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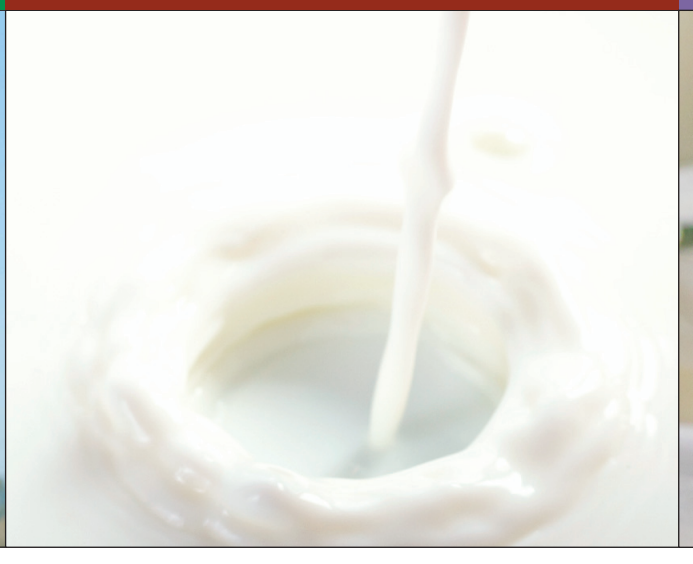



Special Supplement to the WINCHESTER PRESS Wed., June 14, 2017



Thurler Farms is a third-generation dairy operation, with a 450-head herd.



The Thurlers' cows are eating a mixture of soybean (35 per cent) and corn silage (65 per cent).

Thurlers take leap of faith into the soybean field

Alicia K. Gosselin

SOUTH MOUNTAIN

After years of experimenting with different forage crops for their South Mountain-based dairy operation, Nick, Robert, Michel, and Oliver Thurler found that growing soybean haylage was giving them the best bang for their buck.

The Thurler family took a leap of faith about six years ago, planting a 200-acre demo plot to gauge if soybean haylage would hit the mark for protein, quality, and efficiency.

"We were very impressed with the first crop, and the cows were doing just as good as they were before," said Nick, who co-owns Thurler Farms with his two sons and brother. "We definitely went out on a limb to try soybeans – it's not very well known – but I heard a farmer in Quebec used a small amount of soybean haylage, so we gave it go."

The third-generation farm was purchased by Nick's parents, Jack and Therese, in 1979, and started with about 135 milking cows. Since then, the operation has grown to a 460-head herd.

Before soybeans, the Thurlers grew alfalfa for their Holsteins, but were experiencing a lot of winterkill due to the flat terrain and clay soil, and continuously needed to re-seed their crops.

After that, they moved on to a mixture of reed canary and brome grass, which they grew for about eight years. But, although the Thurlers didn't get the same winterkill as before, they also didn't get the yield they needed during a dry summer.

That's when soybean haylage came on the radar. Today, the Thurlers plant more than 450 acres of soybean, feeding their herd 35 per cent soybean haylage, and 65 per cent corn silage. Each year, the average protein found in soybean haylage is 25 per cent.

"It'd be hard to get that ratio from alfalfa," said Nick. "You won't get [25 per cent protein] on the first cut – maybe the third or fourth."

Check out some of the benefits the Thurlers have found from growing forage soybeans:

One year's worth of feed can be harvested in one cut

According to Nick, it works well for his family's farm because they get their target volume for the year in one cut, versus in three cuts, like hay. They do have to seed every spring, which means they know ahead of time exactly what they need.

"You don't have to guess through the winter whether your [crop] is going to be there or not," said Nick. "It does make for a busy fall though, when our corn and soybean is all done at once."

Rations are consistent

Because soybean haylage has to be harvested all at once, farmers can fill their silos within a day or two, and have a feed with consistent protein levels for the year. "You don't have the fluctuation between cuts," said Nick. "For example, with haylage, your first cut might have 20 per cent protein, and the second cut has 22 per cent protein, meaning you always have to adjust the ration. But with soybean, it's one and done."

Save time and money

The Thurlers have noticed that by choosing to grow forage soybeans, they are farming more efficiently. "Harvesting takes a lot less time compared to haylage – about 60 per cent less time," said Nick. "For me, its cheaper, because I save so much time, and so much fuel while harvesting. Soybean seeds are also less expensive than alfalfa."



The Thurler family of South Mountain-based Thurler Farms are going against the grain, and growing soybean haylage for cow feed. According to Nick (pictured), it saves their farm time, money, and is more efficient. *Press Photos – Gosselin*

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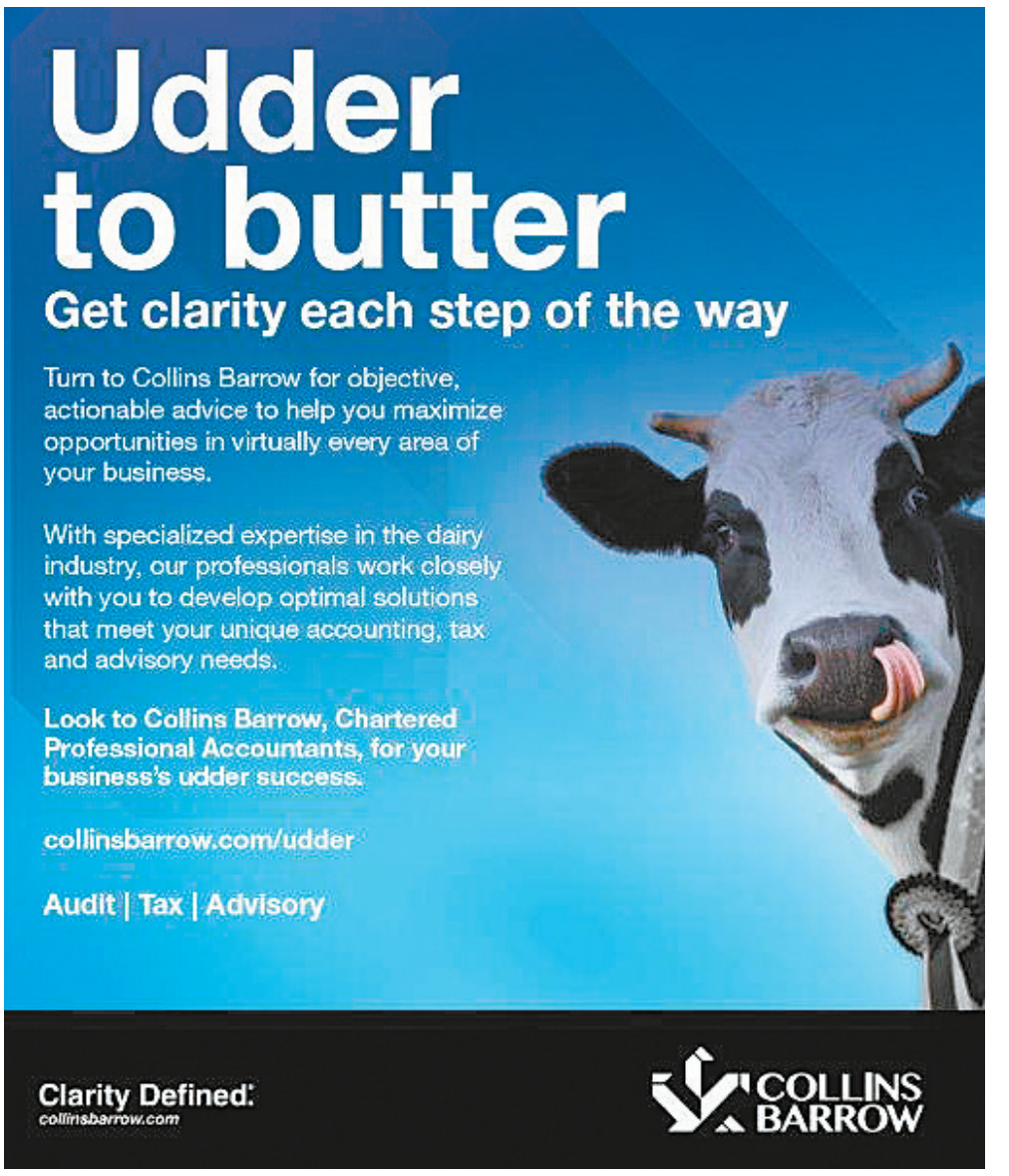

Dairy Herd Improvement results for 2016

In what has become a Winchester Press *tradition, we present to you, once again, the top farms in local herd listings from the 2016 CanWest DHI (Dairy Herd Improvement) Ontario Progress Report.*

Ontario's best

The local region had two farms place in the top 62 with the lowest SCC (somatic cell counts) in the province.

Placing in the 37th spot was Midlee Holsteins, operated by Jim and Connie McDiarmid, along with their sons, in the Vernon area. The farm, with 105 cows, had an average SCC of 93.

In the 42nd spot was Fredwill Holsteins (Albert and Linda Harbers) of Brinston, with a score of 94 based on 84 cows being milked three times a day or more.

In the Holstein bracket for top herds for average BCA by breed, Osgoode's Alexerin Dairy (Ron and Todd Nixon) placed 16th with 297, while the Vanbokhorst family of Stagecoach Road's Topfarm Holsteins was 24th with 292.

In top herd management, the Zandbelt farm in Metcalfe was 14th with a 915 score, Moose Creek's Ferme LCM Quesnel was 35th (893), Topfarm Holsteins was 37th (889), and Alexerin Dairy was 40th (887).

Herd Management

Listed are the top three farms in the region that placed among the best for herd management.

Carleton County: First place – Zandbelt farm, 915 total score. Second place – Topfarm Holsteins, 889 total score. Third place – Alexerin Dairy, 887 total score.

Dundas County: First place – Fredwill Holsteins, 855 total score. Second place – Ricrodreg Holsteins, 835 total score. Third place – Tibben Farms, 830 total score.

Grenville County: First place – Gerann Holsteins, John and Dawn Wynands, Cardinal, 829 total score. Second place – Rideauside Farms, Charles and James Bennett, Kemptville, 799 total score.

Russell County: First place – Rosenhill Farm, Andre Hildbrand, St-Albert, 889 total score. Second place – Ferme A&L Desnoyers, 878 total score. Third place – Ferme St Malo, Etienne Seguin, St-Pascal, 919 total score. Third place – Heiwa Farm, Walter Von Ah, St-Albert, 877 total score.

Stormont County: First place – Ferme LCM Quesnel, Marc Quesnel, Moose Creek, 893 total score.

Publishable Herd Listings

The following rank listings of the highest production herds for publishable milk records are based on the annual summary reports generated for each herd enrolled with CanWest DHI.

The report is a detailed summary of production and BCA for milk, butterfat, and protein for eligible records that reached 305 days in milk, or terminated at or before 305 days in milk, between Jan. 1 and Dec. 31, 2016.

Carleton County: First place – Alexerin Dairy, 297 BCA. Second place – Topfarm Holsteins, 292 BCA. Third place – Midlee Holsteins, Vernon, 277.7 BCA.

