the movement of bees between B.C. and Alberta, these colonies are annually inspected by inspectors from Alberta and B.C. before moving the bees between the two provinces. Inspection reports for the past two years indicate no SHB was reported.

Risks associated with the SHß to Alberta beekeepers.

The SHB is a tropical and subtropical pest. It can be considered a low risk for bees in northern climates. Due to gaps in knowledge and experiences, it is hard to rely on predictions. We might experience the contrary because insects are resilient and can adapt to new climates. It is already known that when the beetles were first found in 1996 in the USA, it went for two years without any noticeable damage. After, the second year, serious damage was reported in several parts of the USA. Therefore, it is necessary to be prepared for either situation.

Risk management options.

There are several options to be considered: To protect the industry from future damage by the small hive beetle, an appropriate provincial response plan may include:

- No action.
- Quarantine and Eradication
- Survey, control and educational campaign option.
  - ◊ Survey of high-risk operations to identify the extent of the presence of the SHB in Alberta.
  - ◊ Development of an information package (diagnoses, prevention, and control options) and a training program for beekeepers.
  - ◊ Register pesticides for use in diagnoses and control of the beetles.
  - ◊ Monitor and review of this action option.

The beekeeping industry has embraced the third option and has requested immediate implementation of a monitoring and educational program.

SHB Beetle Life Cycle

Dr Lundie (1940) was the first to study the SHB. He found that:

female beetles lays thousands of eggs in dark places, cracks and crevices

eggs hatch into larvae within 2-4 days

larvae feed for 10-16 days, 30% need an extra week

mature larvae seek the soil under the hive to pupate

preference is sandy soil, not too wet or too dry

larvae burrow in 6 -8 inches

emerge as adult beetles in 15-60 days (average 3-4 weeks)

beetle lives up to six months (average 2 months)

5 generations produced over summer

adult beetles can fly, but their range is not known with certainty

Lundie, A.E. 1940. "The Small Hive Beetle, Aethina tumida".

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Small Hive Beetle

With the announcement of a second find of SHB in Canada, the message is clear that we must be vigilant in monitoring colonies. The CFIA risk assessment declared this a low risk pest but it is known that the beetle can become a pest in the honey house. It is important to maintain strong colonies and clean apiary sites. Good management practices are a big deterrent to the spread of the beetle. The CHC is assisting beekeepers by seeking Emergency Use Registration of CheckMite+™ (coumaphos) and in providing standards of practice through the Canadian Bee Industry Safety Quality and Traceability program.

Fermentation and crystallization are related: Crystallization and fermentation are closely related. During crystallization, the glucose molecules separate from the liquid phase as solid glucose hydrate crystals containing 9.09% water. Since liquid honey is generally between 17% and 19% water, crystallization frees up quite a bit of water and that increases the moisture content of the remaining solution. This creates an environment favorable for the growth of the yeast. Well-ripened honeys (lower moisture content) are more likely to crystallize than those with higher moisture contents; and if they do, they are more likely to ferment. This would explain the counterintuitive finding by Stephen (1946) that fermentation was greatest in samples with moisture contents between 17 and 18% and less common in honey with 19% or more water content.

Controlling fermentation and crystallization: Crystallized honey can be made without heating the honey, and many people prefer a product made in that manner. However, to ensure the consistent production of the finest-grained honey that will not ferment, the yeasts must be killed and the size of the seed crystals must be precisely controlled. The most satisfactory method for achieving these ends is pasteurization, a process in which the honey is heated rapidly to a specified temperature for a specified period of time, and then rapidly cooled. The elevated temperature eliminates rogue seed crystals and kills the yeast, thereby preventing future fermentation. The rapid heating and cooling process is essential to minimize damage to the honey. See Townsend (1975) for details on cooling honey.

Several studies have examined the amount of heat required to kill yeasts in honey and the results are inconsistent, possibly reflecting the different methods used for evaluation. A partial summary of those data are given in Table 2 (from White 1992). Although the table indicates 7.5 minutes at 62.8° C (145° F), in his text, White states that honey should be heated to 63° C (145° F) for 30 min to destroy yeasts. This latter recommendation is the same as that given by Fabian and Quinet (1928).

