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Agriculture and Agri-Food Canada
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RE: Fertilizer Emissions Reduction Target

To Whom It May Concern:

On behalf of the Canola Council of Canada (CCC) and the Canadian Canola Growers Association (CCGA), we are pleased to submit a joint response to Agriculture and Agri-Food Canada's (AAFC) consultation on the federal government's fertilizer emissions reduction target. Collectively, our organizations represent the entire canola value chain with members from British Columbia to Quebec. The canola industry is a major economic driver and contributes approximately $30 billion annually in economic activity and supports over 200,000 jobs across the country.[1] In 2021, canola exports were valued at $13.7 billion with ninety percent of canola crop exported as seed, oil, or meal.

Canola's success is Canada's success. As a made-in-Canada crop, canola has seen significant growth over the past 50 years with just over 6 million seeded acres in the 1980s to over 22 million acres in 2021. As a result of global demand for healthy vegetable oil, the canola industry has dramatically increased production to help feed and fuel the world. Canola remains Canada's most valuable cash crop and has contributed to Canada's prosperity for decades. Given the current war in Ukraine, together with other factors that are also impacting global food security, additional demand for canola products is anticipated and expected. Canada must seize this opportunity and can only do so by increasing production.

As food demand is increasing, so too is the demand for low carbon feedstocks for biofuels. The canola industry was pleased to see the final publication of the Clean Fuel Regulations and its recognition of canola's potential to reduce GHG emissions as a low carbon feedstock for biofuels. A growing biofuel market in Canada and the United States, coupled with the demand for healthy vegetable oils is supporting announcements of significant value-added investments in Canada's canola industry. Since 2021, approximately $2 billion of expanded canola processing capacity has been announced, with the potential for significant new job creation and economic opportunity.

The canola industry's strategic plan, *Keep It Coming 2025*, has rallied all segments of the value chain behind aggressive production goals: 26 million metric tonnes and 52 bushels per acre by 2025. This goal represents a 6.5 million metric tonne increase over 2020 levels. The corresponding announcements to expand crush capacity domestically illustrates that industry is willing to invest

[1] LMC International Ltd, The Economic Impact of Canola on the Canadian Economy: 2020 Update, for the Canola Council of Canada (Oxford: 2020) online: https://www.canolacouncil.org/download/131/economic-impact/17818/economic-impact-report-canada_december-2020

significantly in Canada and the canola sector. For these investments to become a reality, industry needs to be confident in farmers' ability to produce more canola.

Farmers will produce more canola if it makes economic sense for them to do so and their ability to use fertilizer to optimize plant growth directly impacts their profitability and competitiveness. To achieve the industry's goals and meet the rise in demand, increased nitrogen fertilizer use will be essential. As such, a tension exists between meeting domestic and global demand and reducing fertilizer emissions.

While the discussion paper from AAFC acknowledges this challenge for Canadian agriculture, it is especially acute for canola. Nitrogen is second only to moisture in importance for the productivity and yield of canola. It will be critical that AAFC's final advice and recommendations do not in any way hinder farmers' ability to maintain and increase yields or their profitability. Farmers make investments when they are confident in the economic stability and sustainability of their operations. If the goal is to meet a voluntary fertilizer emissions reduction target of 30% below 2020 by 2030, government will need to work with farmers in a meaningful way to design programs, put in place incentives, and provide evidence of return on investment regarding the impact that any new emission reducing practices will have on the economics of growing canola.

Efforts to Date

For decades, Canadian canola farmers have been stewards of the land and adopted leading-edge sustainability practices. One of the greatest challenges growing canola is competition from weeds, but the introduction of herbicide-tolerant canola enabled the adoption of reduced tillage practices across the prairie landscape. These conservation tillage practices have led to significant environmental benefits, allowing canola farmers to sequester more carbon in the soil, improve soil cover and overall soil health, reduce erosion risk, and reduce GHG emissions from fuel usage as fewer passes are made over the field to remove weeds. In 1991, just 7% of Western Canadian farmland was seeded with no-till practices compared to 61% in 2021.[2] Widespread adoption of conservation tillage practices is just one example of the practices used by canola farmers which have helped position the industry as an environmental leader. This has been done against the backdrop of increased production to meet the growing demand for canola products around the world.

As an industry, canola has been at the forefront of sustainability with industry-led targets that promote both economic growth and environmental stewardship in line with *Keep It Coming 2025* including targets for:

- An 18% reduction in fuel use per bushel.
- A 40% decrease in the amount of land required to produce one tonne of canola.
- 5 million additional tonnes of greenhouse gas emissions sequestered in Canadian soils every year.
- Utilizing 4R nutrient stewardship practices on 90% of canola acres.
- Safeguarding over 2,000 species of beneficial insects that call canola fields and surrounding habitat home.

[2] Statistics Canada. Table 32-10-0367-01 Tillage and seeding practices, Census of Agriculture, 2021.

While not all of these efforts are directly linked to fertilizers, they demonstrate the industry's holistic commitment to sustainability and environmental leadership by Canadian canola farmers.

