

World Society for the Protection of Animals

WHAT'S ON YOUR PLATE?

The Hidden Costs of Industrial Animal Agriculture in Canada



WSPA

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Executive Summary

About the Project

In the fall of 2010, with a generous donation from Canadians for the Ethical Treatment of Food Animals (CETFA), the World Society for the Protection of Animals (WSPA) commissioned a multidisciplinary review of the wide-ranging impacts of Canada's animal agricultural practices. Inspired by the Pew Commission's Report on Industrial Farm Animal Production (www.ncifap.org) in the United States, we invited a diverse team of contributors, recognized in their respective fields, to provide their assessment of the problems in Canada, based on their research and experiences. The contributors were also asked to collaborate with others in their field to develop policy recommendations. The report was then reviewed by an exemplary panel of experts to provide feedback and strengthen. The result is the first comprehensive Canadian examination of the impacts of industrial animal agriculture on animal welfare, the environment, public health and rural communities and solutions for addressing them. We hope it will be used to stimulate and promote a public policy discussion about the changes necessary to encourage a widespread transition to a more humane and sustainable food system in Canada.

Introduction

The most dramatic changes in the history of animal agriculture took place during the 20th century as extensive pastoral farming systems, made up of small and medium-sized farms were replaced with large, intensive systems, commonly referred to as Intensive Livestock Operations (ILOs). Traditionally, smaller numbers of animals were raised in environments they were more biologically suited for. They were often raised with other species and alongside diverse crops on family-owned and controlled farms. Most were what we would today call 'free-range.' Now, significantly more animals are being raised on fewer farms which are increasingly owned and controlled by a few large corporations. Since 1956, the number of farms in Canada has decreased by 60 percent, while the average farm size has increased by 141 percent. Around 700 million animals are now raised for food every year in Canada – that's 21 times greater than the human population. A drive through the countryside may not provide evidence of this, as most farm animals remain hidden from view.

Industrial animal agriculture uses intensive 'production line' methods to produce greater volumes of meat, dairy and eggs as quickly and as cheaply as possible. It is characterized by high stocking densities and/or close confinement, forced growth rates, high mechanization and low labour requirements. While this system has resulted in a remarkable increase in food production, it comes at great expense to animal welfare, environmental sustainability, human health and rural communities.

The costs of this industrial system are substantial and growing and, like farm animals, they remain largely hidden. The result is a misleading picture of the true costs associated with the production and consumption of intensively produced meat, dairy and eggs. What consumers don't pay for upfront, will be paid for later in terms of escalating health care costs, environmental remediation, and the cost of depleted water and energy resources.

Public Health

ILOs are associated with a diverse array of health problems in surrounding communities through odour, air and water pollution. The crowded and stressful conditions under which animals are housed contributes greatly to the spread of diseases transmissible to other animals and even humans by encouraging the propagation, redistribution, transmission and spread of pathogens. Overcrowding, poor hygiene, inadequate ventilation and stress greatly impact the animals' ability to resist infection. These conditions have led to the routine use of antibiotics which in turn has contributed to the development of antibiotic resistant bacteria, rendering important human and veterinary drugs ineffective.

Food-borne Illness

An estimated 11 to 13 million Canadians suffer from food-borne infections every year costing our health care system between 12 and 14 billion dollars. More than 7,000 Canadians suffered from Salmonellosis in just one year. Canadians learned during the Listeriosis outbreak of 2008 that food-borne bacteria can prove fatal. What's perhaps not as clear, as Dr. Pip points out, is that "contamination with *Listeria monocytogenes*...is widespread in manure as well as dairy products and cooked and raw meat products sold in Canada." The crowded and unsanitary conditions that many animals are raised in can no longer be ignored in our quest to improve food safety. As Pip explains, these 'standard' practices "must undergo a drastic overhaul, and contamination risks to drinking water supplies must be more stringently monitored and enforced."