Dundas County: First place – RicRodReg Holsteins, Dwight Gilmer and sons, South Mountain, 273.3 BCA. Second place – Glen Haven Farms, Tom Macgregor, Morewood, 270.3 BCA. Third place – Verspeek Farms, Peter and Charmaine Verspeek, Winchester, 269.7 BCA.

Grenville County: First place – Rideauside Farms, 260.3 BCA. Second place – Gerann Holsteins, 254.3 BCA. Third place – Benoaks Holsteins, Russell Bennett, Spencerville, 243.3 BCA.

Russell County: First place – Bertom Farm, F&T Vanmunsteren, Sarsfield, 307.7 BCA. Second place – Brabantdale Farms, Chris and John Nooyen, Navan, 305.3 BCA. Third place – Ferme Prospere, Luc and Sylvie Dutrisac, Orleans, 299.7.

Stormont County: First place – Murrayholm Farms, Campbell Murray, Martintown, 262.3 BCA. Second place – Wenalt Holsteins, Crysler, 256.3 BCA. Third place – Ferme Sabourin, Gilles and Johanne Sabourin, Crysler, 248 BCA.

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Optimizing milk production 101 – fix the basics first

WINCHESTER

How important is feed management when it comes to improving milk production?

Over the years, genetic selection processes have led to our modern dairy cow – a high performance animal, built to transform feed into milk.

In order to achieve optimal results, the dairy cow requires top quality feeds. Forages, grains, protein supplements, minerals and vitamins that make up the ration need to be perfectly in tune with the cow's nutritional requirements.

What strategies should farmers implement to help increase milk production and improve rumen health?

The following lactation depends on a successful dry period. It will go a long way in optimizing the ability of the cow to express its full genetic potential. The impact of dry period nutrition, and management on early lactation performance and health are well documented.

The causes of low milk yields and health problems postpartum often originate from management issues during the dry period. Key goals for dry cows include: maintaining dry matter intake, avoiding overfeeding energy thus preventing body condition scoring gain, optimizing comfort, and addressing feet and leg health.

Reducing the risk of subclinical or clinical milk fever (low blood calcium or hypocalcemia) in the first week of lactation minimizes the risk of having to deal with other problems such as ketosis, elevated somatic cell count, delayed uterine involution, metritis, and depressed feed intake, which leads to reduced milk yield.

The calving period and the onset of lactation is a stressful time for the cow. Optimizing cow comfort, especially for the fresh cow group could pay big dividends. Lowering stocking density for the fresh cow group will minimize social stress at the feed bunk, water bowls, and stalls. Heat stress mitigation devices such as fans and sprinklers for dry and lactating cows will help to keep milk production up.

The ration of the high producing cow group should consist of the best quality feed stuffs available on the farm.

Forages and grains containing mold and undesirable yeast or poorly fermented feeds should be avoided. Elevated mold counts likely decrease feed intake and diet digestibility. Furthermore, mycotoxins may be present in these feeds and can have detrimental effects on cow health.

Dry matter intake is crucial, especially in the early part of the lactation. Maintaining rumen health and preventing ruminal acidosis will help the dairy cow to achieve its full production potential.

The early lactation ration should contain plenty of good quality digestible fibre of sufficient length to maintain proper rumen functions. Since the fermentation of grains and concentrates acidifies the rumen, these ingredients should be fed in small, frequent meals or served in a total mixed ration, promoting consistent feed intake and rumen pH. The mixed ration should be formulated in such a way that diet sorting by the cows is minimized. The inclusion of a buffering agent such as magnesium oxide or sodium bicarbonate can help in keeping rumen pH from fluctuating too much.

What feed additives have shown success?

The fresh cow group has the most potential to offer a return on investment for feed additives. In most cases, additives are expensive. Before using any feed additive, a careful evaluation of the expected returns over investment should be done.

There is no point in using feed additives if the cost offsets the gains in production.

Furthermore, all the basics should be fixed first:

- Ample quality drinking water for the cows
- Quality feed
- Excellent ration, from calculations to feeding
- Properly mixed and not easily sorted ration
- Top notch feed bunk management
- Maximal dry matter intake
- Ideal environment and cow comfort from one calving to next
- Optimal grouping strategy, cow traffic and stocking density
- Careful health management and prevention program

Independent research supports the claims of the following additives: Ionophores increase the availability of glucose thus improving energy balance in early lactation. Choline improves liver health and functions.

Field studies with large numbers of cows have demonstrated that rumen-protected choline, when fed pre and postpartum reduced the risk of clinical and subclinical ketosis.

Protected amino acids are designed to escape rumen fermentation, and help meet requirements for certain amino acids without the need to overfeed protein.

Yeast culture containing specific strains of yeasts can stabilize rumen fermentation. Supplemental protected fat addition to diets of dairy animals can be beneficial to improve the energy balance in lactating cows.

This should improve milk production and reproduction. However, feeding fat must be carefully monitored for negative effects on feed intake, milk production, and milk components.

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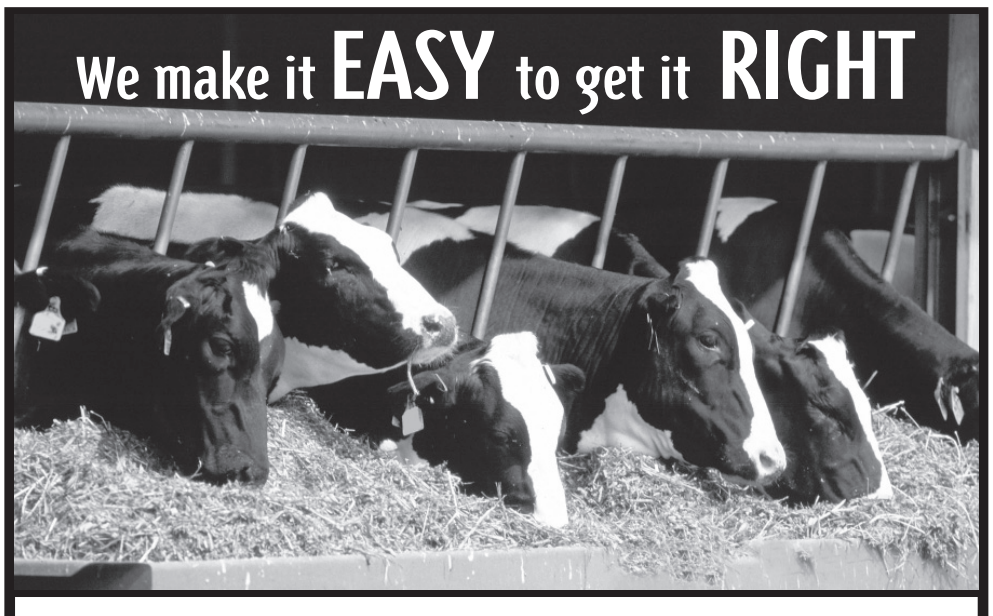

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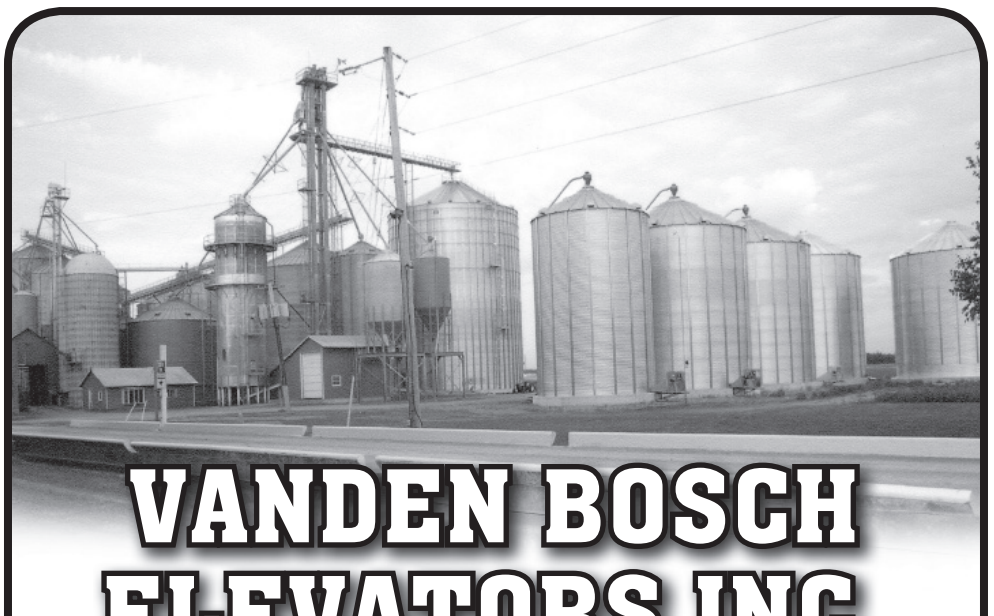

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DHI enhances services to robotic herds

GUELPH

CanWest DHI and Valacta have teamed up for two new service enhancements designed to bring greater value to robotic milking herds.

The introduction of the Ori-Sampler, a new milk sampling device, has thus far been well received by customers.

The innovative device, designed and manufactured in Europe, is now available in Canada through the partnered firms. It is compact, lightweight, easy to use and ICAR approved for official industry improvement programs. It makes on farm sample collection easier and more convenient.

Additionally, by using a large data set and in collaboration with a leading European based milk recording organization, adjustment factors, in particular for milk fat percentage, were recently implemented for robotic herds here in Canada.

The use of adjustment factors is a common practice in conventional herds, and DHI is extending the same approach to further enhance the service it offers to robotic herds.

According to Richard Cantin, CanWest DHI's manager of marketing and product development, "the use of robotic technology is growing rapidly in Canada and we are pleased to invest in service development for those customers."

"This is part of our ongoing process of improving services to reflect changing industry needs," he added.

There are currently more than 650 robotic herds on DHI in Canada, with close to 70,000 cows. This now represents almost 10 per cent of all DHI herds, making it a sizeable segment.

DHI services are a great complement to the on farm data, which when combined, make a very powerful management information package.

"For DHI, the opportunity is to added to and complement the on farm data so dairy managers, and their advisors have the best possible information available for making decisions," Cantin said.



With the Ori-Sampler, individual cow's milk samples are collected through an automated device on test day. From the on-farm software, samples are matched back to the respective cows and then sent on to the DHI lab for value added testing.

