

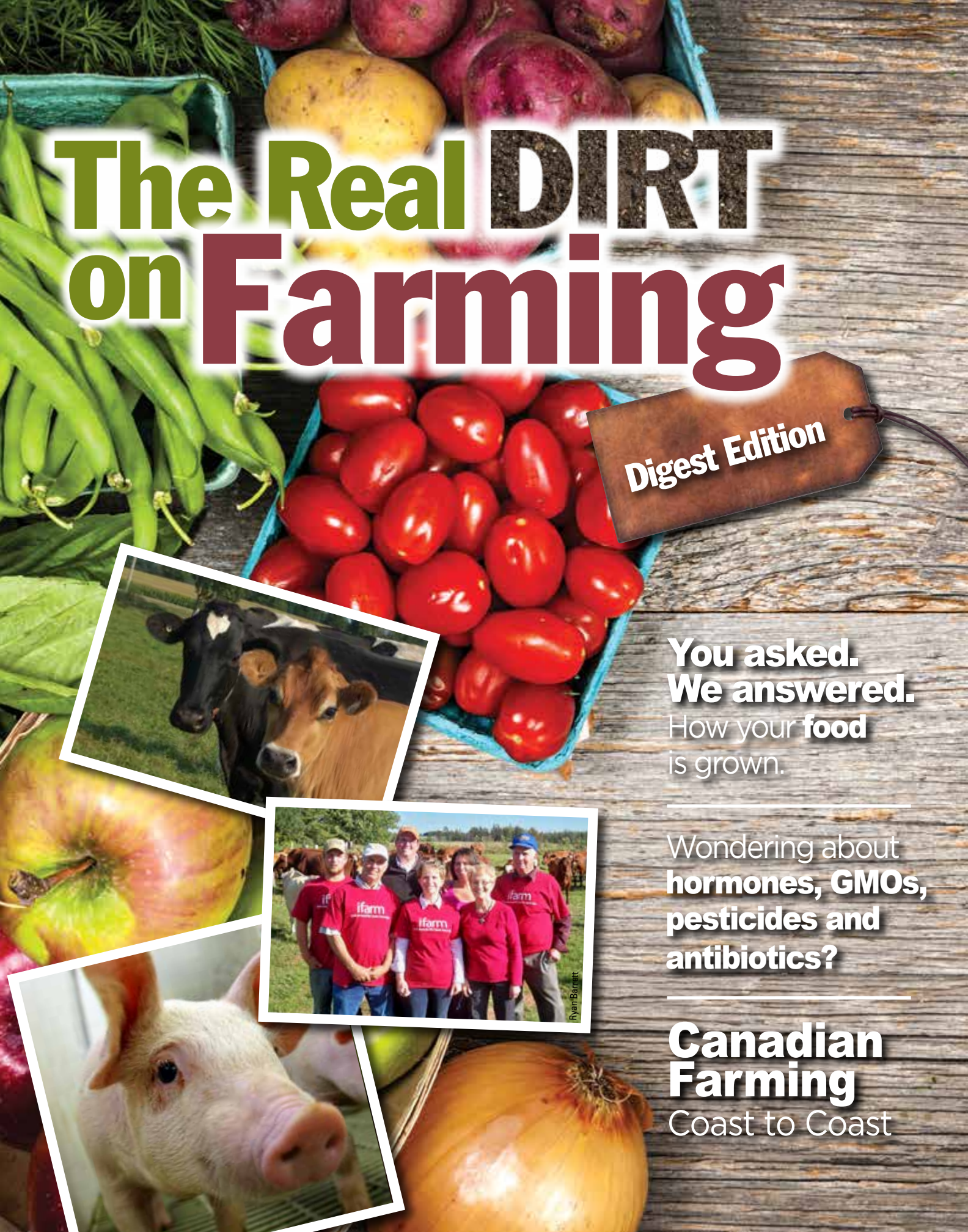
The Real **DIRT** on **Farming**

Digest Edition

**You asked.
We answered.**
How your **food**
is grown.

Wondering about
**hormones, GMOs,
pesticides and
antibiotics?**

**Canadian
Farming**
Coast to Coast



Know your farmers. Know your food.



Krystle VanRoboys

We all eat, yet how many of us think about where our food actually comes from, what is in it and who produces it?