Spreading Pathogens and Disease

The majority of all human infectious diseases come from animals. More than 500 different pathogens (viruses, bacteria, parasites etc.) can be transmitted from animals to humans through the consumption of meat and animal by-products, contact with live animals (bites, cuts and scratches), dust inhalation, exposure to manure, contaminated clothing and equipment, transport routes and vehicles, meat-packing plant waste and contaminated water and soil. As Pip warns, many of these pathogens can stay on the farm and in our environment for long periods of time, "creating endemics in animal herds and poultry flocks, and also endangering farm workers, neighbours and wildlife."

The spread of animal viruses to humans is a serious public health concern as they can mutate at rapid rates and recombine to yield highly infectious human strains. As Pip explains, "ILOs facilitate large-scale viral incubation and genetic reassortment that may lead to new varieties of influenza and initiate human flu pandemics." Avian Flu was likely transmitted from poultry, to pigs and then to humans. There have been numerous cases of Swine Flu infecting people living near hog farms as well as the workers and veterinarians.

Farm Workers at Risk

The people most at risk are the farm workers who Pip says spend much of the day in a closed environment, with limited air circulation, exposed to a high concentration of dust, harmful gases (from the manure), harsh chemicals (to kill pests and sanitize) as well as urine, feces and other pathogen vectors. Exposure to pathogens increase when sick animals are not identified and

segregated, when dying animals are not promptly removed and when facilities and equipment are not thoroughly cleaned. These risks are heightened on industrial farms where with “fewer workers than on traditional farms, sick and dying animals may be easily overlooked in the crowded and dark, confined conditions.”

Dangerous Feed

The sheer number of animals that are slaughtered for food every year in Canada poses a significant health risk as it necessitates the disposal of an increasing volume of animal parts, deemed unsuitable for human consumption, that are rendered for livestock feed. As Khachatourians, Korber and Lawrence explain, this results “in the inevitable inclusion of overlooked animals of questionable health” including “animals that have been sent to market before symptoms have become evident, or obviously distressed animals (downers)...”

The health risks are perhaps most exemplified by Mad Cow disease caused by bovine spongiform encephalopathy (BSE). The fatal disease is believed to be caused by feeding herbivorous cattle, the remains of infected cattle – particularly brain and spinal cord materials, which have been deemed ‘specified risk material’ (SRM). A number of animal rendering by-products, including gelatin and blood meal may also harbour BSE, which remains infective despite standard processing methods. Consuming the meat of BSE-infected animals causes new variant Creutzfeldt-Jacob disease (nvCJD) in humans.

Farm animals in some countries are routinely fed manure and litter from poultry farms as a cost-saving measure – a practice which may be exposing animals and consumers to SRM as well as antibiotics, hormones and pathogens. Although illegal in Canada, some producers continue with the custom and risk prosecution.

Untreated Manure Disposal

Raw, untreated livestock waste is commonly applied directly on farmland and used as a fertilizer to grow the food we eat. According to Environment Canada, farm animals produced 177 million tonnes of manure in 2001. It would take about 2.4 billion people to produce the same amount of human waste. To make matters worse, manure disposal methods are poorly monitored and documented and when they are, they seldom follow standardized practices or comply with regulations. The associated health risks are best exemplified by the Walkerton tragedy. In 2000, seven people died and more than 2,300 became severely ill in the small Ontario town when their drinking water was contaminated with *E. coli* 0157:H7. The source of this highly dangerous bacteria strain was cattle manure.

The increasing number and expansion of ILOs in close proximity to each other means that much of the manure produced needs to be transported longer distances for disposal. To cut down on transport costs, manure is often over-applied in local areas or illegally dumped in ditches and streams. Given the significant health risk, Khachatourians, Korber and Lawrence warn, “public and legislative scrutiny of ... how manure is handled and where it goes is long overdue.”

Antibiotics and Antibiotic Resistance

According to the Union of Concerned Scientists, 70 percent of antibiotics in the US are given to farm animals instead of people. While we don't know exactly how many drugs Canadian farm animals receive because the quantities are not tracked, experts say "agriculture accounts for the highest volume of antibiotic use." A Health Canada Advisory Committee found that "as much as 50 percent or greater of the volume of antibiotics produced or imported are given to farm animals and a significant portion is used to increase growth and prevent disease."

