A NATIONAL FOOD STRATEGY FOR CANADA

Submission from CropLife Canada

Dennis Prouse

Vice President, Government Affairs

proused@croplife.ca

September 2017

Executive summary

Canada's Food Policy must be inextricably linked with the agriculture industry that is responsible for food production in this country. Canada has built a reputation for producing some of the safest, highest quality food in the world. Canadian consumers enjoy access to a safe, affordable, diverse and abundant food supply while consumers around the world benefit from Canadian exports of food and feed. In order to build on the success of Canada's food production system and seize opportunities for economic growth globally, a National Food Policy must consider the following:

- the Advisory Council on Economic Growth highlighted the agfood sector as a key area of opportunity for economic growth in Canada;
- enabling agricultural innovation in Canada can contribute to both domestic and international food security;
- creating an environment that enables agricultural innovation and competitiveness will help drive economic growth and mitigate the impacts of climate change for the benefit of all Canadians; Canada, it should be recognized, is uniquely positioned to benefit from positive climate change impacts on food production capacity
- access to international markets with a growing demand for food and feed such as China's will be critical to Canada's economic success;
- innovations such as pest control products and products of modern plant breeding have helped create an agricultural system that is more environmentally sustainable and productive than ever before and there is significant potential for continued innovation in these spaces;
- biotechnology has the potential to address some significant domestic and global challenges when it comes to food and nutrition through the development of nutrient-enhanced crops and crops that can reduce food waste; and
- a Canadian Food Policy should support science-based decision making and help build trust in Canada's food system.

CropLife Canada – who we are

CropLife Canada is the trade association representing the manufacturers, developers and distributors of plant science innovations, including pest control products and products of plant biotechnology, for use in agriculture, urban and public health settings. We are committed to protecting human health and the environment and we believe in driving innovation through continuous research.

CropLife Canada is a member of CropLife International, a global federation representing the plant science industry via a network of regional and national associations in 91 countries.

Our mission is to enable the plant science industry to bring the benefits of its technologies to farmers and the public. Those benefits manifest themselves in many different forms, including driving agricultural exports, job creation, strengthening the rural economy, increased tax revenue for governments, improving environmental sustainability and increasing access to safe and affordable food for Canadians.

The context for a national food strategy

When we consider the context for a national food strategy, we must think about it through both a domestic and international lens. Canada's food strategy must take into account the needs of Canadian consumers in terms of meeting their demands for access to safe, high-quality and affordable food. But it must also take into account the needs of the global population and the opportunities these present for the Canadian economy.

The world population continues to grow and is expected to reach 9 billion by 2050, which means more mouths to feed. In fact, the world will need to produce as much food in the next 45 years as it has in the previous 10,000. This represents some significant opportunities for Canada. Canada has vast natural resources and a land base well suited to agricultural production. While the amount of arable land available globally will not increase – and may in fact decrease – alongside population growth, innovation and technological advances make it possible to increase production on existing land to meet the growing demand for food and feed.

It is expected that the middle class will grow by 2.4 billion people by 2030[1], which will represent a significantly heightened demand for high quality, protein-rich food, much of which can be produced here in Canada. Canada has an economic opportunity and a social responsibility to produce food for export around the world. We have earned a reputation globally as a trusted leader in the production of safe, high-quality and affordable food and we can - and must - play an even larger role on this front going forward.

Agricultural innovation: a success story to date

Canadian farmers are some of the best in the world at what they do. They are recognized as being among the earliest adopters of technology, which has helped make them leaders in producing a safe, affordable and sustainable food supply for Canadian consumers and the world. Among the top concerns for consumers when it comes to food is safety. This is an area where Canada performs very well. According to a 2014 report from the Conference Board of Canada[2], Canada ranked first in the world when it comes to food safety performance.

Technology, specifically pest control products and biotech crops, has played an important role in increasing agricultural production in Canada while maintaining the high safety standards we have established in this country. These advancements have resulted in economic gains, environmental protection and cost savings for consumers.

