

THE DAIRY GOAT DIGEST

*Dairy Food Safety Program, Food Inspection Branch
Food Safety and Environment Division*

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NEW ANTIBIOTIC RESIDUE TESTING AVAILABLE FOR GOAT MILK

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The most commonly used antibiotics in dairy animals can be grouped into three major classes:

- Beta-lactams (such as penicillins and cephalosporins)
- Tetracyclines (such as oxytetracycline, tetracycline and chlortetracycline)
- Sulfonamides (such as sulfamethazine).

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) has increased its ability to detect these antibiotic residues in goat milk and is now routinely screening bulk tank samples for all three groups of these antibiotics.

Antibiotic residues in foods are of concern as they have been linked to severe allergic reactions, carcinogenicity and the spread of bacterial resistance to antibiotics used in human medicine.

As well, antibiotic residues (also referred to as 'inhibitors') in milk can reduce or destroy starter culture activity used in the manufacture of cheese and yogurt. This may result in considerable economic loss to the processor and the loss of milk's superior reputation as a safe and wholesome food.

For these reasons, Regulation 761, 5.(1)(h) of the Milk Act States that,

"No producer shall sell or offer for sale milk or cream that contains an inhibitor, when tested by an official method at a laboratory approved by the Director."

As such, producers must ensure that all milk leaving their farm is free of detectable antibiotic residues. If a producer's milk tests positive for antibiotics the producer's bulk tank will be placed under detention and milk shipments suspended until the milk test is negative. For more information see separate article in this issue *Preventing Antibiotics in Your Milk*.



Figure 1: Bulk Tank Samples.

PREVENTING ANTIBIOTICS IN YOUR MILK

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Since residues in milk can be traced back to improper use of antibiotics at the farm, producers must ensure that necessary precautions are taken when treating livestock with antibiotics.

Procedures to follow

- Administer drugs only on the advice of your herd health veterinarian.
- Follow veterinarian's instructions exactly for the method of administration (such as intramuscularly, orally, etc), the dosage amount and timing.
- Identify treated animals with markings or bands. Ensure everyone involved in milking is aware of which animals have been treated and follow special milking procedures.
- Ensure milk from treated animals does not get into the bulk tank.
- Follow the withholding time specified by your veterinarian.
- Make a written and permanent record of the animal(s) being treated, dosages, date(s) administered and withdrawal times (milk and meat).

If you are uncertain of antibiotic residues (also referred to as 'inhibitors'), test the milk using an appropriate inhibitor test kit prior to re-entry of treated does into the milking line-up.

Steps to take if you have mistakenly milked a treated animal

If you have milked a treated animal and suspect the milk has entered the bulk tank:

- Stop milking.
- Dump the milk already in the bulk tank.

Thoroughly rinse and clean all milking equipment including hoses, pipelines and bulk tank before resuming milking.

Test if you Suspect

If you are uncertain about antibiotics in your milk, have it tested before shipping. Test kits specifically for goat milk are available for the beta-lactam, tetracycline and sulfonamide families of drugs. Each test has its own benefits and limitations in cost, speed, sensitivity and efficacy. (Note that some test kits are approved for bovine milk only – not goat milk – and may produce inaccurate test results.)

Testing services are available from veterinarian clinics, some processors and the Agriculture and Food Laboratory, University of Guelph at 1-519-767-6299 (Toll Free at 1-877-863-4235) or visit their website at www.guelphlabservices.com/AFL/raw.aspx

The major suppliers of test kits for the North American dairy market are CHARM Sciences and Idexx Laboratories. For information on test kits and ordering, visit:

www.charm.com/en/dairy/dairy-antibiotics.html

www.idexx.com/view/xhtml/en_us/dairy/dairy-testing.jsf



Figure 2: Snap test kit .

A positive inhibitor test result may also be caused by:

- medicated feeds
- incomplete cleaning of ALL milking equipment after inadvertently milking a treated goat
- not adding a safety margin to the milk withholding time (the metabolism of the treated animal may be slower than expected which slows the rate of the drug leaving the animal's system)
- using a combination of drugs to treat an animal, which may lengthen the withholding time beyond that of each individual drug
- administering drugs in a method different from that stipulated (such as intramammary rather than intramuscular), or giving a higher dosage than recommended withholding milk only from treated halves . ■

For more information on what you can do to prevent antibiotics from ending up in your bulk tank of milk, refer to the fact sheet *Troubleshooting Antibiotic Residues in Goat Milk* on the OMAFRA website at www.omafra.gov.on.ca (search 'antibiotic residues') or contact your Raw Milk Specialist.

WHAT THE INSPECTOR SEES

PHILLIP WILMAN, RAW MILK AND DAIRY PLANT SPECIALIST, DAIRY FOOD SAFETY PROGRAM

When performing routine inspections of dairy goat farms, the Raw Milk Specialist (more commonly known as the inspector) makes notes on what he sees. Many of the notes deal with deficiencies ranging from very minor things, such as an overflowing garbage receptacle, to major issues, such as a vacuum line filled with milk residue and maggots, or improperly disposed of deadstock. The paragraphs below are in no specific order, but highlight the most common deficiencies seen by the Inspectors as they make their rounds. Messy, dirty, cluttered, unkempt, untidy and unclean are all words that have been used to describe the milk house, the milking area (parlour) and the milking equipment on too many goat farms. Cleanliness in all these areas is critical to the production of safe, high quality goat milk. Daily attention to maintaining the milk house and parlour is as important as keeping both the interior and the exterior of milking equipment clean and sanitary.