Some animals raised for food are given antibiotics to prevent and treat infectious disease and promote growth or performance. Farm animals today are routinely given low doses of antibiotics to prevent them from getting sick in the first place; a necessity given the conditions in which they are raised. Decreasing the demands placed on the animal's immune system has the added benefit of directing more energy towards weight gain. Health Canada's Advisory Committee reports that "growth promoters account for a considerable amount of the total antibiotic exposure..." and "are not used under veterinary prescription, nor to treat infections in animals." Consequently, antibiotics "are now present in many Canadian soils and surface waters at measurable concentrations," writes Khachatourians, Korber and Lawrence as "the drugs and their metabolites are excreted in animal waste and escape into the environment..."

As Khachatourians, Korber and Lawrence explain, "the primary issue is that some antibiotics used for animals are identical to those prescribed for human use" making the indiscriminate, unregulated use of antibiotics for growth promotion "most inappropriate." The continuous exposure to these drugs acts as a powerful selection force for the propagation of antibiotic resistant strains of bacteria (ABRB). The crowded conditions on ILOs further encourages the spread of these bacteria strains. The stress animals experience can also increase the levels of resistance. As a result, "multiple-drug resistant 'super bugs' are now ubiquitous in the environment at large." They are found in our groundwater – even in air samples behind animal transport trucks.

The increasing development of resistant bacteria can have serious implications for the effectiveness of human and animal medicine. It has been estimated to infect more than two million people in the US annually, causing 90,000 deaths. Physicians are forced to prescribe more expensive antibiotics or abandon treatment altogether. Only seven new antibiotics were approved between 1998 and 2004 suggesting an emerging global health risk if antibiotic resistance continues to grow without replacement drugs. It is for this reason that the European Union (EU) banned the 'growth promoting' use of antibiotics in agriculture in 2006. The Canadian Medical Association and the American Medical Associations now support a similar ban in North America.

The economic benefits farmers receive from using antibiotics are not always sufficient to offset the additional cost of the drugs. Society pays a hefty price too as the cost of drugs would nearly triple if resistance rises to endemic levels. Considering the length of time needed to develop new antibiotics, the pursuit of 'cheap' food, is not really worth the risk that life-saving antibiotics may fail.

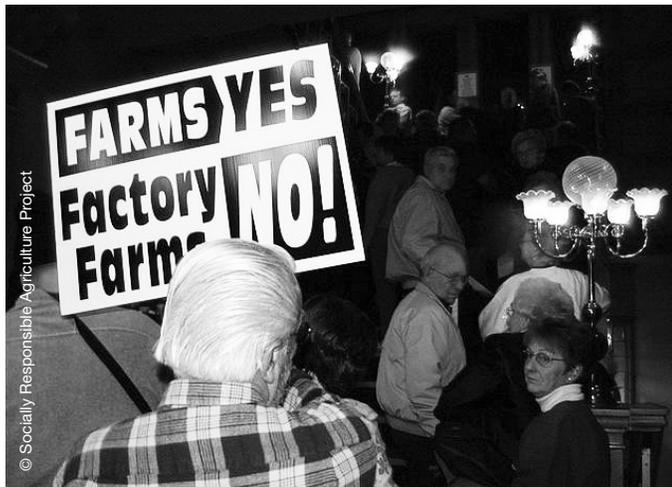
Rural Communities

ILOs were promoted by corporate and government representatives as a means to stimulate local economies, create jobs and new markets, improve social services, and lure outside investment. Instead, writes Qualman, “rural Canada witnessed the closure of meatpacking plants, the boarding-up of main street windows, a rural-youth diaspora and the destruction of family farms.” The increasing consolidation and mechanization of agricultural systems and practices has led to a hollowing out of rural communities – with capital, people and infrastructure abandoning these communities for the full service economies of larger communities.

The viability and liveability of rural communities is put in jeopardy as ILOs proliferate, especially for those families who rely on farming as their chief source of income. ILOs drain money from communities as more tax dollars are needed to address the associated health, environmental, social and traffic problems. In spite of the significant costs ILOs bring to the host community, they are typically taxed at the same rates as the traditional family farmer.