Cool temperatures [below 50°F (10 °C)] are ideal for preventing crystallization.

Moderate temperatures [50–70°F (10–21°C)] generally encourage crystallization.

Warm temperatures [70– 81°F (21–27°C)]discourage crystallization but degrade the honey.

Very warm temperatures [over 81°F (27°C)] prevent crystallization but encourage spoilage by fermentation as well as degrading the honey

Townsend, G. F. 1975. Processing and storing liquid honey. In:

Table 2. Time that honey must be held at a specified temperature to destroy yeasts (after White 1992). The indicated time does not include the time required to bring the honey to the specified temperature.

Temperature (°F)	Temperature (°C)	Time (min)
125	51.7	470
130	54.4	170
135	57.2	60
140	60.0	22
145	62.8	7.5
150	65.6	2.8
155	68.3	1.0

While pasteurization destroys yeasts and eliminates crystals, honeys treated in this manner usually begin to re-crystallize in a few weeks or months. The crystals that form after pasteurization are invariably large and coarse and make the resulting product undesirable for table use. Therefore, liquid honey used for making crystallized honey should be crystallized immediately after it has been pasteurized.

The Dyce Process: The following steps encompass the essentials of the Dyce Process for producing the finest-grained crystallized honey. Some of the temperatures given may differ slightly from those given above. These discrepancies reflect the sometimes inconsistent information available from different sources. Most differences are minor, but you should consult the original literature for additional details. Before undertaking large-scale production, the serious producer should experiment with the process until a desired product can be consistently produced.

STEP 1: Blend the honey to the desired color, flavor and moisture content (usually between 17.5 and 18.0 %). Use a refractometer to determine the actual moisture content of the final blend.

STEP 2: Use a two-step heating process to control fermentation and crystallization:

a. Heat the honey to 48.9° C (120° F), and then strain it through a screen with at least 40 mesh/cm (100 mesh/in) to remove impurities, especially wax particles. Wax cannot be easily removed from honey after it has liquefied. Therefore, it is essential that you strain all wax from the honey before it is heated to a temperature at which it will liquefy.

b. Following this initial straining, heat the honey to 65.6° C (150° F) for 15 min to dissolve remaining crystals and kill any yeast cells. Strain the heated honey through a screen with at least 40 mesh/cm (100 mesh/in) to remove fine impurities.

STEP 3: Cool the honey as rapidly as possible to between 15.6° C and 24° C (60° F and 75° F, respectively) in preparation for the addition of seed crystal. Rapid cooling is essential, as a large volume of honey raised to 65.6° C (150° F) for 15 minutes and left to cool on its own will suffer heat damage and yield an inferior product.

STEP 4: Prepare an intermediate batch of seed crystal from a batch of previously crystallized honey that has not been exposed to temperatures that would damage the crystals. Grind this honey to a suitable fineness, and then add it to 9 times its weight of pasteurized and strained honey. The seed crystals and honey must be thoroughly mixed, but be careful not to over mix or to incorporate air into the honey. Over-stirring will raise the temperature of the honey, dissolve the seed crystals, and destroy the batch. Air will return as a layer of aesthetically offensive foam in the final product. Cover the batch of seed crystal and place it in a cold room at 55° F for one week. Prepare this batch in a wide mouthed container so that it can be easily removed after it has crystallized. Protect this seed crystal from temperatures that will damage the crystals.

STEP 5: After the intermediate batch of seed crystal is completely crystallized, you must process it before you can use it as seed crystal for the main batch. Remove it from the cold room, bring it to a temperature of 70° F, and grind it to a very fine consistency. Dyce (1975) noted that "It is impossible to pack high quality finely granulated honey year after year without regularly grinding the starter."

STEP 6: After grinding the intermediate batch of seed crystal, add it to 9 times its weight of pasteurized and strained honey, and then mix thoroughly, paying attention not to over mix or to incorporate air into the mixture. The length of time that the honey and seed crystal are mixed will affect the rate of crystallization and the grain of the final product, and the optimal time for stirring will depend on the specific equipment used. Be sure that the seed crystals are evenly distributed throughout the mixture. Keep meticulous records of everything you do so that you can repeat your successes.

