THINKING ABOUT EMISSION REDUCTION TARGETS? PULSES PACK AN ENVIRONMENTAL PUNCH

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The benefits of pulses in crop rotations are well known from an agronomic perspective, in particular the nitrogen-fixation abilities of pulses, reducing the nitrogen fertilizer needs of Canadian farmers. The unique capacity of pulses to fix their own nitrogen from the air provides a major greenhouse gas benefit, and this benefit has been well documented in Canadian research studies. Additionally, the economic benefits of pulse production should not be ignored, with major contributions to Canada's GDP, economic output, and providing full-time work to over 26,000 Canadians.

Within the context of the corporate and governmental focus on greenhouse gas emissions, pulses provide a major benefit by reducing greenhouse gas emissions from Canadian agriculture. This is particularly relevant with the federal government target of reducing nitrogen fertilizer emissions by 30% by 2030. As growers know, Canadian pulse production is already contributing to limiting emissions from nitrogen fertilizer.

The key question is: How much of a contribution do Canadian pulses have in reducing greenhouse gas emissions, both from the farm and nationally? Research commissioned by Pulse Canada showed that Canadian pulses are some of the most sustainable crops in the world, as disclosed in the 2021 Canadian Pulse Industry Environmental and Economic Impact Report. The report focused on the greenhouse gas impacts of pulse production in crop rotations and as individual crops in the rotation. These impacts are distinguished by pulse type (peas, lentils, dry beans, chickpeas, and faba beans), and by province. The greenhouse gas impacts of total production in Canada were also calculated, which provided an estimate of the national impact of the Canadian pulse industry to reduce emissions in a substantial way. The current Canadian pulse crop (2021) reduced greenhouse gas emissions by up to 3.6 million tonnes of CO2-equivalents, which represents a reduction of emissions which is over a quarter of the direct and indirect emissions associated with applying nitrogen fertilizer (12.75 million tonnes of CO2-equivalents in 2019).

In addition to reducing greenhouse gas emissions, pulses are a protein source with a very low water footprint. Pulses such as peas, lentils, and chickpeas are well-adapted to semi-arid conditions and can tolerate drought stress.

Continued on page 24.

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Continued from page 23.

Pulse crops like peas and lentils also use water in a different way than other crops grown in rotation, extracting water from a shallower depth, leaving more water deep in the soil for the following year's cereal or oilseed crop.

Including peas, lentils or beans in crop rotations also confers sustainability benefits for the crops grown after. Crops like wheat and barley produce higher yields and have higher protein when grown after pulses. This is due to the soil fertility, water and soil microbial benefits of pulse crops which also benefit crops grown in rotation.

Incorporating pulses in livestock diets reduces the environmental footprint of pork and egg production and can help to develop and market livestock products with low environmental footprints as well. A recent life cycle analysis commissioned by Pulse Canada found incorporating peas into pork rations reduced the carbon impact of the feed by 28%, and the overall emissions of the pork by 18%.

Under a responsible growth scenario, as part of an economically viable rotation along with cereals and canola, pulse acreage could increase between 14.2% and 40.3% by 2030. This means Canadian pulses could remove a further 1.4 million tonnes of carbon from our environment by 2030.

While pulses pack an environmental punch, they are also an economic performer. Economic contribution of the Canadian pulse industry is also highlighted in the report, with over 26,000 pulse producers contributing to a pulse industry that generates an estimated $6.3 billion in economic output and $3.1 billion to the GDP of Canada.

In February 2023, Pulse Canada launched this Environmental and Economic Impact Report as part of our 'Impactful' campaign. Through this campaign, Pulse Canada is positioning pulses in agronomically responsible rotations as one of the key environmental pillars of the Canadian agricultural system. Practices such as no-till, 4R stewardship, and integrated pest management practices are rightfully seen as agronomically responsible and environmentally beneficial, and this study shows that pulses in Canadian crop rotations should be too. Pulse Canada and our members are using the report to help prioritize programs and issues for the Canadian pulse industry which require government attention and investment.

To date, government investments to help the sector seize sustainability opportunities have been provided through Sustainable Canadian Agricultural Partnership (SCAP), On Farm Climate Action Fund (OFCAF), Agriculture Climate Solutions (ACS), and Living Labs. The industry will continue to rely on the support of SCAP programming – the Agri-Marketing Program, Science Clusters, and AgriAssurance to ensure that work is being done to grow exports while lowering emissions.

The key takeaway is that federal and provincial governments should view any dollar invested in Canada's pulse sector as a dollar invested in reducing Canada's emissions. Growth in Canada's pulse industry means lower carbon emissions and higher economic output, making Canada's pulse industry a 'green' investment.

For more information and to download a report summary, visit pulsecanada.com/impactful.