These targets are coupled with substantial research jointly funded with industry through AAFC's AgriScience Cluster program and the industry-led Canola Agronomic Research Program (CARP). Between both programs, industry has funded almost 20 research projects to date related to fertility and nutrient management. To further bolster these efforts, the new *Canola Innovation Strategy* has identified nutrient use efficiency as one of the industry's ongoing research and innovation priorities.

The canola industry continues to demonstrate its leadership in this space through initiatives like the On-Farm Climate Action Fund (OFCAF). The CCC has been selected as one of the delivery partners for OFCAF and has worked closely with canola farmers to design and implement the *Canola 4R Advantage*, a program to incentivize practices that will contribute to improved nitrogen management, reducing on-farm nitrous oxide emissions, while working to demonstrate and deliver tangible benefits for canola farmers.

Barriers to Achieving Voluntary Target

Canadian canola farmers are among the most sustainable in the world and have championed emissions reduction practices for decades but are currently presented with conflicting messaging around increasing productivity at the same time that the use of key inputs is being called into question. There are several barriers that exist for canola farmers as they consider their role in further emissions reductions related to the government's aspirational target of a 30% reduction below 2020 levels by 2030. It will be essential for industry and government to work collaboratively to address these barriers and find solutions as we look towards the intensification of yields to feed and fuel the world.

<u>Knowledge and Technology Transfer to Labour and Staff</u>

There is a general lack of resources, knowledgeable labour, and agronomists available to assist with knowledge transfer, especially as new technology and practices are introduced at an increasingly rapid pace. New technology (e.g. machinery, mapping, and plant breeding innovations) will be required to further improve emission reductions associated with the use of fertilizer but farmers must be able to understand how to use these new technologies to their full potential. To ensure that new practices and technologies are fully leveraged, knowledge transfer and an overall increase in learning opportunities for farm businesses will be essential. Empowering and expanding existing networks of agronomists (e.g. CCC agronomy team, retail agronomists, etc.) to promote new practices and technologies will help ensure that there is streamlined access to information farmers need to be successful in both further reducing fertilizer emissions and remaining competitive in the marketplace.

<u>Regulatory Barriers to New Technologies and Innovations</u>

The agricultural sector is ripe for new technologies and innovations that will change the way we grow crops and continue to reduce our environmental footprint. Plant breeding innovations and genomics, machinery advances, machine learning and artificial intelligence are just some of the innovations that will help make Canadian agriculture even more resilient in the face of a changing

climate. Our regulatory systems must adapt to foster greater investments in these new technologies and be an enabler for new product development by streamlining approval processes and limiting the administrative burden associated with the commercialization of new technologies for the benefit of Canadian farmers and agriculture.

Costs and Ensuring a Return on Investment (ROI)

Canola farmers already invest significantly in their operations, in capital, time, as well as research and development, use of new technologies, and equipment. These investments would need to be supported and accelerated rapidly if the goal is to reach the voluntary target within the 2030 timeframe as there are significant risks associated with implementing new practices where minimal research or economic studies demonstrating an ROI to a farmer's business have been conducted. As the government looks to advance this voluntary target, it must work with the industry to invest in work and research which will provide farmers with a better understanding of how new technologies and practices can lead to greater profitability without compromising yields. This can be achieved, in part, by increasing the funding envelope of the AgriScience Cluster program in the Next Policy Framework and by providing flexibility regarding the use of new research dollars announced in the Emissions Reduction Plan for post-secondary research on net-zero agriculture.

Our Recommendations

AAFC's discussion paper on fertilizer emissions raises important issues for consideration by both industry and government. As an industry, the Canadian canola sector is calling on the government to implement the following recommendations which will help facilitate meaningful action to reduce fertilizer emissions on a voluntary basis.

1. **Keep the emissions target voluntary.** Farmers have proven they can adopt new practices that improve their environmental footprint, but it will take time. Additional efforts must be made by government to support the transition to these new practices through incentives and policy changes that recognize both historical practices to reduce emissions and additional practices which will be adopted more widely. A voluntary emissions target is the best way to support increased adoption of best management practices.
2. **Focus on emissions intensity and not absolute emissions reduction.** As Canada looks to contribute even more to feeding and fueling the world, emissions reduction should be assessed on an intensity basis as farmers strive to increase yields to meet both current and future demand. Given current geopolitical tensions, increased food insecurity, and a growing demand for biofuels moving forward, emission reductions on an absolute basis will jeopardize farmers' ability to increase production to address these challenges.
3. **Address data gaps and modelling issues.** Issues persist with government modelling and accounting of fertilizer use compared to fertilizer emissions. Over-reliance on fertilizer use rates (linked primarily to sales data) and resulting emissions provide an overly simplistic picture of related emissions. This is coupled with issues with the modelling used to track Canadian fertilizer use emissions. Models used do not consider the increased adoption rates of 4R related practices and technologies such as side-banding, yield mapping, variable-rate technology, and enhanced efficiency fertilizer products. These advancements are currently absent from emissions models despite being some of the key practices used and

recommended to reduce emissions from fertilizers. Without the ability to measure more than the sale of fertilizers, improvements associated with the use of on-farm emissions reducing practices will not be reflected and included in emissions calculations. Farmers are unable to manage what they cannot measure. Establishing an emissions reduction target that can only be met based on current data collection methods focused on fertilizer sales, as a proxy for usage, is at best confusing for farmers and significantly undermines government's stated intention of focusing on emissions not fertilizer use.

