

Summary: reducing emissions from nitrogen fertilizer in Canadian agriculture

[Ten per cent](#) of Canada's emissions come from crop and livestock production. [About one third](#) of these come from nitrous oxide (N₂O), making it a clear priority for climate policy. Nitrous oxide, released from nitrogen fertilizer when applied to the soil, is a greenhouse gas over [250 times](#) more potent than carbon dioxide (CO₂). The need for large amounts of fossil fuel in their production, natural gas in particular, has led to some commentators using the term "fossil fertilizers." Greenpeace recommends the following 7 priorities for a food system that is low in emissions and supports a healthy environment and communities.

1. Reduce emissions arising from the application of fertilizer by a minimum of 50% below 2020 levels by 2030: due to their disproportionately high levels in Canada and the [seeming](#) reluctance of the federal government to set meaningful targets elsewhere for the agriculture sector. [2021 research](#) by Greenpeace International and others revealed that emissions from synthetic nitrogen fertilizer in Canada are [among the highest](#) in the world per capita.

2. Less absolute emissions, not more efficient emissions: to avoid the increase of artificial fertilizers usage (and associated emissions), just in a slightly more efficient way. The chemical fertilizer industry has [lobbied vocally against](#) absolute emissions reductions and instead for improving "emissions intensity". However, a low-emission food system means a low-input food system, and so inevitably requires deep reductions in the use of synthetic nitrogen fertilizers.

3. Reduce emissions from factory farms: to make sure that more crops produced are consumed by people, not livestock, and feedstocks for animals are not dependent on fossil fertilizers. Factory farms growing feed crops use synthetic nitrogen fertilizers rather than animal manure. According to new research commissioned by Greenpeace Canada and World Animal Protection Canada, livestock feed production emissions account for approximately 28% of all emissions from crop production in Canada, amounting to roughly 8.38 million tonnes of CO₂-equivalent. Approximately 85% of these emissions derive from the production and application of nitrogen fertilizers.

4. Caps on production, not just emissions from application: to reduce production, consistent with emissions reductions targets. Canada hosts a number of transnational corporations who control a [large amount](#) of the global production and distribution of synthetic nitrogen fertilizers, such as Koch Industries, Nutrien and Yara. According to our new research, roughly 5.5 million tonnes of these fertilizers are produced here every year. Industrial processes to produce them in Canada consume around 8-10% of our natural gas.

5. Food for people, not fuel: to stop biofuel production and instead embrace truly sustainable energy sources. Biofuels from food crops won't solve world hunger, but they will exacerbate the climate crisis by encouraging massive emissions at multiple stages: in transportation, fertilizer production, nitrous oxide release and ultimately combustion. Instead of driving demand for this emissions-intensive and food-wasteful source of energy, the federal government should be focusing on sustainable energy sources.

6. Decolonizing agriculture: to respect Indigenous rights and knowledge. The solution to these interconnected problems, driven by colonization and the dispossession of Indigenous lands for profit, must be grounded in respect and resourcing for Indigenous knowledge holistically across food systems and agriculture.

7. Support for farmers transitioning to organic methods: to invest in farming that is not dependent on artificial fertilizers and is more resilient to disruptions. Large petrochemical corporations impose a financial burden on farmers to grow crops with their high-cost artificial fertilizers. This perpetuates an unjust and unsustainable model of high emissions agriculture, which is prone to supply chain disruptions from diseases, wars and climate change.