Clean Radiators

Incidents of poor milk quality often arise in the summer months, and this summer has been no exception. Keeping the radiator of your cooling compressor clean is a simple, yet often overlooked step in the maintenance of your milking equipment. A dirty radiator slows the rate of milk cooling, often leading to increased bacteria counts and even to butterballs caused by excessive agitation.

Screen Openings

Propping doors open, disconnecting self-closers or failing to repair a broken door or closer can lead to increased animals and pests (such as flies) in the milk house. Both can have a direct impact on the milk quality. We receive lots of comments from the milk transporters about flies in the bulk tank and have even found mouse parts in a spray ball! Make sure doors are tight-fitting, self-closing and kept shut. If extra ventilation is required, install screened openings.

Trim Hooves

Hoof trimming does not appear to be anyone's favourite job, but it is critical to animal health and welfare. Establishing a routine schedule for hoof health makes it easier to not "put it off till tomorrow". Research in the cow dairy industry shows a 5-10 percent increase in milk production when hooves are properly trimmed on a routine basis. Discussions with veterinarians at OMAFRA and the University of Guelph suggest that the response in goats is likely closer to 15 percent more milk!

Replace Worn Components

Milking equipment is the same as any other piece of equipment; it will wear out and break down, particularly

inflations, gaskets and hoses. We often see producers who try to get every last milking they can out of their milking equipment, especially inflations. Inflations, gaskets and hoses are made of materials which have a defined lifespan of use, which will vary depending on the type of material and the manufacturer. As they age they become more porous allowing biofilms and other residues to deposit. Consult with your supplier to determine the change intervals for these important components of the milking equipment on your farm. Worn or ripped parts cannot be properly cleaned and sanitized, and lead to poor milk quality.

Consistent Udder Prep

The final point that needs to be made here is about udder preparation and post milking teat dipping. Even though there is insurmountable evidence showing that the proper and **consistent** use of udder preps and post dips lead to lower somatic cell counts, decreased bacteria counts in milk, faster milk out times and increased milk yield, we still see farms where these two critical components of milk quality are overlooked. It must be noted that on many of our farm visits where we are troubleshooting poor milk quality, the producer will admit that because things were "going well" they decided to stop the udder prep and/or post dip steps. In these cases, inevitably udder health problems developed shortly thereafter, leading to increased bacteria counts in milk, and in some cases financial penalties.



Figure 3: Proper and consistent udder prep lowers SCCs.

Never forget that you are producing food for consumers. Your facilities and practices need to measure up to Grade A standards at all times. ■

DO YOU HAVE A HERD HEALTH PLAN FOR YOUR DAIRY FARM?

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As dairy goat farms/producers become more progressive and milk yields increase, we frequently see more herd related issues dealing with animal disease and productivity. Examples include increased mortality (adult and kid), poor milk quality, nutritional problems (i.e. pregnancy toxemia), and fertility issues (i.e. abortion). Creating and following a herd health plan will benefit your operation by providing good animal health, welfare and production while balancing competitive economic returns. The proper development of a herd health plan involves a team approach involving your veterinarian, nutritionist, equipment dealer, management team (family and/or employees), financial advisor and any other people/organizations who bring value to your operation. A herd health plan needs to be customized to **your** dairy herd—your plan will not be the same as other dairy goat producers.

What is a Herd Health Program?

"Objective is the maintenance of animal health and production at the most efficient level that provides competitive economic returns to the animal owner."
- Dr. Otto Radostits

What does it take to create a herd health team?

1. Work with a small ruminant veterinarian and establish an ongoing veterinary-client relationship. Veterinary costs are a very minor part of the overall expenses of a dairy goat operation. A small increase in veterinary expenses by utilizing your veterinarian for herd health will result in increased profits by improving overall animal health, production and milk quality.
2. Nutrition impacts the health and productivity of your herd. Your nutritionist is a key part of the herd health team by assessing the quality of feedstuffs and advising on the best utilization of those feeds to meet the metabolic demands of your animals.
3. Your equipment dealer needs to be involved in your herd health team as poorly maintained or improperly functioning milking equipment can cause udder health issues. These can impact overall animal health and ultimately profitability of your dairy herd.
4. Properly trained and fully engaged staff and family members understand the importance of ensuring consistency in each part of the operation. A lack of routine or inconsis-

sistent management practices may negatively impact health, production and milk quality.

5. As part of your management team, your financial advisor will prompt you to maintain more detailed records and he/she can assist you in analyzing those records to show what parts of your operation are the most or least profitable.

Your herd health plan should take into consideration the following aspects of your operation:

- ✓ Establishing farm specific and realistic goals for your herd
- ✓ Biosecurity / "buyer beware" / isolation and hospital pens
- ✓ Disease prevention programs
- ✓ Disease occurrence and investigation
- ✓ Treatment and vaccination protocols
- ✓ Drug usage / withdrawal times
- ✓ Udder health / milk quality
- ✓ Reproductive health
- ✓ Genetic improvement
- ✓ Nutrition
- ✓ Hoof care
- ✓ Kid rearing
- ✓ Production data
- ✓ Husbandry / environmental management / air quality
- ✓ Record keeping and analysis
- ✓ Any other elements that are deemed significant to your operation

It is often said that an ounce of prevention is worth a pound of cure. The diagram below highlights the economic impact of preventative strategies.

