

THE DAIRY GOAT DIGEST

Dairy Food Safety Program, Food Inspection Branch

ISSUE 18 AUGUST 2018

IN THIS ISSUE

- MILK HOUSE MATTERS, **PAGE 1**
- PROPOSED FEDERAL REGULATIONS FOR TRACEABILITY, **PAGE 3**
- PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018, **PAGE 5**
- A GOAT BREEDER'S GUIDE TO GENOMICS, **PAGE 11**
- BENCHMARKING KID MORTALITY ON ONTARIO DAIRY GOAT FARMS, **PAGE 12**
- SMALL RUMINANT ADULT MORTALITY PROJECT, **PAGE 13**
- COORDINATOR'S CORNER, **PAGE 14**
- QUALITY GOAT MILK, **PAGE 15**
- MILK SAMPLING STRATEGIES, **PAGE 17**
- ANIMAL HEALTH AND WELFARE BENCHMARKING ASSESSMENT, **PAGE 19**
- COLOSTRUM QUALITY IMPACTS ON KID VIABILITY, **PAGE 21**
- ONTARIO DAIRY GOAT VALUE CHAIN ROUNDTABLE, **PAGE 23**
- SUMMARY OF RAW GOAT MILK TEST RESULTS, **PAGE 24**

MILK HOUSE MATTERS

PETER MAW, RAW MILK SPECIALIST

Your milk house is the first impression visitors get of your farm. A clean and tidy milk house is important for safely storing a quality product and allowing your Bulk Tank Milk Grader (BTMG) to properly grade, sample and pump milk to the transport tank.

Hose Port

Hose Ports must be kept clean and smooth to prevent damage to hoses. The outer flap that covers the port needs to be self-closing and tight-fitting to keep pests out. Concrete or clean crushed stone should be laid on the ground under the hose port and the area kept free of all clutter.



Windows and Doors

All doors in the milk house must be tight-fitting and self-closing. At no time should doors be propped open. This keeps critters (rodents, insects) out of the milk house as well as prevents odours from the barn and outside. Windows must be closed tight or be covered with screens that are in good repair, this includes the opening for the cooling unit.

Lighting

Sufficient light is required by the BTMG to visually grade the milk and read the volume scale. Lighting over the tank lid must be provided and needs to have a shatter-proof cover. If hydro is not available, a working flashlight must be made available to grade the milk. Keep in mind, milk that cannot be properly graded will not be picked up by the BTMG.

Hand Wash Station

BTMGs should have clean hands when taking a representative sample of the milk. Producers should provide hand soap and a clean towel or paper towels. Hand sanitizer is also acceptable.

Fly Control

“One fly in the milk is too many”. Rejecting milk that contains flies is part of a BTMG’s training. Fly control is very important and can be achieved by keeping doors and windows closed and tight-fitting as well as the use of sticky fly tapes and/or approved sprays.

Water Hose

A water hose with an attached nozzle must be available in the milk house at all times. The hose must be kept clean and stored up off the floor.



Bulk Tank

A minimum distance of 60 cm (23”) of clear space is required from all fixed objects around the bulk tank. This is to facilitate proper cleaning around the tank. Manually applied acids are best to keep your tank exterior clean and shining. Don’t forget the underside of the tank. A proper tank brush is the best tool for this job.

Rubberware

All black rubber parts must be inspected regularly for “inking” and breakdown. Black flecks of rubber from tank gaskets can end up in the milk, causing the tank of milk to be rejected by the BTMG. Silicone replacement parts, if available, are always the best alternative.



Clean and Tidy

When your BTMG grades the goat milk, there should be no smell. Items like milk replacer are to be stored in another room or sealed containers. Engine or fuel fumes must be kept out of the milk house. Odours from feed and used milk filters can also make grading difficult. Once again, keep all doors in the milk house closed. Walls and ceilings must be covered with a washable material and kept in good condition and cleaned regularly. Cobwebs are not considered a form of fly control and need to be swept down. Keep all non-dairy items out of the milk house.

Algae, mold and mildew can be an issue in the milk house. Ventilation is key to controlling moisture. Open windows, as well as fans and dehumidifiers all help to control this problem. A chlorine solution (one part chlorine to one part water) is the best treatment for removing any growth.

In Conclusion

Goat milk producers are professionals, producing a quality product. BTMGs are trained professionals hired to properly grade, collect samples and transport that product. The milk house is your common work space. Conditions in your milk house matter, and will help promote a good working relationship.

Thank you and keep up the good work.■

PROPOSED FEDERAL REGULATIONS FOR TRACEABILITY – WHAT WOULD IT MEAN FOR YOU?

VANESSA TAYLOR, FOOD SAFETY AND TRACEABILITY ADVISOR

Ontario's goat industry has been involved in traceability for the last decade, from initiating tag trials in 2012, to establishing the Ontario Goat Traceability committee in 2014. The industry also participated in the last round of consultations on proposed regulatory changes to the federal Health of Animals Regulations for animal identification and traceability, which would include goats for the first time.

The proposed changes to the federal regulations would affect all dairy, meat and fibre goat operations, regardless of size. The proposed changes are expected to be published on the Canadian Food Inspection Agency's web site (www.inspection.gc.ca/traceability) in the fall of 2018 for a 75-day public comment period. During this time, dairy goat operators will be able to comment on the proposed changes. The regulations are anticipated to come into force in late 2019 or early 2020 after all comments are reviewed and considered.

What can you do now to be ready for these changes? Below is a brief summary of some of the requirements expected to be in the proposed federal regulations, and some steps you can take now to prepare your operation.

Animal Identification

Under the proposed federal regulations, goats would be required to be identified with an approved indicator before leaving the farm of origin, similar to current requirements for cattle, bison and sheep. The Canadian National Goat Federation website lists current pre-approved indicators, including ear tags, tail web tags and leg bands available in RFID (radio-frequency identification) and non-electronic options. While they are not a federal requirement at this time, these tags and leg bands are available for purchase from the Canadian Cattle Identification Agency.

Applying pre-approved indicators to your goats such as a tag or leg band will not only help you be prepared when the requirements come into effect, but also help with herd management activities such as tracking breeding status, feed intake and milking performance. Using RFID tags and a reader to automatically scan identification numbers can increase the accuracy of those numbers being read and decrease the time needed to identify animals within your herd.

For more information on pre-approved identification for goats, go to www.cangoats.com/animal-identification.

Premises Identification

A premises is a parcel of land associated with agri-food activities. A premises identification number (PID) is a unique number assigned to that parcel of land and would be needed to purchase approved indicators for your goats. PIDs are free and it will take you less than five minutes to get one. Contact the Provincial Premises Registry to register your farm:

- ⇒ Online: www.ontariopid.com
- ⇒ By phone: 1-888-247-4999

PROPOSED FEDERAL REGULATIONS FOR TRACEABILITY – WHAT WOULD IT MEAN FOR YOU? (cont'd)

VANESSA TAYLOR, FOOD SAFETY AND TRACEABILITY ADVISOR

Registering your premises regardless of a regulation change will help your business. A PID will help protect your herd during a disease outbreak or emergency by helping the government quickly assess if your operation is impacted by a disease or emergency. This will help to reduce response times and impacts in Ontario.

Get Ahead of the Curve

There are two things you can do now for your dairy operation to be well prepared for upcoming changes to the federal regulations:

1. Get a PID for your farm.
2. Start using pre-approved indicators (tags or leg bands) to identify your herd when they leave the farm. ■



Figure 1. A pre-approved indicator by Canadian National Goat Federation.

NEW DAIRY FOOD SCIENTIST

MELISSA HAVEROEN, FOOD SAFETY SCIENCE UNIT

It is our pleasure to welcome Dr. Melissa Haveroen to the role of Dairy Food Scientist, as of March 2018. She will be focused on providing support to the Dairy Food Safety Unit, including designing and conducting baseline studies related to the safety of fluid milk and other dairy products. Baseline studies generally relate to assessing food safety risks posed by chemical or microbiological contaminants in dairy products, and the results of such studies provide verification of the safety of Ontario's milk supply.

Melissa previously worked in the Meat Inspection Program at OMAFRA as a Food Safety Advisor. She has also worked as a food safety consultant and HACCP Coordinator in the food industry. She holds a PhD in Food Microbiology from the University of Alberta. ■



PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

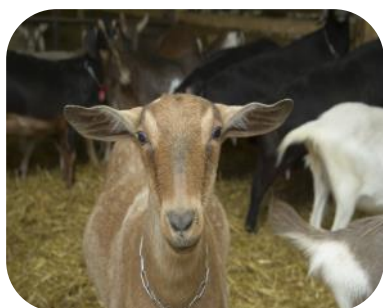
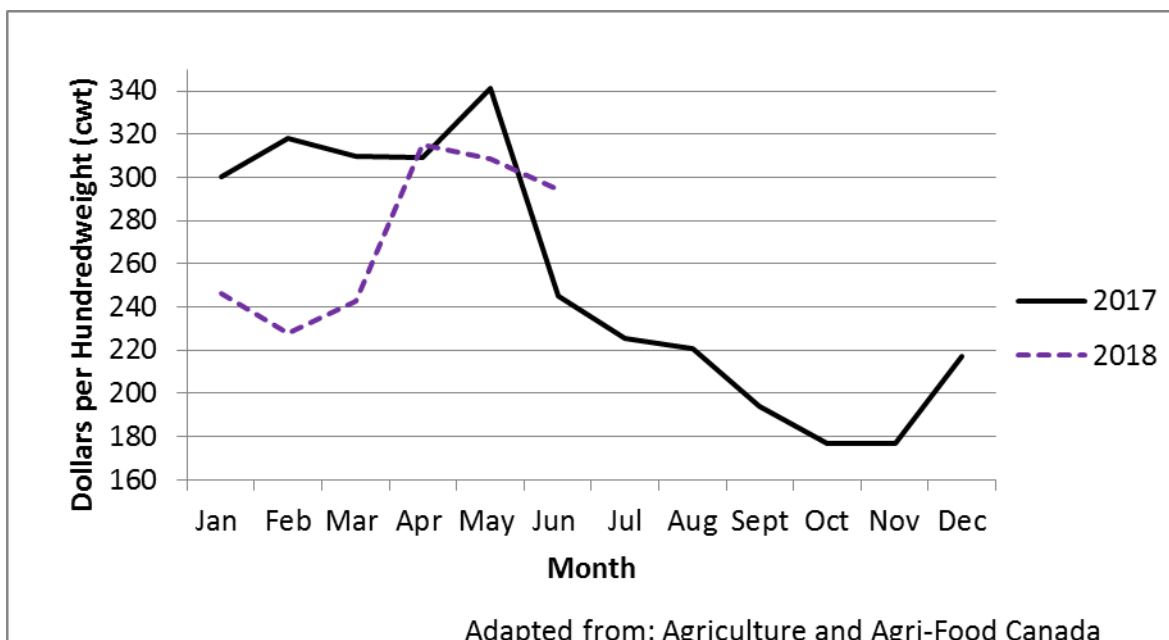
JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

Given that there is no unified reporting of goat kid prices, direct comparisons to certain sales barns are difficult to make. Auction markets report kid pricing in different ways - either per head, per pound or per hundred weight. Kids may be recorded by weight class by some sources, or total volumes of all goats marketed. Volumes are not always included. The pricing trends for goat kids remain valuable to review.

