

Animal Health Monitor

OCTOBER 2012



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Editorial by Dr. Paul Kitching

Earlier this year a new Animal Health Act—Bill 37, was presented to the BC Legislature to replace the existing Animal Disease Control Act. Other provinces, in particular Alberta and Ontario have recently updated their animal health legislation, and it was time to update the 1948 BC legislation to bring it into harmony with the rest of Canada. The proposed Act would more clearly define the powers required for modern animal disease control strategies, such as surveillance zones and animal movement restrictions. Also included, was an exemption of a client's personal animal health records from the BC Freedom of Information legislation. This was consistent with the practice in other Canadian provinces to protect these commercially sensitive records, and thereby encourage animal owner cooperation in disease surveillance. In no way would this exclusion restrict the response to a disease outbreak. In fact it would increase opportunities for the early detection of an outbreak which would significantly reduce the consequences on the industries.

The protection of a client's personal animal health records from public scrutiny was viewed with suspicion in many media reports, and comparisons were made with

the public right to know which restaurants had failed a health inspection. But restaurant inspections are much more routine than identifying the presence of an emerging animal disease that could decimate the provincial livestock population. Inspectors can enter a kitchen and swab the utensils and prepared food, looking for specific organisms which indicate the quality of the hygiene standards being practiced. The timing of the inspection could be random or in response to a report of food poisoning. The first person to know that the animals are sick is the farmer, and it is the cooperation of the farmer that will ensure rapid identification and diagnosis. However, if by so doing, the farmer is put out of business because the public and food processors have boycotted even proven safe farm products, what is the incentive to cooperate?

Some diseases are more of a threat to human health than animal health, and may not cause the farmer economic loss. But it is obviously in the public interest to identify and eradicate the organism causing the disease from the farm. By working with the farmer this can be successfully achieved, but only if the farmer knows that the existence



of the organism on the farm will not appear in the morning press. Animal disease control programs can only be successful if government works together with farmers, in an atmosphere of trust and with the public confident that the outcome is in the best interest of everyone.

Other concerns were also expressed about the new Animal Health Act and it failed to pass in the spring session, and will have to wait for representation. It is important that BC has the legislative tools to effectively fight animal diseases, and it is important that the public are reassured that there is nothing sinister in the new legislation that might leave them at risk from an undeclared pathogen. I look forward to the opportunity to continue the effort to have a new Animal Health Act in place before the absence of its provisions are made glaringly apparent during a major disease outbreak in the province.

The proposed new Animal Health Act

http://www.leg.bc.ca/39th4th/1st_read/gov37-1.htm

European Fire Ants Risks to People, Pets, and Livestock

by Tracy Hueppelheuser , Entomologist, Plant Health Unit

European fire ant (*Myrmica rubra*) (EFA) was identified in 2012 in urban sites in coastal BC by Dr. Rob Higgins, Thompson Rivers University, Williams Lake, BC. Confirmed BC sites are in Burnaby, Vancouver, Victoria, North Vancouver, and Chilliwack. This ant has been confirmed in Washington State (Seattle), eastern Canada, and eastern USA. First introductions to North America were over 100 years ago in Maine, USA. We theorize that a more aggressive strain was introduced about 15-30 years ago, when the spread and impact in North America accelerated. There has been no delineation survey to confirm the extent of establishment in BC; current detections are based on urban resident submissions to Dr. Higgins. Research is currently underway in 2012 to better understand the distribution of this ant in southern BC.

EFA builds nests in lawns, garden beds and related urban substrates (e.g., cold-frames, small greenhouses) and swarms and stings anything that disturbs it; including people and pets. Aggressive

behaviour is most notable above 20°C; ants don't swarm and sting at cooler temperatures. EFA seem to prefer cultivated soil (turf, containers, gardens), but is also recorded in various natural sites in Maine, USA.