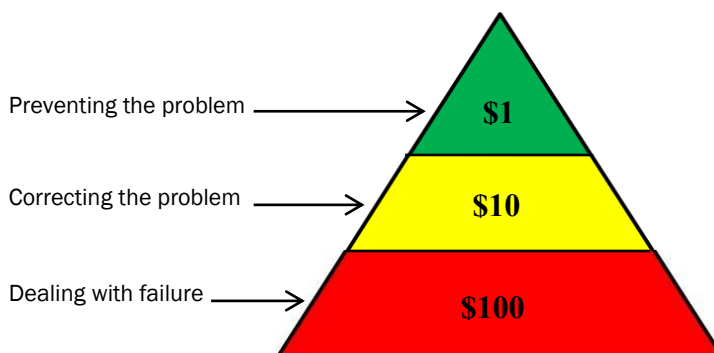


Figure 4: Adapted from the Canadian Dairy Information Centre.

For example, routinely performing post mortems can help with the early identification of disease before it spreads through your herd. In many situations, dollars spent determining the cause of one death will save a producer even more in terms of preventing future animal losses.

Future issues of the Dairy Goat Digest will expand on various topic areas mentioned in this article. ■

1 An interactive map of small ruminant veterinarians in Ontario can be found at www.srvo.ca/members/

CASEOUS LYMPHADENITIS IN SHEEP AND GOATS

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Caseous lymphadenitis (or CLA) has been called the plague of small ruminant producers. It occasionally occurs in other species such as horses, cattle, fowl and hedgehogs.

It is also potentially transmitted to humans by infected animals. CLA occurs in two forms: in the skin and in organs.

Causes

CLA is caused by a bacterium called *Corynebacterium pseudotuberculosis*, which is often found in some of the same sites favoured by the tuberculosis bacteria, and often causes a wasting syndrome in infected animals.

Once one animal on a premise is infected, open draining wounds associated with infected lymph nodes result in environmental contamination. Other sheep or goats are then infected through routine procedures that result in broken skin, such as shearing, tail docking, horn removal and castration. The bacteria is quite resistant to commonly used sheep dips and the use of these may even spread the disease.

Symptoms

Abscesses usually take one to three months to form from the point of entry in the skin or lymph node, and then slowly spread by blood or lymph to organs or other lymph nodes. CLA abscesses are characteristically thick walled. When fresh they are filled with soft pasty white to green exudate, but older abscesses display a very typical onion like appearance of rings of thick dry pus. While some animals waste away as organs are affected, other animals may appear fat and healthy and only on post-mortem exam is the extent of involvement recognised. Slaughtered sheep and goats are condemned when multiple abscesses are found as this indicates the immune system has not contained the disease well and that bacteria are circulating throughout the body.



Figure 5: External CLA abscesses under the jaw, and in the parotid lymph node.

Treatment

The incidence of abscesses increases with age, and up to 40 per cent of animals in a flock may be affected. Both forms are considered impossible to completely cure, are very slow to progress and often wax and wane as abscesses rupture and drain. A small ruminant producer should consult a veterinarian if they have concerns over CLA in their flock, but herd culling and environmental decontamination is often advised to remove infection from a premise. Antibiotic treatment is long-term and does not cure disease.

Surgical removal of abscesses remains the most effective treatment but does not cure infection. There are vaccines for CLA. They do not completely prevent disease in a flock but do reduce prevalence and severity. The vaccine is not approved for use in goats. ■

"A small ruminant producer should consult a veterinarian if they have concerns over CLA in their flock."

IS YOUR PARLOUR CLEAN ENOUGH? FOAM CLEANERS CAN HELP

MIKE FORAN, RAW MILK SPECIALIST, DAIRY FOOD SAFETY PROGRAM

A dairy goat parlour should be a hygienic place to harvest milk for human consumption. The cleanliness of the exterior surfaces is part of Ontario's Grade "A" farm requirements. Observations made during farm inspections and milk quality troubleshooting indicate that there is a positive correlation between high quality milk and a high level of parlour hygiene.

Keeping the exterior surfaces of a dairy goat facility clean can be a labour intensive and tedious job. It is not just the more obvious surfaces like walls, floors and milking stands that need to be clean. Frequent contact points like milking clusters, milking machine key pads, and headgate release levers are all points where germs may collect and lead to cross contamination during the milking procedure. A clean milking parlour also reduces the attraction of flies and is the first step to good fly control.

It is easier to maintain a high level of exterior surface hygiene if you wash and sweep after each milking. This will help prevent manure, feed, or milk residue from sticking to milking equipment and the floor. However a more intensive "deep" cleaning is required periodically. Too often other pressures on the farm take priority and parlour hygiene slips.

Most dairy goat producers take pride in their facilities. My observation has been that producers utilizing foam cleaning for exterior surface cleaning maintain a high level of parlour hygiene and also maintain enthusiasm for keeping a clean parlour.