The plant science industry contributes $9.8 billion to Canada's GDP every year.[3] It has an impact on everything from research and development to agricultural production and food processing. The economic activity generated by the plant science industry generates 131,000 jobs in Canada, with

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[1] United Nations World Population Prospects; McKinsey Global Institute.

[2] 2014 World Ranking Food Safety Performance, Conference Board of Canada.

[3] This figure is calculated by measuring economic impacts along the entire value chain including production of plant science innovations, research and development, wholesale and distribution, agricultural production, and food processing. More detail is available here.

research and development alone producing 4,000 science-based, globally connected jobs for Canadians.[4]

About $8.3 billion, or 71% of Canada's trade balance in crops, is the direct result of innovations in crop protection products and plant breeding.[5] A transparent, predictable, and science-based regulatory system coupled with a robust, open trade policy is critical to maintaining and growing this advantage for Canadians.

The plant science industry is driving this growth more sustainably than ever via modern agriculture innovations that, by significantly improving weed and insect pest control, have enabled farmers to grow more crops on less land with fewer inputs and a reduced environmental footprint. For example, advances in plant science technologies have facilitated the adoption of conservation tillage practices, which significantly reduce diesel consumption, as well as soil erosion, and have resulted in Canada's agricultural soils becoming a net sink for atmospheric carbon.[6]

The productivity gains realized from agriculture innovations allow farmers to grow more food on significantly less land and, in turn, keeps wilderness areas out of production, preserving Canada's rich biodiversity. Without pesticides and plant breeding innovations, farmers would need to use 50 per cent more land than they do today to produce the same amount of food.[7] Ongoing research and development will continue to develop crop varieties that will adapt to changing climate conditions, including drought tolerance, heat tolerance, and resistance to emerging pests and diseases. Advances in precision farming will further reduce agriculture's environmental footprint while optimizing yields under unstable conditions

Another advantage to Canadians from the plant sciences industry is seen directly at their grocery stores and in their kitchens. As Canadians, we pay some of the lowest food prices in the world. On average, Canadians spend about 10 per cent of household income on food, much less than people in most other parts of the world.[8] Without the use of conventional pesticides and genetically enhanced crops and modern agricultural practices Canadians would pay about 55 per cent more for food — roughly $4,400 more per family and $60 billion as a country — each year.[9] Canadians currently enjoy better access to nutritious, affordable, culturally adequate and abundant food supply than at any other time in our history thanks to modern agriculture. It is important that a Canadian Food Strategy enable this to continue.

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[4] Job numbers are calculated along the entire agricultural value chain. More information is available here.
[5] The economic impact gains in agricultural production from plant science innovations were calculated using a customized run of the Statistics Canada Input-Output simulation model. More details are available here.
[6] According to the latest Agriculture and Agri-Food Canada review, Canadian agricultural soils represented a net source of 1.2 megatonnes of CO2 per year in 1981. In 2011, Canadian agricultural soils became a net sink for 11.9 megatonnes of CO2 per year.
[7] A recent literature review summarized the crop yield impacts of plant science innovations across a broad range of agricultural commodities. These data were then used to estimate the additional area of land that would be needed to obtain the same level of crop production output.
[8] These data are tracked annually by the United States Department of Agriculture Economic Research Service and are available for download here.
[9] Statistics Canada data (found in CANSIM Table 201-0028) indicate that the average Canadian household spent $7,980 on food in 2013. Recent reviews (for example, see summaries here and here) of the price differential between conventional and organic foods estimated the difference to be around 55%.

A modern food policy for Canada – agriculture as a driver of growth

Agriculture and food are inextricably linked and a national food strategy must take into account the food production system.

It is timely that the Government of Canada is consulting on a national food policy in light of the Advisory Council on Economic Growth's recent report to the government. A national food strategy can and should play a role in helping to enable some of the recommendations set out by the council.

