

THE DAIRY GOAT DIGEST

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

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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 to goat milk producers, transporters, and marketers regarding the provincial Raw Goat Milk Quality Program.

TOPICS OF INTEREST TO GOAT MILK PRODUCERS

In April 2014, surveys were mailed out to all Ontario goat milk producers asking what topics they would like to see discussed in the Dairy Goat Digest. The two topics of highest interest to our respondents were animal health and milk quality troubleshooting tips. Based on these results and current industry issues, we have developed this 2015 edition of the Dairy Goat Digest.

ANIMAL WELFARE ISSUES ENCOUNTERED

BRENDA NORRIS, DAIRY FOOD SAFETY PROGRAM
JOCELYN JANSEN, ANIMAL HEALTH & WELFARE BRANCH

More than ever before, issues related to animal welfare and the environment occupy a great place in the consciousness of our communities and government.

As stewards of the land and animals, farmers must be able to demonstrate responsible care of these precious commodities.

A small number of cases involving poor animal welfare on dairy goat farms occurred in Ontario this past winter. These were unusual and extreme cases that involved inexperienced operators.

The OSPCA is an animal welfare organization mandated under the *Ontario SPCA Act* to enforce animal cruelty laws. The act provides OSPCA inspectors and agents with police powers when enforcing the act. Some enforcement activities of OSPCA inspectors and agents include conducting animal cruelty investigations, rescuing animals in distress and ordering owners to provide adequate provisions for animals in their care. Before taking these types of enforcement actions, in OMAFRA's experience, the OSPCA makes every effort to educate and assist producers in making the necessary changes to bring them into compliance with prescribed standards of care in conjunction with the National Farm Animal Care Council (NFACC) codes of practice.

Under the authorities provided by the *Milk Act*, OMAFRA inspectors are required to make general observations regarding the physical condition and cleanliness of animals on dairy farms. If in doing so, animal welfare issues are suspected, inspectors will discuss the situation with the producer and advise that they consult with their herd veterinarian. The inspector also frequently consults with OMAFRA's small ruminant veterinarian to discuss issues of concern. If a Raw Milk Specialist (inspector) from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) observes dead animals and/or animals in distress while on a farm visit, they are obliged to contact the Ontario Society for the Prevention of Cruelty to Animals (OSPCA) for further action.

Ontario's *Regulatory Modernization Act* (RMA) provides OMAFRA staff with express authority to disclose information to other agencies or ministries in certain circumstances. Section nine of the RMA states that, "[a] person who is lawfully present in a place in the exercise of powers or performance of duties under an Act or regulation [like an inspector under the *Milk Act*] and who makes an observation, visual or otherwise, that is likely to be relevant to the administration or enforcement of *another* Act or regulation may record the observation and disclose it to a person who administers or enforces the other Act or regulation [such as the *OSPCA Act*]".

A similar process may be followed in cases of possible environmental contamination. For example, if an inspector conducting an inspection under the *Milk Act* were to observe milk house wash water or manure entering a waterway, that inspector may record that observation and disclose it to a provincial officer or inspector appointed to enforce the *Ontario Water Resources Act*. Failure by producers to meet the requirements of the *Ontario Water Resources Act* can result in enforcement action by the Ministry of Environment and Climate Change under that Act. ■

SCRAPIE UPDATE

JOCELYN JANSEN, ANIMAL HEALTH & WELFARE BRANCH

As of the spring of 2015, the Canadian Food Inspection Agency (CFIA) completed all trace-in and trace-out investigations involving goat scrapie cases. The file is now considered closed. In total, seven Ontario goat herds were confirmed to be infected with classical scrapie between 2013 and 2015.

Scrapie is a disease that affects the central nervous system of goats and sheep, and develops slowly. Clinical signs are only seen in adult animals, typically between two and five years of age, and in some animals it can be much older. Once an animal appears ill, it will typically die within months. In Canada, the disease frequently presents itself as thin, weak/wasting goats even with a good appetite. Other signs may include trembling, excitability and lack of coordination. It is important that you work closely with your herd veterinarian to investigate animal health concerns.

There is not an approved genotype test available for use in goats anywhere in the world. However, researchers continue to look at genotypes for scrapie susceptibility in goats. At this time a clear connection between specific genetics and related scrapie resistance has not been determined for goats. Any genotype test must be determined to be scientifically based and also validated for the specific scrapie genetics found in goats in Canada. While research is ongoing, it is uncertain as to if or when a test may be available for goats.

Many countries in the world, including the USA and Great Britain, have national programs in place to reduce the incidence of scrapie in small ruminants, with the overall goal being eradication. The USA has spent millions of dollars to eradicate scrapie from the national flock/herd and has declared that their country will be scrapie free by 2017. To maintain trade opportunities and ensure the long-term sustainability of the Canadian small ruminant industry, the CFIA developed a national scrapie eradication program with industry support in 2005. The program serves to protect the health of the national sheep flock and goat herd, thereby reducing the economic and animal health impacts of scrapie. ■



For more information on scrapie please contact Ontario Goat for the factsheet “Scrapie in Goats—Frequently Asked Questions” or visit the [Scrapie Canada website](#)

A FEW POINTERS FOR NEW ENTRANTS

BRENDA NORRIS, DAIRY FOOD SAFETY PROGRAM

Some new entrants to the industry may lack experience with milking operations and/or managing goats. If you know someone who is getting into the dairy goat business, here are a few pointers to help them get started.

Visit OMAFRA's [Dairy Food Safety Program website](#) for information on requirements and steps to getting started.

Contact an OMAFRA Raw Milk Specialist

Contact an OMAFRA Raw Milk Specialist (see pg.19 for contact information) to discuss plans and approvals in advance of any building construction or renovations.

Contact a milk broker

Contact a milk broker or licensed dairy processing plant regarding milk marketing. Goat milk producers are responsible for securing their own market.

Contact Ontario Goat

Contact Ontario Goat for many other helpful resources.

Plan and Prepare

Plan and Prepare. The process for getting a dairy goat farm up and running usually takes many months and may require building permits, nutrient management strategies, farm lane upgrades, construction and equipment installation. All of these steps require coordination and time.

Facilities should be ready

Facilities should be ready when goats are at the farm and ready to be milked. Bringing lactating goats into a farm without functioning milking facilities could be a recipe for disaster. Facilities need to be Grade A approved before goat milk can be marketed.

Buyer Beware!

Buyer Beware! Producers should always consider the health status of the animals they are purchasing. For existing producers, animals should be purchased from herds with an equal or higher health status than their own herd. It is important to develop a biosecurity plan with your herd veterinarian and identify diseases of concern for your operation. Producers should insist on seeing the milk test results of the herd for the last three months and any animal health records (i.e. diseases, treatments, vaccinations, test results). Existing producers are advised to be cautious when bringing goats onto their farm, even if just temporarily housing goats owned by others. Diseases such as Caprine Arthritis Encephalitis (CAE) and Johnes can quickly infect a herd with devastating consequences. Get all test results before agreeing to accept any new goats on the farm. For more information check out the [Biosecurity Planning Guide for Canadian Goat Producers](#). ■

IMPACT OF STAGE OF PRODUCTION, NUTRITION AND COLD WEATHER ON BODY CONDITION

MARLENE PAIBOMESAI, AGRICULTURE DEVELOPMENT BRANCH

One of the most important husbandry skills required by all livestock producers is the ability to recognize the body condition of their animals. Are they too skinny, too fat, or do they have just the right amount of fat stores and muscling? Body condition significantly impacts animal health and productivity. Poor or excessive body condition can result in an increased incidence of metabolic diseases (e.g. pregnancy toxemia), as well as increased neonatal mortality. Maternal underfeeding impairs placental size, kid birth weights, brown fat stores in kids (a critical energy source prior to nursing), colostrum quantity and quality, and milk production. The ideal body weight of an animal will depend on its breed, frame size and nutritional requirements based on growth, stage of lactation and pregnancy.