Why Foamers Make Cleaning Easier

Foam products can penetrate into areas which are difficult to reach or access by producing a high-volume, rich clinging foam. The foam typically sits on the surface for about a half hour and even adheres to vertical surfaces. Labour is reduced since the foam is doing the work drilling into the soil. The foam product is rinsed off or power washed off after the soak time. Some brush scrubbing for areas with heavy soil is beneficial. Foam cleaning achieves far superior cleaning results versus power washing alone. Even fly specs are easily removed! Alkaline foaming products are effective at removing residues of manure, feed and milk (i.e. organic residues). There are also acidic foaming products that remove hard water/mineral scale (i.e. inorganic residue). Dual foaming products are formulated to be effective on both organic and inorganic residues.

There are various types of foam applicators. Some are fixed units that could be dedicated to the milking parlour using standard water pressure to draw and blend the chemical concentrate. The foam is created by injecting compressed air into the foam product which greatly increases the volume and surface area covered. Other units may attach to a power washer.

Regardless of the type of unit used it is important to make sure you use a potable (safe to drink) water source and have proper backflow prevention so that your water source does not become contaminated. Ask your supplier about any necessary precautions you should take. Foam cleaning technology is an investment that may pay off in many ways.

■

Thank you to Dairy Goat Producers, Matt Vanmaar and Shawn Kelley for the pictures demonstrating foam cleaning.



Figure 6 (from left to right): Applying a rich clinging foam; Removal of foam by power washing leaves a very clean surface; Foam application in a parlour.

REGULATING SAMPLING AND TESTING UNDER THE RAW GOAT MILK QUALITY PROGRAM

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

Goat milk sample collection, transport, storage and testing all have the potential to affect quality results. That's why various checks and balances have been set up throughout the milk sampling system to ensure the chain of custody is maintained and that samples arrive at the laboratory in acceptable condition.

Bulk Tank Milk Graders (BTMGs), more commonly referred to as "drivers", have been trained and certified for their duties associated with collection of milk at the farm including proper collection and storage of milk samples. This includes ensuring that a representative sample of raw milk is carefully collected from each individual bulk tank, accurately recorded and delivered to a depot under refrigerated conditions.



Figure 7: Bulk Tank Milk Grader taking temperature of the milk.

Requirements for taking and transporting milk samples

- Bulk tanks must be agitated for a minimum of two minutes prior to the sample collection. This is to ensure that the sample is a representative one. Therefore it is important that milk is not frozen and that the agitator is working.
- The BTMG takes the temperature of the milk and records it. Milk in the bulk tank should be maintained between 1°C and 4°C.
- Sterile, sealed, tamper-proof sample vials supplied by the University of Guelph's Agriculture and Food Laboratory are used.
- Individually wrapped sterile straws are used to fill sample vials. The supply of straws is kept clean and dry by the BTMG in order to prevent contamination of the sample.

- It is the producer's responsibility to provide a clean, long handled dipper if it is needed to reach the milk for sampling. Stainless steel or smooth plastic construction are required. Rough welds, wood and tape are not acceptable as they may contribute to contamination of the sample. The dipper should be placed in a freshly prepared sanitizer solution and available to the BTMG on pickup day.
- If there happens to be a problem at the farm on collection day that will affect the sample (such as an agitator not working, or a dipper not available), the BTMG is still required to collect a sample. However, the BTMG will tag the sample to alert the lab that it is not representative of the milk in the tank and therefore should not be tested for composition or quality. The sample will still be available for inhibitor testing and further grading.
- To maintain sample temperature between 1°C and 4°C, BTMGs are required to transport samples in coolers fitted with plastic inserts that are filled with an ice water mixture.
- A sample vial containing water is kept in the insert at all times so the BTMG can easily monitor the cooler temperature with a hand held thermometer.
- Sample coolers are also equipped with time temperature recording devices known as I-buttons. These devices alert the laboratory if the samples have not been kept at the appropriate temperature.

Delivery of samples to the laboratory

Goat milk marketers have arrangements with private couriers to transport sample coolers to University of Guelph's Agriculture and Food Laboratory. When samples arrive at the lab, temperature readings from the I-buttons are downloaded and checked by lab technicians to verify that samples have been maintained between 1° and 4°C. Lab staff also check the temperature of the water blank vial. Quality testing is not performed if sample temperatures have, at any time, been over 4°C.

Testing by an accredited laboratory

University of Guelph's Agriculture and Food Laboratory (AFL) is an accredited lab, meaning that it must take extra steps to ensure the accuracy and repeatability of test results. This includes submitting to routine third party audits. Sample handling and test methods and procedures are documented and validated by trained and experienced technicians. Only goat milk samples that are less than 48 hours old from point of collection at the farm, and maintained between 1°C and 4°C, can be tested for bacteria at the laboratory. Samples that are older than 48 hours, or

REGULATING SAMPLING AND TESTING UNDER THE RAW MILK QUALITY PROGRAM (cont'd)

that have not been kept cold, are not tested since their results may no longer accurately reflect the quality of the milk that was in the bulk tank.

Monthly testing of goat milk producer samples is conducted by the Dairy Food Safety Program of the Ontario Ministry of Agriculture and Food and Rural Affairs at the University of Guelph's AFL. Samples are tested for bacteria levels (using the bactoscan), the presence of inhibitors (such as antibiotics), somatic cells and abnormalities (such as added water).