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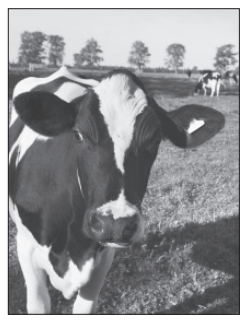

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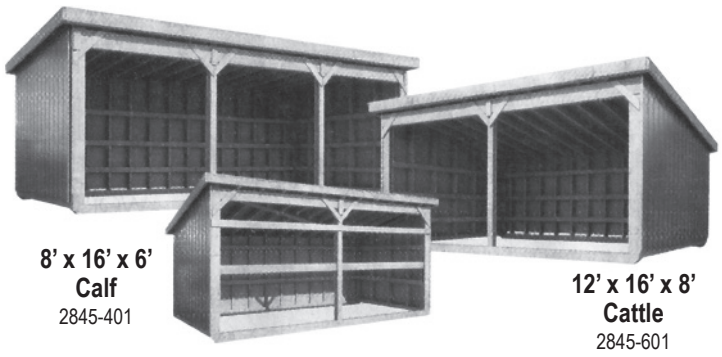

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How rain takes a toll on forage quality

WINCHESTER

The challenge of making hay between the raindrops in an unusually wet summer can certainly raise producer frustration levels at times.

It also changes the crop's nutrient and feeding value.

Rain delayed alfalfa harvest on farms may result in the following due to advanced maturity of alfalfa-type hay:

• Higher Neutral Detergent Fibre (NDF) values (about 0.9 per cent increase per day of delayed harvesting)

• Higher Acid Detergent Fibre (ADF) values (about 0.7 per cent increase per day and more lignin)

• Decreased protein (about 0.5 per cent per day)

• Decreased calcium due to maturity and heavier grass content; If hay got rained on here are some other physical changes

• Increased leaf loss due to physical damage (leaves are high in protein and low in fibre)

• Increased breakdown of protein to non-protein nitrogen (the breakdown rate is rapid when moisture levels are above 60 per cent)

• Decreased soluble carbohydrate levels lowering the fermentation rate

• Water-soluble minerals washed out;

• Dry matter yields dropping 30 to 50 per cent;

• Increased fibre levels.

In just five or six days hay can go from ideal alfalfa of 20 per cent crude protein, 30 per cent ADF and 40 per cent NDF to 17, 34 and 45, respectively. Once lower quality forage is harvested, the only option is to feed it. This necessitates adjusting feeding and management. Below is a checklist:

• Test all forages before feeding and balance rations more often

• Check hays and fermented silages for heat damage

• Know where you have stored feeds of different quality. Keep the highest quality forage for high-producing, early-lactation cows, or seasons of the year when more cows are fresh

Adjusting feeding and management

• Feed 15 to 25 per cent more volume than if hay is of poorer quality. Let cows sort through it and pick out the best parts

• If using a total mixed ration with an adjustable chop length, chop hay a little finer to increase intake and digestibility. Make sure to still have effective fibre length.

• Feed more corn silage or high-fibre ingredients such as soy hulls, beet pulp, brewers' grains or cottonseed

• Plan to purchase more protein. Look at alternatives such as distiller's grains, corn gluten meal, canola meal or possibly raw soybeans

• Ammoniate your corn silage to increase the source of readily available protein

• Adjust the type or amount of mineral mix to account for lower calcium levels

• Watch for moldy feeds or mycotoxin formation. If in doubt, leave it out.

• Consider a two-TMR group system. Use poorer quality forages in the lower production TMR

• Feed yeast or yeast culture to increase the number or cellulose-digesting bacteria in the rumen

The challenge of feeding poor quality forages requires closer management and fine-tuning.

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(Not so) dry hay – handle with care!

by Mario S. Mongeon, OMAFRA livestock specialist

ALFRED

Writing about hay making might sound strange when the rain is falling in record amounts, but when it comes to feed quality, it is always good to be ready for action.

Making quality dry hay can be a challenge, especially when conditions are cool and wet, as we experienced last summer in many parts of the province.

In order to produce quality dry hay, it must be harvested to preserve the nutritive value of the forage. Moisture level at bailing is of critical importance to insure quality.

If baling hay at too high a moisture content, molds, dust and funny smells are expected. But, there is more. Substantial losses of dry matter and nutrients can occur due to spontaneous heating.

When moisture levels are greater than optimal, plant cells and microorganisms consuming forage's carbohydrates and biological activity generate heat that gets trapped in the hay mass.

Even hay baled at 15 to 20 per cent moisture may undergo some degree of heating a few days after harvest that may extend for seven to 10 days.

Usually, temperatures will not be excessive so quality damage is minimal.

Several factors can affect the impact of the post-harvest heating, including:

- bale size and type,
- level of compaction,
- storage

Moisture levels at baling (without acid) to minimized Heating losses

- Small square bales: 15 - 18% moisture
- Large round bales (soft core): 13 - 16% moisture
- Large Rectangular and large round hard core bales: 12 – 15% moisture

The larger the bale, the less easy it is for heat to escape thus increasing the extent of nutrient loss. As bale size and compaction levels increase, moisture remains trapped in the hay mass for a longer period of time thus increasing heat damage.

Along the same line, if freshly harvested hay is stored in a tight pile, excess moisture and heat will not escape readily and overheating might occur for several weeks.

A team of investigators at the Dairy Forage Research Center in Wisconsin studied the relationship between moisture content at baling, size of bales and forage quality using a Heating Degree Day (HDD) system.

The HDD are calculated by subtracting 30 from the maximum internal bale temperature measured in Celsius for each day of storage. The difference is summed each day until internal bale temperature drops below 30˚C.

Their findings show that small square bales, harvested at a moisture level 20 per cent or less accumulated a low level (93 or fewer) of HDD.

As bale size and diametre increased, baling at a moisture content of 20 per cent resulted in more HDD accumulated and a higher risk of spontaneous heating that could lead to significant nutrient losses. As HDD exceed 150, nutrient losses begin to increase substantially.

In the past, the effect of heat damage was believed to be mainly a reduction in the digestibility of crude protein as a result of chemical changes taking place between carbohydrates and protein known as Maillard reaction.

Recent research findings indicate that not only is protein digestibility reduced, but energy losses are at least as significant. Energy concentration in the forage decreases as non-fibre carbohydrates (NFC) are depleted, while fibre concentration increases.

Since NFCs are almost all digested by the cow, the disappearance of NFCs markedly impacts the energy content of the hay. As HDD exceed 315 the NFC losses can be as high as 25 per cent of their original levels.

This HDD system can be readily used on the farm to monitor a new crop of dry hay. The only equipment required is a bimetallic stemmed thermometer with a long stem or a moisture tester equipped with a long probe with built in thermometer.

Internal bale temperatures are taken daily until the internal temperature gets down to 30˚C. The HDD value can then be calculated, and an assessment of potential heat damage can be made.

Another tool to assess potential heat damage to a forage crop is ADF-CP. It is a laboratory test used to measure the amount of heat damaged protein in a forage sample, reported as a percentage of the crude protein (CP). It measures the portion of crude protein that is bound to the acid detergent fibre fraction of the cell wall, or the portion that is unavailable to the cow. Some degree of binding between fibre and protein occurs naturally even though no heating took place. This protein is often subtracted from the feed's total crude protein to estimate available crude.

ADF-CP values higher than 10 per cent (as percentage of CP) on the analysis report indicates that some overheating of the forage has occurred.

If the bound protein becomes too high (greater than 12 per cent of CP) then, the crude protein value should be adjusted. The analysis report will often provide an adjusted CP value. This value should be used in ration formulation.

Although dry hay was the main focus of attention of the research team, it is fair to assume that silage and haylage behave likewise when exposed to spontaneous heating and similar nutrient losses can be expected.

In order to minimize nutrient losses due to heat damage, forage moisture level at harvesting, particle size, packing and oxygen exclusion are key factors to manage.

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Keeping cool with supplemental fans

WINCHESTER

Planning a cooling system can help having more comfortable cows producing more milk this summer.

The combination of rising temperatures and high humidity can cause heat stress in dairy cows. This reduces feed intake, leading to decreased milk production.

After stretches of hot, muggy weather, milk yields commonly drop 20 or 30 per cent. Heat stress also causes poor reproductive performance, and can make cows more susceptible to mastitis and other diseases.

Cows have four primary ways to get rid of body heat:

• Conduction – the transfer of heat between two bodies in contact, both at different temperatures

• Convection – heat loss between two objects, one of which is moving, such as wind or water

• Radiation – the exchange of thermal energy by electromagnetic waves

• Evaporation – when heat is given off as water changes from a liquid to a vapour.

The most effective ways to improve cooling for dairy cows is to increase the convective heat transfer rate, increasing the air speed over the cow and increasing the evaporative cooling rate by wetting the cow, or the air around her.

Most free-stall dairy barns are naturally ventilated, and will remain reasonably cool and fresh as long as there is enough wind to provide air movement.

Researchers have determined that air should move past a cow at 200 to 430 feet per minute (fpm) – 2.3 to 4.9 miles per hour (mph) – to provide desirable rates of heat and moisture movement through and from their hair coats during warm weather. Often during muggy weather there is not enough wind to produce these desired air flow rates. The solution is to speed up the air flowing over the cows using supplemental cooling fans.

Tips for selecting the right fan

Axial-flow or propeller-type fans are the fans usually selected for cooling. Typically, these fans are 24 to 48 inches in diameter and operate with one-quarter to one-horsepower (hp) motors. They can generate high air flow rates when operating at little or no static pressure, roughly 10,000 cubic feet per minute (cfm) per one-half hp.

Choose fans that move air in a relatively tight cone. Typical fans from a reputable supplier effectively maintain air flow at a distance of 10 times the fan diametre. For example, a two-foot-diametre fan will throw air 20 feet. Also select fans for their capacity and the air velocity they produce. They should provide at least 500 cfm to 1,000 cfm per cow. Air velocities should be in the range of 220 to 500 fpm (2.5 to 5.5 mph).

Mount fans high enough to provide clearance for any equipment used in the alleys, and about eight feet above the free stalls to keep cows from damaging them. Fans should be placed to blow air in the direction of the prevailing winds and spaced 10 times their diametre apart. Tilt fans downward to aim their air flow at a point directly below the next fan in line.

Three key steps

Follow a three-step process to reduce heat stress in free stall barns:

• Ensure the natural ventilation system is working effectively by reducing any barriers to natural air flow around buildings and checking the wall design. Some screening used to keep birds out can greatly reduce air flow.

• Provide adequate water space and volume. Water consumption increases as temperature increases. It's important to have an unrestricted water supply when and where cows need it.

• When natural ventilation cannot handle the heat load, supply supplemental cooling over the cows. This can increase their convective cooling rate significantly. If heat stress is still a problem, sprinkler or fogging systems can be used to increase the evaporative cooling rate.

