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The Honourable Senator Robert Black  
Chair, Senate Standing Committee on Agriculture and Forestry  
Senate of Canada  
Ottawa, Ontario  
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January 18, 2023

Dear Senator Black:

On behalf of Pivot Bio, I write regarding the study on the status of soil health being undertaken by the Agriculture and Forestry Committee. We would welcome the opportunity to appear to discuss Pivot Bio's contributions to soil health and sustainability.

By way of background, Pivot Bio was founded in 2011 in the United States and launched its expansion into Canada in July 2022 with product trials underway on corn, wheat and canola. Our ambition is to replace fossil-fuel-based nitrogen fertilizer with a more sustainable and safer tool for cereal crop farmers. In 2018, we brought the world's first nitrogen-producing microbes to market for U.S. corn farmers. The product sold out within six weeks, and has sold out every year since, demonstrating a strong demand from farmers for a new approach to improve their operations while minimizing their environmental footprint.

Since that time, the company has invested mainly in U.S. manufacturing and distribution and expanded into wheat, sorghum, sunflowers and other small grains to reduce farmer dependence on synthetic nitrogen and the volatile natural gas price and fragile global supply chain to which it is pegged. In addition, Pivot Bio works with a contract manufacturing partner in Canada to manufacture some of our microbes. In December 2022, the Canadian Food Inspection Agency (CFIA) approved the first Pivot Bio corn product (Pivot Bio N). We are actively working towards additional product approvals through the CFIA so we can deliver quality products for the benefit of Canadian farmers and the land on which they work.

Of specific interest to the Committee, Pivot Bio's microbial nitrogen fertilizer has the potential to permanently and immediately deliver reductions in GHG emissions, while delivering co-benefits to watershed health, biodiversity and farmer margins.

Today, chemical nitrogen fertilizer is made from liquid natural gas and works agronomically by storing synthetic nitrogen in the soil where plants seek it out, making it energy intensive

to produce and transport, and potentially dangerous to store and apply. Alternatively, Pivot Bio's microbial fertilizer produces nitrogen at the plant roots, so it is continually available across the growth cycle of the crop without risk of loss to the environment. For example, farmers can get the same amount of nitrogen in one 1,200-gallon nurse tank of anhydrous ammonia from 120 ounces of PROVEN 40 On-Seed, one of Pivot Bio's products currently being used in the U.S.

With an environmentally sound fermentation production process and significantly lower transportation resources needed, Pivot Bio's microbes will offer Canadian farmers a more efficient and sustainable nitrogen to fuel their crops. On the farm, instead of mixing nitrogen into the soil where excess fertilizer can leach into groundwater or volatilize into the air, Pivot Bio's microbes adhere directly to the plants' roots, supplying nitrogen to the plant throughout the growing season, offering the plant a dependable source of nitrogen that stays at the plant roots and does not volatilize or leach.

Pivot Bio's technology will provide Canadian farmers with new options to help them reduce emissions and environmental impacts – without increased costs or sacrificing yields. More nitrogen in the plant and less wasted to the environment translates to healthier, more resilient crops, and an improved return on investment. This will empower growers to sustain the health of their crops and land for generations to come.

In short, our technology has positive implications for soil health while ensuring agricultural producers can make needed contributions to Canada's net-zero commitments without impacting crop production.

We would welcome the opportunity to discuss the benefits of Pivot Bio's products to soil health in Canada with Committee members at your convenience.

Yours sincerely,



Chuck Broughton  
General Manager, Canada  
Pivot Bio

Copy to: Ferda Simpson, Clerk, Senate Standing Committee on Agriculture and Forestry