Ideally, there would be standardized goat pricing data in which all Ontario auction markets would report price per hundred weight, break out the various weight classes of kids (into three or four weight classes) and report average weight of mature does and mature bucks. The volumes in each weight class for kids and mature animals would enable a weighted average to be calculated, making the data more accurate and comparable across the province.

The weighted average of kid prices on a monthly basis for all Ontario auction markets can be found in **Figure 2**. The graph includes data from January 2017 through May 2018.

Figure 2: Monthly Average Kid Prices at Ontario Auction Markets Jan. 2017 to May 2018.



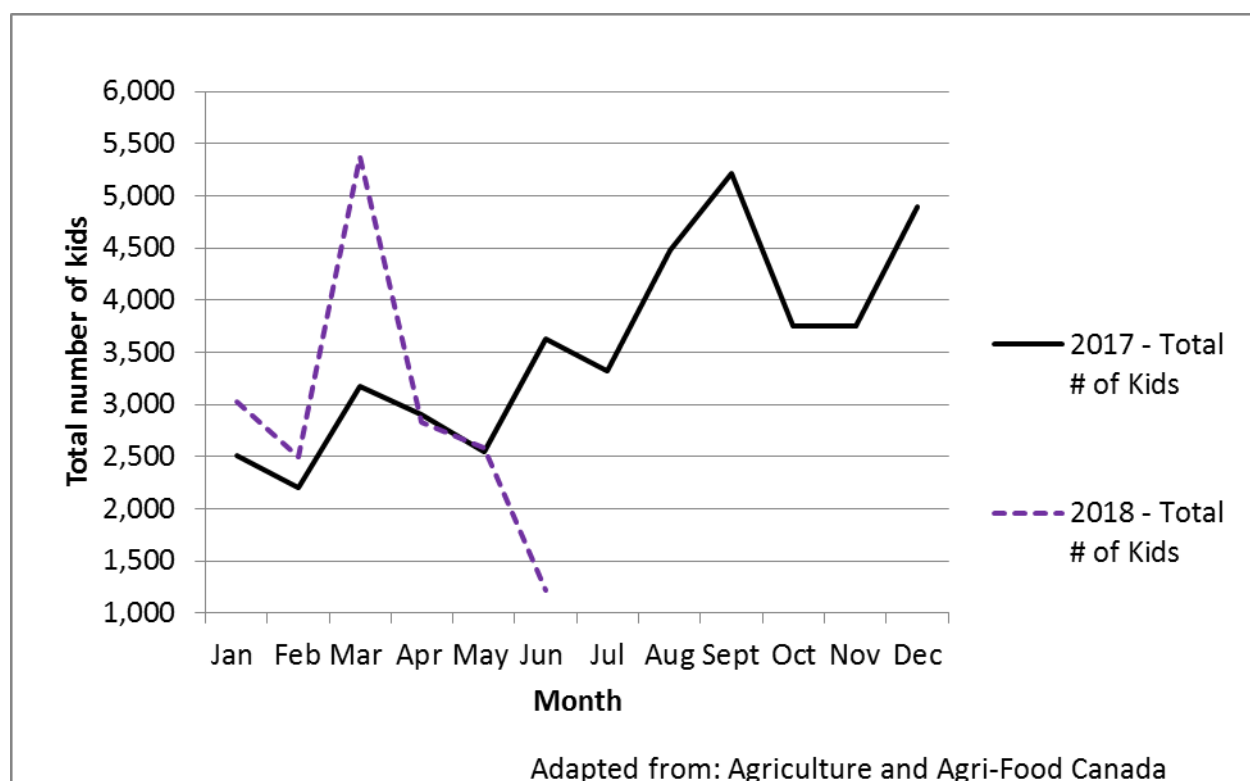
PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

(cont'd)

JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

Figure 3 reports total volume of kids marketed on a monthly basis from all Ontario auction markets for 2017 to May 31, 2018. The volume of kids marketed could be related to specific holidays, or when the majority of kids reach market weight due to the seasonal breeding nature of does.

Figure 3: Monthly Volume of Kids Marketed at Ontario Auction Markets (2017 & 2018)



The Ontario auction markets data for Figures 2 and 3 was collected from:

- Aylmer Stockyards Inc.
- Brussels Livestock
- Community Livestock Exchange (Hoard's Station)
- Embrun Livestock Exchange
- Kawartha Lakes Co-op Auction Market Inc.
- Keady Livestock Market Ltd.
- MapleHill Auctions Ltd.
- Ottawa Livestock Exchange
- Ontario Livestock Exchange
- Ontario Stockyards Inc.
- Rainy River
- Temiskaming Livestock Exchange
- Vankleek Hill Livestock Exchange.

The following charts represent weekly pricing data collected from the three auction markets selling the largest portion of goats in Ontario.

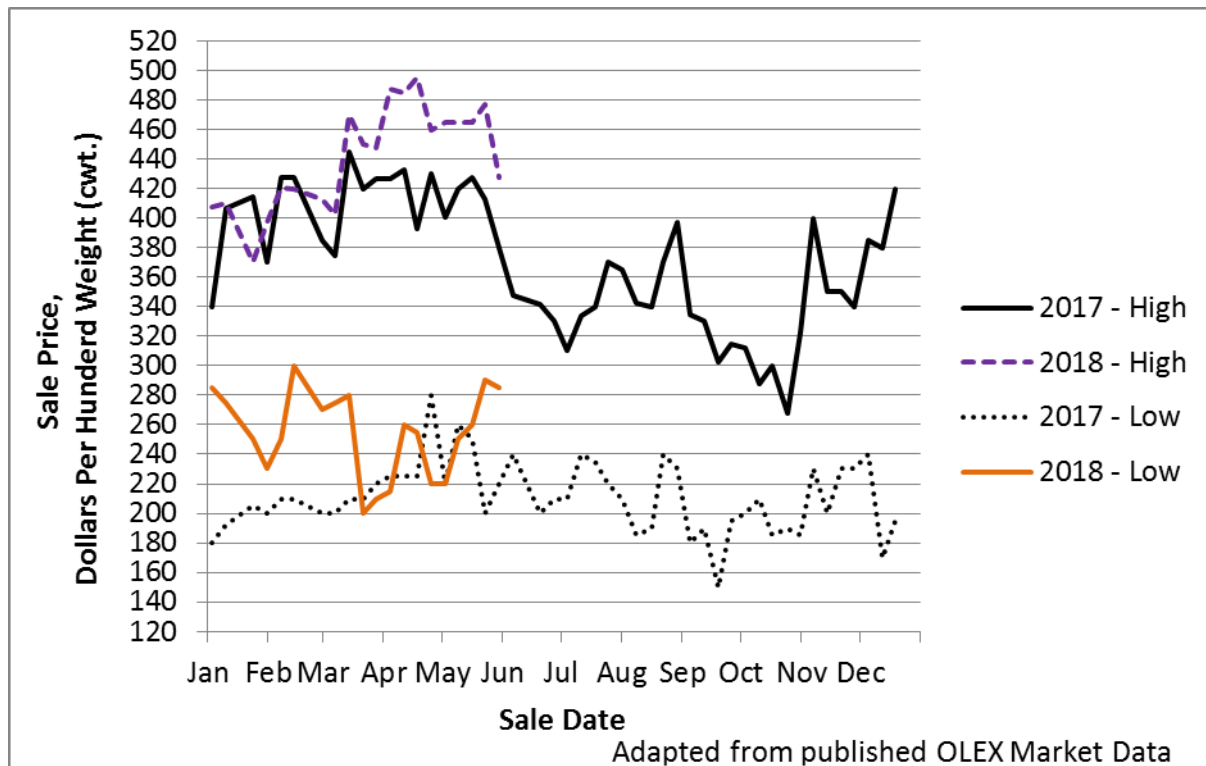
Figure 4 shows the average price per hundred weight of the total kids marketed from the Ontario Livestock Exchange (OLEX), in Waterloo. There are no weight classes reported; this figure represents the price of all kids marketed. Volume data is included in **Figure 8**.

PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

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JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

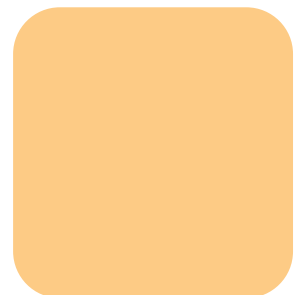
Figure 4: Price Ranges: Dollars per Hundred-weight for Kids Marketed (2017 & 2018) (OLEX)



Figures 5 and 6 provide the weekly kid prices **per head** for the Ontario Stockyards Inc. (OSI) in Cookstown. Weight classes of kids are reported and, for the purpose of this article, two weight classes are included. Volume data is in Figure 8.

OSI reports three price ranges (Figure 5 and 6):

1. **'high'** is the highest price per head
2. **'to'** is the average range in price taking out extreme highs and lows
3. **'from'** represents a low price, taking out any extreme low prices per head.



PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

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JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

Figure 5: Price Ranges: Dollars per Head, Kids 35-49 lbs (2017 & 2018) (OSI)

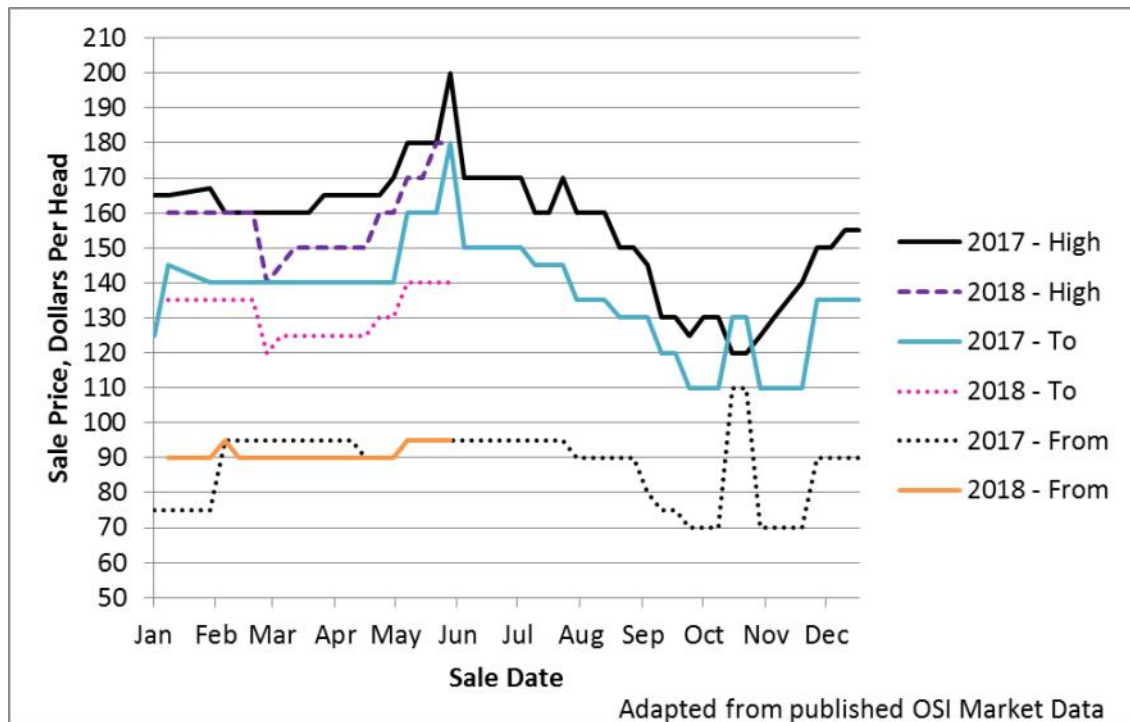
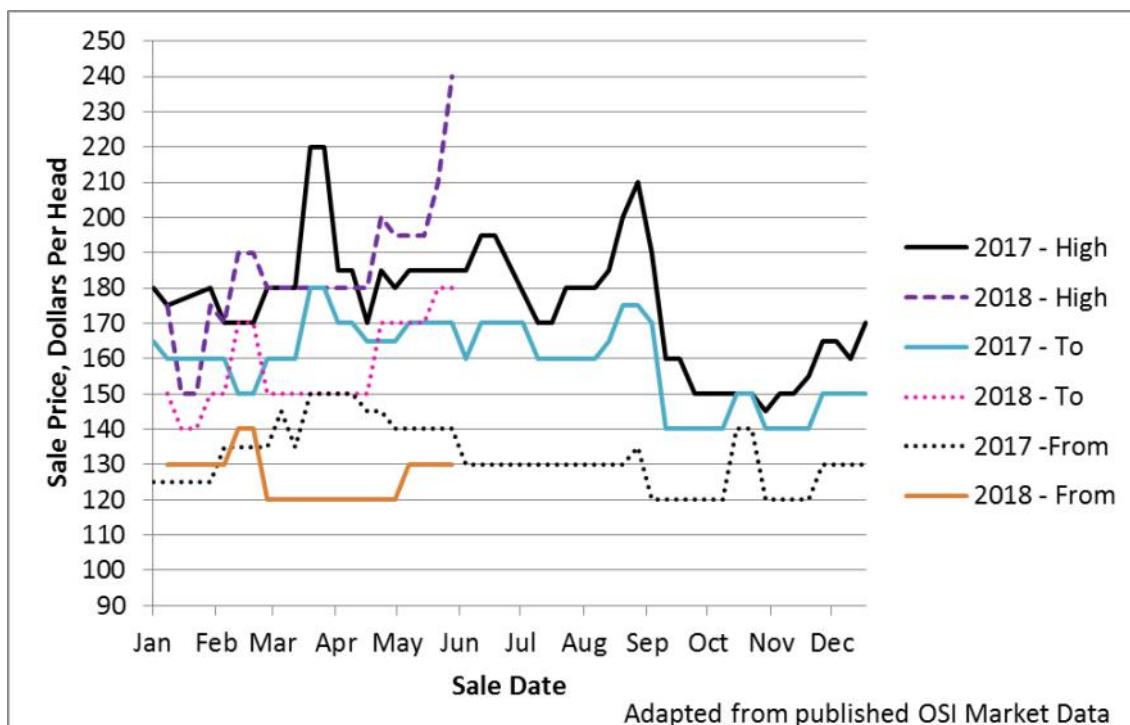


Figure 6: Price Ranges: Dollars per Head, Kids 50-75 lbs (2017 & 2018) (OSI)



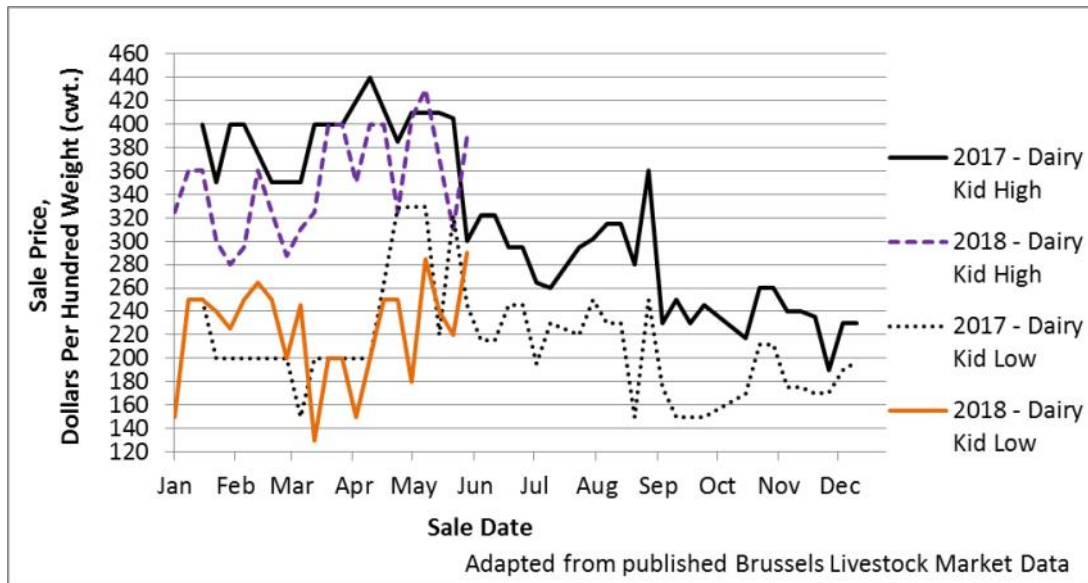
PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

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JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

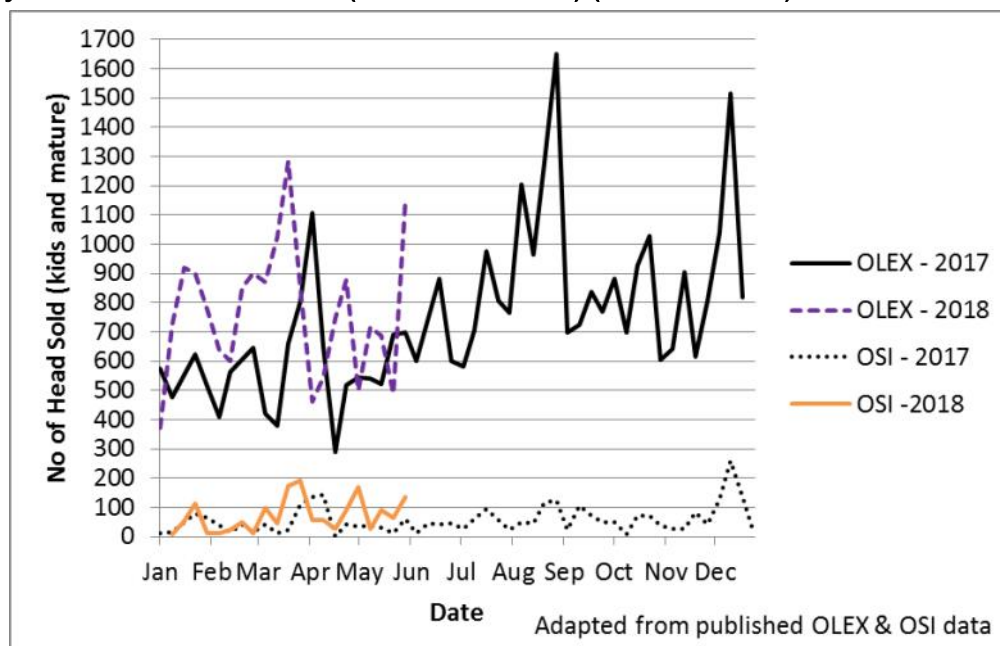
Figure 7 shows the price per hundred weight of the total kids marketed weekly from Brussels Livestock. There are no weight classes reported; this figure represents the price of dairy kids marketed. In early 2017, Brussels Livestock began reporting kid prices in two categories – dairy and meat – with a high and low range in each category. For the purposes of this article, the dairy category has been included.

Figure 7: Price Ranges: Dollars per Hundred-weight for Dairy Kids (2017 & 2018) (Brussels Livestock)



Weekly volumes of all goats (including kids, mature does and bucks) are reported in **Figure 8** for OLEX and OSI. Brussels Livestock does not report sheep and goats separately.