The council, tasked with coming forward with key policy recommendations that would help drive economic growth, highlighted agriculture as a key sector. To quote the report directly:

> ***"The Canadian agfood sector has great potential, given the large natural endowment of water and arable land, distinctive record of accomplishments in research, and exceptional base of companies and entrepreneurs. This sector also has exposure to favourable global market trends including demand from fast-growing Asian economies where protein consumption is on the rise. These assets, coupled with the scale of the existing obstacles, provide the potential for material economic gains for Canadians while also providing a blueprint for how the government and private sector may work together to unleash Canada's potential in other sectors."*** [10]

The report points out that Canada's potential agricultural output greatly exceeds the needs of our own population. This is our opportunity to become an even greater source of high-quality food for the world's growing middle class while continuing to supply our domestic population with affordable, nutritious and healthy food.

The paper sets some lofty targets such as increasing Canada's share of global agricultural exports to 8 per cent from its current 5.7 per cent, thus making us the second-largest agricultural exporter, after the United States (the U.S. accounts for 14.8 per cent of the total). In the agri-food sector, the paper's goal is to double our share of world exports to 5.6 per cent from the current 2.8 per cent. The council feels strongly that our food processing sector in particular is badly underdeveloped, and that Canada is well-positioned to quickly improve in that area.

The report makes it clear that innovation is the key to unleashing agriculture's potential. It highlights advancements such as those in canola and pulses as examples of what Canada can achieve. But Canada is not the only country pursuing innovations in agriculture. And as others pursue advancements in data analytics, automation and genomics, Canada must act quickly or risk being left behind.

The report identifies several barriers to success for Canada's agfood sector. One of which is increasing productivity. Agriculture must continue to adopt new technologies and innovations to increase productivity. Those innovations include crop protection products and modern plant breeding.

One of the other key barriers to success identified in the report is expanding trade. Canada lacks preferential trade agreements in several high potential markets. Without access to these markets Canada cannot successfully leverage one of its major competitive advantages – its large agricultural land base.

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[10] Unleashing the Growth Potential of Key Sectors, Advisory Council on Economic Growth, 2017.

As comprehensive and forward looking as the council's report is, however, it will only have value if it prompts meaningful policy action. For many years shelves in Ottawa have sagged under the weight of accumulated reports, many well-researched and full of excellent ideas that died due to a lack of action or political will. A national food strategy presents a timely opportunity to create real momentum and action around food and agriculture policy.

Enabling innovation for the benefit of all Canadians

A national food policy can help position Canada to achieve the agriculture and agri-food export targets as outlined in Budget 2017 and in the Advisory Council on Economic Growth's report. Canada is respected around the world for its strong science-based regulatory system when it comes to agriculture and food. This commitment to science-based regulation must continue and opportunities must be seized to improve efficiencies and streamline regulations where possible to drive greater innovation and competitiveness.

Modernizing the regulatory system for products of plant biotechnology

For example, there is an opportunity to modernize the regulatory system for products of plant biotechnology. Over the past two decades there has not been a single product submitted for review that has been deemed harmful to either humans, animals, or the environment. Trillions of meals containing products of plant biotechnology have been safely consumed around the world, which further attests to the minimal regulatory risk posed by crops developed through biotechnology.

Despite this track record of safety, there has been little progress in improving the efficiency in the system carried out by Health Canada and the Canadian Food Inspection Agency. Long approval timelines leads to a delay in new products coming to market or the stifling of innovation at the front-end of the process.

Innovations in plant biotechnology and new breeding techniques, including gene editing, have the potential to help improve yields, giving Canadians and the world greater access to high-quality food. This will be critical to both domestic and international food security.

And with improved efficiencies in production comes cost savings for consumers. As noted above, Canadians are fortunate to pay some of the lowest food prices in the world. If farmers could no longer use tools like pesticides and plant biotechnology consumers would end up paying more than 50 percent more for food. This would dramatically limit access to healthy and nutritious food for a significant portion of the Canadian population.