Crystallized honey must crystallize in the containers in which you intend to sell it. You cannot re-pack it after it has crystallized. Therefore, the container in which you mix the seed crystal and liquid honey for your production run should be equipped with a 2" gate to facilitate bottling.

STEP 7: After blending the seed crystals with the liquid honey, let the mixture set for one or two hours. This will allow the larger air bubbles to rise to the top where they can be skimmed off. If you do not do this, the air bubbles will rise in your retail containers and create an undesirable layer of foam on top of the honey.

STEP 8: After settling, dispense the mixture into smaller containers for crystallization and retail sale.

STEP 9: Place the containers in a well-insulated and dry cold room at 12.8° C (55° F). A temperature of 12.8°C (55° F), rather than 13.9° C (57° F), is recommended to compensate for the slight rise in temperature that will° Ccur when you place a new batch in the cold room. Maintain the cold room as close to this temperature as possible, but never allow it to become colder than 10°C or warmer than 15° C (50° F and 59° F, respectively). The honey should be firm in 3 days and ready for market in 6 days (although, in later years, Dyce increased this to eight days). If the temperature in the cold room is less than 12.8° C (55° F), it may take several more days to complete the process. Be sure to leave ample space between containers (or boxes of containers) in the cold room to promote rapid and even cooling.

Here is a photo of my apiary at 4500 ft in the foothills of southern Alberta. I wonder if anyone has a permanent apiary site (not counting temporary yards for fireweed) any higher?

Wind is the biggest problem so we have built a berm of straw bales, backfilled with topsoil and planted with shrubs for shelter. There are times when the bees don't fly but as soon as the wind drops they leave en-masse to make up for lost time. This subalpine area is predominantly native grasses but there are many varieties of nectar and pollen plants. In spring there are abundant alpine flowers followed by dandelion, willow, choke cherry, carragana, alpine lupins and asters. We planted numerous flowering shrubs as well as sainfoin and clover to supplement the summer nectar sources. Besides sudden mountain storms, moose stomping down the strawbales and watchful deer, elk, cougars, bear and coyotes, the bees appear to be happy in their mountain home.

STEP 10: After crystallization is complete, store the product at or below 24° C (75° F). Crystallized honey may soften and liquefy at higher temperatures.

Firmness of the Product: Dyce found that he could control the firmness of crystallized honey by carefully selecting or blending the honey for the proper moisture content. A good working average is between 17.5% and 18.0 %. Use honeys at the lower end of this range for warmer climates and at the upper end for cooler climates.

Packaging Problems: Packaging is another area that can greatly affect customer acceptance. One problem with crystallized honey is the incorporation of air bubbles that can° Ccur when you cool the honey by stirring or when you mix seed crystals with the main batch of honey. If a large number of bubbles rise to the surface as the honey cools, they will produce a layer of foam. This will give the pack a bad appearance and may cause it to be rejected. As mentioned, you can minimize this problem by allowing the mixture of seed crystals and liquid honey to settle for an hour or two before bottling.

Another appearance problem arises from the fact that glucose crystals are pure white. This means that honey becomes lighter in color as it crystallizes. If the honey is not thoroughly strained, specks of comb, especially dark comb,

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Natural Beauty with Honey

Jill Hawker, Owner, All Things Jill, Calgary, Alberta

Since the days of Cleopatra, honey has been used as a beauty treatment. The legendary milk and honey baths that Cleopatra is known for are just one of many historical examples of people using honey's skin-enhancing properties.

Honey is a rich source of natural benefits for the skin. Full of minerals, vitamins and amino acids, Honey repairs, softens and nourishes the skin while improving its texture. In essence, Honey is one of the most pure and natural things you can put on your skin and body.