One hundred years ago, when over half of Canada's population farmed, there was no need for a publication to explain the ins and outs of farming. Today, however, less than two per cent of Canadians are farmers. In 1931, one in three Canadians lived on a farm; today, it's only one in 50 – so it's no wonder that so many people want to know more about food and farming.

We asked 1,200 Canadians what they would like to know about food and farming and went to fellow farmers and experts in the field to find the answers and real Canadian examples. We hope to answer your questions and address your concerns, as well as debunk some myths about food and farming. We also hope to wow and impress you with some of the incredible things happening in agriculture and food today – and in doing so, reconnect you with your food and the people who produce it for you.

It all begins on the farm and ends with the incredible food choices we enjoy in Canada, with so many good people and stories in the middle. Although our farms may look different today, we still work hard and have the same values, care and commitment to our animals and the land as the generations who farmed before us.

We're Canada's farmers and we're proud of what we do. This book is a good start for connecting with us and providing some facts on food and farming. Our goal is to help you make informed food choices, whatever they may be. Let's keep the conversation going, online and in person, anytime. Get to know us – after all, to know us is to know your food.

Yours in food and farming,
Canada's Farmers



Milton Young



Tiffany Mayer



Alberta Milk



Rose Hill



Marsha Shoeman



Farm Animal Council of Saskatchewan

Canadian farming - the big picture

What pops into your mind when you hear the word "farmer"? On the surface, today's farmers – and their farms – have little in common with the images of Old McDonald that you may remember from childhood story books.

HERE'S A LOOK AT WHO IS REALLY FARMING IN CANADA TODAY:

- There's no such thing as a "typical" Canadian farm. They're different sizes and types, but they all share a commitment to caring for their land and animals, 365 days a year.
- In 1900, one farmer produced enough food for 10 people and 50 cents of every dollar Canadians earned was spent on food. Today, that same farmer can feed well over 120 people, and we spend just over 10 cents of every dollar on food.
- Like all of us, "we have an app for that"! Farmers today have many tools and technologies to enable us grow more food to feed more people. We can check the temperature in our barns on a smartphone, while satellite-controlled Global Positioning Systems (GPS) on tractors and other equipment help ensure fertilizers and crop protection products are applied in the right amount to the right places.
- Less than two per cent of Canadians feed the other 98 per cent as well as helping to feed people right around the world. And we do it on less land and using fewer resources than before.
- Farming is different in each Canadian province. For example, Prince Edward Island has 1,495 farms that produce mostly dairy, fruits and vegetables (like potatoes) whereas Alberta has 43,234 farms that mostly raise beef and grow grains and oilseeds crops.
- The average age of a Canadian farmer is 54. More than 70 per cent are men, and just under half of Canada's farmers also have a job off the farm to earn additional income for their families. More than half of all farmers have some form of post-secondary education.



"For me it's about living the great life that you can on a farm with fresh dirt and hard work....It's the smell, the sound, the feeling you get when you're out there. It's very fulfilling."

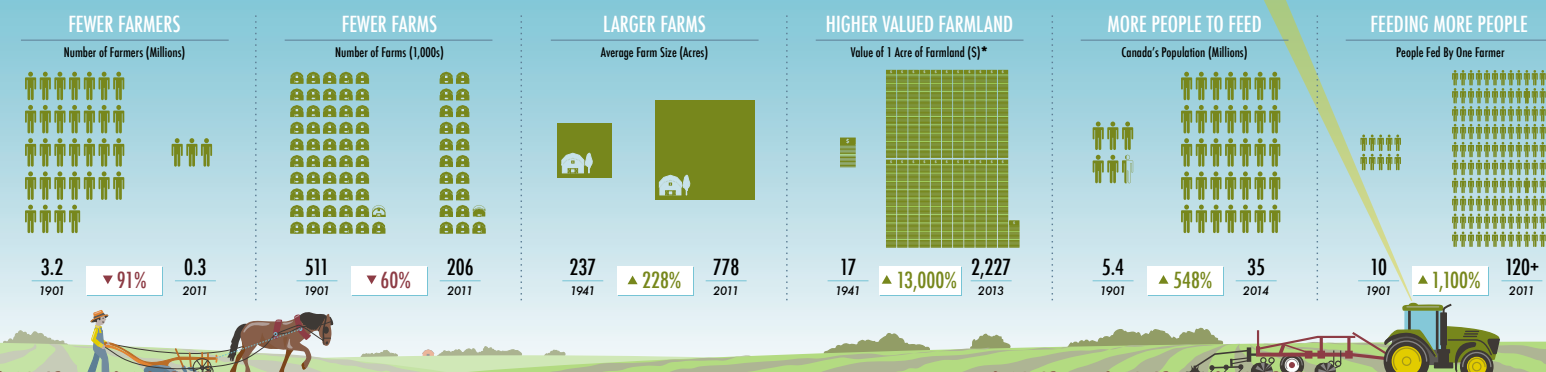
Doug Chorney, a third generation Manitoba fruit and vegetable farmer