Figure 8: Weekly Volumes of Total Goats (2017 and 2018) (OLEX and OSI)



PRICING TRENDS FOR DAIRY GOAT KIDS IN 2017 AND 2018

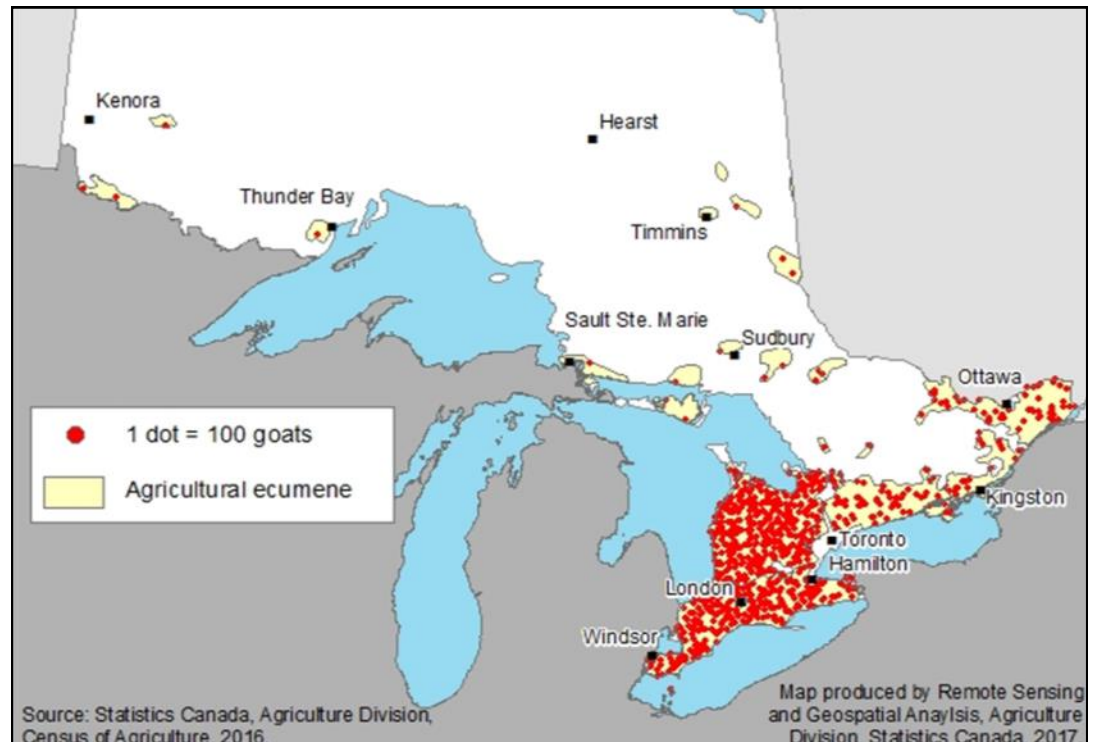
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JILLIAN CRAIG, SMALL RUMINANT SPECIALIST

Figure 9 from Statistics Canada, shows more dairy goat operations in Southwestern Ontario, with pockets of dairy production in Central and Eastern Ontario. This geographic distribution likely influences the larger volume of goats marketed through OLEX.

Figure 9: Number of Goats Reported on Known Dairy Goat Operations by Census Agricultural Region in 2016

Disclaimer: The data provided in this article is from published weekly sale prices at auction markets and is summarized. For detailed market prices, visit the auction market websites for weekly sales data or attend a few sales for more detailed pricing, volume and weight information.



Sources:

Agriculture and Agri-Food Canada – monthly kid prices and volumes: <http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/prices/?id=1415860000004>

Brussels Livestock – weekly market data: <http://www.brussellslivestock.ca/>

Ontario Livestock Exchange (OLEX) – weekly market data: <http://www.olex.on.ca/Olex/Default.asp>

Ontario Stockyards Inc.. (OSI) - weekly market data:

<http://www.ontariostockyards.on.ca/>

Statistics Canada, Dairy goats in Ontario, M. McGonegal, Dec 2017: www150.statcan.gc.ca/n1/pub/96-325-x/2017001/article/54873-eng.htm ■

Genomic selection has revolutionized livestock breeding programs around the world. The use of genomic selection rapidly increases genetic progress by reducing the generation interval and increasing the accuracy of selection. It is an efficient tool to increase producer profitability, making it an exciting prospect for the Canadian goat industry.

What is genomic selection?

An animal's merit is based on their phenotype for a given trait, which is an observable characteristic resulting from environmental and genetic interactions. Genomic selection uses small differences in the DNA of individual animals, called single nucleotide polymorphisms (SNPs), to predict an animal's genetic merit for economically-important traits, such as milk production. These genomic trait predictions can be used to select more profitable animals to use as replacements.

How does it work?

A technology called an SNP chip uses a small tissue sample to read thousands of different sites across the animal's DNA. These results can then be used to predict the genetic merit of genotyped animals without having to determine that individual animal's phenotype for that trait. These predictions can be used to make selection decisions.

However, before the industry can use genomic selection, researchers need to determine what areas of the genome are associated with different traits. To do this, we need to create a genomic reference population of animals with both genotypes and phenotypes. The animals in this reference population are used to determine which SNPs are favourably or unfavourably associated with a given trait.

What are the benefits?

With genomics, it is possible to select breeding candidates at an early age, which lowers rearing expenses and increases genetic progress. It also allows producers to make selection decisions with greater confidence by increasing the accuracy of estimated breeding values. Preliminary research suggests that genomic selection is expected to lead to at least a 17 per cent relative increase in accuracy over traditional Canadian goat genetic evaluations. Increased accuracy allows producers to make genetic selection decisions for their herd with greater confidence. Genomic technology is also very useful for traits that are difficult or expensive to measure, such as disease resistance traits, because we can use an animal's genotype to predict their merit without measuring the trait itself.

Get involved in a new genomic selection project

A new genomic selection project funded by the Ontario Ministry of Agriculture, Food and Rural Affairs – University of Guelph Partnership program is looking for participants. The project plans to genotype 2,300 Ontario dairy bucks and does, and aims to implement dairy goat genomic evaluations by expanding the genomic reference population. There will be no cost to participating producers, and producers will receive free genotyping. Contact Erin Massender at the University of Guelph at emassend@uoguelph.ca or 519-365-1013 for more information about how you can get involved. ■

PROJECT UPDATE – BENCHMARKING KID MORTALITY ON ONTARIO DAIRY GOAT FARMS

DR. CATHY BAUMAN, DR. JULIA KIM, DR. JEFF WICHTEL, DR. PAULA MENZIES, DR. ROBERT FOSTER, DR. EMILY RATSEP, ONTARIO VETERINARY COLLEGE, UNIVERSITY OF GUELPH

DR. JOCELYN JANSEN, ANIMAL HEALTH AND WELFARE BRANCH, OMAFRA

Profitability of dairy goat operations is heavily influenced by kid survival. It is well known that the post-natal period for dairy goat producers is very challenging as seasonal breeding and multiple births result in large volumes of animals born in short periods of time. This results in kids being susceptible to failure of passive transfer (not receiving adequate antibodies/immunity from the colostrum consumed), coccidiosis and other diseases. Kid mortality has been identified by the Ontario goat industry and the Small Ruminant Ontario Animal Health Network as a significant issue and barrier to industry growth. However, there is a lack of available data on the actual level of mortality in dairy goat kids and little evidence as to the most important causes.

The project, “Investigating Kid Mortality in Ontario Dairy Goat Farms”, began in the fall of 2017. Phase I of the project involves a questionnaire and farm visit and the goal is to visit 100 herds. Phase II of the project is a 12 month commitment which involves weighing and tagging all kids at birth, and collecting and freezing kids that die between birth and four months of age so that postmortems can be performed. Samples of colostrum and/or colostrum replacement products will also be taken to estimate colostrum quality. Thirty producers from Phase I will be randomly selected to participate in Phase II. Phase III will share the results of the project with producers, veterinarians and industry groups. To date, 90 producers responded to a request to participate in Phase I. Thirty completed questionnaires have been received and 25 farm visits have been completed. Twenty farms have been enrolled in Phase II of the project. Another ten farms will be enrolled shortly. Colostrum samples have been collected from 17 farms.

Preliminary results from 182 kid postmortems are as follows:

- 8% of kids died between birth and 48 hours of age
- 80% of kids died between 48 hours and 40 days of age
- 12% of kids died over 40 days of age
- 40% of kids showed evidence of pneumonia

If you are interested in participating in Phase I of the project, please contact Dr. Julia Kim by email at jkim16@uoguelph.ca or by phone (647-991-1265).

This project is funded by the OMAFRA-University of Guelph Research Program, MITACS (NSERC), and with support of industries partners – Gay Lea Foods, Saputo, Ontario Dairy Goat Cooperative, Ontario Goat, and the American Dairy Goat Association. ■

Listeriosis

Listeriosis is a disease that affects a variety of animals and can cause neurological problems, abortion and other symptoms. Listeriosis is caused by the bacterium *Listeria monocytogenes*. It is found throughout the environment, especially in soil, manure and spoiled silage or hay. Listeriosis usually affects cattle, sheep and goats and can be characterized by animals with a fever, poor appetite and appearing depressed. For more information: <http://www.omafra.gov.on.ca/english/livestock/vet/facts/13-011.htm>

PROJECT UPDATE – SMALL RUMINANT ADULT MORTALITY PROJECT

JEANETTE COOPER, DR. ANDREA JONES-BITTON, DR. PAULA MENZIES, ONTARIO VETERINARY COLLEGE, UNIVERSITY OF GUELPH
DR. MARIA SPINATO, ANIMAL HEALTH LABORATORY, UNIVERSITY OF GUELPH
DR. JOCELYN JANSEN, ANIMAL HEALTH AND WELFARE BRANCH, OMAFRA

Why did that mature goat die? 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), so that changes can be implemented to help prevent ongoing disease. The “Distance support for on-farm investigation of adult small ruminant mortalities” project was developed to investigate which diseases cause mortality in Ontario’s sheep and goat populations.

To date, 43 goat postmortem cases have been submitted through the project, with only seven cases remaining undiagnosed. Diagnoses in goats include: clostridial disease (enterotoxemia) (7), caprine arthritis encephalitis (6), pneumonia (4), listeriosis (4), endometritis (inflammation/infection of the uterine lining) (2), copper toxicity (2), dental disease (1), Johne’s disease (1), enlarged esophagus (1), tumor of the thymus (1), chronic bloat (1), pregnancy toxemia (1), gastrointestinal parasitism (1), laminitis (inflammation/irritation of tissue in the hoof) (1), inflammation of the intestine (1), clostridial malignant edema (1), and *Yersinia pseudotuberculosis* intestinal infection (1).

Many of the diagnoses in goats can have impacts on overall herd health, with the potential to cause multiple mortalities. The diagnostic information gained from a proper postmortem can provide the basis for the design of prevention and control strategies by producers and their veterinarians to prevent further losses. Cases are being accepted until August 31st, 2018. Up to \$400 worth of diagnostic testing and \$175 worth of veterinary fees per case are being funded by the project. Talk to your herd veterinarian about submitting a case!