Human assisted dispersal is considered to be the main means that the ant gets around to new locations. Natural spread occurs but is slow because ants don't appear to fly during the reproductive (nuptial) period in late summer/fall in North America as they do in their native ranges in Europe. Colony budding (a queen leaves with a few hundred workers and finds a new nesting site) can occur any time during active foraging season.

Presence of EFA can have various impacts including: decrease in property values as a result of infestation, unmarketable container/nursery stock, costs to control and inspections, increase in plant feeding pests. EFA aggressively 'farm' aphids and other plant feeding pests for their sugary secretions, 'honeydew', preventing natural biocontrol from being effective. EFA are attracted to sugar, and will feed directly



on fruit (i.e. strawberries, apple slices).

Provincial Ministries in cooperation with Dr. Higgins and the Invasive Species Council have launched a website to provide information to the public:

http://www.for.gov.bc.ca/hra/invasive-species/fire_ants.htm

If you think you have European fire ant on your property, ant samples can be submitted to the Plant Health Lab for identification. There is no charge for suspected EFA samples.

<http://www.agf.gov.bc.ca/cropprot/lab.htm>

12th Annual Zoonotic Diseases Symposium

Thursday November 15, 2012

9am - 3:30pm

Langley Golf & Banquet Centre

21550 - 44th Ave, Langley, BC

This symposium provides an opportunity for professionals from across BC to gather, network and learn about disease issues affecting animals and humans. The symposium is a partnership of the BC Ministry of Agriculture and the BC Centre for Disease Control.

Please plan to attend this year's symposium and forward this invitation to colleagues who might be interested. Registration, including lunch, is free. For planning purposes, including lunch, please register your attendance with Debi (Debra.Sand@gov.bc.ca) at your earliest convenience.

Dr. Brian Radke , Public Health Veterinarian Ministry of Agriculture

Medicated feed usage **By Andrew Schroeder—vet student**

Summer is coming to a close and yet it feels as though I am just getting myself settled in. With October almost here I am sad to have to say goodbye to all the great people I enjoyed getting to know and working with. I had the opportunity to participate with the Growing Forward project, Quantifying Over the Counter Antimicrobial Use in BC livestock; working with Brian Radke and Bill Cox.

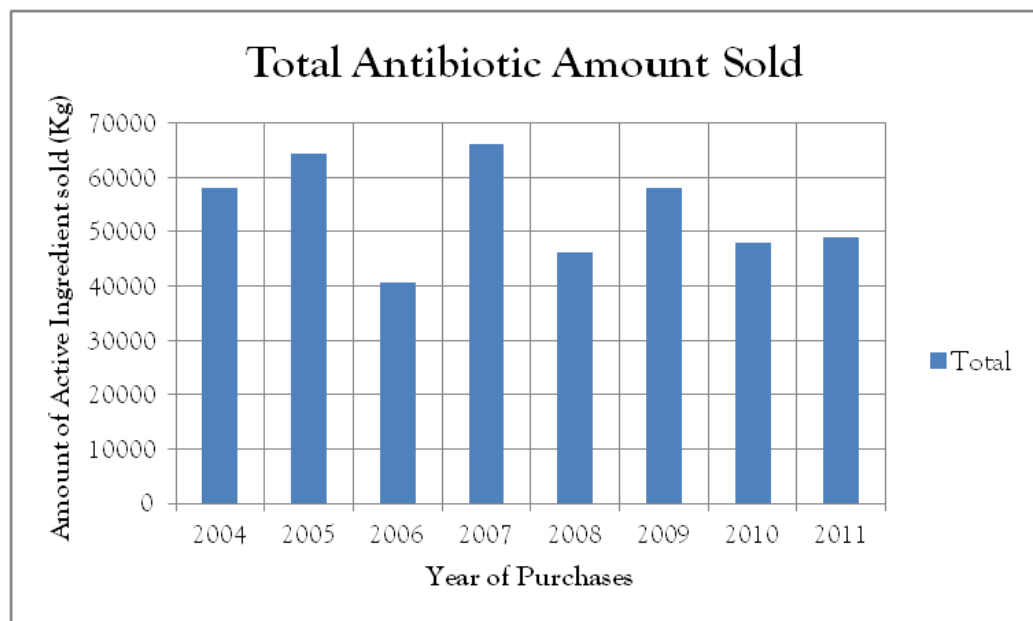
The use of antibiotics in animals, particularly livestock, is of global societal interest. This interest stems from the ongoing debate about the degree to which antibiotic use in animals contributes to antibiotic resistance in bacteria causing human disease. Antibiotic administration in livestock feed to promote growth and disease prevention and over the counter (non-