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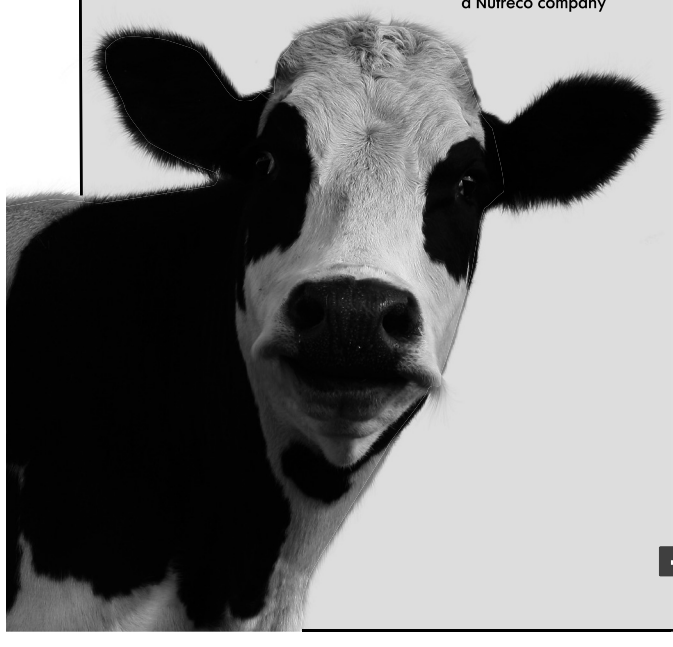
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Ford fires up

Bobby Walker, a graduating transportation technology student at North Dundas District High School (NDDHS), is making progress in transforming his 1951 Ford 8n four-cylinder tractor into a powerful 100 hp agricultural workhorse. With the help of his teacher Andrew Whitton, Walker brought the Funk V8 flathead power plant to life last week (Wed., June 7). After replacing the starter, coil, readjusting the timing, and with a little force-feeding of fuel, the iconic flathead roared to life, without backfire or flames. "Boy, that makes me happy," smiled the three-time Skills Ontario Competition medal winner as his rebuilt power plant idled. Walker is aiming to have his Ford ready to roll in time for NDDHS's drive your tractor to school day on Friday (June 16). He hopes use the tractor for various odd jobs on his family's Maple Rock Farm. "I'm sorry it is Bobby's last semester because we have another flathead to rebuild," said Whitton.







Press Photos – Van Bridger, Whitton

Canadian government defends dairy industry

Recent comments from US President Donald Trump about Canada's dairy policies prompt response from federal government

by Sharon Laidlaw

TORONTO

Recent claims stating Canada's dairy policies have led dairy farmers in Wisconsin, U.S., to lose contracts with a major processor have sparked much media attention, says Graham Lloyd, Dairy Farmers of Ontario's (DFO) director of communications.

The backlash also garnered the attention of U.S. President Donald Trump, who said Canada changed its trade policies with respect to dairy, leading processors to cancel milk contracts with dairy farmers.

However, Trump's statement is misleading, according to Canadian dairy industry advocates.

This past April, dairy farmers in Wisconsin claimed they would lose millions of dollars per year because Canadian dairy processors had switched to using more domestic milk ingredients, specifically ultra-filtered milk, as a result of new policies to increase domestic ingredient use.

They also claimed this led to Grassland Dairy Products Inc. cancelling processor contracts with 75 dairy farms in Wisconsin and Minnesota, which took effect Mon., May 1.

According to DFO's general manager Peter Gould, there has been no change to any regulations affecting imports or border controls between the U.S. and Canada. All exports from the U.S. and imports into Canada are permitted as they always have been, and no new trade policies have been implemented.

The resulting media fury and president's comments prompted Canadian Ambassador to the U.S. David MacNaughton to write a letter to the governors of Wisconsin and New York – both major dairy states – stating "Canada does not accept the contention that Canada's dairy policies are the cause of financial loss for dairy farmers in the United States." The letter clearly defends the Canadian dairy system and highlights there has been no change to Canadian trade policies.

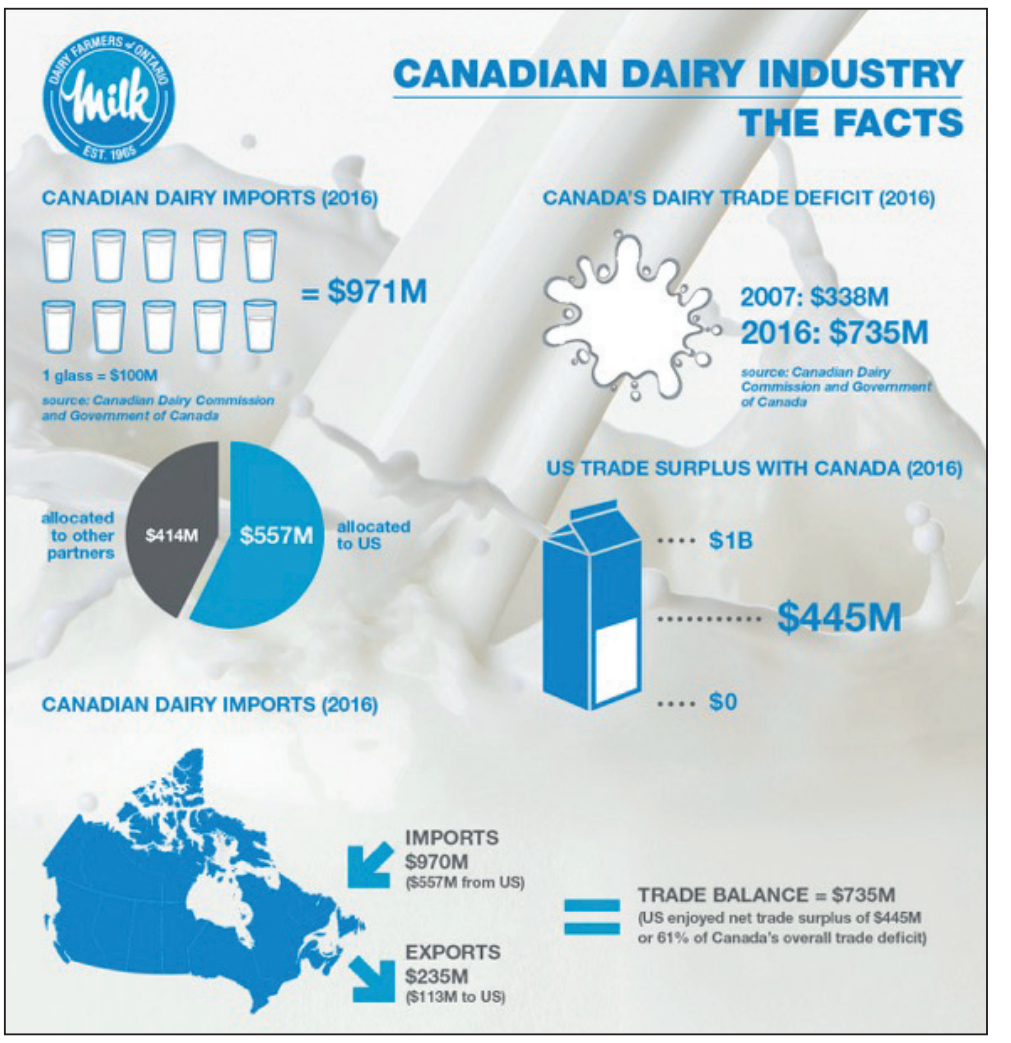
Dairy Farmers of Canada also responded to the issue with a blog post on its website (www.dairyfarmers.ca), detailing Canada's position in terms of its domestic policies and the current market situation in the U.S. dairy industry.

The post states "Canadian producers can certainly sympathize, and would never wish this upon anyone. However, we must nonetheless point out the reality that there have been no changes to Canadian regulations related to dairy imports, or changes to Canadian dairy tariffs, and we want to set the record straight."

While Grassland has tried to put the blame on the Canadian dairy industry for its decision to cancel the contracts, what hasn't been made clear, notes the post, is "both the U.S. and world dairy markets are currently oversaturated, which has led to low prices at the farm gate and a lower price received by processors. Simply put, in the U.S., and around the world, too much milk is being produced. In the U.S., the oversupply of milk is exacerbated in an environment where processing capacity is lacking. When too much milk is produced, prices crash and there are no incentives to invest in increased processing capacities."

"The current exchange rate has made U.S. dairy ingredients more expensive, and exchange rates can have a significant impact on trade flows," Gould said, adding Canadian companies didn't have the technology to make ultra-filtered milk until recently.

"What is surprising is how anyone can claim trade with Canada is unfair," Lloyd said. "The fact is the U.S. enjoys a massive dairy trade surplus with Canada, such that Canada is a significant net importer of dairy products from the U.S., which means they are benefiting from our market. We are, in fact, not protectionist."



Infographic on Canada's dairy industry.

He added the U.S. exports more dairy products to Canada than the U.S. imports from Canada.

According to Canadian Dairy Commission and Government of Canada statistics, Canada imported nearly $1 billion in dairy products in 2016, and ran a total dairy trade deficit of almost $735 million – meaning $735 million more dairy products entered Canada than it exported, said Lloyd.

As well, almost two-thirds, or $557 million, of Canada's imports were from the U.S., which enjoyed a net trade surplus with Canada of $445 million.

Editor's note: *This article was re-published with permission from the May 2017 edition of Milk Producer Magazine, Dairy Farmers of Ontario's monthly publication.*

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Understanding consumer attitudes key for agriculture

by Hannah Sweett, OMAFRA

WINCHESTER

The University of British Columbia (UBC)'s animal welfare and behaviour program has been a leader in research to improve dairy cow management.

Recently, UBC has been investigating the way society views different aspects of dairy farming to explore new issues. Through the years there has been a growing divide between consumers and farmers, as consumers with little knowledge about farming start asking questions about where their food comes from.

Producers have been responding to their questions and concerns to better meet consumer expectations.

A practice that dairy farmers take for granted is cow-calf separation. A 2017 report led by researchers at British Columbia showed that 55.1 per cent of Americans were in favour of later cow-calf separation, and after being given the arguments both for and against cow-calf separation, the majority of their opinions on the topic did not change.

The group originally in favour of late separation strengthened their support for late separation once reading the balanced arguments, and three quarters of participants kept their initial answer.

The researchers concluded that public views and opinions of farm practices are not based on a lack of knowledge of the subject, but on people's values.

Similarly, a 2017 study looked at consumer attitudes in Brazil, and found that 69.2 per cent of participants rejected the idea of cow-calf separation, with their reasons focused on issues such as the importance and naturalness of early contact, producer's goals to increase milk production, and consideration for the feelings of the cows.

However, only 1.5 per cent of participants in the study were familiar with the dairy industry. That being said, participants that were given information that justified cow-calf separation along with the limitations and criticisms had a higher rejection of the practice. Similar to the results from the first study, a low awareness of dairy cattle production may not be the explanation for the results.

By providing assurance that producers care for the health and well-being of both the cow and the calf equally, mainstream consumers will have the opportunity to better understand the practice. After calving, calves are moved to a clean nursery facility away from exposure to potential diseases, such as Johne's disease found in the maternity area.

In this designated area for calves, farmers are able to monitor colostrum, milk and solid feed intake to insure proper nourishment, health, and development.

Improving communication between industry stakeholders and the public regarding cow-calf separation, as an example, is essential to maintaining the dairy industry's positive image.

Stakeholders need to educate the public on reasons for separating the calf from the cow, and how this helps both cow and calf health. Not only is educating consumers important, but agriculture stakeholders will also need to figure out how to apply the lessons to be learned from this new work from British Columbia.

This will help close the gap between producers and consumers.