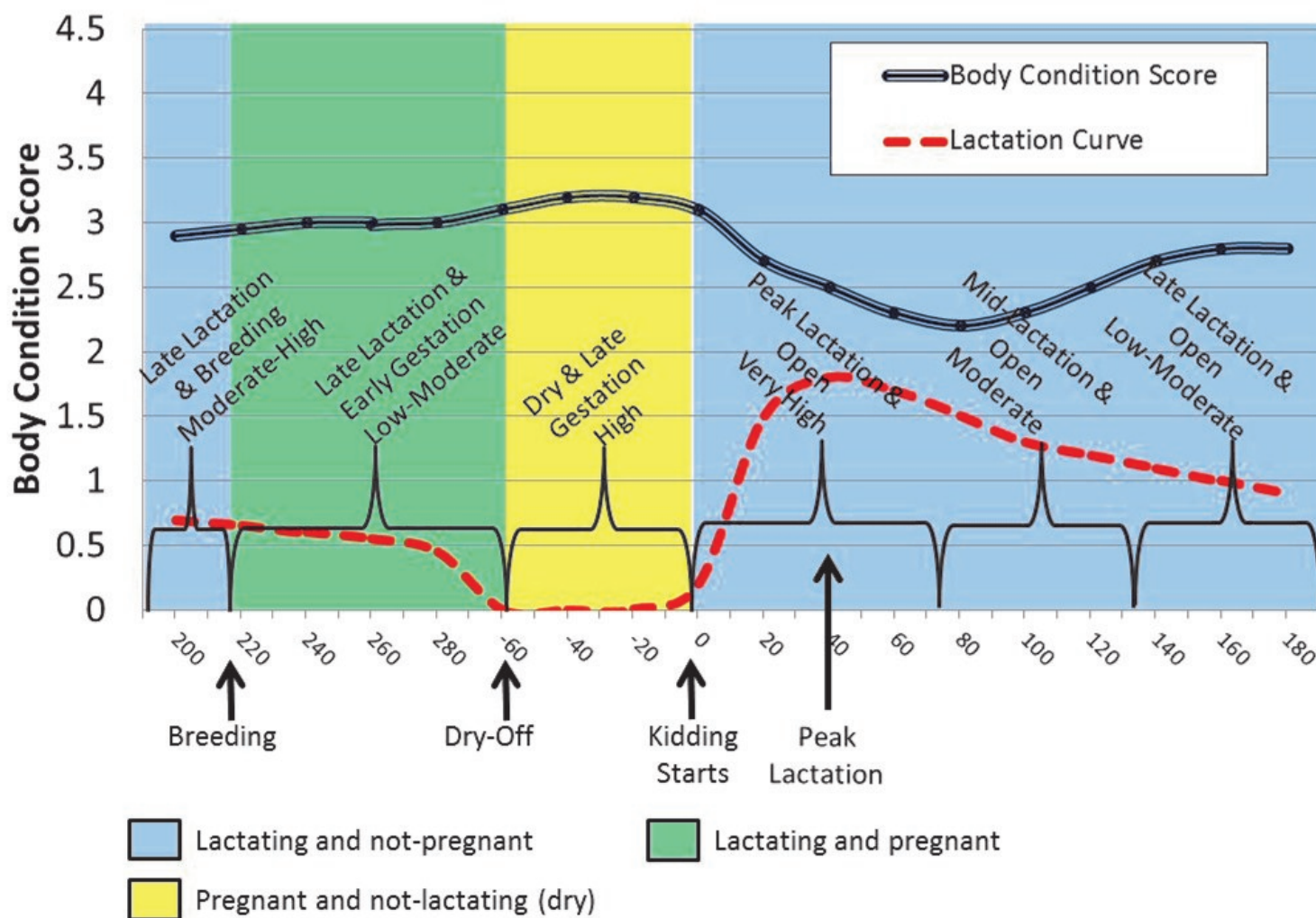


Figure 1: Body Condition Score by Stage of Production – Courtesy of Dr. Paula Menzies, Ontario Veterinary College.

IMPACT OF STAGE OF PRODUCTION, NUTRITION AND COLD WEATHER ON BODY CONDITION (cont'd)

The most critical times to condition score goats are pre-breeding, early gestation, late gestation and early/peak lactation. It is important to score at these times and allow time to make the necessary changes if needed. One body condition score (BCS) is equal to 7 to 10 kg (15.5 to 22 pounds). It only takes two weeks to lose one BCS but it takes longer (6 to 8 weeks) to gain it back. To properly perform body condition scoring, goats should be palpated in the following locations: the backbone behind the ribs, the short ribs and the brisket. At kidding, does need to be in good body condition (score 3 to 3.5) to deal with the very high nutritional demands of early lactation and then have time to recover prior to breeding. For more information on body condition scoring, please visit the [Langston University website](#).

Managing nutrition on a dairy goat operation is a crucial part of a successful operation. Nutrition represents approximately half of the cost of production on dairy operations, but is a key part of achieving high producing does and maintaining good herd health. There is some truth in the old saying: “you get back what you put in”. Goats, like other ruminants, need consistency in their feed and feeding routines. Routine ensures that the rumen maintains favourable conditions for the microorganisms that live there, which include well over 150 different species of bacteria, fungi, protozoa, and viruses. The interaction of all these microorganisms will affect how feed is being processed and utilized by the goat. The rumen not only processes complex feed sources into a useable, digestible form, but also provides warmth.

The Essential Nutrients

Energy – the energy value of feed is referred to as Total Digestible Nutrients (TDN). As TDN increases so does the energy provided by that feed. Energy deficiency can be caused by not feeding enough or feeding poor quality feed. Not enough energy will result in a decrease in milk production, infertility, decline in body condition, and increased chance of disease and death.

Protein – protein assists in tissue repair and is a major building block for growth and high production. Feeding high levels of protein can be costly, but is essential in having high producing does. Proper ration development and balancing will ensure the most efficient use of feeds.

Vitamins & Minerals – Calcium, phosphorus, and salt are essential minerals that can only be obtained through feed. Special attention to calcium and phosphorus proportions must be considered. Most vitamins on the other hand are relatively available in the feed consumed by the goats and are produced in the rumen. However supplementation of vitamin A and D are necessary and recommended.

Water – water is often the forgotten essential nutrient. Good quality water is key to higher milk production. It is essential to digestion, regulating body temperature, milk production, and many other functions. Access to clean, good quality water will encourage goats to drink.

Being smart about your nutritional choices will ensure the most productivity from your herd. Targeting those does that need nutritional intervention will help you manage issues before it starts affecting the whole herd. Measuring feed quality to know what you are working with and consulting your nutritionist will keep your herd on track.