“Get Big or Get Out”: Forced to Consolidate

Winson explains how “the financial ruin of farmers held hostage by soaring debt loads and high fixed costs” facilitated the increasing trend towards ILOs throughout the 80s and 90s. The costs of farm inputs, such as machinery and drugs, increased nearly twice as fast as the price paid for farm products, creating a ‘cost-price squeeze’. As a consequence, farmers were under growing pressure to “get big or get out”. Those not forced out of business, were forced to consolidate and by the 1980s, the largest 20 percent of farms accounted for approximately 80 percent of gross annual sales. Farming today is predominately controlled by a small number of very large agricultural companies and their increased level of production has caused farm prices to crash.



- Fewer, bigger farms put rural families and communities in jeopardy, especially those relying on farming as their main source of income.

Rising Debt and Unemployment

While farm productivity has significantly multiplied over the last three decades, farm debt loads have soared by 700 percent. It is not unusual for a farm to carry a debt of about \$23 for every net dollar earned. It’s no wonder more farmers have to seek off-farm employment to supplement their income. According to a report on rural communities by the Canadian Senate Standing Committee on Agriculture and Forestry, “real net market farm income has hovered at or below zero since about 1987, with government program payments accounting for almost all of the farm sector’s realized net income over this period.”

Communities without laws to protect them from ILOs tend to have higher poverty and unemployment rates. Winson writes, “industrialized agriculture is characterized by some of the very things that pose a direct threat to traditional agricultural employment” being “capital-intensive in terms of both production and distribution, relying on technology as opposed to people.”

A typical intensive pig farm with 2,400 sows might employ 15 people but puts as many as 50 traditional farmers out of business.

Subsidies

Qualman demonstrates how ILO expansion is a ‘lose-lose-lose’ proposition for family farmers, rural communities and even the ILOs themselves. Canada’s hog production sector would not even be viable were it not for multi-million dollar taxpayer-funded subsidies. Since 1996, taxpayers have given more than \$4 billion to hog producers, with nearly three-quarters going to the largest corporations. In 2009, the largest 28 percent (with annual revenues greater than \$1 million) collected 72 percent of the support. Federal and provincial governments have facilitated the proliferation of ILOs and the size of them by steadily increasing the maximum subsidy per operation. Each operation can now receive up to \$3 million per year – triple what they could have received 13 years ago – essentially working to triple the size of the ILO. In addition, there are tax exemptions for building materials, subsidies to packers and tens of billions of dollars worth of subsidies paid to grain farmers which facilitate the production and sale of feed grains below actual costs of production. All of this demonstrates that our food system is actually very inefficient. Many ILOs would not be able to turn a profit without these subsidies.

Diminishing Quality of Life

Sumner and Ikerd explain how ILOs impact the quality of life in rural communities in three main ways: they disrupt rural life, deny democratic rights of rural people, and threaten public health in rural areas. Increased traffic problems, insect infestations and the prevalence of noxious odours can affect people’s decision on where to live, not to mention property values and has likely contributed to the decline in the number and proportion of Canadians living in rural areas.

According to Sumner and Ikerd, “ILOs frequently pit neighbours against neighbours and local officials against their constituents. The conflicts invariably strain and often rip the social fabric of rural communities. This is perhaps the most damaging and longest-lasting impact of ILOs on the quality of life in rural communities.” ILO owners employ a variety of tactics to stifle local opposition to their operations. They have eroded local democracy by fighting to get ‘right-to-farm’ legislation passed and to shift decision-making authority to the provincial government level where it is easier for them to exert their political influence. Decisions are now made by provincially appointed regulators, largely comprised of industry peers rather than by municipal or county governments with the input of local residents. This can lead to the ‘political deskilling’ of rural communities whereby individuals subsequently start losing their ability to articulate a position and organize.

Environment

Animal agriculture is one of the top three causes of the most significant environmental problems facing our planet. It contributes more greenhouse gas (GHG) emissions, uses more water, more land and is the largest threat to biodiversity than any other single human activity. The trend towards

increasing intensification is exacerbating these environmental problems, using more energy and contributing more air and water pollution to a planet that is already past its carrying capacity.