...that big corporations have **not** taken over Canadian farms? More than 97 per cent of Canadian farms today are still family-owned and operated, and many are handed down from generation to generation.

MORE THAN A CENTURY OF CHANGES TO CANADIAN FARMING

Over the past 110 years, there have been big changes in farming in Canada. Today, a decreasing number of farmers are working on fewer, larger farms to produce more food for a growing Canadian population.



Here are the top things Canadians asked about food and farming.

What grabs the headlines about food and farming? Usually it's bad news, and it often doesn't tell the whole story. Let us answer a few of the big questions we're commonly asked and give you the real 'Dirt' on food and farming in Canada.



Dwane Morik

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Farm animals 101

In Canada, thousands of farmers care for a wide variety of farm animals everyday. Whether it's helping a cow give birth to its calf in the middle of the night or checking on the chickens before we open presents on Christmas morning, caring for animals has been at the core of what farmers do every day for generations. Animals depend on us for everything – and that's a responsibility we take very seriously. Farmers and ranchers choose to work with animals because we enjoy it. Caring for animals properly is simply a matter of doing the right thing but it also makes good business sense. Content, healthy animals are more productive animals and lead to higher quality food products.

Here's a quick tour of farm animal real estate and the rules for raising livestock and poultry in Canada.

WHY ARE MOST FARM ANIMALS RAISED INDOORS IN CANADA? PROTECTION!

- Barns protect livestock from extreme weather and temperatures (hot and cold), diseases like avian influenza, and predators like wolves and coyotes.
- It's also easier to ensure each animal gets the right food, clean water, and general care.
- Animal housing is about animal needs, which can be quite different from human needs, and every animal is different. For example, laying hens are descended from jungle fowl that live in small groups under tree roots. This means it is natural for hens to want to live closely together with other birds and in smaller, enclosed spaces. And, given the choice of staying indoors or heading out to pasture, dairy cows often opt for the comfort of well-ventilated barns in warmer weather.
- We're constantly investing in new welfare research to help the animals tell us what's best. There are many people with full time careers in farm animal care. Many researchers and other specialists dedicate their lives to improving animal care.
- It's our priority to provide the best environment we can for the animals in our care, balancing animal needs and safe food with environmental and economic realities.

WHAT ARE THE RULES FOR RAISING FARM ANIMALS?

- Farmers, like all animal owners, must follow laws for humane treatment - including those in the federal Criminal Code. Neglect and abuse of animals of any kind is against the law, and most farmers do a great job looking after livestock and poultry. Sometimes, however, there are situations where that isn't the case, and that's not acceptable. Undercover footage of farm animal cruelty is disturbing for anyone who cares about animals.
- We also have the "Codes of Practice for the Care and Handling of Farm Animals" to help us; they were developed by animal scientists, government, veterinarians, farmers and the Canadian Federation of Humane Societies. You can learn more at www.nfacc.ca. The Codes spell out what's appropriate when it comes to housing and handling facilities, food and water, management, health, transportation, good animal husbandry or stockmanship and euthanasia.



“We're proud of our family-run farm and the care we put into producing healthy, nutritious milk.”