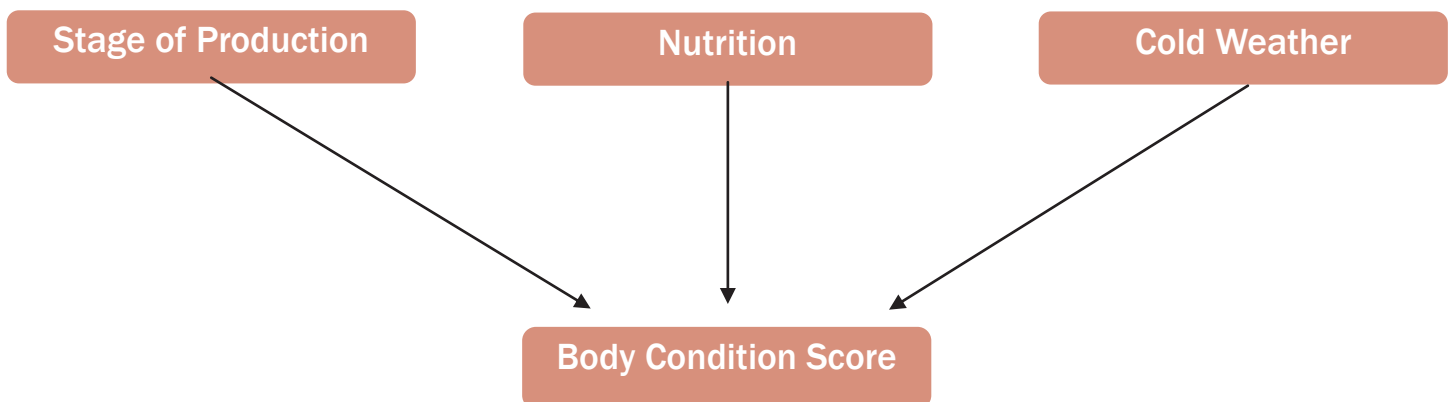
IMPACT OF STAGE OF PRODUCTION, NUTRITION AND COLD WEATHER ON BODY CONDITION (cont'd)

The Challenges of Winter

It is a challenge to maintain body condition score during cold weather, especially as does reach late gestation, dry period, and early lactation which have high energy demands. When the rumen is full and processing feed, it can help maintain proper body temperature through the colder months. Goats can better tolerate extreme cold weather when there is increased available energy at the feed bunk and feed is available and accessible at all times. Providing adequate dry bedding is also very important in preserving body heat.

This year's harsh winter was a challenge for producers in meeting the nutritional needs of their goats. Many of the top issues seen by veterinarians in the first three months of the year were related to the extreme cold weather and nutritional issues/deficiencies on-farm. Even if the diet is properly balanced, in cold weather goats may not eat enough to maintain their body weight. In cold weather, the nutritional requirements of goats are increased by a minimum of 10 to 15 per cent. Supplementing with grain is the common way to increase the calories in the adult diet, particularly in late gestation and early lactation. However, protein levels must be adequate as well – grain alone will not compensate for poor quality forage. It is important that feeds be analyzed for quality and diets balanced for energy, protein, fibre and mineral levels. Veterinarians reported seeing animals eating adequate looking hay but when analyzed, protein levels were poor, thus accounting for their weight loss. Veterinarians and nutritionists speak of “3 livestock rations”: the paper ration, the ration fed to animals and the actual ration that an animal eats. The goal is for all three to be the same but often there are differences.

Talk to your veterinarian or nutritionist for more information on ration analyses, cold weather feeding requirements and the impacts of nutrition on health and production.■



THINGS TO CONSIDER BEFORE SENDING A GOAT TO SLAUGHTER

JOCELYN JANSEN & MIKE DRAPER, ANIMAL HEALTH & WELFARE BRANCH
ALEXANDRA REID, FOOD INSPECTION BRANCH

Culling and transportation decisions are part of farming; however, there are challenges with making these decisions. Farmers need to decide whether to treat an animal and wait for the meat and milk withdrawal times to be completed before transporting, send the animal direct to a local abattoir, cull it to a livestock auction, or euthanize on farm due to health/welfare reasons. One of the biggest challenges is timing – when to remove the animal from the herd. Animals are removed when their economic value falls below the goals of the herd. However, poor production/reproduction may be the result of an underlying disease. Making timely culling decisions is best for the welfare of the animal. Waiting too long can result in an animal being unfit for transport and/or condemned at slaughter.

Transportation is stressful for goats as it involves change – the truck ride, the noise and the strange environment when entering a livestock auction or abattoir. Weak animals are less able to cope. The welfare of the animal(s) being transported is always paramount. There are a number of things to consider prior to loading an animal for transport. The Ontario Humane Transport Working Group developed [Guidelines for Transporting Cattle, Sheep & Goats: Should this Animal be Loaded?](#) Reviewing these Guidelines will help you make informed decisions prior to shipping goats from the farm.

When shipping cull goats, farmers should be thinking about how long it may take that animal to get to its final destination – whether that final destination is another farm or a slaughter plant. There could

be multiple stops (including unloading and being re-loaded), as well as extended periods without access to feed or water. If goats are taken to a livestock auction, this is not a final destination, and they will be transported at least once, if not several times before they reach their final destination. Goats consigned to markets may be in the marketing chain for several days. While many cull goats are purchased by slaughter plants, many farmers are unaware that there is an active trading network for goats in Ontario, and many goats may be purchased and then be resold at later auctions, purchased by dealers to be resold, or assembled for larger orders for slaughter facilities. Some goats may be bought and taken back to another farm in Ontario. In several trace back inspections relating to cull goats at auction, OMAFRA inspectors have determined that farmers are unaware of how long goats may be in the marketing chain prior to slaughter, while other trace back inspections have shown that the same group of goats have been marketed at four separate auctions. In some cases goats may be bought at auctions and remain there for several days prior to being loaded and taken to their final destination.

What's the best option for selling goats? Weak or sick animals should not be loaded and transported to livestock sales or to a collection yard. These types of goats, if they are fit for transport under provincial and federal transport regulations (see Guidelines) and fit for human consumption, should be sold directly to a slaughter plant – the OMAFRA website has a list of provincial slaughter plants. Contact the slaughter plant directly and establish if

THINGS TO CONSIDER BEFORE SENDING A GOAT TO SLAUGHTER (cont'd)

they will buy goats and on what days. If you do not have a local slaughter plant in your area, consign an animal to a livestock auction and request they go “direct to slaughter.” These animals will be sold on a rail grade basis, after veterinary inspection, to a designated slaughter plant, and the farm will be paid for them if they pass post mortem inspection at the plant.

Generally, animals are condemned at slaughter for two reasons: inhumane transportation resulting in prolonged suffering, and infectious diseases that indicate a risk to food safety. A carcass may also be condemned if it doesn't undergo the biochemical changes that turn ('set') muscle into meat.

Goats are less frequently condemned compared to some other species for inhumane transportation, but a non-weight bearing/three-legged lame goat does occasionally arrive at one of our abattoirs.

Goats should be shipped to slaughter before lameness reaches that point. Most causes of condemnation of goats are for risks to food safety. Many of the bacteria that cause respiratory or a multiple-abscess type disease in organs and joints in goats are by far the most common reason to condemn a carcass. These infectious diseases are very common in goat herds in Ontario and normal appearing

animals may be harbouring advanced disease. Goats are also commonly condemned for emaciation and failure to set up. Goats, particularly dairy goats, are often very thin at slaughter, for a variety of reasons – end of lactation, Johne's disease, Caprine Arthritis Encephalitis (CAE), age and dental erosion, lameness, as well as infectious diseases like caseous lymphadenitis; and carcasses may be condemned directly in severe cases, or condemned if the carcass doesn't have sufficient energy reserves to set into meat. While very thin goat carcasses are premium in some markets supplied by provincial plants, an unset carcass will spoil quickly and poses a risk to human health, so we must ensure borderline cases are set before approving for human consumption. Many of the animals described above were likely candidates for on-farm euthanasia. If you have questions as to whether a goat should be sent for slaughter, talk to your veterinarian for advice.