Reporting of Results

Sample test results are electronically transferred to the Dairy Food Safety Program and once a month reports are mailed out to producers. Test results are also tracked and reviewed for trends. Individual producers experiencing on-

going quality problems are identified and offered assistance in detecting problems. Province-wide data is also monitored to detect trends in milk quality. Goat milk brokers also conduct supplementary sample testing to proactively detect problems and promote high milk quality standards.

The integrity of the goat milk sampling system rests in the hands of producers, BTMGs, temperature recording technology and qualified lab technicians. All are doing their part to ensure high-quality goat milk and fair compensation for producers. ■

DAIRY GOAT FARM EXPANSIONS

Thorough Planning Is Essential

MIKE FORAN, RAW MILK SPECIALIST, DAIRY FOOD SAFETY PROGRAM

Ontario's dairy goat industry continues to expand. Producers building or renovating need to carefully plan to meet Grade 'A' requirements, environmental requirements and building code requirements. The milk house, parlour and livestock housing are interdependent. Changes in one area can impact the others. The goal is to produce quality milk in a Grade 'A', labour efficient facility that meets the needs of the animals and people. The following are some bigger picture suggestions to consider when renovating or building.

1. Complete a financial analysis of the farm operation. Know how much money you can spend and how much debt you can manage. Being a good dairy goat manager also requires being a good manager of risks such as debt (Reinemann, 2014).
2. Visit many existing dairy goat farms to obtain ideas. Make these visits as productive as possible by planning ahead and asking good questions. Ask what they like about their facility and what they would do differently. Take a measuring tape, a digital camera and a notebook. Develop a list of questions for equipment dealers, builders, electricians, plumbers and milk inspectors. Always observe strict biosecurity protocols when visiting farms.
3. Inform OMAFRA of building or expansion plans as early as possible and review plans with Raw Milk Specialists (Inspectors) to make sure your plans will meet Grade 'A' requirements.
4. Milking Parlour Expansion – Let the dairy equipment dealer design and install the milking system. Designing the milking system to meet all milking, sanitation and Grade 'A' requirements is a highly skilled job, not a do-it-yourself task. Inspectors see far too many quality problems develop as a result of poor or improper milking equipment installations.
5. Do not over estimate the value of used milking equipment. Replacement parts can be hard to find and expensive. Labour to repair unreliable equipment is expensive. Milk quality penalties are expensive. Obtain advice from an equipment expert before making the investment in used equipment.
6. It is essential to get the building right. Remodeling an existing building can be a wise decision or a big mistake. It is not always cheaper to remodel (Reinemann, 2014). All costs of a renovation must be considered and compared to the cost of designing and building new. Parlour equipment changes and expansion are easier if building space is not a limiting factor.
7. If remodelling / renovating this is the time to upgrade the wiring (Reinemann, 2014). Many older barns do not have adequate electrical systems.
8. Parlour and milk house floors must drain well. Poorly sloped floors can be slippery and possibly result in ice buildup which becomes a safety issue. In the parlour a mono slope floor to one end functions better than multiple slopes to a central floor drain. Proper slopes and finishes on concrete surfaces are tricky and

should not be attempted by amateurs.

9. Install good lighting. A well-lit parlour makes for a good working environment and surprisingly assists in producing quality goat milk. For more information check out the info sheet *Energy Efficient Dairy Lighting* at www.omafra.gov.on.ca/english/engineer/facts/06-007.htm
10. Energy saving technology should be investigated (Reinemann, 2014). Energy efficient lighting, refrigeration heat recovery (RHR), variable speed drives for the vacuum pump or milk pump, and well water pre-cooling are examples of energy saving technology. (Note – pre-coolers may be difficult to clean if the sanitation program is not working perfectly.) More information is available in the infosheet *Using Less Energy on Dairy Farms* at www.omafra.gov.on.ca/english/engineer/facts/10-067.htm
11. Incorporate labour efficiencies wherever possible. These can be big or small things such as easy manure removal, total mixed rations (TMRs) or automation in spreading bedding.
12. Owner built projects can keep costs down but take time away from other important farm duties. Be realistic with your areas of expertise. Inexperience can lead to costly mistakes.

Other Housing Considerations:

It is very difficult to determine the long term cost of poor building layout or inadequate ventilation, but it can be significant. The building must satisfy animal needs so they have the ability to be productive (McFarland & Groves,

2014). Dairy goats require fresh, dry air so good ventilation is essential. The ventilation system must function properly during all seasons. Sufficient pen space, adequate feed bunk space, and clean water are also essential (McFarland et al., 2014).

Goat movement to and from the parlour should be as direct as possible for efficient throughput. Building consultants, OMAFRA extension personnel, veterinarians, experienced dairy goat producers, nutritionists and farm equipment professionals all bring knowledge and experience that should be considered. Find more information on farm building construction in the infosheet *Constructing a Farm Building in Ontario* at www.omafra.gov.on.ca/english/engineer/facts/07-007.htm

The above mentioned info sheets are also available by emailing OMAFRA staff at ag.info.omafra@ontario.ca or calling 1-877-424-1300. ■

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McFarland, Dan F., and Robert E. Graves. "Out with the Old, in with the New?" *Hoard's Dairyman: National Dairy Farm Magazine* 25 May 2014: 367. Print. 18 July 2014.

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Figure 8: Careful planning addresses labour efficiency, animal needs and Grade 'A' requirements.