Jason, Brad and Trevor Kornelius, dairy farmers from Saskatchewan

1 Let's talk plants and crops

Canadian farms provide a diverse range of plants and crops for domestic and international markets. There are literally hundreds of crops being grown in fields and greenhouses across the country – from more traditional crops like corn, wheat and soybeans to pulses, fruits and vegetables, flowers and specialty crops. Here are a few cool facts:

- Canada is the world's largest exporter of pulses. The eight major pulse and specialty crops are: peas, lentils, beans, chickpeas, mustard, sunflowers, canary seed and buckwheat.
- Canada is a world leader in the production and export of mustard and Saskatchewan is responsible for 75% of the country's production. In fact, more than one quarter of world mustard exports in 2014 originated in Saskatchewan.
- Canola was developed in the 1970s by Canadian plant scientists and is now the oil of choice for millions around the world.
- Canada's principal grain and oilseed crops are corn, wheat, soybeans and canola.
- Over 125 different fruit and vegetable crops are grown in Canada from coast to coast. This includes apples, pears, peaches, cherries, cranberries, blueberries, grapes, ginseng, garlic, onions, carrots, peppers, asparagus, potatoes, cauliflower, cabbage, broccoli and so much more.
- New Canadian immigrants are actively looking for produce that they are familiar with from their native countries, so some farmers have begun growing crops that are not traditional in Canada – crops like bok choy, nappa, okra, Indian and Asian eggplant, hard long beans and more.



PEI Potato Board

PEI potato farmers Peter and Becky Townsend

Quick fact:

Canada produces about 10 billion pounds of potatoes per year. PEI is the largest producer of potatoes, producing approx. 2.5 billion pounds of potatoes in 2013.



A field of mustard in Saskatchewan
SK Mustard Growers Association



SEE FARMS FOR YOURSELF

If you really want to know about how Canada's farm animals are treated and raised, ask questions, talk to real farmers at fall fairs, farmers' markets and other events, or visit www.virtualfarmtours.ca. That's the best way to discover what Canadian farms are really like. Farmers are as shocked and outraged as everyone else when examples of animal cruelty are brought forward. We want to work with people who are committed to make a difference for how animals are cared for.



3 Farmers: the active environmentalists

Canada is a world leader in farm environmental programs. As farmers, we live where we work and we depend on healthy soil, water and air to grow crops and raise livestock. We've come a long way from the "good old days" – here are some of the things we're doing to help the environment:



"I have to look after the land so my children can run an even better farm than I have."

Curtis McRae, Manitoba canola farmer

- We rotate crops. Because different pests attack different crops, we plant different crops in the same field every year to help control them. This also keeps nutrients in the soil as different types of crops need different nutrients to grow.
- We've stopped plowing as much. Not working the ground as often keeps soil healthy and prevents erosion. We're now using a "no-till" or "conservation tillage" method: stubble and other leftovers from the previous crop are left on the field and seeds are planted directly into the soil. More than half of all farm land in Canada is now cultivated using no-till practices, which means lower levels of greenhouse gas emissions since there is less time, labour and fuel spent preparing a field for planting.
- We spend money on improvements. In all Canadian provinces, the "Environmental Farm Plan" is helping farmers evaluate farms for environmental concerns and set goals and timelines for improvement. In Ontario, for example, farmers have invested over \$600 million in on-farm environmental improvements in the last 20 years.
- We use good bugs to fight bad ones. "Integrated Pest Management" is a method that lets us work together with nature to monitor and control pests by combining different tactics, whether they're mechanical (tillage), cultural (good bugs) or chemical (pesticides).



4 Why do farmers use pesticides?

Pests are called pests for a reason – because they will eat our food and destroy our crops. Pesticides in appropriate and approved quantities, used together with other methods of crop protection, have helped us grow more and better quality food – namely fruits, vegetables and field crops. Being able to protect plants against pests, diseases and invasive weeds reduces the risks of food shortages due to crop failures which also helps keep food prices affordable.

Farmers take pesticide use seriously, too. We live where we work and eat the food we produce, so making sure we're using products responsibly is very important to us and our families.



- Canada's pesticide safety standards are among the strictest in the world. Health Canada's Pest Management Regulatory Agency regulates pesticides in Canada.
- Modern lab equipment and testing methods are so advanced that we can now find parts per billion (really, really small quantities). FYI – a part per billion is about the same as one second in 32 years!
- The Canadian Food Inspection Agency (CFIA) monitors fruits and vegetables for pesticide residues. In the last 10 years, 99.6 per cent of fresh fruits and vegetables met Canadian standards for residues.
- It can take more than 10 years of strict, independent scientific review for a new pesticide to be approved and considered safe.