Honey is a natural humectant, meaning that it has the ability to attract water making honey a natural fit in a variety of body care products. It is also rich in alpha hydroxy acids (AHAs) which invigorate skin cell renewal, and can give skin a younger, healthier, more vibrant look. Honey also forms a protective, breathable barrier on the body that is antiseptic and conditioning. It is safe for most sensitive skins, and the use of honey produced locally to your environment can often be helpful with existing allergies.

In addition to the healthy benefits of honey, one of its byproducts, beeswax, works well in body care products because of compounds called wax esthers that exist in both beeswax and human skin. Beeswax is a hydrating ingredient that increases skin's essential moisture and forms a breathable shield to protect the skin from loss of this moisture. It is also widely reputed to be beneficial in the treatment of Ezcema and Psoriasis.

Personal care product manufacturers are increasing the incorporation of honey into their products. One reason they use honey is for its wholesome, all-natural image; more and more consumers are demanding cosmetics and personal care products made from natural ingredients.

All Things Jill's Honey Line of products delivers the sweetest of promises for your body. Handcrafted in Calgary, Alberta, each of our honey drenched, scrumptious products are made with only the purest of ingredients – no chemicals, no preservatives – nothing your body doesn't need. Pamper your body with our sumptuous cocktail of natural ingredients including raw Alberta honey, golden beeswax, propolis, organic cane sugar, cocoa and shea butters and precious plant oils that leave the hands, body, and lips soft and smooth as silk.

Surrender your body to a deliciously fragranced, honey sweet, All Things Jill experience!

For further information:

All Things Jill
403.283.2502
sales@allthingsjill.ca

A TRIBUTE TO REG SHUEL

Paying tribute to a friend and colleague of over 40 years (for one of us (SD)) and over 20 (for the other (PK)) is an honor. As a teacher and friend he was consistently selfless and generous with his time. His quiet humour always contributed perspective to discussions over morning coffee. His thorough, measured, analytical approach to his life style applied equally to his research in plant physiology and especially into the regulation of nectar secretion in flowers and the physiology of caste determination in honey bees.

Reg was born on 24 March, 1920 and died 30 March, 2006. He received his Bachelor of Science in Agriculture from the University of Toronto in 1941. His academic career was interrupted by World War II. He served as a Captain in the 11th Field Regiment, First Artillery Survey until 1945. He continued his studies, first at the University of Toronto for his Masters of Science in Agriculture (1948) and then at the Ohio State University for his Ph. D (1950). From 1950 to 1985 he rose through the ranks as a distinguished professor, first in the Apiculture Department, and latterly in the Department of Environmental Biology. He served as co-ordinator of the Apiculture program for many years, and from time to time acted as Chair of department. His extensive publication record spans 44 years, and lists over 50 publications. His scholarly activities and interests took him to editorship of the Journal of Apicultural Research from 1981 until after his retirement in 1985.

A retrospective of his decades of academic activity has left us with a harvest of memories. He concern for his friends, colleagues, and students extended into his involvement, and the tensions, of the very first brief that represented the views of the Faculty Association to the President of the Board of Governors. Later, he served on the University President's committee on pensions. He was influential in international development, participating in training of Kenyan students at home and in Canada as part one of the first international development projects in Apiculture (funded by the Canadian International Development Agency). He contributed consistently to the activities of the Ontario Beekeepers' Association, and to national concerns in beekeeping, honey production, pesticide problems.

We have memories of Reg's principled and respectful approach in all his relationships. Those memories can be best summed up in the values that seemed to motivate and inform his actions, and in his many interests, academic, professional, and personal. The commanding value was "for the good of the whole". We can pay an academic colleague and friend no greater compliment. We are sure that he is especially missed by his family, his wife, Helena; three daughters, Jane, Deirdre and

Heather Mattila

Heather Mattila Receives Top Graduate Student Honour

Gard W. Otis, Professor, Department of Environmental Biology, University of Guelph, Guelph, Ontario

The D. F. Forster Medal is the most prestigious graduate student award of the University of Guelph. It is named in honour of Professor Donald F. Forster, a former President of the University. This medal is awarded annually to a convocating graduate student who excels both academically and in extracurricular activities.