4. **Do not target indirect emissions at this time.** Science around indirect emissions is still in its infancy and there is no significant body of scientific research on indirect emissions by which government and industry can benchmark itself. Since indirect emissions cannot be modelled with any level of accuracy, they should not be targeted at this time.
5. **Prioritize outcomes, not the process for achieving them.** AAFC's final advice and recommendations must focus on outcomes and not prescriptive policy. Given regional variability within provinces, from farm to farm and even within fields, together with other unique geographical and crop production challenges, no one-size-fits-all approach will work. It is essential farmers have the flexibility and support to use the management practices that are best suited for their farms.
6. **Recognize the importance of economics.** Farmers will make investments when they are confident in the economic viability and sustainability of their operations. If the goal is to meet this voluntary reduction target by 2030, government needs to work with farmers to generate economic studies on the impact these emission reducing practices will have on their profitability. Farmers need to have confidence in new products and practices, such as enhanced efficiency fertilizers, ensuring that they are going to work well and either maintain or increase their yields.
7. **Foster a regulatory environment that encourages innovation.** Sound science must be the foundation of how we work towards this voluntary goal. This includes federal regulations that facilitate appropriate and timely commercialization of new technologies, including plant breeding innovations, which will be essential in the fight against climate change. Canola farmers will need access to a variety of innovative technologies and practices that will help them continue to minimize their environmental footprint while ensuring farms remain economically viable and competitive.
8. **Further incentivize farmers to participate in environmental goods and services programs.** Provide long-term funding and incentives, such as those that are part of the government's Agricultural Climate Solutions Program, to increase farmer awareness and participation in these programs. Targeting less productive and marginal land would help reduce emissions and, through appropriate incentives, farmers can repurpose these lands for nature-based solutions. Programs can help with developing criteria to identify lower productivity acres with low or no economic ROI and removing them from production. These areas need to be properly identified and the ROI must be made clear to farmers to be successful. Such programs could be modelled after similar programs administered by Alternative Land Use Services (ALUS) which provide an incentive for the environmental benefits provided to the public through nature-based solutions on marginal farmland. Given the benefits to the public, such programs need to ensure farmers are properly compensated and should be additive to current programming and funding envelopes.

9. **Working with farmers and industry.** It will be essential to have farmer buy-in if Canada is to reach the voluntary target established by the government. Canola farmers must be fully included in the conversation around the fertilizer emissions reduction target and be involved in decision-making in a meaningful way. This, along with the development of a working group or formalized body to engage further on agri-environmental policy, can help build trust as we collectively seek to reduce emissions while at the same time maintaining and increasing productivity and farmer competitiveness. Concern around the lack of engagement directly with farmers during this consultation leads to our continued recommendation for direct and meaningful engagement with farmers to hear specifically from them regarding the challenges faced with reducing emissions and how best to address them.

Other Considerations

Continued Support for 4R

CCC and CCGA were pleased to see AAFC recognize the important contribution 4R nutrient stewardship practices play in reducing fertilizer emissions. While some canola farmers have developed and implemented a 4R plan, there is still significant opportunity to encourage greater adoption levels. With greater adoption of 4R across canola acres, farmers will be able to potentially increase profitability, mitigate risk, and significantly reduce fertilizer emissions. Industry and government will have to work together to communicate these benefits to farmers and ensure that farmers have the tools they need to implement a 4R plan (e.g. access to 4R agronomists and crop advisors, limited financial barriers, etc.).

Additional Weather Predictive Tools

Predictive weather stations with N2O sensors help with predictive modelling and weather-based decisions that affect N2O emissions. Efficient fertilizer uptake is linked to moisture availability and when rain bypasses a canola field, applied fertilizer is not taken up by the canola plant as efficiently as it otherwise would be. More accurate weather prediction tools will help address this problem.

Conclusion

Canadian canola farmers are some of the most progressive and innovative in the world. They have, over decades, demonstrated a strong commitment to sustainability and reducing emissions while continuing to help feed and fuel the world. An example to other farmers around the world, Canadian canola farmers continue to adopt best practices that will preserve our land, water, air, and biodiversity for generations to come.

As we look towards 2030 and the federal government's climate commitments, canola is well positioned to contribute as a climate solutions provider. Canola farmers are always looking for ways to improve their use of inputs and their sustainability and should be actively engaged when it comes to the conversation around fertilizer emission reductions. The above-noted recommendations provide specific examples where government action can support and incentivize greater use of certain practices while maintaining and growing yields. This proper equilibrium between sustainable intensification of production and emissions reduction must be at the forefront of all policy decisions

by the federal government in the agriculture sector. Together, industry and government will be able to tackle this challenge head-on charting a pathway for long-term economic growth, competitiveness, and a sustainable food supply for the world.

Thank you for considering our joint submission. We would be pleased to meet with AAFC officials at any time to discuss this submission further.

Sincerely,

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