This project is funded by the Agri-Food and Rural Link KTT Funding Program, part of the OMAFRA-U of G Partnership; and the Ontario Animal Health Network. ■

Orf

Contagious Ecthyma – commonly known as Orf – is a highly contagious skin disease commonly seen in goat and sheep. Orf is characterized by blister-like lesions that develop on the animal’s mouth and muzzle. If exposed, humans can develop the lesion (s) in three to seven days. The virus is spread via direct contact with an infected animal or indirectly from a contaminated environment. The virus is very hardy and can remain viable for one month after the lesions have healed, which makes it difficult to control. For more information: <http://www.omafr.gov.on.ca/english/livestock/goat/news/dgg1208a2.htm>

Q Fever

Coxiellosis – commonly known as Q fever – is a disease of sheep, goats and cattle which can cause disease in some animals and in humans that are exposed to infected animals. Q fever is caused by the bacterium *Coxiella burnetii* which can exist in the placenta and birthing fluids as well as the milk, semen, feces and urine of infected animals. The bacteria can remain alive in the environment for long periods of time. Your veterinarian can diagnose and provide treatment recommendations for coxiellosis and may prescribe medications to reduce the spread of the bacteria in the herd. For more information: <http://www.omafr.gov.on.ca/english/livestock/vet/facts/13-007.htm>

With an increased focus on fresh, local food and market fluctuations in the goat milk industry, OMAFRA Dairy Food Safety Program staff have seen an increase in the number of questions regarding on-farm milk processing as well as queries about plants that can/will process goat milk. Below are some of the more frequently asked questions regarding on farm processing and the answers to those questions.

Q. Can I make cheese to sell at my farm, farmers market or local store?

A. All dairy products made from cow or goat milk must be processed in a plant licensed by OMAFRA. A plant can be on farm, but must meet all of the regulatory requirements in Regulation 761 under the *Milk Act*.

Q. Can I have cheese made at another plant and sell it at my home, a farmers' market or a store?

A. Yes. Milk products can only be packaged in a plant licensed by OMAFRA and must have the proper labelling applied. You may not age, smoke or package cheese unless you have a licence.

Q. Who can transport my milk to a processing plant?

A. All cow or goat milk must be collected and transported in a vehicle that has been inspected and approved as a tank truck as defined in the regulations. A certified Bulk Tank Milk Grader (BTMG) must grade, sample and collect the milk. A transporter may only operate a tank truck for the purposes of collecting milk when authorized by the marketing board in the case of cow milk or by OMAFRA in the case of goat milk.

Q. I want to build my own plant, who do I talk to?

A. Contact Mr. Rick Bond, Dairy Food Safety Advisor with OMAFRA. Mr. Bond can be reached at 519-826-4089 or rick.bond@ontario.ca. He can provide you with information regarding the process to become a licensed plant operator. Please note that you cannot begin any construction or renovation to a building intended for use as a plant without a permit from the Director of the Food Inspection Branch at OMAFRA.

Q. What plants could process milk for me?

A. A list of all licensed plants in Ontario can be found at <http://www.omafra.gov.on.ca/english/food/inspection/dairy/licenseddairyplants.htm> or by calling Rick Bond at 519 826-4089. ■

Reminder - Changing or adding a bulk tank

When changing or adding a bulk tank, you MUST:

- Inform OMAFRA of the bulk tank change or addition, including the date the tank will be changed or added. A second tank will require a specific identification number supplied by OMAFRA for milk sample identification purposes.
- Have a dealer calibrate the bulk tank and provide a written calibration certificate, verifying that the bulk tank was calibrated within the tolerances specified in [Regulation 761, Section 18\(4\)](#).

Before the bulk tank may be used, OMAFRA staff must verify that the tank installation meets the regulatory requirements of Regulation 761 under the *Milk Act*. These requirements can be found at www.ontario.ca/laws/regulation/900761 or by contacting Phillip Wilman, Raw Milk Quality Program Coordinator at 519 826-3746.

QUALITY GOAT MILK – WHY DOES IT MATTER?

MIKE FORAN, RAW MILK SPECIALIST

Various studies indicate that poor raw milk quality can have a detrimental effect on finished dairy products. Very high levels of somatic cells, bacteria, or both, can lead to increased enzyme levels in pasteurized milk, which negatively impacts finished product quality (e.g. flavour) and shortens the shelf life. Enzymes include lipolytic enzymes, which break down milk fat and cause rancid flavours, and proteolytic enzymes, which break down milk proteins to cause bitter flavours. In particular, research suggests that using milk with very high bacterial and somatic cell counts (SCCs) can result in cheese defects and lower cheese yields. Milk with high bacterial counts may also interfere with starter culture activity in the cheese making process.

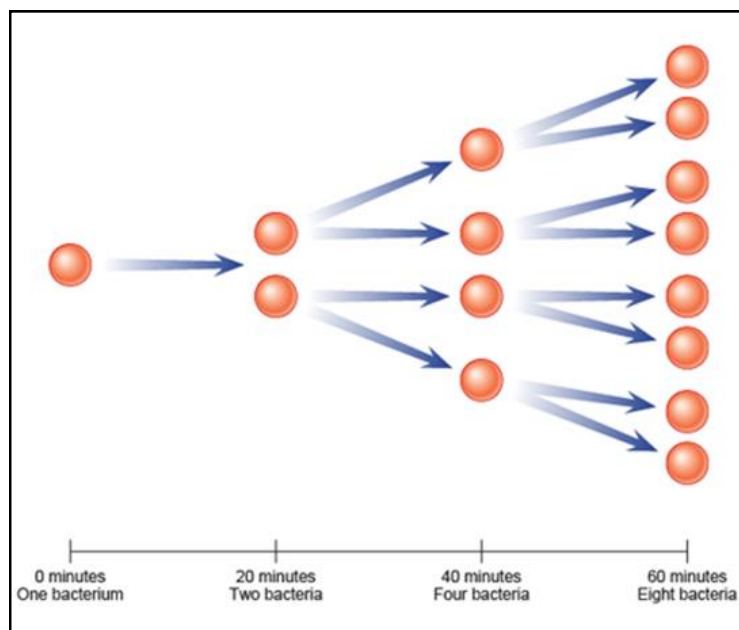
If bacterial counts are already high in raw milk at the time of processing, composition and flavour defects may already be present from microbial activity. In addition, although pasteurization will destroy pathogenic bacteria (disease-causing organisms) and reduce the overall bacterial load, spores of some spore-forming bacteria (such as *Bacillus* spp. and *Clostridium* spp.) that are present in raw milk can survive pasteurization, and subsequently grow and cause further quality issues in finished products. In particular, some clostridia produce gas during their growth, which can cause late-blowing defects in cheese. Controlling these spore-forming bacteria is mainly done through proper sanitation.

One type of bacteria that contributes to enzymatic activity in milk before and after pasteurization are psychrotrophic bacteria, which are bacteria that grow at **7° C or less**. One notable dairy psychrotroph is *Pseudomonas* spp. Some enzymes produced by psychrotrophs are not inactivated by pasteurization or other heat treatments and thus may continue to degrade the finished product after the bacterium itself has been destroyed.

Controlling psychrotrophic bacterial begins with sanitation and cooling. If teats and/or milk contact surfaces are not clean, or milk cooling is slow or marginal, psychrotrophic bacteria may become the predominant organism in the bulk tank. **There is very little growth of psychrotrophic bacteria at 2° C or lower, so proper temperature control of raw milk in the bulk tank is extremely important.** Bacterial growth is an exponential process that can occur as frequently as every 20 minutes.

If raw milk containing one single bacterial cell is left uncooled for only five hours, that one cell could reproduce to become over 16,000 bacterial cells during that timeframe. Thus, cooling is a key step in controlling bacterial growth.

The dairy goat industry is striving to increase milk sales. Competing against various beverages, cow milk yogurts and cheeses is not easy. However, continued production of high quality goat milk will help grow the industry and open new marketing opportunities.



QUALITY GOAT MILK – WHY DOES IT MATTER?

MIKE FORAN, RAW MILK SPECIALIST

References:

http://www.bbc.co.uk/schools/gcsebitesize/science/21c/keeping_healthy/disease_resistancerev2.shtml

[https://www.journalofdairyscience.org/article/S0022-0302\(16\)30640-3/fulltext](https://www.journalofdairyscience.org/article/S0022-0302(16)30640-3/fulltext)

<https://www.extension.umn.edu/agriculture/dairy/milk-quality-and-mastitis/why-does-raw-milk-quality-matter/>

<https://www.uoguelph.ca/foodscience/book-page/dairy-microbiology> ■

Low BactoScan™ Results are Possible – Here's How

If you start to see higher than normal bacterial levels in your raw milk test results, there are some critical control points that can be checked. Steps to take when you encounter poor milk quality:

1. Check bulk tank milk temperature. Milk must be stored between 0 and 4 °C - preferably closer to 1-2 °C (34 - 36°F)
2. Ensure that milk is cooled quickly. The cooling unit should lower the milk temperature 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 which could indicate inadequate cleaning.
5. Observe a complete wash cycle of the milking and 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 your OMAFRA Raw Milk Specialist to discuss findings and arrange for a quality assistance inspection.

Utilize the California Mastitis Test (CMT) or a strip cup to screen for udder health issues. Some bulk tank quality issues have been traced back to a single infected goat.

For more information about keeping milk bacteria levels low, visit the following links:

<http://www.omafra.gov.on.ca/english/livestock/goat/news/dgg1308a10.htm>

http://www.omafra.gov.on.ca/english/livestock/dairy/facts/info_improvin.htm

TIP

Save money on teat dipping. Foaming teat dippers can reduce dripping and spillage of teat dip, reducing costs. Ask your supplier for details.



MILK SAMPLING STRATEGIES

MIKE FORAN, RAW MILK SPECIALIST

Troubleshooting a high Bactoscan result can be one of the most frustrating issues a dairy goat producer encounters. A complete evaluation of milking equipment and bulk tank, and a review of the sanitation program is recommended. Often producers and equipment dealers will make minor or even significant upgrades to the milking system, yet high bulk tank Bactoscan results persist. In these cases, producers should consider that one or more goats are shedding high numbers of bacteria and may be the root cause of the high Bactoscan results.