Transportation and slaughter are under ever increasing scrutiny. Making informed and wise decisions prior to sending goats for slaughter will help to maintain and strengthen the integrity of this growing industry. ■

The Ontario Humane Transport Working Group developed
[Guidelines for Transporting Cattle, Sheep & Goats: Should this Animal be Loaded?](#)

SMALL RUMINANT ADULT MORTALITY PROJECT

JOCELYN JANSEN, ANIMAL HEALTH & WELFARE BRANCH

MARIA SPINATO, ANIMAL HEALTH LABORATORY, UNIVERSITY OF GUELPH

PAULA MENZIES & ANDRIA JONES-BITTON, ONTARIO VETERINARY COLLEGE

The Animal Health Laboratory (AHL), the Ontario Veterinary College (OVC) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) have received funding to conduct a study investigating adult small ruminant mortalities on-farm. Adult sheep and goat mortalities are rarely sent to a laboratory for a complete postmortem and veterinarians infrequently perform postmortems on-farm. However, there is value in knowing why an animal died (chronic wasting diseases, metabolic/nutritional diseases, neurological disorders, parasite problems). This project seeks to improve the practice of on-farm postmortems, and improve information flow among producers, veterinarians and pathologists. The three year project began in the fall of 2014, with postmortems and sampling to start the fall of 2015 and end in the fall of 2016. All testing costs will be covered by the project and veterinarians will receive compensation for performing the postmortems.

The objectives of the study are:

1. To determine why adult sheep and goats are dying on-farm.
2. To determine if technology can be used to increase the usefulness of on-farm postmortems.
3. To determine if better disease diagnoses can increase discussions between producers and their vets, so that they can create sound flock/herd health and biosecurity plans.

Stay tuned for more detailed information on the project.

Funding Provided by the OMAFRA-University of Guelph Partnership KTT Program ■

Small Ruminant Specialist

Jillian Craig has been hired as the new Small Ruminant Specialist with the Agriculture Development Branch, OMAFRA, effective July 14, 2015. She is working out of the Lindsay office and can be reached by email at jillian.craig@ontario.ca or by phone at 705-324-5856.

Jillian worked for the Ontario Sheep Marketing Agency (OSMA) for five years in the capacity of Industry Liaison and Editor of the Ontario Sheep News Magazine. Jillian graduated from the University of Guelph with a Bachelor of Science in Agriculture (Animal Science). Over the years she has attended many industry conferences and is a current member of the Eastern Canadian Farm Writers' Association. She has had experience with both sheep and goats having grown up on a family farm in Fenelon Falls, Ontario and is excited to be assisting the goat and sheep industries as the Small Ruminant Specialist.

SMALL RUMINANT VETERINARIANS OF ONTARIO

JOCELYN JANSEN, ANIMAL HEALTH & WELFARE BRANCH



The Small Ruminant Veterinarians of Ontario (SRVO) has brought together veterinarians with an interest in sheep, goats, camelids (alpacas, llamas) and cervids (deer, elk). The objectives of SRVO are to:

- Provide its members with continuing education in the production practices, health and welfare of small ruminants.
- Speak as a unified voice for small ruminant veterinarians to government, industry and producers on topics dealing with the health and welfare of our patients.
- Promote and encourage veterinary students and new graduates to take an active interest in small ruminant medicine.

Since its formation in 2008, SRVO has had over 100 members each year.

SRVO has held 17 continuing education meetings for its members since 2008. Internationally renowned speakers from Europe, USA and Canada have spoken on the following topics: out of season breeding, sustainable parasite management, controlling abortions, herd health management, ultrasound techniques, investigation and control of chronic wasting diseases, nutrition, dairy goat health, and management of the clinically ill small ruminant. SRVO also continues to lobby government regarding the lack of approved drugs and vaccines available for small ruminants. ■

We encourage producers to speak with their veterinarians and see if they are SRVO members.

Producers looking for a small ruminant veterinarian should visit [SRVO's website](#) and view a map of its current members or speak with fellow producers to locate a veterinarian in their area.

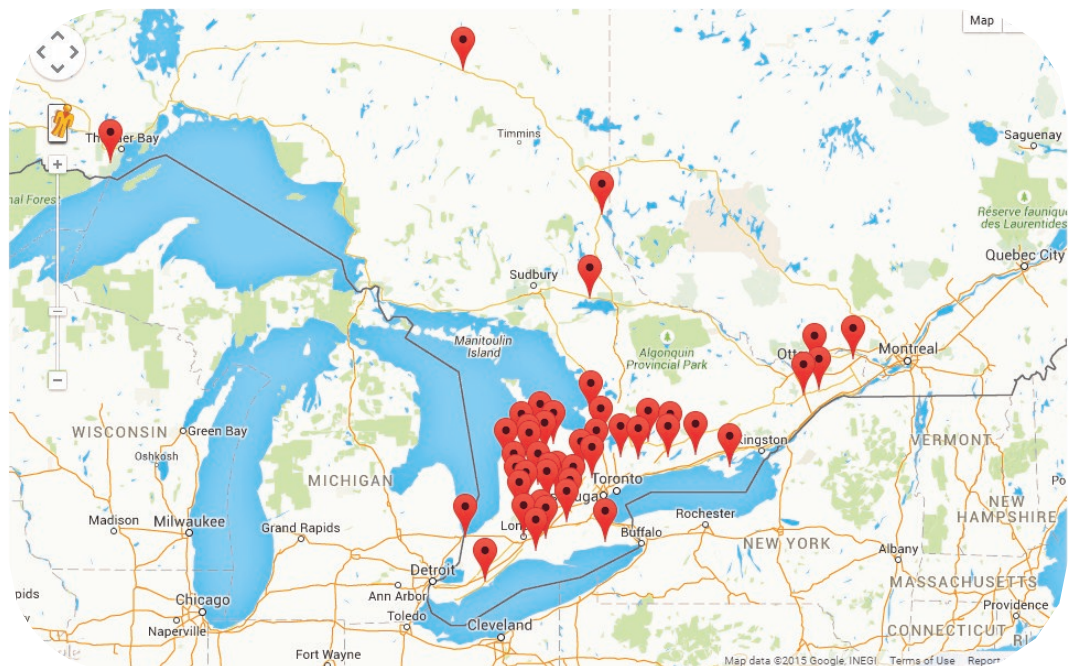


Figure 2: Map of locations of SRVO members.

Hoof trimming in the herd is not the job that most dairy goat producers run to the barn to complete. However, it is a necessary task for maintaining good herd health. Lameness can cause reproduction issues, decline in milk production, and drop in body condition score. Sore hooves will reduce the activity of the doe, causing a decline in feed intake at the bunk which can cause a decline in milk production and displays of estrous. Observing the herd and trimming on a routine basis prevent lameness issues from occurring.

What do you need?

