

THE DAIRY GOAT DIGEST

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TESTING FOR VETERINARY DRUG AND MEDICATED FEED RESIDUES

BY BRUCE KEOWN, FOOD SCIENTIST, DAIRY
FOOD SAFETY SCIENCE UNIT

A study to determine the prevalence of selected veterinary drug and medicated feed residues in raw goat milk has just been completed. In this study, samples were tested for the presence of several common parasiticides including monensin, lasalocid, abamectin, doramectin, eprinomectin, ivermectin and moxidectin. The results of this study reinforce the message that producers must be very careful in the use of veterinary drugs and medicated feeds. For example, Monensin residues in one sample were caused by the inappropriate use of medicated feed on lactating goats. Another sample with moxidectin residues was caused by the extra-label use of veterinary drugs. OMAFRA worked with producers to resolve the problems.

PREVALENCE OF *COXIELLA BURNETII* IN RAW GOAT MILK

BY BRUCE KEOWN, FOOD SCIENTIST, DAIRY
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OMAFRA is testing raw goat milk to determine the prevalence of *Coxiella burnetii*. Preliminary results indicate that the prevalence is high at approximately 30%. This microorganism can cause Q fever, a potentially serious human illness.

Ruminants are the primary reservoirs of *C. burnetii*. It does not usually cause clinical disease in these animals, although abortion in goats and sheep has been linked to *C. burnetii* infection. During birthing, the organisms are shed in high numbers within the amniotic fluids and the placenta. The organisms are resistant to heat, drying, and many common disinfectants and may survive for long periods in the environment. *C. burnetii* is also excreted in milk, urine, and feces of infected animals. Considering the high prevalence of this microorganism in the raw goat milk samples tested, raw goat milk should not be consumed. *Coxiella burnetii* is killed by the pasteurization processes used by licensed dairy processors.

RESEARCH PROJECT TO TEST GOAT MILK USING THE BACTOSCAN

BY BRENDA NORRIS, DAIRY TECHNICAL REGULATORY ANALYST, DAIRY FOOD SAFETY PROGRAM

THIS new study using goat milk, aims to determine the suitability of the BactoScan as the method for routine raw goat milk bacteria testing.

In March 2009, OMAFRA initiated a study at Lab Services, University of Guelph that involves bacteria testing of raw goat milk samples using both the Standard Plate Count (SPC) method and the BactoScan. Data will be gathered for one year and then analyzed to determine the suitability of the BactoScan as the method for routine raw goat milk bacteria testing.

The BactoScan is currently used on raw bovine milk by regulatory programs in several European countries, a number of states in the US, and several provinces in Canada, including Ontario. The BactoScan FS model was introduced in Ontario in 2001 following extensive testing of raw cow milk samples using both the SPC method and BactoScan and then comparing results to develop a correlation equation.

In cow milk, the BactoScan equivalent to 50,000 cfu (SPC) is 122,000 ibc. In general, the BactoScan count for a particular sample should be higher than the corresponding SPC because the BactoScan counts 'individual bacteria cells' (ibc) whereas the SPC method counts clumps of bacteria as 'colonies' (colony forming units or 'cfu'). The BactoScan also counts some bacteria that are not counted by the SPC.

September 2002 BactoScan Findings

- raw goat milk: 50,000 SPC = 342,000 IBC
- raw cow milk: 50,000 SPC = 122,000 IBC
- significantly different equivalent
- requires further study

Figure 1. September 2002 BactoScan Findings.



This new study using goat milk, aims to achieve a similar outcome to the raw cow milk comparison. The study will examine factors which may explain the differences in the BactoScan test results when compared with the standard developed for cow milk.

An OMAFRA study conducted in 2002 indicated that even though raw cow and goat milk samples had the same SPC counts, the BactoScan results on goat milk were significantly different from those on cow milk. At that time, the BactoScan had difficulty processing some goat milk due to quality issues. Therefore OMAFRA reverted back to using the SPC, which takes longer to get results and is more expensive. While the SPC requires 2 to 3 days until results are available, the BactoScan shortens this time drastically to under 15 minutes. Labour and testing supplies are also significantly reduced for the BactoScan making it a more economical option.

This 2002 OMAFRA study found that the BactoScan results were roughly three times higher on goat milk than cow milk, (Figure #1). The difference in physiology between a cow and a goat may also mean the presence of different bacteria in the milk and explain these differences. Also contributing to higher results are longer bulk tank storage times that may allow certain organisms such as psychrotrophs (bacteria which grow at cold temperatures) to continue to grow and multiply.