...each year an environmental group from the United States publishes a "dirty dozen list" of fruits and vegetables it claims contain high pesticide residue levels? Scientists at the University of California-Davis and elsewhere, however, have debunked this myth.

5 What is biotechnology or GMO?

For some people, scientific progress can be intimidating. Thanks to sensational media headlines and clever social media campaigns, terms like biotechnology, GM or GMO and genetic engineering can strike fear – but what do they really mean?

- GMOs (genetically modified organisms) are plants or animals with specific genes added or removed which influence their natural processes to produce more and better food. This science is called biotechnology.
- GMO plants can be resistant to certain pests or diseases, so farmers need fewer pesticides, labour and fuel to manage infestations and grow a healthy crop.
- Foods made from GMO crops are nutritionally and chemically identical to foods from non-GMO crops, and more than 2,000 scientific studies have found GMOs are safe.
- Plant biotechnology can have human health benefits too. Here's a sampling of some of the developments under way: nuts without allergenic proteins; tobacco plants to fight Crohn's disease; or tomatoes with more lycopene, a cancer-fighting antioxidant.

Quick fact:

If Canadian farmers stopped using pesticides and GMOs, we'd need another Saskatchewan - 37 million more acres to grow the same amount of food we do today!



6 Let's talk about antibiotic use

Keeping animals healthy is a top priority for farmers and veterinarians. Not only can a serious health problem cause suffering to livestock and poultry, it can also wipe out a farm's – or even a whole industry's – animals. Prevention, through the use of vaccines, is always preferred over treatment. Think of your own pet. You feed it the right foods and take it to the vet to keep it healthy. Farmers want their animals to be healthy too. Good housing, hygiene, nutrition and biosecurity are all common strategies farmers use to maintain and improve their animals' health.

- Antibiotics, like all medicines administered on farms, are used as little as possible, but as much as is necessary to ensure animal health and welfare. We use them to treat or prevent illness and control the spread of disease.
- Canadian meat is free of drug residues – that's according to the Canadian Food Inspection Agency, which monitors this.
- Resistance is a concern for everyone. It's a complex topic and critically important research is ongoing in both human and animal medicine.



"Raising healthy chickens in a humane way is as important to farmers like us as it is to you."

Chris and Nella Kloot, chicken farmers from British Columbia

7 What about hormones?



The very word 'hormones' conjures up a lot of concern for many people. Hormones occur naturally in people, plants and animals. Here are some important facts and examples for you to consider:

- No pigs, chickens, turkeys or egg-laying hens in Canada are fed hormones. That's been illegal for decades. And they're not used in milk production either.
- There is no such thing as hormone-free beef; all animals produce hormones naturally, regardless of how they are raised.
- Some beef farmers use Health Canada-approved hormones in their cattle to help them convert feed into muscle (lean meat) more easily and quickly – meaning less feed and water used, and less manure produced.
- Hormone levels in beef from cattle treated with hormones are virtually the same as beef from untreated cattle.



Cows and their calves on pasture

8 What's being done to keep our food safe?



Cucumber grower Jamie Cornies of Ontario



- As farmers, we take our commitment to providing safe food very seriously. Remember, our families eat this food too!
- On-farm food safety programs help us identify critical points where food safety could be at risk, like when a new animal comes on-farm or when fresh produce is packed into containers. These same principles are also applied throughout the food chain, including mills that prepare animal feed, food processing facilities and even at your local grocery store.
- Participating in these programs means we evaluate what we do on our farms and keep records of it – and then have those records, and our farms, verified by an independent auditor.
- Thanks to modern technology and record-keeping, it's possible to trace exactly what went into raising an animal or growing a crop from the farm to the grocery store. For example:
 - Milk is identified and sampled from every farm before it is picked up by the milk truck.
 - Electronic ID tags identify all dairy and beef cattle in Canada; the tags link to information about each animal, such as birth date, farm of origin and identification numbers.
 - A unique number on potato bags can be used to determine when and where the potatoes were grown and shipped to market. The same goes for greenhouse vegetables. They can be traced back to the very row in the greenhouse that they were picked from.