Plant breeding innovations also have the ability to improve the nutritional value of plants. Golden rice is the most widely publicized example of this kind of advancement. Through genetic engineering this variety of rice has been enhanced to produce more vitamin A. It's estimated that vitamin A deficiency is the cause of blindness in millions of children in the developing world.

However, this technology can be applied to more than just rice. Through plant breeding innovations scientists can infuse increased levels of vitamins in other crops, reduce or remove allergenic proteins from things like peanuts and soybeans, and lower levels of trans-fats or increase levels of healthy fatty acids in oils.

Plant science innovations offer solutions to another global challenge – food waste. It's estimated that every year, about 1.3 billion tons of food is lost or wasted around the world from farmers' fields all the way along the value chain to consumers' plates[11]. Reducing food waste is one clear way to improve access to food.

Insect-resistant biotech seeds and crop protection products help farmers significantly reduce crop losses from pests. Post-harvest crop protection products, along with proper storage facilities, further reduce crop losses. Recently, new apple ~~variety~~ varieties and potato varieties developed through biotechnology, which have reduced browning, have been approved in Canada. These traits, which can be introduced into other fruits and vegetables, can extend the shelf life of products and cut down on transportation and retail-related waste.

Traits such as reduced browning could also have significant benefits for the food processing sector by prolonging shelf life and improving efficiencies. But plant breeding innovations also stand to benefit the processing sector through advances such as removing the allergenic properties of certain foods or improving the processing qualities of various crops.

Just as farmers have benefited from this technology in terms of reducing their environmental footprint, so too can processors, retailers and food service realize these same kinds of benefits through improved efficiencies. And ultimately, these gains benefit consumers through reduced food costs and a broader selection of food choices, and in some cases, foods that lead to improved health and safety.

Plant biotechnology has already led to the development of herbicide-tolerant crops, which helped enable the widespread adoption of conservation tillage practices in Canada. This practice has significantly improved soil health, decreased soil erosion, reduced farmers' use of fuel and decreased greenhouse gas emissions. Continued advancements such as nitrogen-efficient plants, drought-tolerant crops and salt-tolerant crops all stand to make food production even more sustainable and adaptable to changing conditions brought on by climate change.

It is important that the regulatory environment in Canada supports and enables this kind of innovation and recognize its long track record of safety using innovative regulatory techniques such as incorporation by reference, adoption of reviews by like-minded countries, and harmonized criteria to keep pace.

Improving the effectiveness of the pesticide regulatory system

Equally important as improving the effectiveness of the regulatory system for products of modern plant breeding is ensuring the regulatory system for pesticides is timely and predictable to ensure new and existing crop protection tools are available to growers. This is critical to enabling Canadian growers to continue to supply the safe, high-quality food Canadians have become accustomed to and keep Canadian growers competitive internationally.

Pesticides are an important tool for farmers that help them protect their crops against devastation from insects, weeds and diseases. It is estimated that up to 40 per cent of crops are lost globally each year due to pests and diseases, a figure that could double without pesticides. Here in Canada, without farmers' use of pesticides our farmers would produce a lot less of some of the healthy foods Canadians

[11] Global Initiative on Food Loss and Waste Reduction, Food and Agriculture Organization of the United Nations.

depend on. For example, farmers would grow 48 per cent fewer strawberries, 50 per cent fewer apples, 50 per cent fewer tomatoes and 51 per cent fewer carrots without pesticides[12].

As climate change causes changing weather patterns and pest pressures, globalized trade leads to new pest infestations and resistance issues emerge, it is critical that growers have timely access to new pest control products that allow them to protect their crops.

The resources of the Pest Management Regulatory Agency (PMRA), which is responsible for reviewing all pesticides in Canada, are heavily strained in a number of areas. The pace of product approvals, re-evaluations, and special re-evaluations continues to increase, and the global responsibilities of the agency are increasing at the same time.