The recipient of the Forster Medal this year is Heather Mattila, a PhD graduate of the Ontario Agricultural College's environmental biology program, working in the field of honeybee behavioural ecology.

Heather currently holds a Natural Sciences and Engineering Research Council post-graduate scholarship and a post-doctoral position at Cornell University, where she is conducting research with Dr. Thomas Seeley, arguably the best honey bee behavioural ecologist in the world today.

Heather has built up a sizable list of publication credits that includes a chapter in the recently published Ontario Beekeeping Manual and 14 refereed journal articles, several of which were published in prestigious journals such as Proceedings of the National Academy of Sciences and Environmental Entomology. She has garnered nearly $300,000 in awards and funding, and has presented her findings at numerous scientific conferences in Canada and the United States, as well as in Japan and Slovenia.

While at Guelph, she assisted as a TA, discussion leader, and guest lecturer in five different on-campus courses over 11 course offerings; for her exceptional efforts she was awarded the OAC Class of '60 Award for Outstanding Teaching Assistant at the University of Guelph in 2005. She has also taught in several beekeeping extension courses and shared her work with the public at schools, community events, meetings of beekeepers, and through the media. She co-wrote a primer to help other PhD students survive and excel at their comprehensive exams, and has served as a mentor to her fellow graduate students in entomology. She was the student member of the board of directors of the Entomological Society of Ontario in 2002 and 2003.

I had the privilege of being Heather's PhD advisor. She possesses outstanding organizational and research abilities of which I am envious. Heather is without doubt the best all-round graduate student with whom I have been associated in my 24 years at the University of Guelph. Many undergraduate students have looked up to Heather as a role model as they start their own careers in science.

Heather received the Forster Medal at the OAC convocation ceremony, University of Guelph, 15 June, 2006.

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seemed less evident this year and the provision of standard strength or better pollination units has been reported.

The Beekeeper Olympics, a part of the annual Honeybee Festival held at the Honeybee Centre in Surrey is providing a great vehicle to build acceptance and awareness about bees and their value to agriculture. Extreme Sports "Live" Bee Beards -- Who are these guys that allow thousands of bees to gather around their chins and chests just for a shot at the $1,000 prize money? Fun and entertainment for the whole family with the Saturday night Hive Jive proceeds and a portion of honey sales donated to Charities of Choice, MS Society and the Clover Valley Resource Place are all great initiatives to promote our industry to the public. I am "Going for the Gold."

Best wishes to all for the current season, we hope to see hundreds of you getting out to Langley in January for the Annual General Meeting and Educational Symposiums.

Bee Maid

Regional member meetings were held June 5th to 7th in Spruce Grove, Saskatoon and Winnipeg to update members on the business of the Organization and to review the current situation in the Canadian and world honey markets. This is a very busy time of year for beekeepers and we appreciated those members who were able to attend and provide their input

Barrie Termeer

Bee Maid has been very busy launching the next phase of its marketing strategy. This phase involves interacting with our consumers by giving them the opportunity to enter the "Eat Right, Take Flight" promotion, incorporating Bee Maid's philosophy of helping our customer's live a healthy, natural lifestyle.

Bee Maid was pleased to participate in the recent Industry meetings in Calgary on June 8'th and 9'th. We thank the CHC for arranging for these meetings and sincerely hope that these meetings will lead to the establishment of a new set of Canadian Honey Regulations.

Reminder to all Canadian Beekeepers; you may now order your Bee Supplies on line from the Bee Maid Honey Bee Supply e-Store! This up-to-date, comprehensive beekeeping on-line-shop allows beekeepers across the country the convenience of ordering their supplies over the Internet at the click of a mouse! Please, take the time to tour the Bee Maid Honey Bee Supply e-Store, and bring our beekeeping supply centre right into your own homes.

Please visit our site at: www.beemaidbeestore.com

Eric Field is an award-winning Toronto-based illustrator, photographer, and member of CAPIC (Canadian Association of Photographers and Illustrators in Communications), NAPP (The National Association of Photoshop Professionals), and WTA (The Waterfront Trail Artists).