prescription) antibiotic use are particular areas of interest. The debate is hampered by a deficiency of data on antibiotic usage. Therefore, this project compiled information from licensees of the BC Veterinary Drug and Medicated Feed Regulation who annually submit their veterinary drug purchases.

Using an Excel spreadsheet I created a template to summarize the purchase records and to include additional information such as administration method, approved species and other crucial information to categorize and analyse the purchases. The compiled data excludes antibiotics directly sold by pharmacists or veterinarians as they are exempt from the regulation. The compiled information will be posted on the Ministry's website and expand on

the similar information that is currently provided on antibiotic use in aquaculture. To our knowledge BC is the only Canadian province providing such information. Hopefully, our transparent approach will be embraced by others including human hospital pharmacies whose data is not included in human antibiotic use reporting.

Once all the information was entered into the spreadsheet it was easier to analyze and visualize the amount of active ingredients being sold. Summarized records from all the years were combined to create different graphs illustrating antibiotic use trends over the last 8 years. Figure 1 is a preliminary analysis of total amount of antibiotics sold. Antibiotic purchases appear to have declined slightly.



Host-Specificity of Nosema Species In Question.

by Paul van Westendorp, Provincial Apiculturist

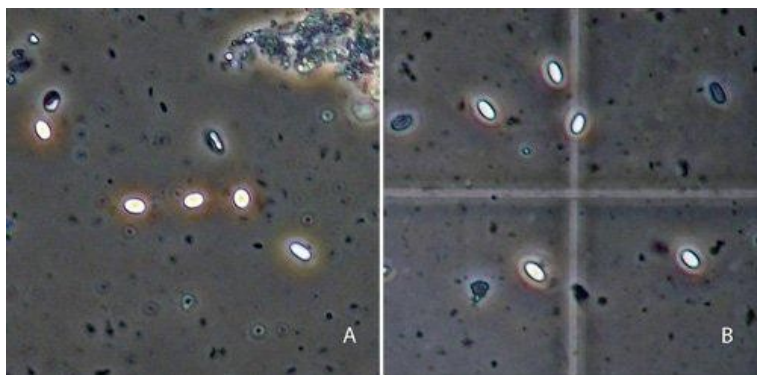
Nosema is a genus of microsporidian parasites of various insect orders. Nosema disease of honey bees affects the epithelial wall of the gut of adult bees. The disease is most prevalent in spring after bees have been confined to the hive during the winter months. The disease can be controlled by the application of the antibiotic fumagillin. The onset of spring also assists in reducing Nosema prevalence as bees begin foraging for fresh pollen and nectar sources.

There are some 80 species of Nosema all of which have been described as host-specific. *Nosema apis* has been the common parasite of the European honey bee *Apis mellifera*, while *N. ceranae* is a natural parasite of the Asiatic honey bee *A. cerana*. Other examples of host-specificity include *N. locustae* parasitizing grasshoppers and locusts, and *N. bombi* affecting bumble bees. While host-

specificity has been reported or assumed in most literature, the emergence of *N. ceranae* in European honey bee populations in North America which subsequently led to the complete replacement of *N. apis*, has put the claim of host-specificity into question.