TROUBLESHOOTING MILK QUALITY PROBLEMS

Step by Step Protocol

Steps to take when you encounter poor milk quality:

1. Check milk temperature.
2. Ensure that the cooling unit lowers milk to as close as possible to 1°C (34°F) within one hour after milking.
3. Check water temperature at the start (74 °C (165 °F) or higher) and end (49°C (120°F) or higher) of the chlorinated alkali wash cycle.
4. When dry, visually inspect the pipeline, milk hoses, inflations and any other milk contact surface for the presence of films.
5. Observe a complete wash cycle of the milking and the cooling equipment. You may find that a pump or valve is worn and not working properly, or that chemicals are not being dispensed as required.
6. Consult your equipment dealer and/or the inspector to discuss findings and arrange for a quality assistance inspection and/or a culture.
7. Utilize the CMT or a strip cup to screen for udder health issues.

SUMMARY OF RAW GOAT MILK TEST RESULTS

JEFF PERKINS, SCIENTIFIC SUPPORT ANALYST, FOOD SAFETY INFORMATION MANAGEMENT UNIT

Table 1 : Goat Milk—All Test Result Averages (medians)

Month	Bactoscan(median) (ibc/mL)	Fat Content (%)	Freezing Point (°C)	Protein Content (%)	Somatic Count (cells/mL)
Jul-13	92,500	3.34	-0.546	3.13	1,074,000
Aug-13	80,500	3.44	-0.547	3.20	1,137,500
Sep-13	92,000	3.58	-0.550	3.28	1,202,000
Oct-13	102,000	3.82	-0.552	3.46	1,320,500
Nov-13	102,500	4.04	-0.552	3.66	1,498,000
Dec-13	104,000	4.13	-0.552	3.70	1,617,000
Jan-14	107,000	4.14	-0.552	3.68	1,519,500
Feb-14	103,000	4.17	-0.552	3.62	1,405,500
Mar-14	96,000	4.16	-0.552	3.54	1,265,000
Apr-14	93,000	3.94	-0.550	3.38	1,199,000
May-14	97,000	3.74	-0.546	3.29	1,225,000
Jun-14	82,000	3.54	-0.546	3.20	1,116,000
Averages	95,000	3.81%	-0.550	3.40%	1,283,000

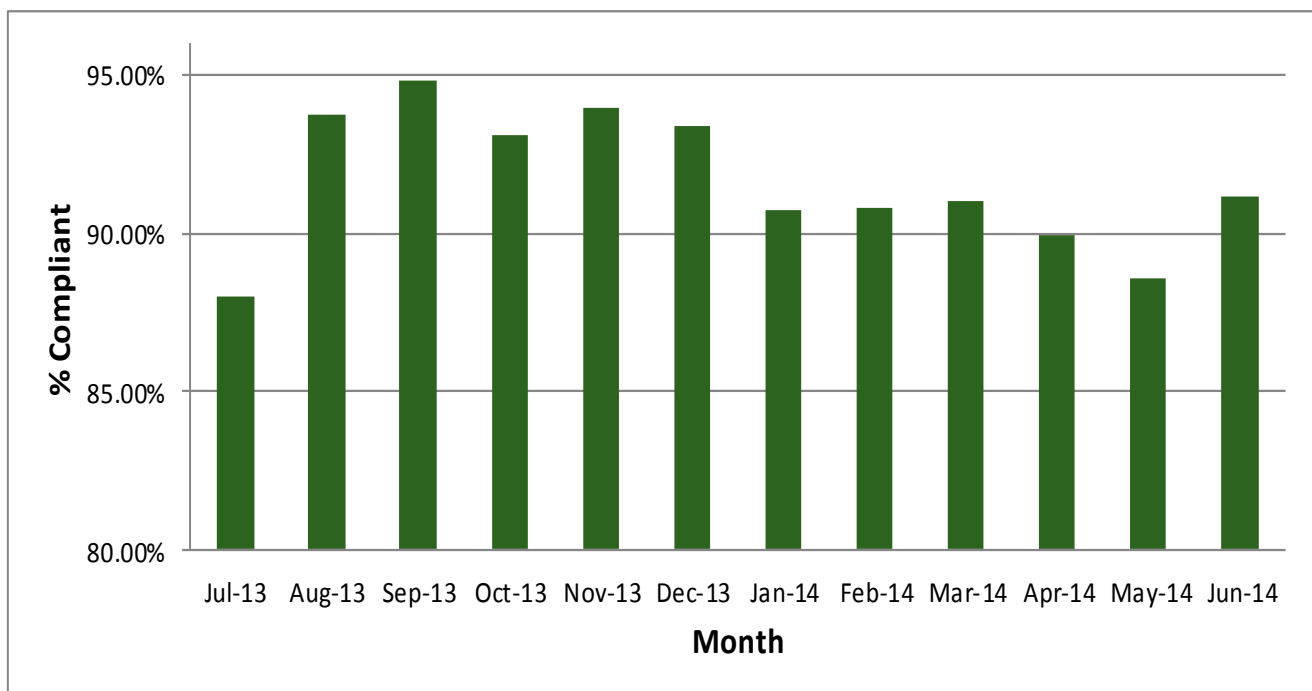
BACTOSCAN TEST RESULTS: 12 month averages

JEFF PERKINS, SCIENTIFIC SUPPORT ANALYST, FOOD SAFETY INFORMATION MANAGEMENT UNIT

Table 2: Distribution of goat milk Bactoscan results for the period of July 2013 to June 2014. The following table represents bacteria test results (using the Bactoscan) for regulatory goat milk samples (1 per month) collected from each dairy goat farm over the past 12 months. “Compliant” figures represent the percentage of samples that met the regulatory standard of less than 321,000 ibc/mL. The columns of less than or equal to 100 (≤ 100) ibc/mL illustrate that the majority of goat milk producers are shipping milk with very low bacterial levels.