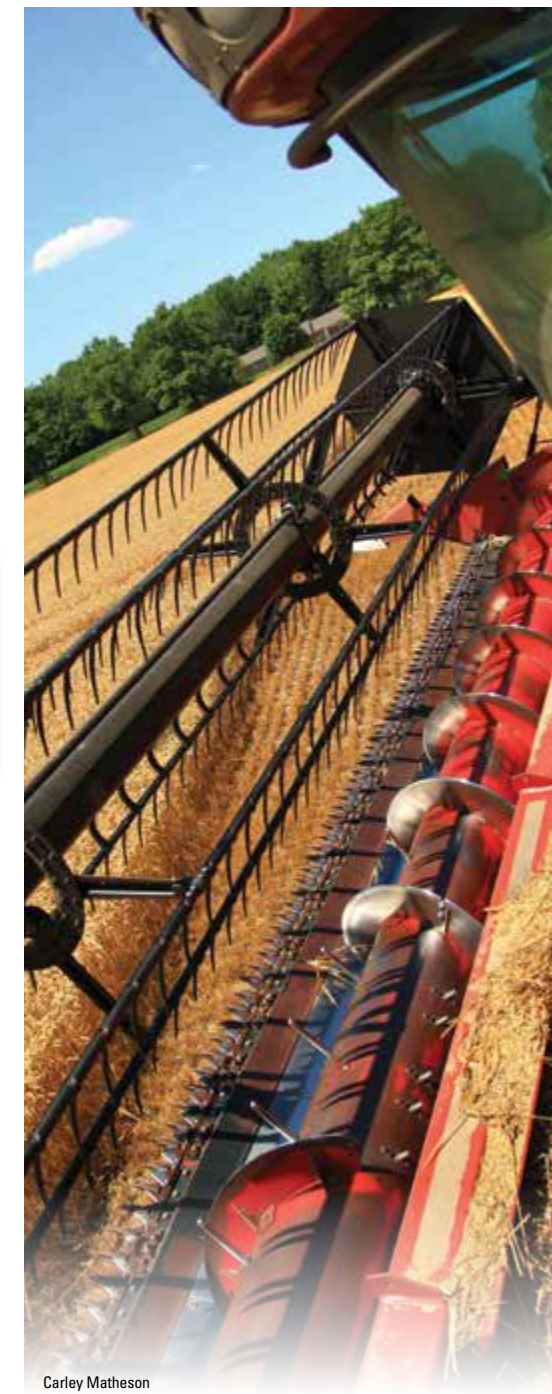
9 What does organic mean?

We're lucky to live in a country like Canada where we have a wide variety of food available to us – and there has generally been plenty of it. What this means is that we have a wide choice when it comes to the kinds of foods we can buy, and we have the freedom and opportunity to support different types of farming or production systems, like organic. Generally speaking, foods sold as organic are those grown or produced without the use of synthetic (or man-made) fertilizers and pesticides, genetically modified organisms, growth hormones or medications like antibiotics.

- To be labeled and marketed as certified organic, food must be produced by farmers who are certified as organic producers under Canada's Organic Products Regulations which made the Canadian Organic Standard mandatory. Products sold internationally or exported to other Canadian provinces must adhere to this national standard and organic farmers must renew their certification every year.
- Organic farming isn't easy and has its own unique challenges. Farmers need to have a lot of information, available skilled labour and time to grow crops or raise livestock organically. Yields often tend to be lower or less reliable and the work of organic growing is more labour-intensive than with non-organic techniques.
- There is no evidence that organically produced food is healthier or safer than food that isn't certified organic.



...that in Canada we mark Food Freedom Day in early February? This is the calendar date when the average Canadian has earned enough income to pay his or her individual grocery bill for the whole year. Canadians enjoy one of the lowest-cost "food baskets" in the world, spending only about \$0.10 of every dollar on food – compared to almost \$0.25 in Mexico and approximately \$0.31 in Russia.



Carley Matheson

10 What does sustainable farming mean?



Farming sustainably means taking into consideration all five principles of sustainable food: food safety, human health, economics and food affordability, environment and animal welfare. All are important and must be given fair and practical consideration in balance. For example, if a farmer is considering converting an egg barn from conventional cages for his or her hens to a free run (cage free) barn, all five principles should come into play: the health and safety of the people who work in the barn; the safety and quality of the eggs; the health and welfare of the birds; the environmental footprint of the new barn; the economic viability of the farm and supply chain, and of course, the cost of the eggs to you and your family.