Can one goat with high bacteria milk in a large herd spike the bulk tank Bactoscan result? The answer is yes. In fact when bulk tank Bactoscan results are in the millions it often comes from a single goat that is shedding high numbers of bacteria. It can be difficult to identify the goat that is producing the high bacterial count, because many times the milk from a problem goat will not show any clinical mastitis signs – no clots, flakes or off-coloured milk – and milk filters can appear normal. Group sampling can be used to help narrow the search for the goat causing the high Bactoscan results. There are various ways to collect group samples; here are some examples.

Large Group Sampling: A starting point might be to collect large group samples, beginning with an empty bulk tank. For example, a producer with four pens (100 goats per pen) may collect a sample from the bulk tank after each group has been milked, starting with Pen 1. Some interpretation of the results is required since the milk from Pen 2, 3, and 4 will be mixed.

Bulk tank sampled after milking:	Bactoscan result (ibc)	Somatic Cell Count (cells/ml)
Pen 1	20,000	700,000
Pen 2 (mix of Pen 1 & 2)	35,000	900,000
Pen 3 (mix of Pen 1, 2 & 3)	2,200,000	1,800,000
Pen 4 (mix of Pen 1, 2, 3 & 4)	1,600,000	1,400,000

In this example the problem goat(s) is most likely in Pen 3. Pen 4 also has a high Bactoscan result and goats in this pen cannot be totally ruled out. However, the Bactoscan result of Pen 4 – which is a homogenous mixture of all four pens – is likely to be somewhat lower due to good quality milk of Pen 1, 2 and possibly 4 diluting the high bacterial count of Pen 3.

Sample collection in this scenario will require a clean sanitized long handle sampling dipper (see Figure 10). Note: if milk from the first group is not hitting the agitator paddle, producers should try their best to mix the milk with a clean dipper in order to get a representative homogenous sample. Bulk tank sample collection is likely the easiest method; however, there are many techniques to obtain samples of milk in order to determine which goat(s) is producing the high Bactoscan results.



Figure 10 - A clean, sanitized long handle sampling dipper is used for sample collection.

MILK SAMPLING STRATEGIES (cont'd)

MIKE FORAN, RAW MILK SPECIALIST

Group sampling via Quality Management, Inc. QMI Sample elbow:

Producers may contact OMAFRA dairy program to borrow this elbow. The elbow allows for the collection of representative sanitary samples from parlour groups. The elbow fits into 1.5 inch milk transfer lines between the milk pump and the tank. Every time the milk pumps from the receiver jar, a stream of milk can be collected (see Figure 11). If producers have an air blow system they can use this between groups to help remove residual milk in the transfer line. There will always be some residual milk in the system between parlour groups; however, high Bacotscan groups can usually be isolated. Goats from each group need to be identified and tag numbers need to be recorded. If goats are not tagged a system using coloured livestock markers can be used. The benefit of QMI sampling is that the samples are truly representative of the group of goats being sampled versus the bulk tank sampling method.

Pipeline systems: Producers with pipeline systems could simply hand milk a few streams of milk from a group into a clean container and sub sample into the small sample bottle. Hand milking sample collection can work but the representativeness of the sample is not as good as with the sampling elbow and the risk of contamination is greater.

Bucket and hand milking farms: Group sample collection is fairly straight forward on these farms. Milk from the bucket or pail should be mixed with a ladle or dipper prior to transferring the required amount to the small sample bottles.

Sample supplies, labelling, handling, and transport: Producers can contact their milk broker or OMAFRA to obtain sample bottles. The bar coded producer label should be put on each group sample bottle. Use a permanent marker to indicate the group number on the sample bottle (see Figure 12).

The sample bottles should be put in a zip lock bag to keep them dry and put in an insulated cooler or box. Ensure bags of milk samples are amply surrounded with ice in order to cool the milk as quickly as possible (see Figure 13).

Producers can work with their milk broker / transporter and OMAFRA to arrange sample delivery to the University of Guelph lab. Contact OMAFRA regarding sample submission procedures and forms.



Figure 11 – Group sampling using a QMI sampling elbow. Every time the milk pumps from the receiver jar, a stream of milk can be collected into a sample container.



Figure 12 – Properly labelled group sample bottles.



Figure 13 – Ensure sample bottles are cooled quickly before transportation to the lab.

MILK SAMPLING STRATEGIES (cont'd)

MIKE FORAN, RAW MILK SPECIALIST

A high Bactoscan group has been identified – what now? The California Mastitis Test (CMT) is one of the most effective tools a producer can use to identify a problem goat. Milk brokers have the Draminski conductivity meter which can also be useful; however, reviews are mixed. Using a strip cup with close and critical examination can also help. Cull or remove suspect goat(s) from the milking lineup going into the bulk tank until you receive acceptable bulk tank Bactoscan results. Individual goat milk samples could be submitted for Bactoscan and SCC testing. However, testing costs are significant, so testing samples from a small number of suspect goats is the best option to minimize costs.

Final Comments: Even the very best dairy goat managers can encounter goat-related Bactoscan issues. However, if your farm has consecutive Bactoscan spikes multiple times per year and every year, take a step back and consider a team approach to improve milk quality. Your dairy equipment dealer, veterinarian, nutritionist, milk inspector and fellow producers can provide useful advice. As Henry Ford once said “If you always do what you’ve always done, you’ll always get what you’ve always got.” ■

PROJECT UPDATE – ANIMAL HEALTH AND WELFARE BENCHMARKING ASSESSMENT FOR ONTARIO DAIRY GOAT PRODUCERS

PHILLIP WILMAN, RAW MILK QUALITY PROGRAM COORDINATOR

DR. JOCELYN JANSEN, ANIMAL HEALTH AND WELFARE BRANCH

The goat milk industry in Ontario has grown rapidly over the last 10 years; currently there are 285 active dairy goat farms in the province. Some of the largest processors and brokers of goat milk in Ontario and the United States are developing or have developed criteria around animal welfare that must be adhered to by dairy goat producers in order to supply milk for processing. OMAFRA has been asked to review and comment on these welfare criteria; however, there have been no studies in Ontario to demonstrate the current level of care with respect to animal welfare on dairy goat farms. These factors led OMAFRA to develop a Pilot Animal Health and Welfare Benchmarking Assessment for Ontario dairy goat producers.

The goat milk industry has few resources available with regards to acceptable welfare standards and the Codes of Practice for the Care and Handling of Goats has not been updated since 2003. Industry partners, goat milk brokers and processors are eager to have the opportunity to have the Codes updated. The benchmarking assessment includes evaluation by trained professionals of several key animal health and welfare markers such as body condition score, lameness in the herd, stocking density in the housing areas, ammonia levels in the housing areas, hoof length, age at disbudding, presence of overgrown horns, and prevalence of abscesses, fecal soiling and thermal stress. The information gathered by this assessment will be valuable in providing baseline information as to where the industry currently sits and will provide greater awareness and understanding of health and welfare in the dairy goat sector. The information will also provide an opportunity for the diligence and hard work carried out by Ontario dairy goat producers with respect to animal care and welfare to be reflected in the updated Codes.

ANIMAL HEALTH AND WELFARE BENCHMARKING ASSESSMENT FOR ONTARIO DAIRY GOAT PRODUCERS (cont'd)

PHILLIP WILMAN, RAW MILK QUALITY PROGRAM COORDINATOR

DR. JOCELYN JANSEN, ANIMAL HEALTH AND WELFARE BRANCH

The Benchmarking Assessment has been conducted on 41 dairy goat farms to date. Assessments are taking approximately 2 hours to complete. All assessment are performed by Phillip Wilman and Dr. Jocelyn Jansen. Producer interaction has been very positive with much discussion and sharing of information. Each producer is contacted to schedule an appointment that is convenient for the operator. Upon arrival at the farm, strict biosecurity measures are followed including clean coveralls for each farm and washing and sanitizing of boots. As part of this biosecurity protocol, animals are evaluated starting at the youngest kids and finishing with the lactating does. Kids, doelings, dry does and bucks are evaluated in their pens, while lactating does are examined in the parlour. The number of milking does evaluated is based on herd size.

Early trends indicate the need for further education and training in the following areas:

1. Hoof trimming
 - ☒ age at which hoof trimming should commence
 - ☒ frequency of hoof trimming (once per year is not sufficient)
 - ☒ how to properly maintain hoof shape during trimming
2. Lameness
 - ☒ apparent causes of lameness include footrot, laminitis, injury and caprine arthritis encephalitis (CAE)
3. Kid mortality
 - ☒ many farms have expressed concern over elevated kid mortality levels
 - a kid mortality project is currently underway to help determine causes
4. Ventilation
 - ☒ ammonia levels checked in various areas of the barn
 - ☒ levels have ranged between 0 ppm and 75 ppm
 - international recommendations suggest levels be below 20 - 25 ppm
5. Body Condition Scoring
 - ☒ in general, body condition scores (BCS) have been good
 - however, there is a lack of knowledge on how to properly assess BCS in dairy goats

“With consumers being so concerned about animal welfare, it’s good to have someone come out and show us the things we are doing right and those things that we can improve upon.”
Ed Zehr

Upon visiting 50 farms, a brief report will be provided to each producer that has participated. The summary report will detail results of the individual producer’s farm as well as the aggregate results from all farms. A more in depth report will be provided following the project end date of December 31, 2019. ■

COLOSTRUM QUALITY IMPACTS ON KID VIABILITY

MARLENE PAIBOMESAI, DAIRY SPECIALIST

What is colostrum?

Colostrum is the first secretion from an udder after birth. Colostrum is rich in nutrients and immune factors, such as immunoglobulins and immune cells that are important for immune and digestive system development (Sanchez-Macias et al., 2014). Colostrum is higher in protein, fat, growth hormones and immune factors than milk.

Why do newborns need colostrum?

Unlike other mammals, ruminants transfer limited amounts of immunoglobulins and other immune factors from the dam to the fetus during pregnancy. Instead, the majority of immune factors are transferred through colostrum to the goat kid after birth. This is called passive immunity. Passive immunity protects a goat kid from developing disease while their immune response develops during their first few weeks of life. At birth, a goat kid has a limited ability to mount a strong immune response, which makes it susceptible to infections and potentially death.

What is failure of passive transfer?

Successful passive transfer of immunity through colostrum is when there is more than twelve milligrams per millilitre (mg/mL) of immunoglobulin G (IgG) concentration in the blood serum of the goat kids after feeding colostrum (O'Brien and Sherman, 1993). Arguello et al. (2004) showed that goat kids with less than five mg of IgG/mL of blood serum two days after birth had higher mortality rates within the first month of life compared to goat kids that had 15 mg of IgG/mL in blood serum. Therefore, it is important to ensure that a goat kid has received enough high quality colostrum at birth to see them through early life while their own immune response develops.