Despite these limited resources, there's a key function currently missing from the PMRA's mandate: exports and competitiveness. While health and safety are - and should remain - the number one priority of the regulatory agency, decisions about which products to approve and discontinue should not be made in a vacuum. For example, removing products from the market for which there are no alternatives currently available, yet which our American neighbours continue to have access to, can be devastating for the competitiveness of Canadian growers.

In order to seize the opportunities for Canada's agfood sector, the Canadian government must take a whole-of-government approach to the regulation of products of plant biotechnology and pesticides. Closer alignment between regulatory agencies and key economic departments could help drive Canadian competitiveness while continuing to uphold the high standards for protection of human and environmental health that Canada is known for.

Creating trust in Canada's food system

A Canadian food strategy focused on increasing access to safe, affordable and healthy food should consider the role of public trust in the food system. While Canada's regulatory system is based on risk-based scientific approaches and it is a system with an excellent track record of protecting the health and safety of Canadians, there are non-science-based movements that promote fear of the food system and modern farming practices.

This does a disservice to Canadians who are trying to make the best decisions about what to feed their families. For example, some activist groups promote only eating organic fruits and vegetables falsely claiming there are health concerns over pesticide residues on non-organic products. While there is no scientific evidence that suggests organic fruits and vegetables are safer than those produced through conventional methods, these kinds of tactics can lead to consumers buying less fruits and vegetables due to cost constraints. The impact is particularly negative on lower income families.[13]

Rather than promoting fear in the food system, a national food strategy should focus on encouraging people to eat more fruits, vegetables and whole grains, no matter how they are grown, because science shows this has a positive impact on health.

Some groups use similar scare tactics when it comes to foods containing products of plant biotechnology, colloquially referred to as GMOs. As noted above, GMOs have been on the market for

[12] The Value of Plant Science Innovations to Canadians, RIAS Inc.
[13] Low-Income Shoppers and Fruit and Vegetables: What Do They Think?, Nutrition Today

more than two decades. They are among the most studied type of food on the planet. There is an international consensus[14] on the safety of foods containing GMOs and Health Canada has stated that crops developed through genetic modification do not pose any greater risk than crops developed through traditional breeding methods.[15]

Campaigns warning consumers to avoid GMOs or labelling initiatives that label products non-GMO lead to further fear and confusion for consumers. Consumers may choose to avoid certain foods and pay more for others due to a perceived safety threat. Marketing efforts to mislead and scare consumers should be replaced with fact-based information that enables consumers to make the best choices about what they are going to feed themselves and their families. A national food strategy should help create trust in what is one of the safest food systems in the world.

Conclusion

This is a critical juncture for Canadian agriculture. We have an opportunity to build on our reputation as a global leader in agricultural and food production – one that will supply a burgeoning global population with food and feed. However, our place on the world stage is not guaranteed. We must create an environment for success that includes one with streamlined and effective regulatory processes that promote innovation and competitiveness – and a national food strategy is a perfect opportunity to help advance some of these goals. Regulatory cooperation has been highlighted as a key opportunity to leverage leading up to the modernization of NAFTA between the U.S. and Mexico. Canada can lead these discussions to streamline a science-based approach for products of modern agriculture similar to the existing NAFTA framework for crop protection products.

A Canadian food strategy must guard against attempts to promote niche sectors of food production at the expense of the innovative and sustainable crop production system that is responsible for providing the vast majority of the safe, high quality and affordable food most Canadians enjoy. This is the same production system that is helping to drive Canada's agricultural exports and boost our economy.

Our forward momentum must build on our accomplishments to date and recognize how far we have come. Technological advancements such as those in crop protection and plant biotechnology have helped create an agricultural production system that is more sustainable than it has ever been before. Canadian farmers' adoption of technology has also driven greater food production than ever before, which has spurred economic growth throughout the country. It has also helped ensure Canadians pay some of the lowest food prices and have access to one of the safest food supplies in the world.

[14] The National Academies of Sciences, Engineering and Medicine
[15] Health Canada