The key to quick accurate hoof trimming are sharp hoof shears and a hoof knife. Sharp instruments mean quick cuts, which can reduce stress on the goat and you. A spray bottle with soapy water and paper towel nearby allows you to wash the hoof before cutting. A clean hoof surface minimizes the chance of infection, makes it easier to trim, and your trimming tools are less likely to dull. A hoof rasp will help you file down the sharp edges on the hoof that can be left after trimming. Finally, having hydrogen peroxide or a similar disinfectant and “Bleed Stop” or cornstarch nearby are handy in case you trim too close to the quick and cause bleeding. You will also need a container with disinfectant to dip your tools between animals to prevent transfer of contagious hoof lesions.

How to do it?

Although practice makes perfect with hoof trimming there are some key details that will help make the experience positive for you and the goat.

Remain calm

Remaining calm while hoof trimming results in a better experience for you and the animal, this will reduce injury and frustration. If a goat has a negative experience with hoof trimming they will not be as quiet the next time you go to trim hooves. The more frequently you trim hooves, the more habituated the does will become to hoof trimming and will stand quietly for you.

Proper restraint

Easy, low stress handling of the goats will keep animals calm as you sort them for hoof trimming. Once you are ready to hoof trim, pick an area where you will have easy access to the hooves of the animal, easy access to your hoof trimming tools, and allows for easy animal restraint. It is not advisable to perform hoof trimming in the milk parlour as it could inhibit the goats from wanting to enter the parlour afterwards due to negative experience. Leave the parlour for milking only. Pick up the hooves a few times before trimming to calm the goat and in a manner that

is comfortable. For large numbers of goats, a tilt table or squeeze chute can be used to process animals faster and safely. This task can be paired with other management tasks to reduce time spent per doe.

Trim off small sections of hoof

Trimming off small sections at a time will keep the goat calm while trimming, but will also allow you to make a nicely shaped hoof. Lameness can be caused by poor trimming, so pay attention to how deep you are trimming. Once you start to see pink on the hoof, stop trimming immediately. If trimming extremely long hooves, they should be trimmed gradually. Take off 1/8 inch the first trim and trim that goat again in 2 weeks and repeat until the hoof is a reasonable length. Trimming too much at one time can cause sore hooves, so gradual trimming is the key here. Avoid trimming hooves during the dry period, as many changes are occurring in the doe that can lead to lameness issues.

How often?

Observing the herd on a routine basis will help you to identify long hooves, lame animals and what animals are set to trim. If you see an increase in the number of long hooves, more frequent observation might be needed. The frequency of trimming is affected by a number of

individual factors (genetics, age, breed, etc.) and environmental factors (nutrition, housing, etc.) and therefore the rate of growth is unique to each dairy goat operation. Not every doe is the same, so trimming may differ from animal to animal in your herd as well. More frequent trimming will make the task less strenuous and faster. If there is excessive growth of the hooves, have your nutritionist re-evaluate your ration, as it can suggest an energy imbalance that needs to be corrected or it could lead to laminitis. If you schedule a time every couple of weeks to observe the herd and trim hooves it will ensure the task gets done in manageable group sizes.

Why is it important?

Hoof trimming is an important part of a dairy operation. Goats free of lameness will be more productive, more active, and have longevity in the herd. The more frequently hoof trimming is done the easier the task will be and the less time it will take. It is important to note that long hooves are unacceptable to ship off farm and are an animal welfare concern. Regular trimming also reduces the chance of infectious and non-infectious hoof lesions from developing. Overgrown hooves are a risk factor for developing hoof conditions such as foot scald (interdigital dermatitis), which can lead to foot rot or foot abscess. The key to keeping productive does in the herd is to keep well-trimmed hooves. ■

FLY CONTROL STRATEGIES ON DAIRY GOAT FARMS

MIKE FORAN, DAIRY FOOD SAFETY PROGRAM

High fly populations can be an irritant for animals, farm workers and neighbours. With livestock, flies can cause reduced feed intake, negatively affecting weight gain and milk production. Flies can also spread bacterial and viral diseases. For example, bacteria that cause mastitis can be transferred from the teats of an infected doe to a healthy doe by flies and fly bites. There is no magic bullet for fly control but good management and a multi-pronged approach will result in more productive goats and happier dairy goat farm workers.

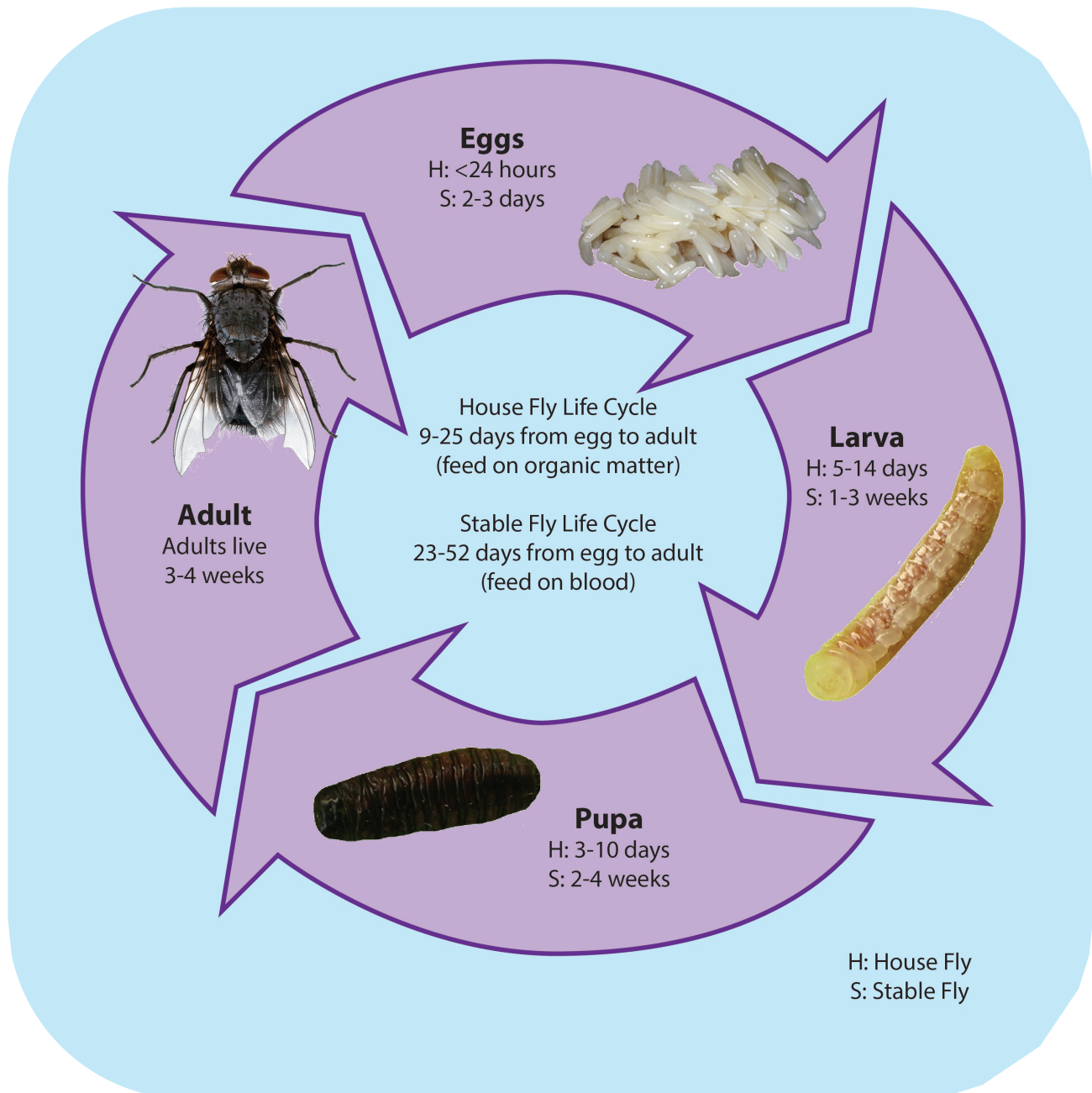


Figure 3: Fly life cycle.