Overall, industry stakeholders and consumers need to recognize they have shared values in terms of wanting what is best for the health and well-being of the cow and calf.

This has been the premise of the development of Dairy Farmers of Canada's proAction initiative – allowing farmers to exemplify and assure the public they have good and responsible farm practices all while maintaining the care, health, and well-being of their cows.

Take a break from your stressful life and cuddle with cows

by Jennifer Nevans

TORONTO

The perfect remedy for anxiety and stress might be lying in your barn right now.

That's what some people in the Netherlands believe after they tried a new form of therapy that calls on people to curl up with a four-legged companion.

They're saying cows make great therapists – and don't worry, if you're not in the mood to share your deepest thoughts and feelings with the animals, cuddling up with them will still do the trick.

Farmer Marente Hupkes, who runs Koeknuffelen in the Netherlands, was the first to offer cow-cuddling sessions, but now the country has more of these "care farms" designed to help calm overstressed people and cater to children and adults with behavioural problems.

Though it hasn't been scientifically proven to reduce people's stress, Hupkes' clients have some positive feedback about cuddling up with a warm, 700-kilogram bovine.

Hupkes claims cow cuddling not only relieves stress, it also allows humans to connect with the animals and "learn the language of the cow."

There are even others in this industry offering courses on cow cuddling led by cow instructors to help people get the most out of their cuddle sessions.

And the popularity of cow cuddling is spreading.

In Switzerland, people are apparently lining up to hug cows at the Zwygart family farm. Inspired by the same cow therapy sessions in the Netherlands, this farm recently started offering sessions as well. The woman behind these sessions say cows are good cuddle partners because they like body contact and are generally quiet animals.

These snuggle sessions start with a brief introduction with the animal, followed by a bonding activity, such as petting or cleaning the cow. Once introductions are over, the cuddling starts.

The cow cuddling sessions cost around $68 in the Netherlands and Switzerland – not a bad rate for the farmers to take home.

Editor's note: *This article was re-published with permission from the May 2017 edition of Milk Producer Magazine, Dairy Farmers of Ontario's monthly publication.*

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Is foraging an acquired or innate skill?

A three-year study sheds some light on the matter

by Mario S. Mongeon, OMAFRA livestock specialist

ALFRED

When a group of dairy producers discuss pasture management, it does not take a lot of time for the discussion to diverge to foraging skills of dairy cows. There is a belief that animals should be exposed to pasture at an early age in order to gain experience that will be beneficial later in their productive life.

In fact, there are grounds for this belief. According to early work on foraging skills, researchers reported that ruminants exposed to pasture remember previous experiences. They learn to select specific forages, and will select the same specific forages later in life.

Other studies conducted in the 1990s reported that experiences obtained as a young animal affected diet selection, grazing behaviour, and animal productivity months or years later both in sheep and cattle.

Furthermore, it was shown that ruminants exposed to pasture acquired their foraging skills at an early age, and grazed more efficiently than animals that were not exposed to pasture. However, much of this research work was conducted in extensive, unimproved grazing systems, where animals were exposed to toxic plants, as well as pasture that varied greatly in nutritional value.

In North America, grazing dairy cattle pastures typically contain high-quality grasses and legumes. Investigating how early grazing experiences affect grazing behaviour or milk yield of dairy cows under these particular conditions was needed.

Furthermore, little was known on how long it takes for lactating dairy cows with no previous grazing experience as heifers to adapt to pasture under intensive rotational management systems.

To answer these questions, a three-year project was conducted and came to an end recently. This study evaluated the carryover effects of dairy heifer grazing experience on behaviour, and first-lactation performance as dairy cows.

Holstein and Holstein/Jersey crosses were used for the experiment, and were divided amongst four different treatments: heifers assigned to pasture as weaned calves, as well as yearlings; heifers assigned to pasture as weaned calves, but then housed in confinement as yearlings; heifers housed in confinement as weaned calves, and then assigned to pasture as yearlings; and heifers housed in confinement as weaned calves and as yearlings. During the third year of the project, all animals were assigned to summer pasture as lactating cows.



Table 1. Three year project treatment schedule

Treatment Year 1 (weaned calves)		Pasture	Pasture	Confinement	Confinement
Treatment Year 2 (yearlings)		Pasture	Confinement	Pasture	Confinement
Treatment Year 3 (cows)		Pasture	Pasture	Pasture	Pasture
Milk yields* (litres)	Days in milk				
	1	32.6	28.2	32.9	28.8
	2	29.0	28.8	31.6	25.0
	5	28.6	29.5	30.3	28.8

* ● / ● Values of different colors are statistically different.

Several parameters were recorded, including: dry matter intake, animal behaviour and activity using global positioning technology.

The first year of the experiment was simply to expose two groups of heifers to a grazing environment for 41 days. The other two groups of heifers were housed continuously in confinement.

During the second year, it was possible to evaluate the carryover effects of the grazing experience on current heifer grazing behaviour. The experienced heifers that grazed during the first-year spent more time grazing on the first-day than inexperienced heifers.

This suggested that heifers with previous grazing experience remembered how to graze, because these heifers started grazing immediately upon exposure to the pasture during the second year. In contrast, heifers with no previous grazing experience exhibited a clear reluctance to graze on the first day. However, after only a few days, both groups behaved similarly.

On the third summer of the project, the animals were now lactating. Once again, it was possible to evaluate the carryover effects of the grazing experience on cow grazing behaviour. Cows that were previously exposed to pasture, either as a calf or yearling spent more time grazing on the first day than cows with no previous experience.

Once again however, after five days on pasture, inexperienced cows showed the same grazing patterns as experienced cows as described (shown in table one).

In terms of milk production, on the first day on pasture, cows that had not grazed as heifers during the second year produced less milk than cows that had grazing experience as heifers during the second year. This was most likely caused by the lower percentage of the time spent grazing.

However, average daily milk production during the whole study did not differ.

Results from this study show that experience early in the life of dairy heifers grazing high quality pasture does affect grazing behaviour and milk production, but only during the first few days of exposure to pasture.

However, cows with no previous grazing experience adapt relatively quickly to grazing and milk production recovers within a few days after first exposure to pasture.

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Setting a course for healthy heifer growth

by Mario S. Mongeon, OMAFRA livestock specialist

ALFRED

The cost of raising a heifer from birth to calving has been commonly estimated at $1,500 to $2,000.

However, one recent analysis puts the figure at nearly $2,500 for a conventional heifer. Cost of raising a heifer in an organic system can be even more.

Most producers can readily identify the cash costs of raising a heifer, but they often overlook some overhead costs and the cost of their own time and management.

Heifers represent an important investment in your dairy farm's future. As with all investments, looking at costs, as well as returns, could pay dividends for your bottom line.

- **Raising a replacement heifer costs $2,500**
- **Identify your replacement needs**
- **Raise only what you need**
- **Control your replacement and mortality rate**
- **Calving heifer early pays off**
- **Implement a heifer feeding program to achieve your goals**

How many heifers do I need?

When industry professionals meet to discuss calf and heifer management, there is usually consensus among the group that many dairy producers invest financial and labour resources into raising too many replacement heifers.

In fact, when looking at the last census, one realizes that pretty much every heifer born in Ontario gets raised. Unless the herd size is increasing and in order for heifers to be milked, one needs to make room for these new comers and older cows might get pushed out of the barn prematurely.

An easy way to get around the trap of sending a good cow away too early is to limit the number of heifers raised on the farm. Several factors will affect the number of replacement animals required. These include: age at first calving; herd turnover rate; and calf and heifer mortality rates.

The general idea is to raise only the number of animals required to maintain a constant herd size.

Calving management

A difficult calving results in lost production, infection and poor fertility on the part of the dam, and the calf may be weak, suffer from bovine respiratory disease or diarrhea as a result of its experience, or the calf or cow or both may not survive.

Mortalities in the first three weeks of life have been attributed to Failure of Passive Transfer (FPT) of immunity from the dam. The only way a calf receives immunity after birth is through colostrum.

The keys to achieving successful passive transfer of immunity (immunoglobulins) are "3Q's": quality, quantity and quickness.

Feeding quality colostrum in the right quantity quickly after birth will greatly improve the chances of calf survival and good health. The ability of the calf to absorb immunoglobulins through the gut wall decreases rapidly from zero to six hours after birth.

Dystocia, and on the other hand allowing the calf to suckle on its own are conditions that have been shown to contribute to FPT. Calves that have calved unassisted, but have been allowed to suckle on their own do not fare as well as they probably do not receive first colostrum in a timely manner.

Calving management and procedures are very important to minimize losses due to dystocia and stillbirths.

Some points to consider include:

• Keep good records of breedings and expected calving dates

• Have a clean dry calving facility that is not used as a sick bay as well.

• Know the signs of calving

• Know when to intervene to provide assistance

• Know procedures for calving assistance

• Ensure the newborn calf receives adequate colostrum as soon as possible after birth to achieve passive transfer of immunity from the dam

Weaning

Weaning calves from high milk volumes is a challenge, and often a time when calf performance declines or experiences a lag phase. Weaning is an important time for your calf, a time of change and stress when the calf's primary source and form of nutrients and the metabolism of those in her body nutrients undergoes changes.

The digestive system has to make dramatic changes to adapt to the altered source of nutrition. The method of weaning, and the quantity of dry matter intake has an effect on the immune system as well as overall calf performance like growth rate.

The method of weaning will be limited by the equipment, and the calf data that is available to the producer.

When calves are fed by an electronic feeder, the weaning method can then depend on starter intake. Reducing the amount of milk provided as the starter intake increases will result in calves being weaned earlier, compared to calves weaned gradually from eight to 12 weeks of age. Calves that are weaned in this manner will also have a more developed rumen, compared to abruptly or gradually weaned calves.

The milk allowance of calves prior to weaning will have an effect on the success of a weaning method. Calves fed a high milk allowance will benefit from a gradual weaning.

First calving by 24 months of age

The strategy – begin planning for her to calve at 24 months the day she is born.

Getting a heifer to calf at 24 months of age starts the day she is born.

Every step in your heifer rearing process from newborn, to weaning and on to breeding directly impacts the time it takes to get your heifers into the pipeline, and generating profits.

Reaching a 24 month calving age means the first breeding must occur at 13 months. A herd with an average heifer conception rate of 60 per cent with good heat detection should start their breeding program at 13 months to ensure the majority of heifers are pregnant by 15 months, reaching the 24 month goal.

In order to have your heifers in top shape for breeding at 13 months, the first 12 months of her life are key. A heifer's nutrition and health from the day of birth until she reaches the breeding group determines her breeding eligibility, and her effectiveness in the breeding program. A general rule of thumb is that a heifer should be at 60 per cent of her mature body weight when first breeding occurs.

The recommended weight for a breeding age Holstein heifer is approximately 395 kilograms (870 pounds); the recommended height is 127 centimetres (50 inches). Nutrition and disease problems in the first few months of life will greatly affect whether these growth targets are met.