...about 30 per cent of Canada's farm land is too hilly, rocky, cold or wet to grow crops – but it's ideal to support grazing livestock like cattle and sheep. Animals convert grasses and otherwise indigestible plant matter into nutrient and protein rich food, while returning organic matter (manure) to the soil. It's the original recycling program.

- Many farmers choose practices such as planting native grasses, moving their livestock from pasture to pasture - we call this rotational grazing - and establishing buffer zones around water bodies to help sustain wildlife populations and promote biodiversity. And some species, such as grassland birds like the Bobolink or Eastern Meadowlark, rely on areas with tall grasses to nest. If farmers stopped planting and maintaining grass crops, small shrubs and trees start to take over and those types of birds lose their habitats.



YOU WERE ASKING ABOUT... BEE HEALTH

Bees are important pollinators of plants and they are vital to all segments of agriculture and food. In recent years higher than normal bee deaths have been reported in areas of Europe, Canada and the United States. This is a complex issue and experts from around the world are examining many factors impacting bee colony health. Unfortunately, there are no easy answers.

Beekeepers routinely lose a percentage of their bees each winter, depending on a number of factors including how cold it gets and how long winter lasts. Researchers around the world are currently working to figure out why bee populations are growing in some areas while death rates are higher in others.



Curtis Matwishyn



Curtis Matwishyn

Food, farming and the future

As farmers, we can look back to the days when we bought farm animals based on looks or applied fertilizer to our crops using only a best guess as to how much was needed.

Today, new technology has changed and continues to change what we do on our farms. And we need all of that and more to meet our biggest challenge ever: feeding a world population expected to reach nine billion by 2050 AND dealing with a changing climate.

Yes, the world's population is growing by 75 million people every year (that's like adding cities the size of Ottawa and Vancouver every week!) and hunger is still an unfortunate reality for many.

SEVENTY PER CENT OF THE WORLD'S POPULATION WILL LIVE IN URBAN CENTRES BY 2050. TO FEED THEM, WE'LL NEED:

- 70 per cent more food
- Almost a billion tonnes more grain produced every year
- An additional 200 million tonnes of meat produced annually

We know we're going to have to work hard to meet this challenge. While much has changed, our commitment to safe food, caring for our animals and sustainable farming practices hasn't wavered. By purchasing our products and being interested in what we do, you are supporting Canadian farmers.

For this we say thank you.

New Brunswick maple syrup producers
Gérald Turcotte and Lyse Fortin



Shawn and Rose Harman are third generation egg farmers from Saskatchewan



Want to learn more?

This booklet only scratches the surface of everything involved in Canadian farming and food production, and we invite you to discover more.

If you want to know more about how Canada's farm animals are raised or how crops are grown, we encourage you to have your questions answered by talking to farmers at fall fairs, farmers' markets and other events. You can also visit www.virtualfarmtours.ca where real farm families tour you around their farms and give you the real dirt on what they do.



...many farmers today are also active on Twitter and other social media sites? That means it's easier than ever to have your questions answered by someone who works with farm animals or grows crops every day! Try searching popular farming hashtags like #ontag (for stories about Ontario agriculture) #westcdnag (for stories about agriculture in Western Canada) #CdnAg for cross-country stories or following @farmfoodcare.



And if you'd like to read the full version of *The Real Dirt on Farming* booklet in English or French, visit www.RealDirtonFarming.ca



Farm & Food Care cultivates appreciation for food and farming in Canada by connecting farm gates to our dinner plates. Farm & Food Care is a coalition of farmers and associated businesses proactively working together with a commitment to provide credible information and strengthen sustainable food and farming for the future.

www.FarmFoodCare.org www.RealDirtonFarming.ca

Enter to Win: Visit www.RealDirtonFarming.ca/Contests for your chance to win one of 10 Canadian food and farming prize packs valued at \$250 or to read the entire *Real Dirt on Farming* booklet.

Manitoba Canola Growers Association



Kathie MacDonald



PEI Federation of Agriculture