As Weis points out, “rising meat consumption has increasingly been recognized as a major, multidimensional environmental issue on a world scale” and Canada has among the highest per capita meat consumption rates. Canadians currently consume 102 kg of meat per capita per year—two-and-a-half times the global average. As citizens of other nations become richer, they aspire to eat more meat—to close ‘the meat gap.’ Per capita meat consumption in China has increased 15-fold in the past 50 years—with each citizen now consuming just under 60 kg per year. If two-thirds of our growing global population start eating meat at the Canadian rate, global meat consumption would nearly triple from current levels, and the global farmland base would have to more than double—requiring massive environmental destruction. Nothing can be clearer: globalizing Canadian levels of per-capita meat consumption is impossible. This necessarily implies that Canadian consumptions levels are too high, and must come down.

“Through most of the 10,000 year history of agriculture, small, mixed livestock populations have been part of integrated farming systems,” Weis explains. The animals scavenged for wastes, produced valuable fertilizer and foraged on land not suitable for cultivation. In contrast, animals on ILOs are removed from the landscape and now distanced from their feed, the energy sources and their waste. While this transformation has enabled standardization and mechanization to increase the ‘efficiency’ of meat production, Weis reminds us that “...these reduced economic costs are only made possible by the fact that so many environmental costs are simply not counted (or are externalized).”

Land Use, Degradation and Biodiversity Loss

One of the main reasons why meat production has become more inefficient and environmentally destructive is because we are now feeding farm animals grains (e.g. barley, maize) and oilseeds (e.g. canola, soybeans) on land that would otherwise be used to produce food directly for people. Intensive livestock production occupies one-third of the earth’s arable land, largely because of the land needed to grow animal feed.

ILOs and the feed crops they are dependant upon, are a major threat to biodiversity in Canada having reduced our Tallgrass Prairie and Carolinian Forest ecosystems to miniscule patches and destroyed the habitat for several species of wildlife. What is further troubling, roughly half of Canada’s ‘species at risk’ are found on agricultural lands.

Livestock feed is typically grown in monoculture (one-crop) systems, which accelerate soil erosion and diminish the soil ecosystem, causing a host of environmental problems. Monocultures require more fertilizer to compensate for the higher loss of nutrients, more pesticides to compensate for increased pest problems and are more water-intensive because of reduced soil moisture retention and thirstier seed varieties selected for higher yields. Excessive irrigation is a major factor contributing to the salinization of agricultural land in Canada, decreasing yields by up to 75 percent and costing farmers millions in annual income.

ILOs concentrate high volumes of manure in a small area so it must be cleaned out, transported and stored with environmental costs at each step. This contrasts markedly with traditional farming systems where smaller numbers of animals were raised on larger areas of land and

the volume of animal waste did not exceed the land's capacity to absorb it. The waste was typically collected in straw bedding and composted, killing potentially harmful pathogens, before being applied onto fields as a rich source of nutrients. What was once a valuable resource is now a source of pollution, laden with drug residues, heavy metals, pathogens and higher than beneficial concentrations of nutrients.

Animal waste today is typically spread or sprayed onto fields as a fertilizer, where there is a persistent risk it will get into the groundwater or contaminate surface water when it runs off fields. Alternatively, it may be captured in waste lagoons, where there are also high risks of water contamination as a result of leakages and spills.

Water Consumption and Pollution

Agriculture uses more water than any other human activity and roughly half of that used in industrialized countries is used to produce feed crops. ILOs also require large volumes of water for the animals to drink, to flush the wastes down gutters and to clean out the barn. To put it into perspective, 100 times more water is needed to produce 1 kg of animal protein than to produce 1 kg of plant protein.

As Weis points out, “much of the freshwater used in feed crop irrigation, running ILOs and slaughterhouses ends up very polluted.” The industrial fertilizers and manure slurry that is applied to farm fields carry concentrated nutrients (nitrogen and phosphorous) into our lakes and rivers. This stimulates the growth of algae, which depletes the water of oxygen when it decomposes, killing fish and other aquatic life. This process, known as ‘cultural eutrophication’, has been identified in water bodies surrounding industrial agriculture and has long been recognized as a major environmental problem in Canadian government reports.