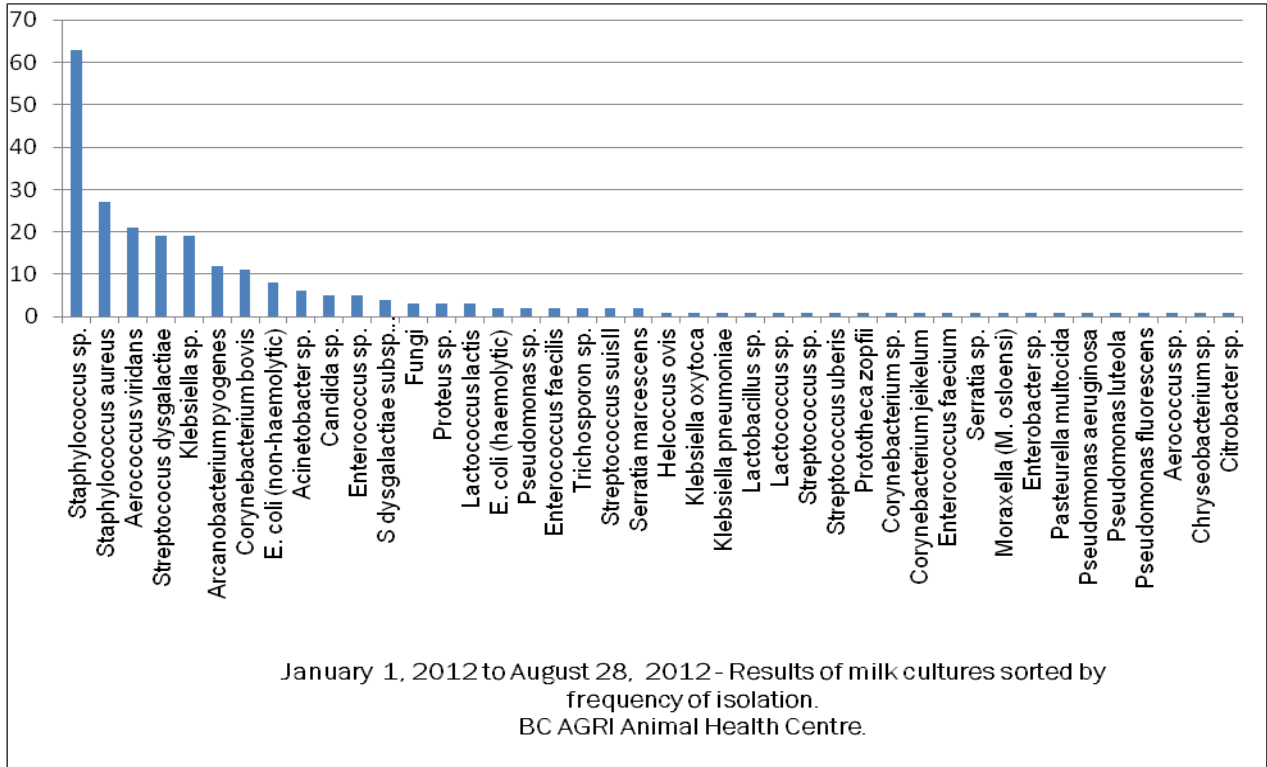
Host-specificity of other Nosema species may also be in doubt. In the mid-1970s, a simple study involving grasshoppers resulted in catastrophic mortality after the test population had been fed a diet with *Nosema apis* spores. In 2007, we examined a sample of Yellow Jackets (*Vespula pensylvanica*) to confirm the presence of Nosema spores. PCR techniques identified the species to be *N. bombi*. It is not known whether *N. bombi* actually parasitized the adult wasps or that its presence was the result of Yellow Jackets having robbed out a bumble bee nest.

Sensitivity to Nosema also varies among host species of the same genus. Since the 1980s, the BC tomato greenhouse industry was fully reliant on the supply of the native Western Bumble bee *Bombus occidentalis* to meet its pollination requirements. In 1998, bumble bee suppliers reported serious outbreaks of Nosema in their rearing facilities which they failed to get under control. At the same time, *Bombus impatiens* of Eastern North America reared in parallel laboratories didn't appear to be impacted in the same way and the disease was readily controlled. *N. bombi*'s persistence in laboratory-reared *B. occidentalis* populations eventually led to its abandonment and today, the entire North American tomato greenhouse industry relies on *B. impatiens* to meet its pollination requirements.