FLY CONTROL STRATEGIES ON DAIRY GOAT FARMS (cont'd)

The Pest and Their Biology

The most common types of flies found on dairy goat farms are the stable fly, house fly, and sometimes fruit flies. The stable fly has piercing mouth parts (in other words, they bite). Both male and female stable flies feed on blood several times a day, normally attacking the legs and belly. Stable flies take about three weeks to develop. The stages are egg, larva (also known as maggot), pupa to adult. Adult female flies can live 30 days and lay up to 400 eggs. Stable flies breed on organic debris such as: wet straw, manure and spilled feed.

The house fly is non-biting. House flies breed in organic matter such as bedding, manure, decaying silage, and spilled feed. During warm conditions they can complete their life cycle in just ten days!

Control Options and Tools

Sanitation

Keep all areas of the barn clean. Insecticides cannot be expected to control flies under poor sanitary conditions. Some producers spend too much money on insecticides and ignore that flies require moist organic matter to reproduce. The immature fly takes ten to 21 days to develop. Cleaning goat pens weekly helps break the fly's life cycle. Attention should be given to the perimeter of the pens and area around water bowls, as more maggots are often present at these locations. The drying action of desiccants such as Dry Start or Stalosan spread after pen cleaning can play a role in reducing fly populations. These desiccants also reduce manure odours which attract flies. It is important to not overlook the kid pens. The kids are on high liquid diets and thus excrete more liquid making these pens a perfect area for fly reproduction. Eliminate spilled feed, rotting hay and moist decaying organic matter, repair any water line leaks, and keep vegetation around the barn and manure pile well mowed to reduce areas where flies can rest.

The importance of good sanitation in controlling fly populations cannot be over emphasized. In addition to pens, keep the entire milking parlour and milk house as clean and fly free as possible. This includes in and around the drain and receiver jar of pit parlours. Tight-fitting, self-closing doors and screens are required. The entire floor surface needs to be kept clean including under the bulk tank, the drain and area close to the drain, floor areas along walls and in corners, around cleaning chemical containers, etcetera. If milk replacer is mixed in the milk house, any spills need to be cleaned up promptly. A poorly rinsed milk filter can attract flies often making garbage cans the perfect reproductive site for flies. Empty the garbage container frequently and **clean** the garbage can. Small fruit flies can also be a serious issue in a milk house since they are small enough to get into the bulk tank – particularly flat top tanks. Bulk Tank Milk Graders grade milk tanks by sight and smell and have rejected tanks with flies including fruit flies. Sanitation is the key to keeping fly populations under control.

FLY CONTROL STRATEGIES ON DAIRY GOAT FARMS (cont'd)

Mechanical Control

Sticky tape and traps can play a role in controlling small or moderate fly populations. A clean, well-managed milk house may only require sticky tape for fly control. Sticky rope placed above a highline pipeline (a warm area where flies congregate) will help. Electronic fly zappers are a onetime cost and can help in localized areas.

Screens and tight-fitting, self-closing doors in the milk house are regulatory requirements for a good reason - they limit entry of flies into the milk house. Using large fans to circulate air in the milking parlour and animal housing areas makes conditions less favourable for flies by preventing them from resting and helping to dry damp areas.

Chemical Control

Always read and follow product labels. Some fly control products require Ontario Pesticide Certification. For more information on Ontario Pesticide Certification you can visit <http://www.ontario.ca/environment-and-energy/pesticide-licences-and-permits>.

Baits are useful in controlling moderate fly populations. Baits need to be put in shallow dishes or mesh bags rather than spread directly on the floor, window sill or milk stand. This will prevent possible cross contamination of milking equipment or milk.

Space sprays provide a quick knockdown of flies in an enclosed air space. Space sprays have little residual activity; therefore, flies usually do not develop resistance and remain susceptible to them.

Residual sprays are fly control products typically applied to walls, posts and other fly resting areas. Flies can develop resistance to residual sprays so they should be used with caution and only when outbreaks cannot be managed by other techniques. Rotation of pyrethroid and organophosphate products can reduce the potential development of resistance.

Consider Biological Control

Flies have natural enemies such as parasitic wasps that can be used to biologically control fly populations.

Parasitic wasps find and kill fly pupae. However flies have some reproductive advantages over the wasps. Flies develop twice as fast from egg to adult, live longer and lay more eggs. Fly populations also begin to grow earlier in the spring than the wasp population. Therefore to be successful as a biologic control, natural populations of parasitic wasps need to be enhanced by frequent releases of large numbers of commercially available parasitic wasps. Note that parasitic wasps should only be one part of the farm fly control program.

Ontario Companies that Supply Parasitic Wasps

- Bugs for Bugs—Guelph, ON 519-836-8166
- Koppert Canada—Scarborough, ON 416-291-0040
- Natural Insect Control—Stevensville, ON 905-382-2904 ■

PROCEDURES FOR USING AND MAINTAINING DIPPERS

MIKE FORAN, DAIRY FOOD SAFETY PROGRAM

Occasionally improper milk sample collection may contribute to increased bacteria counts. Regulatory milk samples must be collected under sanitary conditions taking care to ensure there is no possible contamination of the milk sample due to sampling technique or the sampling tools used. Bulk Tank Milk Graders (BTMGs), more commonly referred to as “drivers”, carry a supply of sterile, individually wrapped straws used for collecting a bulk tank milk sample at each pickup. However, when bulk tank volumes are low and the Bulk Tank Milk Grader cannot reach the milk, a sample dipper must be provided by the producer. When it comes to using and maintaining sample dippers both the producer and BTMG have responsibilities.

Producer Responsibilities

- Provide a sample dipper when requested by the BTMG.
- Ensure sample dipper is made of food grade material that is easily cleanable (such as stainless steel or hard plastic) and has smooth surfaces with no cracks or rough edges. Duct tape, rust, wooden extension handles and painted surfaces are totally unacceptable.
- Make sure the sample dipper is clean. It is recommended that producers clean with hot water and an appropriate cleaner, rinse the dipper after each use and store it in a clean, dry location until the next use. Dippers left in the wash sink often degrade quicker because of the increased exposure to chemicals and heat.
- Provide an appropriate container filled with a sanitizing solution prepared according to label instructions. For example, a 200 ppm chlorine solution is recommended for sanitizing milking equipment and can be prepared by mixing 1/3 ounce chlorine (10 milliliters (ml)) to 1 gallon water. Sanitizing solutions lose their strength with time so it must be prepared fresh just prior to each milk collection.

- Prior to milk collection, place the dipper in the container of freshly prepared sanitizing solution for a minimum of 2 minutes contact time.
- After pickup, clean and rinse the dipper and return it to a clean, dry location for storage until the next use.

BTMG Responsibilities

- Take the sample dipper from the sanitizing solution container being careful not to touch it to any surfaces.
- Do not rinse the dipper with tap water or set it down.
- To remove any residual sanitizing solution, ‘rinse’ the dipper in bulk tank milk at least twice.
- Carefully fill sample vial with milk to the fill line on the vial.
- Rinse the dipper with clean tap water and place in the sink.