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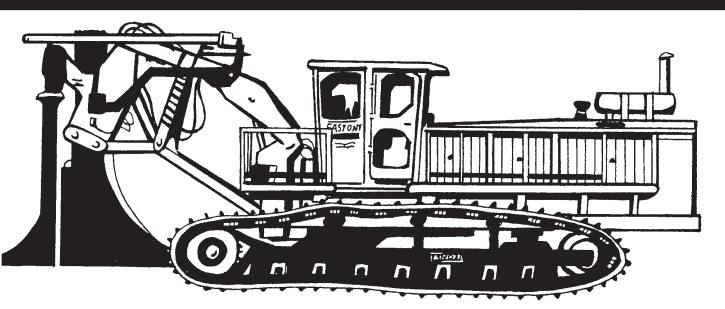
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Table 1: Results from a selection of Ontario robot farms surveyed in 2013

Ontario Robot Farms	Average
Number of cows/Robot	48
Number of milkings/cow/day	2.8
Milk yield litres/cow/day	31.5

Robotic milking continues to grow in popularity

by Hannah Sweett, OMAFRA

WINCHESTER

Since its first installation in Ontario in 1999, robotic milking is being used on more and more dairy farms across the country every year.

There are around 650 robotic milking herds on Dairy Herd Improvement (DHI) in Canada, representing almost 10 per cent of all DHI herds.

Decreased labour and improved herd health outcomes are just two of the many benefits in using these technologically-advanced machines.

One of the major attractions of robotic milkers is that the milking is done automatically so there is no need for a farmer's presence at regular milking times, thus reducing the need for labour.

Field studies conducted by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) in 2008 noted herds using robotic milking spent an average of one minute per cow per day on milking-related handing and clean-up, while herds of the same size milking cows in a parlour spent 3.28 minutes per cow per day.

This difference was equivalent to 1,664 hours per year for 120 cows with $12.75 per hour in labour savings.

Labour is a significant cost for dairy farmers, making up approximately 34.7 per cent of the total indirect and overhead farm expenses per cow. Labour also has an impact on herd health and production as workers are required to know the signs and symptoms of common illnesses.

Robotic milkers use automated monitoring and sensors to conduct checks on milk quality, and they also record udder health. Newer types of sensor technologies can also control the milking process based on the farmer's preferences all the while recording milk quality, temperature, body weight, and milking speed for each cow.

Automated milking systems (robots) can alert farmers when cows are overdue for milking, at which time cows may have to be fetched or individually brought to the robot.

An Ontario study conducted in 2013 on 33 robot farms found a fetching rate of eight per cent in herds using an automated milking system for less than 24 months and a rate of six per cent in herds after using the robotic milking for more than 24 months. Thus, the longer cows have to adjust to robotic milking and with more experience managing in a robot setting, the lower the fetch rate becomes.

A number of studies have concluded that the use of robotic milking allows for calmer, more comfortable cows as they voluntarily choose when to be milked. Changing to a robotic milking system is often found to increase milk production, partly because the cows are being milked more often (approximately 2.8 times a day) that can result in a 1.5 to three kilogram increase in milk yield.

This increase in milk yield can ultimately affect production efficiency for the robotic milker. Higher milk increases can result with nutritional changes, and when better cow comfort is also provided.

In summary, robotic milking has become a mainstream way to milk cows in Ontario. There are more robotic milking manufacturers than ever before as well.

It will be interesting to see exactly how the popularity of robotic milking continues to grow.

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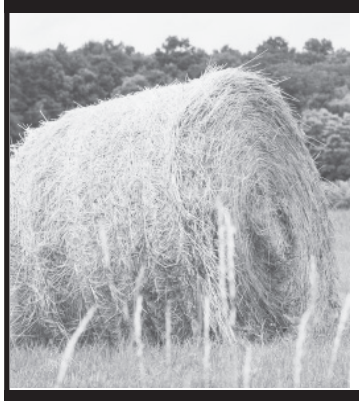
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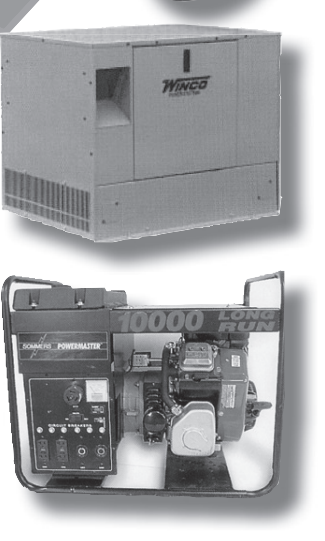

Silage preservation: It's more than compaction alone

by Mario S. Mongeon, OMAFRA livestock specialist

- Top quality silage should ferment rapidly and wee and be aerobically stable
- Yeasts are the main initiators of silage spoilage
- Silo management and proper silage additive have the potential to minimize aerobic spoilage, inside as well as outside the silo.

ALFRED

Last April, I had the chance to attend the 2016 Herd Health and Nutrition Conference in Burlington, Vt.

Dr. Limin Kung from the University of Delaware made a presentation on silage preservation, and aerobic stability. Here are some highlights of his talk.

Several factors influence the preservation and, ultimately, the quality of silage after harvest. One of them, the type of fermentations taking place in the silo after harvest, will impact the palatability, nutrient content and stability of the final product once out of the silo and into the feed bunk.

The amount of time silage can remain stable after it is exposed to oxygen from air (aerobic conditions) is called aerobic stability. Silage will obviously be exposed to oxygen when taken out of the silo, mixed in the ration, as well as sitting in the feed bunk. Aerobic conditions could also occur on the exposed face of bunk silos, at the surface of poorly sealed bunk silos, and at the surface of tower silos.

Silage can undergo a perfect post-harvest fermentation, but if exposure to air occurs later on, that perfect silage can become a poor quality feed.

Aerobic spoilage can account for more than 50 per cent of total dry matter losses in a silo. Furthermore, spoiled silage can result in the production of undesirable end products, which may depress nutrient intake and milk production.

Molds are usually blamed for silage spoilage but in fact, in most cases, molds are the result of spoilage. The real culprits are the yeasts present in the silage at harvest.

When fresh forage is ensiled, bacteria (*Lactobacillus sp.*) convert sugars into lactic acid.

As the concentration of lactic acid increases, pH decreases and silage becomes stable, like pickles in vinegar. If no oxygen gets in, the mass of silage will remain stable. If silage is exposed to oxygen, the yeasts become active and start to degrade the lactic acid. Yeasts multiply and feed on readily degradable nutrients. It is the yeast activity that generates the heat in the fist place. As lactic acid is depleted, pH increases, which then allows mold and undesirable bacteria growth to proceed. More heat is then produced and further spoilage occurs.

Yeasts are naturally occurring organisms. There are many types of yeast found in silage, and can vary by farm as well as feed type. All types of yeasts are undesirable in silages. Some yeast species will ferment glucose, and are responsible for large dry matter losses while others will feed on lactate and will impact aerobic stability, reduce feed intake and nutritive value of the silage. The number of yeasts in silage is negatively correlated with aerobic stability so the less yeasts present in silage the better.

During spoilage, the temperature of the silage mass can reach 49 to 54°C. In the past, the effect of heat damage was believed to be mainly a reduction in the digestibility of crude protein as a result of chemical changes taking place between carbohydrates and protein known as Maillard reaction.

Recent research findings indicate that not only is protein digestibility reduced, but energy losses are at least as significant. Energy concentration in the forage decreases as non-fibre carbohydrates (NFC) are depleted, while fibre concentration increases.

Since NFCs are almost all digested by the cow, the disappearance of NFCs markedly impacts the energy content of the silage. As heat damage progresses, the NFC loss can be as high as 25 per cent of their original levels.

Another tool to assess potential heat damage to a forage crop is ADF-CP. It is a laboratory test used to measure the amount of heat damaged protein in a forage sample, reported as a percentage of the crude protein (CP). It measures the portion of crude protein that is bound to the acid detergent fibre fraction of the cell wall, or the portion that is unavailable to the cow. Some degree of binding between fibre and protein occurs naturally even though no heating took place. This protein is often subtracted from the feed's total crude protein to estimate available crude. ADF-CP values higher than 10 per cent (as percentage of CP) on the analysis report indicates that some overheating of the forage has occurred. If the bound protein becomes too high (greater than 12 per cent of CP) then, the crude protein value should be adjusted. The analysis report will often provide an adjusted CP value. This value should be used in ration formulation.

Dry matter intake of fresh compared to aerobically spoiled total mixed ration (TMR) can differ by 10 per cent. What causes animals to consume less of the spoiled silage is unclear, but can result from a combination of factors such as poor palatability, lower digestibility, foul smell, toxicity or potential interactions between yeasts and rumen flora.

Initial population of yeast in silage, before exposure to oxygen, definitively affects time to spoilage. Low yeast concentration silage can take up to 60 hours before showing signs of spoilage. The temperature of high yeast concentration silage can increase by 2°C in less than 12 hours, a definite sign of spoilage onset.

Management can go a long way in minimizing silage spoilage by yeasts. Packing quickly and tightly bunker silos is a very good start. Sealing it quickly, using a thick, white, oxygen limiting plastic film weighted down will further help. Delaying filling is a major cause of yeast and mold growth.

If filling takes place over more than a six to 12 hour period, the yeast and mold population explode exponentially. Porosity, not density of the silage mass dictates air movement into a silo. Instead of aiming for a certain amount of kilograms of dry matter per cubic meter, striving for a bulk density of at least 700 kilograms per cubic meter (44 pounds per cubic feet), no matter what the moisture level is. Obviously, this means that the drier the silage is, the more efforts will be needed to properly compact the silo.

Even in a well packed silo, air can penetrate as much as a metre deep into the open face. This means that even if removing 30 centimetres per day, silage at a clean face can be exposed to oxygen for three days. Removing sufficient silage each day will help prevent spoilage. This is why proper sizing of silos is critical. During hot weather, for drier and/or poorly packed silage, removing more daily can go a long way. Keeping the silo face clean and undisturbed is a must.

Various additives can help improving aerobic stability of silage. Inoculants containing selected strains of *Lactobacillus buchneri* can be help.

This bacterium converts a small amount of lactic acid to acetic acid. Since acetic acid has superior antifungal properties, it helps to control yeasts.

There are some dry matter losses due to the fermentation from *L. buchneri*, but they are small relative to the increased savings of dry matter loss from aerobic spoilage.

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K A P Y A H U O T E S A A N G R R R E U
T T I S R E A N T N S N T T A O E U R G
Z R E R R N E Y A C U R O S N W N T D A
W I U N A M E E B R A L E S I N I S L T
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Y L P P O S P R O O C E E C D I A V L V
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J T D V Q B N E M E Z V I N T W R A M N
C E F E R T I L I Z E R E E D Y P W E R
R E T S E V R A H F F D C U F K L A R O
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A T O B U K L W X O E R R H G G N T R N
S I L O O U H V U F C M U C O C T S O W
N O S U G R E F Y E S S A M A J I K F H
E R I H S R Y A H O U S E L Q N N D M A
K J D R A Y G S W N L R F N B M G N E Y

Find the words hidden vertically, horizontally, and diagonally throughout the puzzle.
Words can also be read backwards – from right to left.
Solution on page 18.