Month	Samples Tested	≤ 100 ibc/ mL	101-320 ibc/ mL	> 320 ibc/ mL	% ≤ 100 ibc/mL	% Compliant
Jul-13	234	137	69	28	58.5%	88.03%
Aug-13	239	164	60	15	68.6%	93.72%
Sep-13	234	155	67	12	66.2%	94.87%
Oct-13	233	129	88	16	55.4%	93.13%
Nov-13	232	118	100	14	50.9%	93.97%
Dec-13	226	121	90	15	53.5%	93.36%
Jan-14	216	113	83	20	52.3%	90.74%
Feb-14	218	121	77	20	55.5%	90.83%
Mar-14	222	127	75	20	57.2%	90.99%
Apr-14	228	139	66	23	61.0%	89.91%
May-14	228	135	67	26	59.2%	88.60%
Jun-14	226	148	58	20	65.5%	91.15%
Average for 12 months	228	134	75	19.1	58.7%	91.61%

Table 3: Goat Milk Bactoscan Results - Percentage of Producers Compliant ($< 321,000$ ibc/mL)



GROWING FORWARD 2 (GF2)

Improving Animal Health and Milk Quality for Goat Producers

OMAFRA STAFF

Do you need to improve your food safety or traceability systems?

Do you need to implement or improve biosecurity or animal health programs?

Do you need to upgrade your facility or equipment to meet food safety requirements?

If so, Growing Forward 2 can help!

Growing Forward 2 (GF2) is a federal-provincial-territorial initiative designed to encourage innovation, competitiveness and market development in Canada's agri-food and agri-products sector.

Projects eligible for cost-share assistance under Growing Forward 2 must fall into one of six areas: environment and climate change; animal and plant health; market development; assurance systems (food safety, traceability, animal welfare); business and leadership development; and labour productivity.

For goat milk producers, there are two ways Growing Forward 2 can provide assistance:

- 1) **Capacity Building** – Provides 50 per cent cost-share for skills development, training, first-time audits to a national or international program, assessment and planning. Applications are accepted on an ongoing basis for capacity building activities. Examples of projects that are eligible include:
 - Risk assessment of on-farm biosecurity practices on your operation conducted by a veterinarian or crop advisor
 - Evaluating an existing herd health program and developing methods for improvement
 - Development of a biosecurity, disease response or operational procedures plan (such as Veterinarian or consultation fees)
 - Courses on humane handling of livestock or on-farm animal care practices

- Assessment or audit of welfare practices (such as Veterinarian or consultation fees)
- Food safety and traceability courses

2) **Project Implementation** – Provides 35 per cent cost-share or 50 per cent for projects demonstrating a high level of innovation. Project funding examples include:

- Building or equipment upgrades to improve food safety, biosecurity or animal welfare (such as time-temperature recorders (TTRs), plate coolers for pre-cooling milk, hoof trimming equipment)
- Initial laboratory testing to confirm your water treatment program is effective
- Developing and/or implementing food safety, recall and traceability practices and procedures

For each business, there is a total funding cap of \$350,000 over the five-year program (April 1, 2013 to March 31 2018) for both Capacity Building and Project Implementation projects. Due to the competitiveness of funding for Project Implementation projects it is strongly recommended that applicants first participate in Capacity Building and develop a strong rationale to increase their likelihood of being awarded funding for Project Implementation projects.

Producers must have a valid Premises Identification number to apply for programs under Growing Forward 2. Applying for Premises Identification Number is easy and free. Register with the Provincial Premises Registry online at www.ontarioppr.com or call 1 855 697 7743.

The examples listed above are a sampling of the funding available for each area of focus. Please review the program guides for full details. Additional information on Growing Forward 2 is available at www.Ontario.ca/growingforward2 for more information or call 1 877 424 1300 for assistance. ■



Growing Forward 2
A federal-provincial-territorial initiative

NATIONAL BIOSECURITY STANDARD FOR GOAT INDUSTRY

Free Capacity Building Workshop

PAUL INNIS, LEAD VET – PROVINCIAL BIOSECURITY

Workshops for the goat industry national biosecurity standard have been developed and will be delivered by the Ontario Soil and Crop Improvement Association (OSCIA). Producers are strongly encouraged to take advantage of education workshops supported through Growing Forward 2 (GF2) and delivered by OSCIA. These free workshops will present the key biosecurity concepts in the national standard with real life examples and case studies to help producers assess their own biosecurity and identify areas for improvement.

Participation in a workshop or another similar educational event will strengthen any subsequent application for GF2 funding. For a list of upcoming workshops and to register, please call the OSCIA office 1-800-265-9751 or visit the OSCIA website www.ontariosoilcrop.org/en/programs/growing_forward_2.htm.

RAW MILK — NOT WORTH THE RISK

OMAFRA STAFF

A glass of pasteurized milk is cold, delicious – and safe to drink.