BTMG using a sample dipper to collect a milk sample.

Both producers and BTMG's have important roles to play in the proper collection of a representative sample of milk. The sample taken must represent the quality of milk in the tank, not the condition of the sample dipper. Make sure you are doing your part. ■

SOME PERSPECTIVE ON THE GLOBAL DAIRY GOAT INDUSTRY

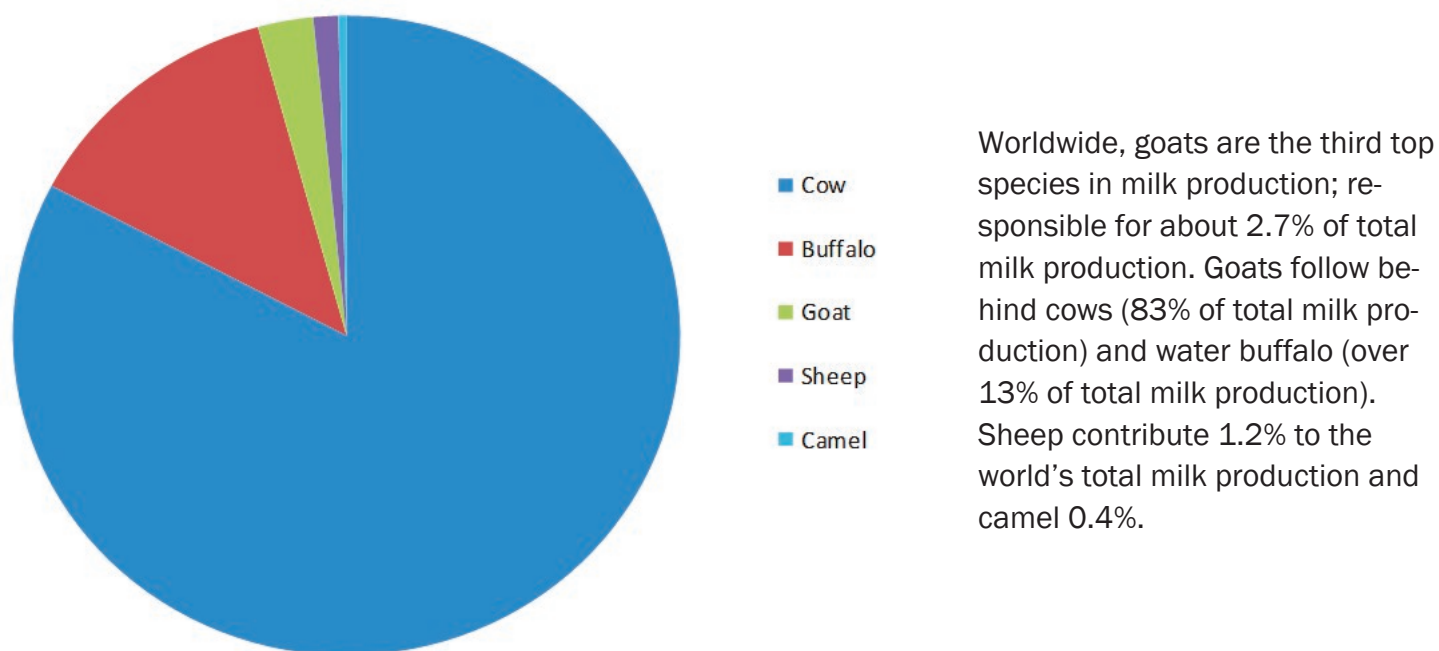


Figure 4: Total world milk production by species in 2013.

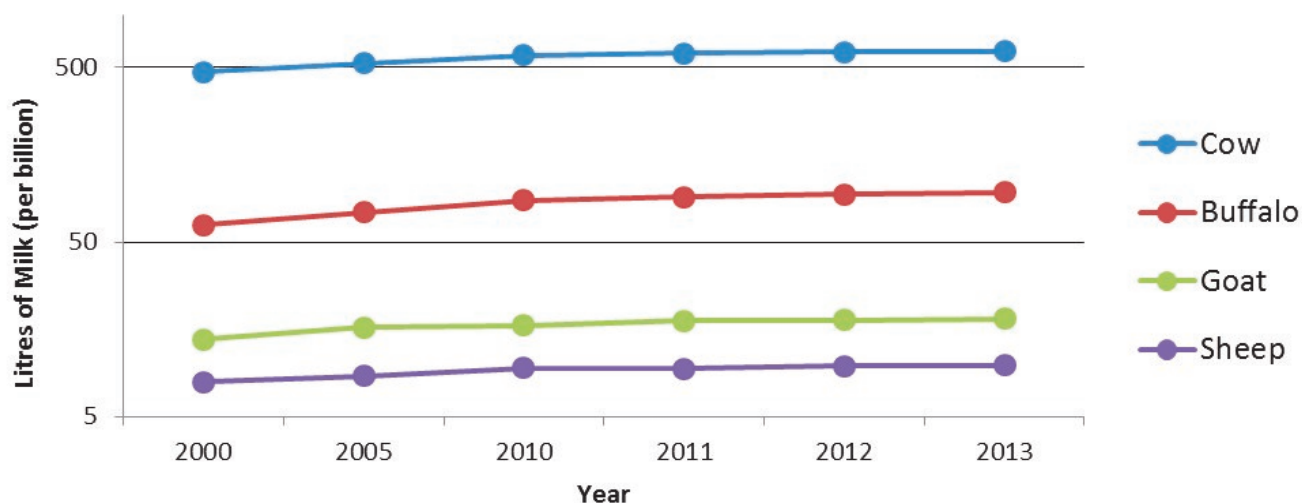
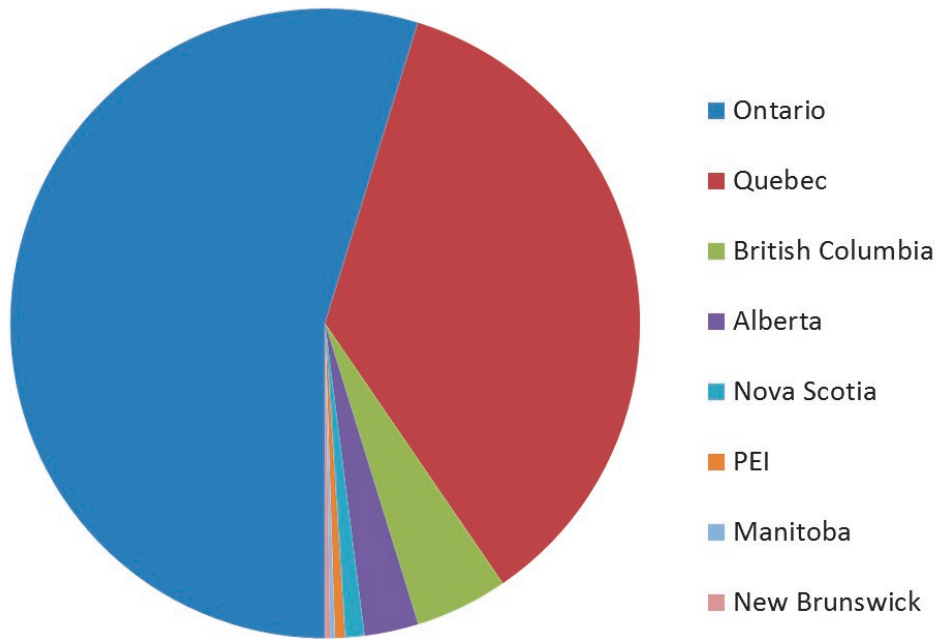


Figure 5: Milk production per year.