WORDS

AYRSHIRE
BARN
BROWN SWISS
CALF
CASE IH
CATS
CORN
COWS
DAIRY FARM
DOG
FARMER
FENCE
FERTILIZER
FORD
GATE
GUERNSEY
HARVESTER
HAY BALES
HEIFER
HERD
HOLSTEIN
HOUSE
IMPLEMENTS
JERSEY
JOHN DEERE
KUBOTA
MACHINERY
MANURE SPREADER
MASSEY FERGUSON
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PASTURE
PLANTING
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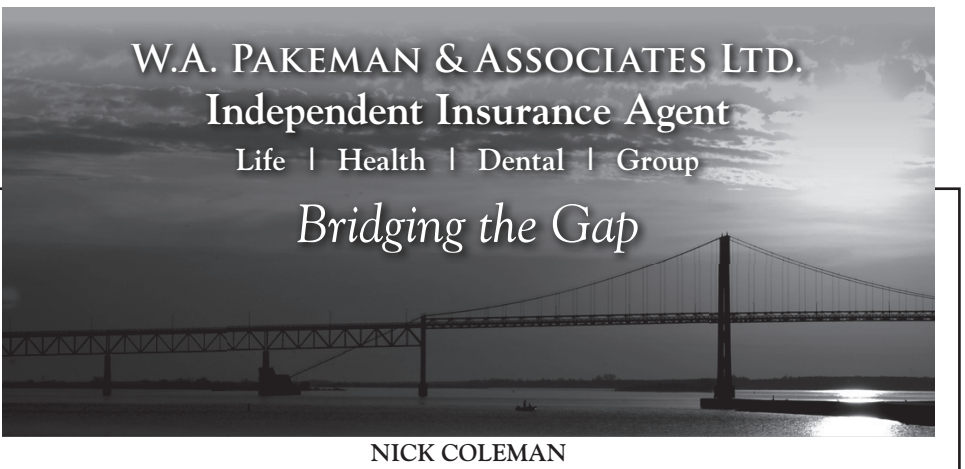

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DAIRY MONTH RECIPE

Light & Fresh Cobb Salad



Ingredients

4 small boneless skinless chicken breasts
10 cups (2.5 L) torn Romaine lettuce
8 small tomatoes, cut into quarters
1 avocado, cut into cubes
1 cup (250 ml) Canadian sharp cheddar cheese, shredded or
½ cup (125 ml) Canadian blue cheese, crumbled

Dressing:

1 cup (250 ml) milk
½ cup (125 ml) drained* plain yogurt
2 Tbsp (30 ml) chopped fresh chives
1 Tbsp (15 ml) chopped fresh thyme
1 Tbsp (15 ml) Dijon mustard
1 tsp (5 ml) sugar
Salt and pepper, to taste
¼ cup (60 ml) red wine vinegar or white wine vinegar

Preparation

Dressing: In a bowl, whisk together milk, yogurt, chives, thyme, mustard, sugar, salt and pepper; gradually whisk in vinegar.

Chicken: In a shallow dish, pour ¼ cup (60 ml) dressing over chicken; turn to coat. Let stand for 10 min. Set remaining dressing aside. Meanwhile, preheat barbecue grill to medium or preheat broiler. Place chicken on greased grill and close lid or on a foil-lined baking sheet if broiling (discard any excess marinade). Grill or broil chicken for about 8 min per side or until no longer pink inside. Transfer to a cutting board; let stand for 3 min.

Salad: In a large bowl, toss lettuce with ½ cup (125 ml) dressing. Slice chicken into thin strips. Divide lettuce among plates; top with chicken, tomatoes, avocado and cheese. Drizzle with more dressing. (Extra dressing can be covered and refrigerated up to 3 days.)

Tips

To drain yogurt, spoon 1 cup (250 ml) plain yogurt into a sieve lined with a coffee filter; set over a bowl and cover. Refrigerate and let drain for 4 hrs or up to 1 day. Measure ½ cup (125 ml).

Yields 4-6 servings.

Source: www.dairygoodness.ca

DAIRY MONTH RECIPE

Easy Butter Chicken



Ingredients

2 Tbsp (30 ml) butter
2 Tbsp (30 ml) tandoori curry paste or tikka curry paste
1 Tbsp (15 ml) minced fresh gingerroot
2 tsp (10 ml) minced fresh hot pepper
1 tsp (5 ml) ground cumin
1 tsp (5 ml) paprika
1 can (28 oz/796 ml) crushed tomatoes
1 cup (250 ml) 35% cream
1 1/2 lbs (675 g) boneless skinless chicken, cut into chunks
1/2 cup (125 ml) plain yogurt
1/4 cup (60 ml) chopped fresh coriander
2 Tbsp (30 ml) freshly squeezed lime juice or lemon juice

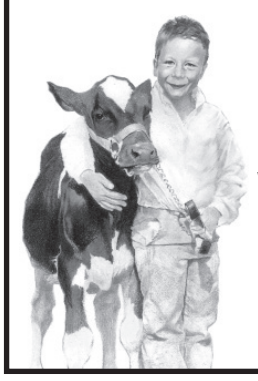
Preparation

Preheat oven to 375 °F (190 °C). Place half of butter in a 13 x 9-inch (33 x 23 cm) glass baking dish. Place in oven for about 3 min or until melted. Swirl to coat dish; set aside.

In large deep pot, melt remaining butter over medium-high heat. Cook half of tandoori paste, the ginger, hot pepper, cumin and paprika, stirring, for about 2 min or until fragrant . Add tomatoes; bring to boil. Stir in whipping cream; return to boil. Reduce heat to medium-low; simmer, stirring often, for 10 min or until sauce is thickened.

Meanwhile, in bowl, combine chicken, yogurt and remaining tandoori paste; toss to combine. Spread in single layer in prepared baking dish. Bake in oven for 10 min. Pour tomato sauce over chicken; bake for about 10 min longer or until sauce is bubbling and chicken is no longer pink inside. Sprinkle with fresh coriander and lime juice.

Source: www.dairygoodness.ca



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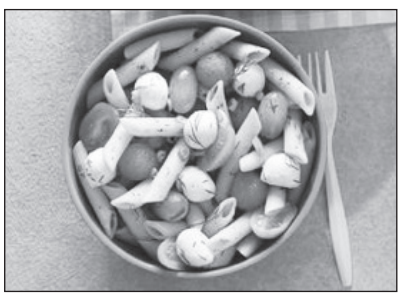
DAIRY MONTH RECIPE

Bocconcini Summer Salad



Ingredients

7 oz (200 g) Canadian mini bocconcini
¼ cup (60 ml) canola oil
⅓ cup (75 ml) white balsamic vinegar
2 Tbsp (30 ml) fresh dill, chopped
Salt and freshly ground pepper
1 box (375 g) penne
2 cups (500 ml) grape tomatoes
2 cups (500 ml) watermelon balls
1 cup (250 ml) red or green grapes
4 green onions, thinly sliced

Preparation

Drain bocconcini and place in a small bowl. Add oil, vinegar and dill and season generously with salt and pepper. Let marinate while you prepare the salad. Cook pasta according to package instructions. Drain and rinse with cold water to cool. Drain again and transfer to a large bowl. Add tomatoes, watermelon, grapes, green onions and Bocconcini with the marinade. Mix well, adjust seasoning and serve.

Variations

Cheese alternatives: Canadian havarti, feta, fresh mozzarella.

Yields 6 to 8 servings as a side dish

Source: www.dairygoodness.ca

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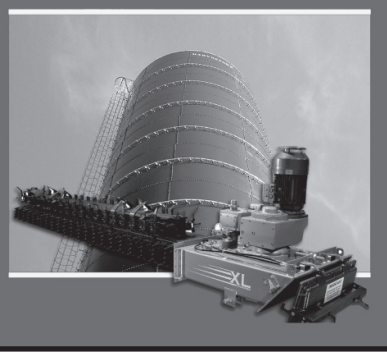

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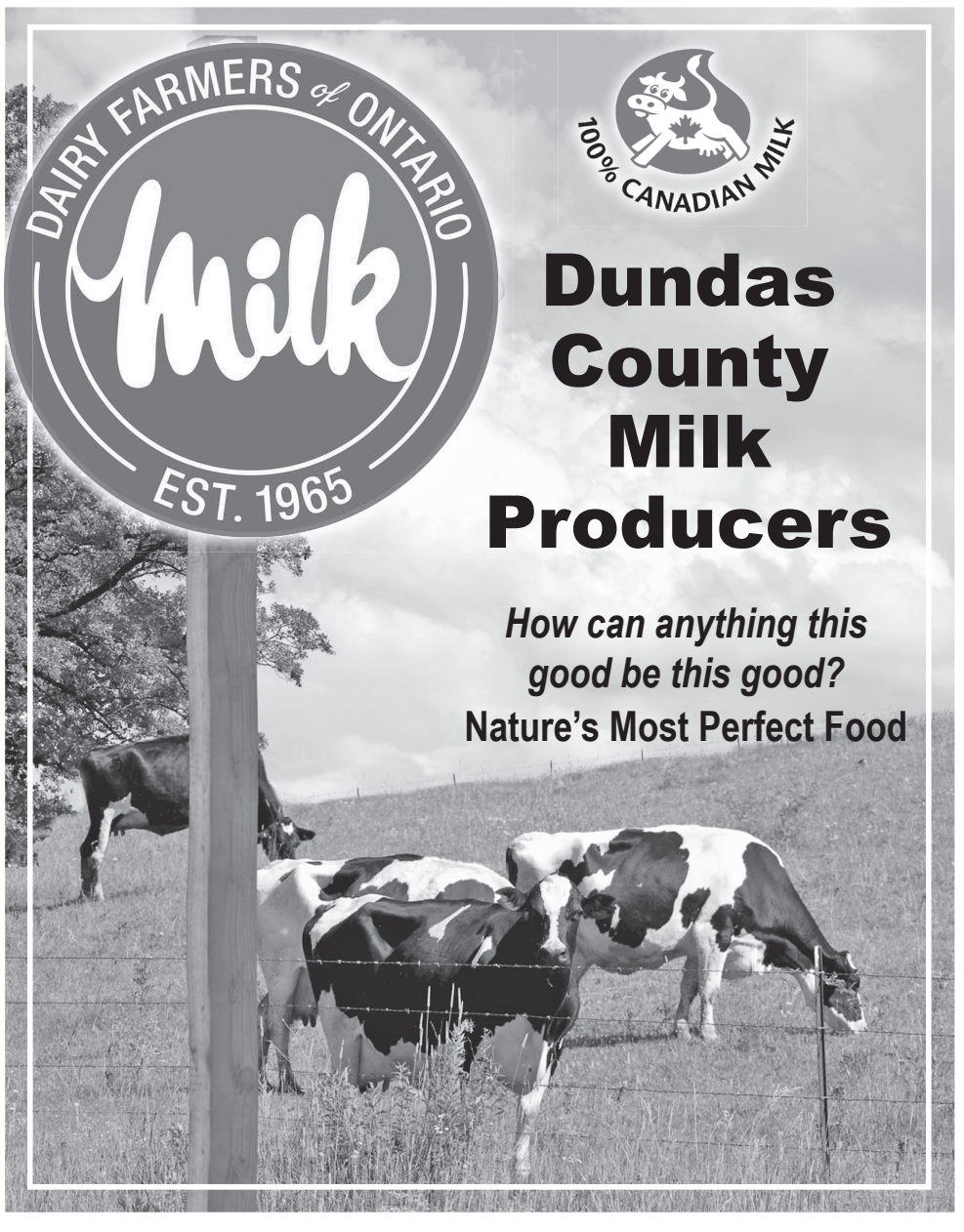