Energy and Atmosphere

On a per capita basis, Canada is one of the largest GHG emitters in the world and livestock production is a major contributor to this problem. According to the United Nations Food and Agriculture Organization (FAO), animal agriculture accounts for nearly one-fifth of the world's human-caused GHG emissions. This is equivalent to releasing more than seven billion tonnes of carbon dioxide (CO₂) into the atmosphere every year. That's twice the global warming potential of all the world's cars!

The sheer rise in the livestock population means more CO₂ is emitted as the animals respire, more methane is emitted as they digest (particularly from ruminants), and the vast quantities of manure and urine they produce is contributing more nitrous oxide and methane to our fragile atmosphere.

ILOs are more energy intensive than traditional farming systems, requiring more fossil fuels to keep the barn running, manage the wastes and to produce livestock feed. High volumes of fossil fuels are used to operate large machinery, store and process the feed and manufacture and transport industrial fertilizers. Weis reports that “Canada's agricultural sector annually consumes industrial fertilizer far above world averages, and a large share of the ensuing production is destined for ILOs.” The carbon footprint increases as the distance between the different stages of production and consumption increases.

ILOs are also responsible for a range of air pollutants, including viruses, bacteria and fungal spores that can be carried in the air, affecting the health of farm workers and nearby communities. The most potent odours and gases are released from the anaerobic (oxygen-deprived) and long-term storage of manure and urine.

Animal Welfare

Traditionally, farmed animals were reared in natural environments that they were biologically suited for, and failure to respect their nature would threaten their productivity. The advent of modern industrialized methods of livestock rearing has allowed us to subvert the animals' nature. Duncan and Rollins liken this to 'putting square pegs in round holes' by subjecting animals to "environments for which they were ill-suited, yet still assure productivity and profitability."

They identify three aspects of industrial animal agriculture as having a deleterious effect on animal welfare: 1) environments that severely restrict and frustrate animals, 2) procedures that cause pain to animals, and 3) suffering caused by inappropriate genetic selection.

Environments that Severely Restrict and Frustrate Animals

The vast majority of veal produced in Canada comes from calves that have been housed in 90 cm wide crates for at least part of their lives and for many of them their entire lives. They can't walk, run, play, turn around or fully lie down to rest. They are denied bedding as well as any normal social interaction with their mothers or other calves. Milk-fed calves suffer further as a result of their diet which, in order to produce 'white veal' is deficient in iron and fibre, resulting in frustration, pathological lesions as well as behavioural abnormalities. "There can be no doubt that veal crates severely reduce welfare," conclude Duncan and Rollin.



- Uncomfortable and hungry, sows are kept in gestation stalls for most of their pregnancy. These stalls severely frustrate sows and are being phased out in Europe and in some US states.

Also problematic are the battery cages, used to house laying hens. More than 95 percent of eggs in Canada come from hens confined to barren, sloped, wire-frame cages which restrict their ability to move, turn around and spread their wings. Confined five to seven birds to a cage, they are further frustrated by being denied the opportunity to lay their eggs in a nest or perch, behaviours that studies show are very important. At the end of a laying year, many hens suffer from osteoporosis, bone weakness and broken bones, problems exacerbated due to their inability to exercise.

While pigs are typically reared in group housing, the vast majority of breeding sows are kept in gestation stalls, not much bigger than themselves, for most of their pregnancy. While they may be able to stand and lie down, the stalls are so restrictive that the sows injure themselves by changing between these two positions. They are also frustrated by being denied the opportunity to forage, wallow, build a nest, explore and interact socially with others of their kind. Sows suffer further as their food is restricted to achieve optimal reproduction success, leaving them perpetually hungry. As a result, 91.5 percent of stalled sows show signs of stereotyped behaviours such as bar biting, which Duncan and Rollin say is “generally accepted as a sign of reduced welfare.” As with laying hens, a lack of exercise leads to a decrease in bone density, putting animals at greater risk of bone fracture when transported to slaughter.