From 2000 until 2013, global goat milk production increased from about 13.8 billion to about 18.5 billion litres a year. This is a 31.7% increase which is the second largest increase in milk production for a species in that time period. The species with the largest increase in milk production during the same time period was water buffalo at 53.7%.

"World Dairy Situation." *Bulletin of the International Dairy Federation* (2014): 4-8. Print.

HOW THE ONTARIO GOAT INDUSTRY COMPARES TO OTHER PROVINCES



Current estimates tell us there are approximately 400 dairy goat farms in Canada. Together, Ontario (218 farms) and Quebec (142 farms) have over 90% of these farms.

Figure 6: Number of dairy goat farms per province.

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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TROUBLESHOOTING MILK QUALITY PROBLEMS

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 Cell Count (cells/mL)
Jul-14	81,500	3.48	-0.545	3.17	1,049,000
Aug-14	81,500	3.51	-0.543	3.19	1,062,500
Sep-14	83,000	3.64	-0.548	3.27	1,123,500
Oct-14	95,000	3.87	-0.551	3.46	1,313,000
Nov-14	91,000	4.04	-0.553	3.61	1,471,000
Dec-14	91,000	4.13	-0.550	3.66	1,555,000
Jan-15	95,000	4.13	-0.551	3.63	1,526,000
Feb-15	96,000	4.17	-0.550	3.64	1,521,000
Mar-15	110,000	4.16	-0.549	3.57	1,476,000
Apr-15	85,000	3.95	-0.548	3.40	1,253,500
May-15	84,000	3.71	-0.545	3.28	1,138,500
Jun-15	76,000	3.53	-0.545	3.21	1,116,000
Averages	89,000	3.82	-0.548	3.39	1,282,000

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 2014 to June 2015. 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-14	226	155	58	13	68.6%	94.3%
Aug-14	227	146	63	18	64.3%	92.1%
Sep-14	227	145	64	18	63.9%	92.1%
Oct-14	227	131	86	10	57.7%	95.6%
Nov-14	226	143	73	10	63.3%	95.6%
Dec-14	218	132	73	13	60.6%	94.0%
Jan-15	205	110	79	16	53.7%	92.2%
Feb-15	210	124	65	21	59.1%	90.0%
Mar-15	221	115	81	25	52.0%	88.7%
Apr-15	230	137	66	27	59.6%	88.3%
May-15	235	130	67	38	55.3%	83.8%
Jun-15	238	151	62	25	63.5%	89.5%
Averages	224	135	70	20	60.2%	91.3%

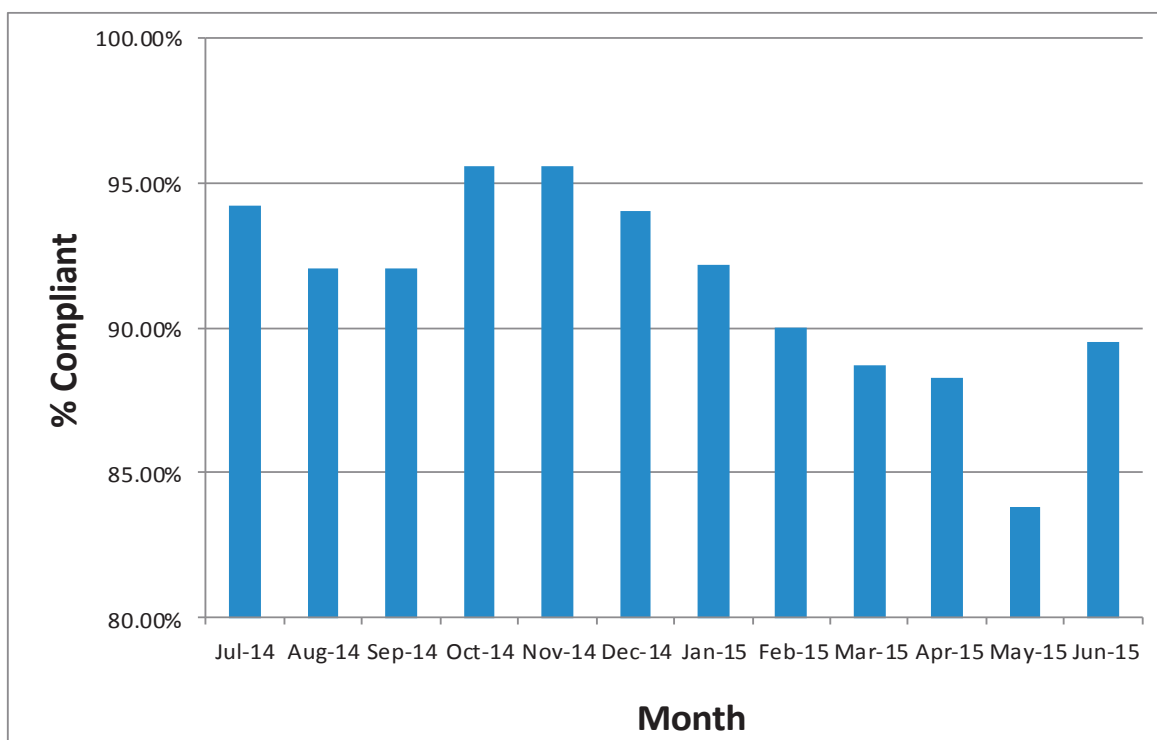


Figure 7: Goat Milk Bactoscan Results—Percentage of Producers Compliant ($< 321,000$ ibc/mL).

GROWING FORWARD 2 UPDATE & PREMISES ID

CHRISTINE CARD, NADEAN KENNEDY & ADAM MEYER, FOOD SAFETY AND TRACEABILITY

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, adaptability and industry sustainability in Canada's agri-food and agri-products sector.

Goat milk producers can access:

- Up to 50 per cent cost-share funding, up to a pre-determined cost-share cap, for projects under the assessment or audit, planning, skills development and training project categories.

* Examples of projects that are eligible include:

- ⇒ Risk assessments of on-farm biosecurity practices on your operation conducted by a veterinarian or crop advisor
- ⇒ Courses on humane handling of livestock or on-farm animal care practices

- Up to 35 per cent cost-share funding, up to a pre-determined cost-share cap, for remaining project categories.

* Examples of remaining project categories include:

- ⇒ Building or equipment upgrades to improve food safety, biosecurity or animal welfare

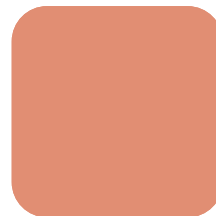
(such as time-temperature recorders (TTRs), plate coolers for pre-cooling milk, hoof trimming equipment)

- ⇒ 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 all project categories.

Producers must have a valid Premises Identification number to apply for programs under Growing Forward 2. Applying for a Premises Identification Number is easy and free. Register with the [Provincial Premises Registry](#) on-line or call 1-855-697-7743.

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



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LEARN MORE!

For more information on getting started milking goats, goat farm inspections, grading and transportation of goat milk, and much more visit the [Dairy Food Safety website](#) page.

More information on nutrition, business management, marketing, production, and breeding goats is available at: <http://www.ontario.ca/cbgk>

Également disponible en français

For more information :
Telephone : 1-888-466-2372

www.ontario.ca/omafra