WORD SEARCH SOLUTION

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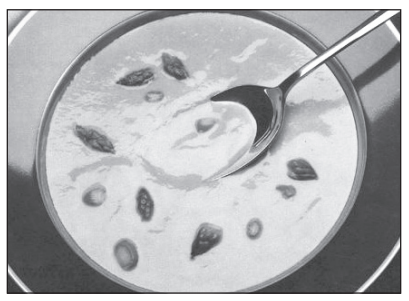
(Over,Down,Direction)
AYRSHIRE(8,19,W)
BARN(4,1,W)
BROWNSWISS(16,1,S)
CALF(16,17,SW)
CASEIH(6,1,SW)
CATS(11,1,SE)
CORN(20,15,N)
COWS(11,8,NE)
DAIRYFARM(20,9,SW)
DOG(12,11,NE)
FARMER(19,9,S)
FENCE(10,17,NE)
FERTILIZER(3,13,E)
FORD(19,18,N)
GATE(20,3,S)
GUERNSEY(8,1,SW)
HARVESTER(9,14,W)
HAYBALES(6,2,SE)
HEIFER(7,11,SE)
HERD(19,1,S)
HOLSTEIN(1,15,E)
HOUSE(9,19,E)
IMPLEMENTS(1,10,NE)
JERSEY(14,6,NW)
JOHNDEERE(16,18,NW)
KUBOTA(6,16,W)
MACHINERY(17,9,N)
MANURESPREADER(14,1,SW)
MASSEYFERGUSON(14,18,W)
MILK(4,10,NW)
NEWHOLLAND(6,4,SE)
PASTURE(18,7,N)
PLANTING(17,13,S)
PLOW(4,8,NW)
SEED(14,7,SW)
SILAGE(1,11,E)
SILO(1,17,E)
SOYBEANS(4,9,NE)
STRAW(18,17,N)
TILEDRAINAGE(15,12,N)
TRACTOR(13,7,NW)
TRUCK(1,3,SE)
VETERINARIAN(12,12,NW)
WOODLOT(8,9,NE)
YARD(6,20,W)

DAIRY MONTH RECIPE

Cream of Asparagus Soup



Ingredients
1 lb (450 g) fresh asparagus
2 cups (500 ml) chicken broth or water
1 small onion, finely chopped
3 Tbsp (45 ml) butter
3 Tbsp (45 ml) all-purpose flour
2 cups (500 ml) milk
Salt and pepper, to taste

Preparation
Discard the white part of asparagus stalks; rinse well in cold water. Cut into 1-inch (3 cm) pieces. Place in saucepan with water or chicken stock and onion; cover and bring to a boil. Cook until asparagus is tender, about 7 to 10 min. Reserve a few tips for garnish. Purée soup in blender or food processor.
Melt butter in saucepan; stir in flour and cook until smooth and bubbly. Add milk and seasonings; cook, stirring constantly until sauce thickens and comes to a boil. Add asparagus purée. Adjust seasoning to taste. Serve hot or cold, garnished with reserved asparagus. If too thick when served cold, thin with additional milk.

Source: www.dairygoodness.ca

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DAIRY MONTH RECIPE

Mascarpone White Chocolate Cheesecake with Rhubarb Sauce



Ingredients

Crust:
1 1/4 cups (310 ml) graham cracker crumbs
1/4 cup (60 ml) butter, melted

Filling:
6 oz white chocolate, chopped
2 (250 g) pkgs regular block cream cheese, at room temperature
250 or 275 ml container Canadian Mascarpone
3/4 cup (175 ml) granulated sugar
1 Tbsp (15 ml) cornstarch
3 eggs
2 cups (500 ml) 14% sour cream
1 tsp (5 ml) vanilla

Rhubarb Sauce:
5 cups (1.25 L) (½-inch/1 cm) slices rhubarb, about 1½ lb (750 g)
1/4 cup (60 ml) granulated sugar
3 Tbsp (45 ml) water

Preparation

Crust: Preheat oven to 350°F (180°C). Butter a 10-inch (25 cm) springform pan. In a bowl, stir graham cracker crumbs with butter. Press into the bottom of pan. Bake 10 min or until crust is a deep golden brown. Leave oven on. Set aside while preparing filling.

Filling: In a microwave, melt chocolate 1 to 2 min, stirring every 30 seconds until nearly melted. Stir to completely melt. Beat cream cheese with Mascarpone cheese, sugar, and cornstarch until smooth, about 1 min. Add eggs one at a time, beating just until mixed and scraping down sides of bowl after each addition. Beat in sour cream and vanilla just until mixed. With mixer running, beat in chocolate just until mixed. Pour over crust. Bake in a preheated oven 1 hour. Turn off oven; leave cheesecake in oven 55 to 60 min or until top jiggles slightly when gently shaken. Using a knife, go around rim of pan to release cheesecake, but leave in pan. Cool on a rack 2 hours. Refrigerate at least 4 hours, but preferably overnight.

Rhubarb Sauce: Place rhubarb, sugar, and water in a medium saucepan. Bring to a boil; simmer gently, uncovered, stirring occasionally 5 min until sauce-like in consistency but some pieces remain. Refrigerate until ready to serve. Serve wedges of cheesecake with rhubarb sauce spooned over top.

Tips

For easy slicing, dip sharp knife into hot water, dry well then slice.

Source: www.dairygoodness.ca

DAIRY MONTH RECIPE

Deliciously Different Butters for Veggies



Lime Coriander Butter
½ cup (125 ml) butter, softened
2 Tbsp (30 ml) fresh coriander, chopped
½ tsp (2 ml) grated lime rind
1 Tbsp (15 ml) lime juice
2 tsp (10 ml) red bell pepper, finely chopped

Maple Pecan Butter
½ cup (125 ml) butter, softened
⅓ cup (80 ml) maple syrup
¼ cup (50 ml) toasted pecans, chopped

Spicy Cheddar Butter
¾ cup (180 ml) Canadian cheddar cheese, finely shredded
½ cup (125 ml) butter, softened
1 Tbsp (15 ml) pickled hot pepper rings, chopped
Hot pepper sauce

Preparation

Lime Coriander Butter: Beat together butter, coriander, lime rind, lime juice and red pepper. Add salt and pepper to taste. Let stand 1 hour to blend flavours. *Makes ⅔ cup (160 ml).*

Maple-Pecan Butter:
Beat together butter, maple syrup and pecans. Add salt and pepper to taste. Let stand 1 hour to blend flavours. *Makes 1 cup (250 ml).*

Spicy Cheddar Butter: Beat together Canadian cheddar cheese, butter and hot peppers. Add hot pepper sauce to taste. Let stand 1 hour to blend flavours. *Makes ¾ cup (180 ml).*

Source: www.dairygoodness.ca

DAIRY MONTH RECIPE

Caribbean Cooler



Ingredients
1 cup (250 ml) cold milk
½ medium ripe banana, peeled, quartered
¼ cup (60 ml) frozen orange, banana and pineapple juice concentrate

Preparation
Place milk, banana and juice concentrate in blender container. Cover and blend at high speed until smooth.

Yields 1 serving

Source: www.dairygoodness.ca

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DAIRY MONTH RECIPE

Strawberry Rhubarb Cobbler



Ingredients
2 cups (500 ml) fresh strawberries, sliced
3 ½ cups (875 ml) fresh or frozen rhubarb, cut into 1-inch (2.5 cm) chunks
2 Tbsp (30 ml) lemon juice
⅔ cup (160 ml) sugar
1 Tbsp (15 ml) butter, cut into bits

Topping:
1 ⅓ cups (330 ml) all-purpose flour
2 tsp (10 ml) baking powder
3 Tbsp (45 ml) brown sugar
1 tsp (5 ml) grated lemon rind
3 Tbsp (45 ml) quick-cooking rolled oats
3 Tbsp (45 ml) chopped walnuts, toasted
1 tsp (5 ml) ground cinnamon
⅓ cup (80 ml) butter, cut into bits
1 cup (250 ml) milk
2 Tbsp (30 ml) icing sugar

Preparation
Preheat oven to 400 °F (200 °C). Butter a 9-inch square (23 cm) baking dish. Combine strawberries, rhubarb, lemon juice, sugar and butter. Place in bottom of pan.

Topping:
Combine flour with baking powder, sugar, lemon rind, rolled oats, nuts and cinnamon. Cut in butter until it is in tiny bits. Sprinkle mixture with milk. Stir together just until a heavy batter is formed. Drop batter by spoonfuls over top of the rhubarb. Bake 35 to 40 min. Allow to cool before serving. Sprinkle with icing sugar.

Yields 4 servngs. *Source: www.dairygoodness.ca*

DAIRY MONTH RECIPE

Spinach & Roasted Red Pepper Crustless Quiche



Ingredients
1 Tbsp (15 ml) dry bread crumbs
1 Tbsp (15 ml) butter
2 green onions, thinly sliced
4 cups baby spinach, about ⅓ (5 oz/142 g) pkg
¼ cup (60 ml) bite-size strips roasted red pepper
2 cups (500 ml) 2% or homogenized milk
4 eggs
1 Tbsp (15 ml) cornstarch
½ tsp (2 ml) salt
½ tsp (2 ml) dried oregano leaves
Freshly ground pepper
¾ cup (175 ml) crumbled Feta, well drained, about ¼ (400 g) container

Preparation
Preheat oven to 350°F (180°C). Butter a 10-inch (25 cm) pie plate or baking dish; dust bottom and sides with bread crumbs. Place pie plate on baking tray. Melt butter in a large frying pan over medium heat. Add green onions; cook 1 min. Add spinach; stir until very wilted, 2 min. Spoon spinach mixture into prepared dish. Place pepper strips in paper towel and squeeze dry. Scatter over spinach.
In a large bowl, whisk milk with eggs, cornstarch, salt, oregano and pepper until well blended. Pour over spinach mixture. Arrange feta over top (it will sink a bit).
Bake about 35 min or until egg mixture is just set in centre. Remove from oven; let stand 15 min. To serve, cut into wedges (like pie, the first wedge may not be perfect).

Source: www.dairygoodness.ca

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