Procedures that Cause Pain to Animals

“A reasonable place to begin restoring common decency to animal agriculture,” say Duncan and Rollin, “is to end the painful mutilations” that are routinely performed without anaesthetic. For example, most piglets have their teeth clipped, tails docked and ears notched. Males are also castrated. Turkeys have their toes amputated. Beef calves are dehorned, castrated and sometimes branded, despite the fact that it has been estimated to cost the Canadian beef industry \$9.5 million annually due to hide damage. All of these procedures are painful and are regularly performed across North America without any pain relief. To reduce the problem of feather pecking and cannibalism in a modern egg barn, the vast majority of chicks have the upper portion of their beak severed with a hot blade. None of these mutilations would be necessary, the authors argue, if we weren't trying to force square pegs into round holes. More humane and sustainable farming systems and practices would negate the need for these mutilations.

Suffering Caused by Inappropriate Genetic Selection

According to Duncan and Rollin, the blame for many of these animal welfare problems can be laid at the feet of breeding strategies. Animal breeding companies have selected genetic traits for faster growth, food conversion efficiency and higher milk and egg production, creating the most ‘efficient’ production animal but at the expense of animal welfare. They cite, as an example, efforts to breed pigs to increase leanness in meat, which has led to an increased incidence of Porcine Stress Syndrome (PSS). This not only results in poor welfare but may lead to poor quality meat when pigs become stressed during slaughter. Increased incidences of more agitated and unmanageable beef cattle (known as gate crashers) have also been linked with genetic selection for rapid growth and high lean yield. Similarly there is increasing concern that very high-producing dairy cows are at greater risk of pain due to lameness and metabolic diseases. Say the authors: “When welfare problems are caused by breeding practices, then environmental solutions are likely to be limited.” Clearly, there is sufficient evidence to demonstrate the need to curtail genetic selection for even higher production. The challenge will be in persuading the primary breeding companies to select for higher welfare instead.

Conclusion

Industrial animal agriculture has given us deceptively cheap food, as it comes at a very high price to our health, rural communities, our environment and the animals themselves. It is producing drug resistant super bugs, destroying our planet's life support system and transforming the social fabric and vitality of our rural communities. This food system was built on the false premise that inexpensive feed, cheap energy and free and abundant water would be available forever, but we now know these resources are limited and need to be conserved for ourselves and for future generations. Ultimately peak oil, climate change and water depletion will change our food production and consumption practices for us, but by then it will be too late. The ramifications are serious and deserve the attention of all levels of government in Canada. Governments need to act now to address the negative impacts of industrial animal agriculture through meaningful and forward thinking policy changes. The longer we wait, the more these problems will grow, and the harder it will become to find effective and sustainable solutions.

It is clear that many farmers and rural communities have not benefited from our now dominant system of livestock production. There is an urgent need, as Blay-Palmer recommends, "to compensate farmers fairly for the food they provide."

Making it mandatory for food labels to identify production methods is a good place to start. Consumers have the right to know how their food is produced and access to this type of information will help them make more humane and sustainable choices. It is the very least the government can do to encourage consumer behaviour that benefits animals and society as a whole and to support farmers that wish to exceed government regulations.

Fortunately, Canadians are increasingly concerned about how and where their food is produced and are supporting more local, humane, sustainable and healthful foods. This is reflected in public opinion polls, consumer research, at the cash register and in the rising popularity of humane and sustainable food certification schemes. The fact that some of the biggest grocery and restaurant chains in North America are starting to adopt humane and sustainable food purchasing policies is another good indicator of where public preferences and demands are headed.

Canada should get ahead of this growing trend and join the many other countries that are encouraging a transition to more humane and sustainable food production. To do otherwise may risk the viability of Canadian livestock exports as consumers in other countries demand more. For example, the European Union and a number of US states have already banned or are in the process of phasing out sow stalls, veal crates and battery cages. Canada should keep pace with its agricultural trading partners and work towards phasing out intensive confinement systems too. It will be increasingly important in terms of international trade as well as the domestic market. In a 2010 WSPA study, 93 percent of Canadians said they would support laws ensuring that all farm animals are able to lie down, turn around, stretch their limbs and spread their wings.