Over the course of the next year, approximately 115 randomly selected raw goat milk samples per month will be tested using both the BactoScan and SPC test methods. Additional sample information will also be collected including age of milk when collected, season, and stage of production. OMAFRA will then gather and analyze the results to determine the suitability of the BactoScan for the testing of goat milk. The study is expected to conclude by early 2010.

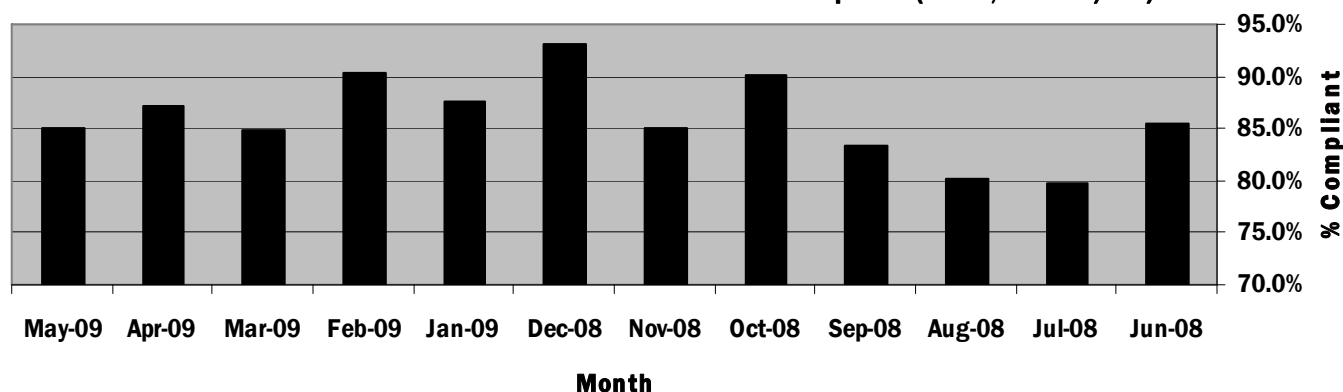
SUMMARY OF RAW GOAT MILK QUALITY

BY JEFF PERKINS, SCIENTIFIC SUPPORT ANALYST, INFORMATION AND MANAGEMENT UNIT

GOAT MILK SUMMARY - STANDARD PLATE COUNT IN COLONY FORMING UNITS (cfu)/mL

Year	Month	Samples Tested	≤10,000 cfu/mL	10,001-50,000 cfu/mL	>50,000 cfu/mL	% ≤10,000	% Compliant
2009	May-09	262	171	52	39	65.3%	85.1%
	Apr-09	256	167	56	33	65.2%	87.1%
	Mar-09	243	150	56	37	61.7%	84.8%
	Feb-09	239	174	42	23	72.8%	90.4%
	Jan-09	225	158	39	28	70.2%	87.6%
2008	Dec-08	215	166	34	15	77.2%	93.0%
	Nov-08	213	137	44	32	64.3%	85.0%
	Oct-08	224	165	37	22	73.7%	90.2%
	Sep-08	234	134	61	39	57.3%	83.3%
	Aug-08	227	120	62	45	52.9%	80.2%
	Jul-08	228	114	68	46	50.0%	79.8%
	Jun-08	227	145	49	33	63.9%	85.5%
	May-08	221	147	44	30	66.5%	86.4%
12 Month Average		229.3	148.1	49.3	31.9	64.6%	86.1%

Goat Milk - Standard Plate Count - % of Producers Compliant (≤50,000 cfu/mL)



DO NOT FORGET: INTERNATIONAL GOAT SYMPOSIUM

Lindsay, Ontario is the place to be from August 11 to 13, 2009 for the fourth International Goat Symposium. This three day event includes numerous activities, such as farm tours, speakers, a dairy goat show, and much, much more! Check out the website: <http://www.goatsymposium.com/main.htm> to find out more about the Symposium including all the events, accommodations, registration and directions. Still have questions? Check out the contact IGS link off of the website main page.

WHEN TO CONTACT YOUR OMAFRA RAW MILK SPECIALIST:

- Do you need assistance resolving milk quality issues?
- Are you making milkhouse or parlour renovations?
- Are you putting in a second bulk tank?
- Are you changing to a different broker/buyer of goat milk?
- Are you ceasing production permanently or temporarily?
- Are you resuming shipments after being out of production more than 30 days?
- Do you require a name change on your file?

If you answered yes to any of these questions you should contact the Dairy Food Safety Program of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

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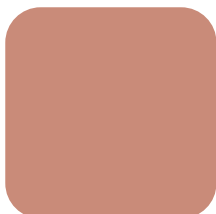
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Extension is last 5 digits of telephone number

LEARN MORE!

Check out past issues of the Dairy Goat Digest at http://www.omafra.gov.on.ca/english/livestock/goat/news_dairygoat.html.



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