How do I measure colostrum quality?

Colostrum quality is related to the concentration of immunoglobulins in colostrum. High quality colostrum has 50 mg of IgG/mL of colostrum. Immunoglobulins make up one-third of the protein in colostrum (Rudovsky et al., 2008). Immunoglobulin G (IgG) makes up approximately 90 per cent of the immunoglobulins found in colostrum, and therefore makes IgG a good measure of colostrum quality (Sanchez-Macias et al., 2014).

Refractometers can be used to determine colostrum quality. Refractometers measure the Brix scale, which measures the amount of sucrose in a given liquid and is related to the specific gravity of that liquid. Refractometers are available in both optical and digital forms (Figure 14).

COLOSTRUM QUALITY IMPACTS ON KID VIABILITY (cont'd)

MARLENE PAIBOMESAI, DAIRY SPECIALIST

Refractometer Research Project

In 2017, the Ontario Ministry of Agriculture, Food and Rural Affairs conducted a research project to validate the use of refractometers to determine colostrum quality in dairy goats. From February to April 2017, researchers collected 10 millilitre (mL) samples of the first milking from 79 dairy does at three Ontario dairy goat farms. A digital and optical refractometer (Figure 14) were used to determine Brix value of the colostrum samples at 25°C, and an enzyme-linked immunosorbent assay (ELISA) was used to determine IgG concentration of the colostrum after sample preparation.



Figure 14. An example of a digital refractometer (left), and a temperature-corrected optical refractometer (right).

In this project, IgG concentration was determined by ELISA and Brix value using a digital refractometer. Brix value is moderately ($R^2=0.3312$) related to IgG concentration of doe colostrum. In doe colostrum, 22 per cent Brix equals to 50 mg/mL of IgG in the colostrum, which is the minimum amount of IgG needed to provide goat kids with passive immunity. These results are similar to dairy cattle studies that have shown the 21 per cent Brix relates to 50 mg/mL of IgG in colostrum (Quigley et al., 2013). Further analysis is needed to confirm the results, and to determine the specificity and sensitivity of this method of colostrum testing.

In conclusion, refractometers are a method to test colostrum quality at goat side. Feeding colostrum to goat kids that contains at least 50mg of IgG/mL that equals 22 per cent Brix or higher will ensure that your goat kids are receiving enough IgG within the first 24 hours after birth.

References:

- Arguello, A. et al. (2004) Effect of Colostrum administration practices on serum IgG in goat kids. *Livestock Prod Sci.* 90:235-239.
- O'Brien, J. P. and D.M., Sherman. (1993) Serum immunoglobulin concentrations of newborn goat kids and subsequent kid survival through weaning. *Sm. Ruminant. Res.* 11(1):71-77.
- Quigley et al. (2012) "Evaluation of the Brix refractometer to estimate immunoglobulin G concentration in bovine colostrum." *J Dairy Sci.* 96:1148-1155.
- Sanchez-Macias, et al. (2014) From goat colostrum to milk: Physical, chemical and immune evolution from partum to 90 days postpartum. *J. Dairy Sci.* 97(1):10-16. ■

UPDATE ON THE ONTARIO DAIRY GOAT VALUE CHAIN ROUNDTABLE

MARLENE PAIBOMESAI, DAIRY SPECIALIST

The Ontario Dairy Goat Value Chain Roundtable inaugural meeting occurred December 14, 2017. Forty participants gathered, representing the dairy goat sector supply chain – farmers, dairy processors, industry suppliers and government. The key priority of the roundtable was to develop action items focused on improving productivity and competitiveness of the dairy goat industry in Ontario.

Presentations from across the dairy goat value chain highlighted current opportunities and challenges in the industry. Participants identified key areas for action during a roundtable session and subcommittees of interested value chain members were formed.

- **Animal Health** subcommittee is working towards coordinating access to pharmaceuticals in the goat sector with some interest in collaborating with Quebec Small Ruminant Veterinarians. Next steps will include exploring opportunities for funding use and withdrawal studies which have been identified as a challenge.
- **Herd Management, Production, and Co-ordination of Genetic Improvement** subcommittee is focused on improving the use of records for herd management and for genetic improvement in the goat sector. Next steps for this subcommittee include: developing education material, performing a jurisdictional scan, and creating a snapshot of current industry status. The focus is on animal identification, genetic improvement and herd management.
- **Business Planning and Co-ordination of Industry Communication** subcommittee is focused on bringing together online industry resources and information in the dairy goat sector.
- **Animal Welfare** subcommittee is focused on supporting educational opportunities for dairy goat producers on cull animal decision-making which will focus on treatment, shipping and euthanizing goats. This committee also supports a timely update to the Codes of Practices for the Care and Handling of Goats, which is co-ordinated by the National Farm Animal Care Council.

Deloitte LLP has engaged stakeholders over the past few months to focus on developing recommendations and next steps to overcome challenges and to take advantage of opportunities in the Ontario dairy goat industry. ■



SUMMARY OF RAW GOAT MILK TEST RESULTS

JAMES LAWRENCE, RISK AND DATA ANALYTICS ADVISOR, MONITORING AND ANALYSIS UNIT

	Less than 35,000 ibc/ mL*	Between 35,000 and 100,000 ibc/mL	Between 100,000 and 321,000 ibc/mL	Greater than 321,000 ibc/mL	Median**	Number of Samples
May 2017	10%	49%	29%	12%	83,000	291
June 2017	14%	45%	29%	12%	76,000	278
July 2017	8%	44%	32%	16%	96,500	286
Aug 2017	15%	41%	32%	12%	85,000	282
Sept2017	14%	49%	28%	9%	78,000	286
Oct 2017	12%	50%	32%	6%	79,000	286
Nov 2017	7%	45%	41%	7%	96,000	288
Dec2017	8%	42%	44%	6%	98,000	276
Jan 2018	8%	40%	41%	11%	106,000	280
Feb 2018	8%	46%	35%	12%	95,000	269
Mar 2018	9%	45%	36%	10%	93,000	290
Apr 2018	12%	47%	28%	13%	83,000	283
May 2018	15%	47%	26%	12%	74,000	291
Total Results	396	1,677	1222	391	N/A	3686

Table 1: This table represents bacteria test results (using the BactoScan™) for regulatory goat milk samples (one per month) collected from each dairy goat farm over the past 12 months. The column of greater than 321,000 ibc/mL shows the percentage of samples that were above the regulatory standard of less than or equal to 321,000 ibc/mL. The column of between 100,000 and 321,000 ibc/mL illustrates the proportion of goat milk producers who are shipping milk with bacterial levels approaching the regulatory limit. The producers that consistently fall in this category should consider examining their milking process and equipment for potential issues. The column of between 35,000 and 100,000 ibc/mL shows that a large proportion of producers are shipping milk with low bacterial levels. Finally, the column of less than 35,000 ibc/mL highlights that a proportion of producers are able to produce and ship milk with very low bacterial levels. Low bacterial levels are achievable and should be what all goat milk producers strive for.

*ibc/mL = individual bacteria count per millilitre of milk

** The median is the value that falls in the middle of the set of data; an equal amount of results are above and below the median number.

SUMMARY OF RAW GOAT MILK TEST RESULTS (cont'd)

JAMES LAWRENCE, RISK AND DATA ANALYTICS ADVISOR, MONITORING AND ANALYSIS UNIT

Average (Mean) BactoScan™ Result for Regulatory Samples Collected Between May 2017 and May 2018

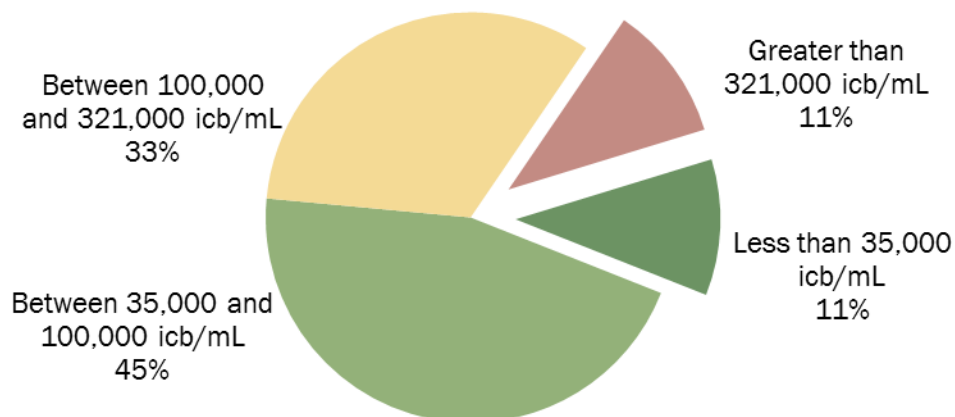


Figure 15: Goat Milk BactoScan™ results – The average percentage of goat milk regulatory samples that fell into each of the following categories for BactoScan™ results between May 2017 and May 2018: greater than 321,000 ibc/mL, between 100,000 and 321,000 ibc/mL, between 35,000 and 100,000 ibc/mL, and less than 35,000 ibc/mL.

	Average Fat (%)	Average Protein (%)	Average Freezing Point	Total Freezing Point Violations	Total Freezing Point Tests
May 2017	3.83	3.36	-0.547	5	291
June 2017	3.47	3.19	-0.543	16	278
July 2017	3.40	3.16	-0.545	5	286
Aug 2017	3.43	3.18	-0.542	20	282
Sept 2017	3.64	3.28	-0.545	12	286
Oct 2017	3.70	3.37	-0.547	6	286
Nov 2017	4.01	3.61	-0.55	8	288
Dec 2017	4.05	3.66	-0.551	10	276
Jan 2018	4.12	3.73	-0.549	18	280
Feb 2018	4.13	3.65	-0.55	16	269
Mar 2018	4.12	3.55	-0.548	6	290
Apr 2018	4.00	3.49	-0.548	8	283
May 2018	3.82	3.40	-0.546	14	291

Table 2: Goat Milk Composition – Average composition test results for regulatory samples per month that were collected between May 2017 and May 2018. This table displays the average percentage fat, percentage protein, freezing point and the number of freezing point violations (above -0.534 °C) per month.