He is a graduate of both the Ontario College of Art and Design and the New York Institute of Photography, and has studied literature, history, and philosophy at the University of Toronto, and composition at the Royal Conservatory of Music.

Although his work is generally photo-based and digitally executed, it also usually reflects his training in traditional media such as drawing, painting, and printmaking, as well as displaying an appreciation for the tactile qualities (and imperfections) of these and other earlier techniques. You can see more of Eric's work at www.ericfield.com.

With ten years' experience as an illustrator, first-hand knowledge of writing, editing, and design, and a background in the humanities and fine arts, Eric is uniquely able to penetrate to the heart of any given text and to translate it into striking, context-sensitive imagery.

Cremed or Creamed Honey

Heather Clay National Coordinator,
Canadian Honey Council

Honey that is sold in its crystallized or granulated form is often referred to as creamed honey. Some companies use the term whipped honey, Kraft uses "churned honey", Quebecers use baratté, and others refer to set honey. Spun® Honey is the registered trademark of Sue Bee Honey in the USA. The National Honey Board mentions the term cremed or crèmed to describe creamed honey. It is not a spelling mistake. According to Jerry Probst, past employee of Sioux Honey Association, the reason for the spelling is because of protests from Wisconsin (the Dairy State). In their historic pro-butter anti margarine battle to protect the dairy industry, the state passed legislation to protect the use of dairy terms from products that are not dairy based.

There is controversy in Canada about the term "creamed". Dairy Farmers of Canada (DFC) have recently lobbied the government to reserve the words "butter", "cream", "creamy" and "creamed" for food that contains only dairy products. An amendment to the Canadian Food Inspection Agency Enforcement Act, Bill C-27 died when the government changed in January 2006. However DFC is ready to lobby again for stand-alone legislation to govern the proper use of dairy terms in a way that is not misleading to consumers. If the Dairy Farmers of Canada are successful in their bid to protect the word "creamed", Canadian honey packers will be forced to find an alternative.

become visible. Be sure to properly strain all foreign matter from the honey before proceeding with the crystallization process.

Glass containers present the producer with a number of challenges. Honey shrinks slightly upon crystallization and has a tendency to pull away from the surface of glass containers. Freezing containers of crystallized honey creates a similar problem. Glass also magnifies any imperfections that might be present in the honey. Each of these situations gives your product an unfavorable appearance and may lead some buyers to reject the product. Nonetheless, several producers of crystallized honey maintain the highest standards of purity and pack highly attractive products in glass containers, but they wisely use wrap-around labels.

Crystal Size: Not everyone agrees on what constitutes the best size crystal for crystallized honey. Clearly, different people have different tastes. Professor Dyce conducted taste tests many years ago and reported that the product most preferred by customers consisted of crystals too small to be felt by the tongue. Not all beekeepers agree with that finding, and many produce crystallized honey with larger crystals.

The Dyce Patent: The Dyce Process was patented in the US in 1931, shortly after Dyce developed it, and the rights were given to Cornell University. The Cornell Research Foundation administered the patent until its expiration in 1952. Licenses were granted to a few of the largest packers who were willing and able to spend the money to install the necessary equipment and to adhere to the instructions required to guarantee a quality product. A token royalty was charged, and the money derived from the patent was invested for use in honey bee research.

A separate patent was taken out in Canada (Dyce 1933) and the proceeds were donated to the Province of Ontario. Initially, no effort was made to license the process, and this resulted in an inferior product appearing on the market. As a result, the Canadian Government restricted the use of the process and granted licenses only to packers who were properly equipped to pack a quality product.

Crystallized honey is a product with considerable market potential. You can crystallize nearly any honey; and while crystallized honey can be made by other methods, there is no question that by carefully following the methods outlined by Dyce, you can be sure of consistently producing the highest quality product. Experiment with small batches using the methods outlined above. Keep good records of how each batch is made so that you can repeat your successes. In light of the downward pressure on honey prices brought about by imports, high-quality, value-added products like crystallized honey present beekeepers with a more profitable outlet for their honey.

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