



Agri-News

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Alberta Beekeepers Survey Results

Alberta beekeepers have struggled for the past three years, suffering from 30 per cent losses of their colonies each year. Most of these losses occurred during winter, which was an expected chain of events in case of failure of pest control, but beekeepers still were taken by surprise. It was fast and losses were far above their expectations.

“An annual survey was conducted to determine losses and to study possible causes of the reported high winterkill,” says Dr. Medhat Nasr, provincial apiculturist with Alberta Agriculture and Rural Development. “The **2009 Bee Winterkill Survey** confirmed what 2007 and 2008 surveys established: 28 per cent of Alberta bees were killed and 13 per cent of the colonies that survived were weak and non-producing. Throughout the province, 54 per cent of beekeepers reported losing one-third or more of their productive colonies in 2009 due to winterkill and weak colonies. However, 14 per cent of the beekeepers reported only 14 per cent winterkill and weak colonies.”

Study results from winterkill of bee colonies survey indicated that a monumental shifting in beekeeping management of varroa mites occurred in 2007. Basically, Apistan and Checkmite+ lost their efficacy against varroa. “This was a big blow for Alberta beekeepers,” says Nasr. “In addition, available alternative treatments when applied, did not provide sufficient control due to cold temperatures. A new nosema species, *Nosema ceranae* was also found in Alberta. The distribution and prevalence of the new species are unknown. Finally, a very long cold winter followed by a cold spring aggravated the problem resulting in high winter kill and weak surviving colonies.”

Laboratory analysis of hundreds of honey bee samples showed that honey bees were unhealthy. Sixty per cent of survived colonies were infected with varroa rates above the economic threshold (1%) and 50 per cent of bee colonies suffered from

nosema with infestation levels above one million spores per bee. Overall, 30 per cent of sampled colonies endured high infection of both varroa and nosema that could cause severe setbacks to bees’ health. Tracheal mites were at high levels in 10 per cent of the bee colonies. These reported infestations with varroa and nosema and, to a less degree, tracheal mites

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compromised the health of honey bees. Moreover, long and very cold winters only exacerbated the problem leading to higher than average winterkill.

“To begin turning the tide, in response to reported failures of Apistan and Checkmite+ in controlling varroa mites, beekeepers were advised to change their pest management practices,” says Nasr. “As a result, almost 85 per cent of beekeepers started to apply formic acid more frequently for varroa and tracheal mites control. The formic acid application time was also shifted to spring to better meet temperature requirements for achieving high efficacy rates. Some 23 per cent of Alberta beekeepers also resorted to oxalic acid applications in early winter and early spring when bee colonies are broodless for varroa control.”

The **2009 Bee Winterkill Survey** can be viewed on Alberta Agriculture and Rural Development’s website at www.agriculture.alberta.ca by searching *2009 Bee Winterkill Survey*.

Additional information on pest control research and what Alberta beekeepers are doing to protect their industry will be featured in an article in next week’s issue of Agri-News.

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Preharvest Herbicide a Management Tool to Aid Cereal Crop Harvest

During the 2009 growing season, cereal crops were subject to many stresses including poor soil moisture conditions, cool soil temperatures and frost. As a result of these adverse conditions many fields seeded to cereal crops have at least two crop stages present. Variable growth stages are problematic because it complicates decisions regarding timing of harvest operations. Fields with variable stages will have areas with mature plants, while other areas of the field will be immature. As harvest approaches, producers will need to consider their options for managing these fields.

“One approach that producers could utilize is the application of a glyphosate product to a standing cereal crop,” says Mark Cutts, crop specialist with Alberta Agriculture and Rural Development. “Applying glyphosate to a standing crop is commonly referred to as preharvest and is primarily used as a management tool to control perennial weeds such as quackgrass and Canada thistle.

“Glyphosate is a systemic herbicide that moves through the foliage into the root system and results in death of the entire plant. As a result of its behaviour in the plant, glyphosate applied to a standing cereal crop will terminate the growth of the crop and, over a period of time the entire field will dry down or ripen. The advantage of this approach is the elimination of the variable crop stages and improved harvest management. However, it should be recognized that the growth of the less mature portions of the field will be terminated and as a result will not contribute to yield.”