But milk wasn't always pasteurized. Although French scientist Louis Pasteur developed the process called pasteurization in 1862, most milk was still delivered to the door unpasteurized and in uncovered containers more than 25 years later.

In 1889, Adelaide Hunter Hoodless was devastated to learn that the death of her young son was the result of drinking contaminated raw milk - a common enough occurrence in those days.

Determined that others should not experience such tragedy, she led the public movement to have all milk pasteurized. However it wasn't until 1938 that legislation was introduced in Ontario that required the pasteurization of milk.

Medical experts generally agree that raw milk presents a real risk to public health, which pasteurization minimizes. Cases of illness attributed to the consumption of raw milk and raw milk products continue to be reported in Ontario. In fact, between January 1, 2005 and December 31, 2012, there were 263 confirmed cases of enteric and zoonotic diseases that reported exposure to raw milk and raw milk products.

Unpasteurized or 'raw' milk is considered unsafe to drink because it may contain illness-causing bacteria, including Salmonella, E. coli, Listeria and Campylobacter. These bacteria can lead to serious health conditions that range from illness to life-threatening kidney failure, miscarriage, and in some cases death. Children, pregnant women, the elderly, and individuals with compromised immune systems are particularly at risk.

Because of the potential dangers of raw milk, the Ontario government continues to support the *Health Protection and Promotion Act*, which makes it illegal to sell, offer to sell, deliver or distribute unpasteurized milk in Ontario, unless it is to a licensed plant. Consequently, distribution of raw milk directly to consumers, including through a goat milk share, is illegal in Ontario. You can review the Health Protection and Promotion Act on-line at www.e-laws.gov.on.ca/index.html

Federal and provincial laws make it illegal to sell raw milk to consumers but producers should also be aware of the potential reputational harm. Whether it's cow or goat milk, an illness resulting from the consumption of raw milk can lead to negative publicity about milk in general and can damage the reputation for quality and safety that everyone in the industry works so hard to build.

Anyone aware of illegal sales of raw milk or dairy products is advised to send an email to regulatory.compliance@ontario.ca or contact us at (519) 826-4537 (secure line).

Raw milk – it's not worth the risk! ■

For information on pasteurized milk check out the infosheet Protect Your Family's Health Always Choose Pasteurized Milk at www.ontario.ca/french/food/inspection/dairy/pasteurized_milk_infosheet.htm

NEW DAIRY SPECIALIST AT OMAFRA

MARLENE PAIBOMESAI, DAIRY SPECIALIST, ECONOMIC DEVELOPMENT DIVISION



Introducing Marlene

This spring brought the hiring of Marlene Paibomesai as a provincial Dairy Specialist at OMAFRA, with responsibilities focused on dairy cattle, goat, and sheep production systems. Her area of focus is dairy housing and management systems, genetics, and production factors for these three industries.

Marlene is currently completing her PhD at the University of Guelph in dairy cattle health and genetics. She is looking forward to learning about and offering support to the dairy industry in this new role at the ministry through extension and research. Marlene is currently working out of the Elora Resource Centre and can be reached by phone at 519-846-3401 or e-mail marlene.paibomesai@ontario.ca.

Animal Health of Top Interest to Goat Milk Producers

What is the Dairy Goat Digest?

The Dairy Goat Digest is a newsletter published by the Dairy Food Safety Program, Food Inspection Branch of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). This newsletter provides information and updates, including emerging milk quality issues, to goat milk producers, transporters and marketers regarding the provincial Raw Goat Milk Quality Program.

In April 2014 surveys were mailed out to all Ontario dairy goat producers requesting information on what they would like to see in this year's issue of the Dairy Goat Digest. Of the 250 surveys mailed out 27.2% were completed and returned. The three topics of highest interest to our respondents included:

- animal health (89.7%)
- milk quality troubleshooting tips (70.6%)
- case studies (60.3%)

We are pleased with the overall response and participation by producers in completing the surveys and providing comments. We have included additional information in this issue to address reader's most common questions. Our Dairy Food Safety Team would like to thank all of you who took the time to participate—your input is valued and appreciated.

Dairy Goat Digest eEdition

Subscribe to the Dairy Goat Digest and have even greater access to information through active website links.

Q. How do I access an electronic copy of the Dairy Goat Digest?

A. For an e-edition of this issue, and future issues of the Dairy Goat Digest, please contact the Agricultural Information Contact Centre (AICC) at ag.info.omafra@ontario.ca or call toll free at 1-877-424-1300 or TTY 1-855-696-2811 and request *The Dairy Goat Digest e-edition*. The AICC's knowledgeable and dedicated staff are available by email or telephone weekday's between 8 a.m. and 5 p.m.

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(519) 826-3869
 - Anastasia Georgakakos,
Summer Experience Student
 - Madison Vettoreto,
Summer Experience Student
- Toll Free: 1-888-466-2372
Extension is the 10 digit telephone number

LEARN MORE!

Visit the Dairy Food Safety website page for information on getting started milking goats, goat farm inspections, grading and transportation of goat milk and much more: www.omafr.gov.on.ca/english/food/inspection/dairy/tableofcontents.htm

More information on nutrition, business management, marketing, production and breeding goats is available at www.omafr.gov.on.ca/english/livestock/index.html#goats



Également disponible en français

For more information :
Telephone : 1-877-424-1300

www.ontario.ca/omafr