This photograph depicts the two Nosema species (*apis* and *ceranae*) that both afflict the honey bee *Apis mellifera*.

Mastitis Culture Results by Dr. Jane Pritchard



Between January 1 and August 28, 2012, 389 milk samples (85 submissions) were received for culture and sensitivity at the Animal Health Centre. Out of the 389 samples submitted, no bacteria were isolated in 197 samples.

The resistance results of the 5 most frequently isolated organisms in the second quarter of 2012 are presented in the chart below.

Resistance by Isolate	amp	kf	ob	e	xnl	p10	pyr	sxt	tet	# of isolates tested
Staphylococcus sp.	6%	0%	10%	5%	2%	8%	17%	2%	8%	63
Staphylococcus aureus	7%	0%	0%	0%	0%	11%	7%	0%	7%	27
Aerococcus viridans	0%	0%	24%	0%	0%	0%	10%	19%	33%	21
Streptococcus dysgalactiae	0%	0%	0%	0%	0%	0%	0%	0%	26%	19
Klebsiella sp.	68%	11%	68%	68%	5%	68%	68%	0%	11%	19

amp - ampicillin	ob - cloxacillin	xnl - excenel	pyr - pirlimycin	sxt - sulfamethoxazole/trimethoprim
kf - cephalothin	e - erythromycin	p10 - penicillin	tet - tetracycline	

Sheep and Goat workshops by Nancy deWith

A workshop for sheep and goat producers, called “Keeping Flocks Healthy” is being held this fall in a number of communities in BC.

The focus of the workshops is biosecurity—keeping diseases off farms, controlling diseases that may be on farms, and preventing diseases from spreading off the farm. The workshops focus on infectious diseases, where the principles of biosecurity play the most important role. Also included are some basics on management to help demonstrate how biosecurity techniques are used in everyday practice. Biosecurity isn't a series of “extra” or “separate” rules to follow, but are part of the farming routine. These principles need to be considered whenever animals are mixed, people come onto the farm, an animal is sick and needs to be isolated, etc.

The binder of written materials produced in the past year will be distributed both at the meetings as well upon request, and will soon be available on the Ministry of Agriculture website <http://www.gov.bc.ca/agri/>.

To register for a workshop, contact Lynette Hare at 1-877-877-2474 or 604-556-3093. The workshops will be held in the following locations:

<i>Community</i>	<i>Date</i>	<i>Location</i>	<i>Address</i>
Prince George	22-Sep-12	Prince George Civic Centre	808 Civic Plaza
Quesnel	23-Sep-12	Best Western Tower Inn	500 Reid Street
Grand Forks	13-Oct-12	Senior's Citizen's Association Branch #68 Hall	565 71 Avenue,
Kelowna	14-Oct-12	Best Western Plus	2402 Hwy 97 north
Haida Gwaii	20-Oct-12	Tlell Fire Hall	Hwy 16, Tlell
Kamloops	20-Oct-12	Kamloops Convention Centre	1250 Rogers Way
Langley	27-Oct-12	Holiday Inn Express Langley	8750 204th Street
Salt Spring Island	3-Nov-12	Hart Bradley Hall (Lions Club)	103 Bonnet Avenue



Animal Health Centre
1767 Angus Campbell Road
Abbotsford BC V3G 2M3

Toll free (BC only):
1-800-661-9903
Phone: 604-556-3003
Fax: 604-556-3010

Past editions of the Animal Health Monitor can be found on our website:

<http://www.agf.gov.bc.ca/ahc/AnimalHealthMonitor.html>

Send correspondence to: Debra Sand
Email: debra.sand@gov.bc.ca
Phone: 604-556-3023
Fax: 604-556-3015

To receive this newsletter electronically, contact
Lynette.Hare@gov.bc.ca