For producers considering preharvest herbicide as a management tool for their cereal crops there are several factors that need to be considered:

- **Registered cereal crops:** preharvest herbicide is registered on wheat, barley and oats. Producers growing barley for malt should contact their malt buyer to ensure a preharvest application is acceptable. It should also be noted that a preharvest application should not be applied to a cereal crop that is being grown for seed due to potential reductions in germination and vigour levels.
- **Timing of application:** for cereal crops, preharvest herbicide applications should occur when grain moisture is less than 30 per cent. This correlates to the hard dough stage of the grain. At this stage, a thumb nail impression remains on the seed. When planning a preharvest application in a field with two or more crop stages, producers will need to base the timing of the preharvest application on the most mature regions of the field.
- **Rate of application:** the standard rate for glyphosate in a preharvest herbicide application is 360 grams active ingredient per acre. Due to variations in the concentration of glyphosate products, producers will need to ensure that the glyphosate product is being applied at the proper rate. For example, the application rate will vary from 0.67 to 1.00 litres per acre depending upon the product being used.
- **Time required for crop dry down:** in general, a crop will require 10 to 14 days to dry down to become a uniform stand. The number of days required to achieve dry down will vary with environmental conditions. For example a fall with cool, wet conditions will extend the time required to achieve dry down.

The environmental conditions in 2009 have resulted in many cereal fields having two or more growth stages present. Proper management of these fields is required in order to ensure an efficient harvest of these crops. For more information on harvest management of these crops, contact the Ag-Info Centre at 310-FARM.

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Nitrate Accumulation in Crops

Nitrate accumulation can become a problem when crops experience light frosts, -1 °C to -2 °C for only a few hours during the night. These conditions damage the leaves of the plants but not the roots. Over the next three or four days, the roots continue to send nutrients up the plant, and the damaged plant is unable to use those nutrients, resulting in nitrate accumulation.

“When we get a heavy frost of -5 °C to -6 °C for six or seven hours, the internal working system of the plant is completely destroyed and it can no longer move water or nutrients. A killing frost means that the plants are dead and therefore nitrates won’t accumulate,” says Barry Yaremcio, beef and forage specialist with Alberta Agriculture and Rural Development. “It’s the light frosts experienced for only a few hours that damage the plant but not the internal bundles which are still able to move water and nutrients up the stem. The injured leaves can’t use the nutrients effectively, and that’s when there is the greatest chance of nitrate accumulate.”

Annual crops are the most susceptible to nitrate accumulation, oats being the worst, but also barley and wheat. Immature salvage canola crops cut for silage or greenfeed also have a tendency for nitrate accumulation.

“Alfalfa is a legume and the nodules on the roots tend to hoard the nitrogen and only release as much as the plants require,” says Yaremcio. “Nitrate accumulation is extremely rare in alfalfa.”

Spring fertilizer applications also have a significant bearing on the susceptibility of the crops. High amounts of nitrogen fertilizer contribute to the possibility of nitrate accumulation.

“If fields have been used for swath grazing, winter feeding areas, have had high manure applications or high amounts of fertilizers applied in the spring, those fields are more susceptible to accumulate nitrate in the plants,” says Yaremcio. “If there’s been no fertilizer applied, or if it’s an old grass field, those fields are not typically a problem.”

After a frost, the timing for cutting the field is a key factor in managing nitrogen accumulation.

“If producers can get out in the field the day after the frost and cut it as quickly as they can, there shouldn’t be a problem,” says Yaremcio. “Nitrate levels increase and peak at day-three to day-four after a frost.”

If there is time for the plants to recover, and there is no additional frost to kill the plants, by day-14 after the frost the nitrate levels will decline and return to normal.

“It’s either get out there the day after the frost and cut very quickly, or wait 10 to 14 days before cutting the field,” says Yaremcio.

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Cornering the Info on Consumer Trends

A new way to find out about consumer food trends, **Consumer Corner** has just been launched on Alberta Agriculture and Rural Development’s website.

“This new online series is intended to provide needed consumer-related information to Alberta’s agriculture and food industry and to the Alberta public,” says Diane McCann-Hiltz, provincial consumer market analyst with Alberta Agriculture. “The purpose of this new resource is to get more consumer-related information out to the industry. The industry has a need for information that will give them a better understanding of what consumers are buying and why they are buying it.”

Having access to this knowledge and intelligence they can develop more effective marketing strategies, reduce the risk associated with new product development and product innovation, and proactively respond to consumer needs.