SUMMARY OF RAW GOAT MILK TEST RESULTS (cont'd)

JAMES LAWRENCE, RISK AND DATA ANALYTICS ADVISOR, MONITORING AND ANALYSIS UNIT

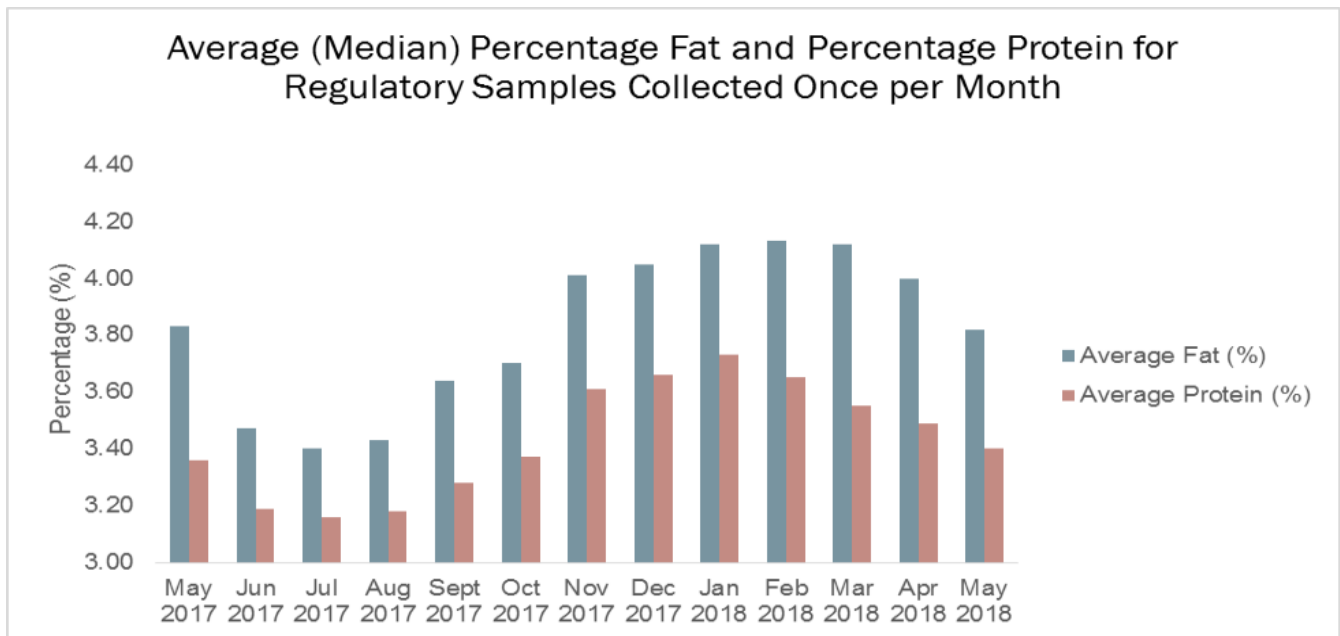


Figure 16: Goat Milk Composition – Average fat and protein composition test results for regulatory samples from May 2017 to May 2018.

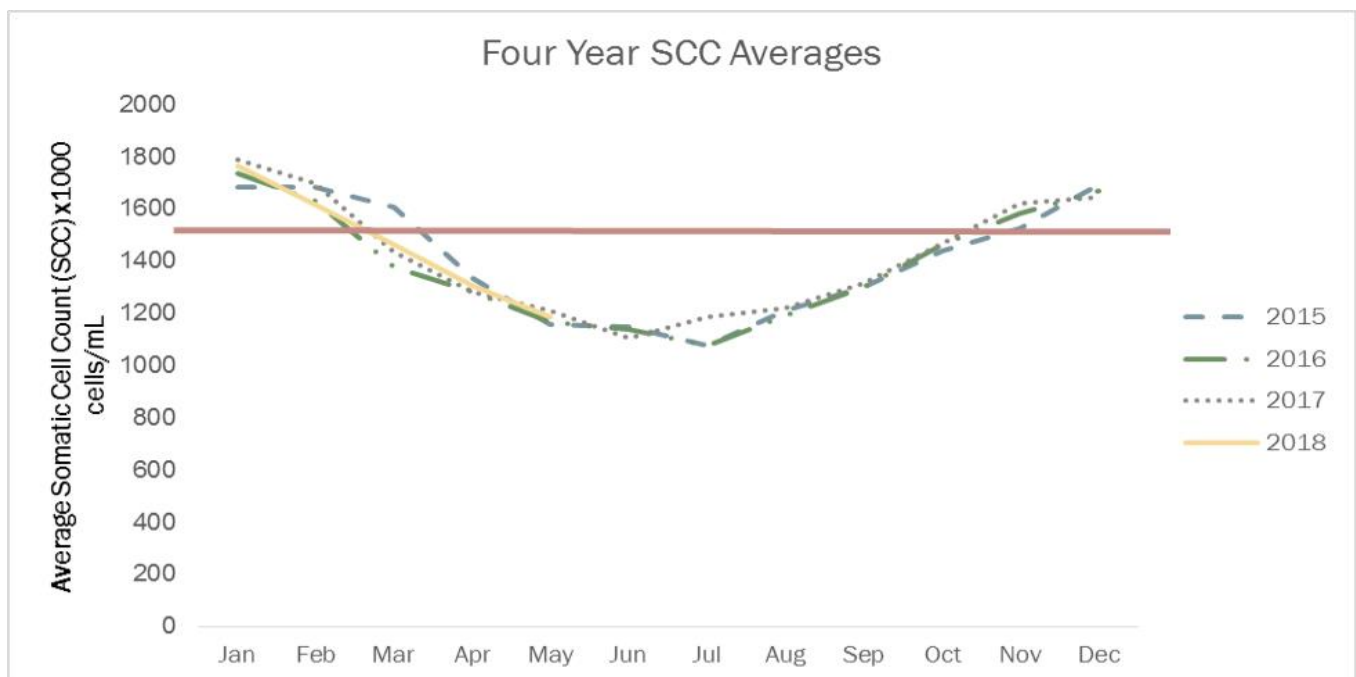


Figure 17: Goat Milk Somatic Cell Count – Average somatic cell count (SCC) of regulatory samples (one per month) over the past 4 years. The line at 1,500,000 cells/mL indicates the maximum levels of SCCs for goat milk.

SUMMARY OF RAW GOAT MILK TEST RESULTS (cont'd)

JAMES LAWRENCE, RISK AND DATA ANALYTICS ADVISOR, MONITORING AND ANALYSIS UNIT

	Total Samples Tested	Number of Adverse Samples (Above 1,500,000 cells/mL)	Percentage (%) of Adverse Samples (Above 1,500,000 cells/mL)	Average Somatic Cell Count (SCC)
May 2017	291	68	23.37%	1210
June 2017	278	45	16.07%	1103
July 2017	286	60	20.91%	1187
Aug 2017	282	61	21.48%	1221
Sept 2017	286	85	29.72%	1317
Oct 2017	286	114	39.86%	1469
Nov 2017	288	144	50.00%	1623
Dec 2017	276	150	54.35%	1644
Jan 2018	280	175	62.50%	1764
Feb 2018	269	134	49.81%	1617
Mar 2018	290	131	45.17%	1463
Apr 2018	283	87	30.74%	1304
May 2018	291	59	20.27%	1188

Table 3: Goat Milk Somatic Cell Count – Average Somatic Cell Count (SCC) for regulatory goat milk samples (one per month) collected from each dairy goat farm from May 2017 to May 2018. ■

SUPPLEMENTARY INFORMATION

BTMG Rejection of Milk – Reg. 761 (*Milk Act*) Update

Changes to Regulation 761 (*Milk Act*) came into effect May 1st, 2018 to provide bulk tank milk graders (BTMGs) with the authority to reject milk in a farm bulk tank if, due to conditions in or around the milk house, they are unable to visually inspect or properly assess the flavour or odour of the milk.

Examples of conditions in or around the milk house that may lead to problems grading the milk include:

- **Strong odours:** drainage not working, excessive use of chlorine or other cleaning chemicals used in milk houses, other strong odours generated by activities in the vicinity of the milk house such as moving manure, harvesting and storing silage, or cleaning out manure packs.
- **Visibility issues:** lightbulbs not working, inability to access the bulk tank manhole because of equipment blocking the area, no ladder available.

Canadian Global Food Animal Residue Avoidance Databank (CgFARAD)

CgFARAD is a databank program developed to proactively protect the food supply from environmental, medical and chemical contaminants that are contracted by livestock and poultry. CgFARAD provides information on residue avoidance to Canadian veterinarians.

The Health Canada website has been updated with additional information on responsible use of medically important antimicrobials in animals. As of December 1, 2018, all medically important antimicrobials for veterinary use will be sold by prescription only. For details regarding those changes, visit <https://www.canada.ca/en/public-health/services/antibiotic-antimicrobial-resistance/animals/actions/responsible-use-antimicrobials.html>.

Importance of Load Insurance

As the trend in milk transportation continues to move towards the use of larger trailers, the cost to a producer of a violative antibiotic residue has gone up dramatically. If rejected for antibiotics, a full trailer load of milk valued as high as \$50,000, could be charged back to the producer responsible. Producers are encouraged to discuss the amount of insurance coverage that they have with their insurance broker. In some cases producers are only insured for \$10,000. As antibiotic residue testing continues to evolve and more products can be detected, producers must be extra diligent in preventing residue contamination of goat milk. If in doubt, have a bulk tank sample tested by your veterinary clinic.

Mental Health & Financial Management Resources

Business and financial management resources and tools may be found on the OMAFRA website under Agricultural Business Management (<http://www.omafra.gov.on.ca/english/busdev/agbusdev.html>), or by contacting the Agricultural Information Contact Centre (AICC) at 1-877-424-1300.

The brochure, Financial Resources and Support Services for Families, is available by contacting the AICC (1-877-424-1300) or visiting an OMAFRA Resource Centre. Find the closest one to you at: <http://www.omafra.gov.on.ca/english/offices/ouroffices.html>.

For producers who are experiencing financial hardship, stress and/or mental health issues, please see the websites and toll-free phone number available below for support with a wide variety of situations. A full list of mental health resources and information for farmers can also be found at the “Do More Agriculture” website; www.domore.ag.

More information on local mental health services and support is also available at:

<https://ontario.cmha.ca/document-category/services-and-supports/>

and/or

<http://www.connexontario.ca/>

Toll Free: 1-866-531-2600

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