Members of Health Canada's own advisory committee admitted that the use of antibiotics as "growth promoters facilitate animal husbandry practices that are unhealthy and therefore questionable on welfare grounds." This practice is one of many that allow us, as Duncan and Rollin point out, to "produce increased quantities of cheap food without concomitantly assuring animal welfare." Canada is one of the few industrialized countries that allows over-the-counter

sales of antibiotics, without a veterinary prescription for farm animals. We can learn from countries like Sweden that banned these practices more than 20 years ago and still maintain a thriving agricultural sector. We should follow the lead of the EU which banned the use of hormones and non-therapeutic antibiotics in 2006.

Lastly we need to stop subsidizing farming methods that produce more problems than benefits to Canadians. Governments should redirect subsidies to support the farmers who need them the most rather than support ILOs and they should implement policies and incentives to encourage more humane and sustainable practices.

Key Recommendations

Our contributors have presented a number of policy recommendations to address the problems associated with ILOs. From these, WSPA presents 11 key recommendations that deserve the urgent attention of policy makers from all relevant levels of government. We believe these recommendations are the most important for encouraging a more humane and sustainable food system in Canada. Most would receive widespread public support.

1. The federal government should enact legislation requiring food be properly labelled according to origin and production methods. Canadians have the right to know how and where their food is produced. Legislation in Europe, for example, requires that all eggs be labelled as 'eggs from caged hens', 'barn eggs' or 'free-range egg'. Similar measures undertaken here would render visibility to the many hidden costs of food production.
2. Federal and provincial governments should prohibit painful mutilations without anaesthetic (e.g. branding, castration, teeth clipping, tail docking, beak trimming, dehorning).
3. Federal and provincial governments should work with industry and farmers to phase out the most restrictive of production systems (including battery cages for laying hens, crates for veal calves and gestation crates for sows) and ensure that animals can live free from intense frustration, fear, discomfort, deprivation, maternal separation, social stress and boredom.
4. Federal and provincial governments should redirect subsidies and programs so that family farmers are the primary beneficiaries and more humane and sustainable animal agriculture is encouraged. In order to better protect our environment, rural communities, increase food security and to maximize the number of family farms on the land, farm support programs should be directed toward family farms and capped at \$400,000 per farmer annually. This cap would cover all potential losses for 95 percent of the farms.
5. To preserve the effectiveness of life-saving antibiotics the federal government (Health Canada and Agriculture Canada) must consider the Canadian Medical Association's call to require veterinary prescriptions for all agricultural antibiotic use. It is a matter of some urgency that the non-therapeutic use of antibiotics (i.e. growth promotion) be phased out in order to preserve life-saving antibiotics that are crucial in human and veterinary medicine. All veterinary prescriptions should be tracked and monitored.

6. Governments should recognize that ILOs have significant impacts on public health, our environment, animal welfare and rural communities and redirect policies and programs towards supporting community-based, humane and sustainable agriculture.
7. Animal breeding companies should produce animals that, if given a good environment, can live lives free from suffering.
8. Communities should have greater access to information and a stronger say in the establishment and enlargement of ILOs. When ILOs are established, the community should have the right-to-enact bylaws that will preserve their health, livelihoods, quality of life, property values and environment. Provincial and municipal governments should ensure that 'right to farm' legislation is not used at the expense of the surrounding community's right to a high quality of life.
9. All levels of government should increase human capital in rural areas through encouraging immigration to rural areas, rural-based college and universities, and innovation that keeps rural communities economically viable without compromising their social, political or physical environments.
10. Provincial governments should reform supply management so that it continues to serve as a restraining force with regard to production-unit size and farm consolidation, while encouraging more humane and sustainable food production and an affordable entry to young and new farmers.
11. All levels of government should regulate ILOs like other major polluting industrial operations – subject to the same rules regarding waste treatment and pollutants and enforced by independent inspectors with the authority to issue stiff penalties for infractions.