“Currently two articles have been posted to this new website, one on Canadian food trends 2009 and the other is on breakfast trends in Canada,” says McCann-Hiltz. “Articles that will be posted soon include information on retail meat trends in Canada and U.S. and article about the differences between consumers in Canada and the U.S. in terms of their purchases and their attitudes towards food.”

McCann-Hiltz is a member of a working group of Alberta Agriculture staff members who focus on consumer and market research and analysis. There is an impressive pool of expertise in this area housed within the department, and it is hoped that **Consumer Corner** will help get much of the valuable information accumulated by this group out to the agriculture and food industry where it can benefit this growing Alberta industry sector.

To read the articles in **Consumer Corner**, visit Alberta Agriculture’s website at www.agriculture.alberta.ca and search **Consumer Corner**.

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Trading City Life for Farming Experience and Rural Lifestyle

The closest some people come to a farming experience is barbecuing a steak or making a fresh salad. Thanks to a new program in Alberta, young adults are making the leap from just eating steak and tossing salad to implementing rotational cattle grazing systems and harvesting vegetables from fields and greenhouses.

The Alberta Sustainable Agriculture Apprenticeship Program (ASAAP) makes this connection possible by pairing potential farmers with local farms in the Edmonton and Peace regions. Each member farm offers a different learning experience, work environment and time commitment. Most apprenticeships run from spring to fall, although several farms are currently looking for apprentices to start this fall. A list of all participating farms can be found at www.startfarming.ca

One thing each participating farm has in common is a desire to share their rural lifestyle and agricultural knowledge with people who want to become farmers, but do not necessarily come from a farming background. Peter Lundgard, owner of Nature's Way Farm in Grimshaw near Peace River, believes that, "we have to support sustainable agriculture and teach the new generation of farmers." Peter has two apprentices on his farm learning all aspects of his operation.

On the farm, every apprentice learns quickly. Collecting organic eggs, delivering calves in spring, maintaining a herd of bison, beekeeping, harvesting vine ripe tomatoes, edible flowers and

digging carrots, and selling at farmers' markets are just a few of the activities apprentices can participate in. One of the most rewarding experiences for apprentices is sitting down to a family meal on the farm, reflecting on the day and eating a well deserved meal they helped grow, raise and harvest. Food doesn't get more local than this.

"I have been wanting to learn more about how food is produced in Alberta so that I can grow more of my own food and potentially provide for others in my community. There aren't enough people producing food locally and we are going to need all the farmers we can get in the future," says Michael Hunter, an apprentice at Inspired Market Gardens near Stony Plain since April. "I'm getting hands-on experience in every practical aspect of running a market garden, from seeding to sales at the farmers' market and everything in between. I get lots of one-on-one discussions with an experienced owner and a horticulturalist. I get to see what I'd be getting into."

In addition to learning on their host farms, the apprentices also attend farm tours and workshops provided by other farmers in the program. "Meeting experienced farmers and getting connected with other apprentices is a big part of what this program is about," says Becky Lipton, ASAAP coordinator. "These networks are really important when it comes to successfully transitioning from learning to farm start-up."

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Agri-News Briefs

What's New in Publications

Alberta Agriculture and Rural Development has released its **What's New in Publications – Summer 2009**. The newsletter highlights new information products that have been added to the department's Publications Office over the last three months. The document is available on-line at www.agriculture.alberta.ca/publications by clicking on the *What's New* link. You can order hard copies of the free publications listed at no charge by calling 780-427-0391 or 1-800-292-5697 (toll-free in Canada). Both free and priced publications may also be viewed online at Alberta Agriculture's website www.agriculture.alberta.ca/publications

Western Nutrition Conference

The Western Nutrition Conference is being held in Winnipeg, MB, on September 23 to 24, 2009. Some of the conference topics include:

- Defining the role of bacteria in animal production and efficiency
- Optimizing efficiency of animal production
- Increasing feed efficiency and weight gain in boiler chickens
- Utilizing natural products in organic production systems
- Advances in companion animal nutrition
- Enhancing immunity through nutrition

For further information on the conference and registration, contact Lisa Burdeniuk, conference coordinator at 204-983-2477, e-mail lburdeniuk@cigi.ca or visit the conference website at www.westernnutritionconference.com