Beneficial bacteria could reduce need for crop fertilizers

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Bacteria discovered by scientists in London could turn out to be best friends with crop farmers.

The beneficial bacteria, isolated by researchers at Agriculture and Agri-Food Canada's research centre, have been found to promote plant growth while cutting dependence on commercial fertilizers.

With Canadian farmers spending more than $4 billion a year on fertilizer — the single biggest input cost for corn and wheat crops — the payoff for growers could be significant.

"If you can reduce fertilizer usage by say 15 per cent, can you imagine how big the number will be for Canada? We will help growers reduce their costs and it will be beneficial for the ecosystem," said Ze-Chun Yuan, the Agriculture Canada scientist leading the research effort.

One of the bacterium was found to fix nitrogen and produce growth hormones that increased the root size of crops, allowing plants to absorb more nutrients.

Other bacteria converted phosphate so more could be used by plants with less ending up in rivers and lakes, causing algae blooms.

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The bacteria were obtained from crop residue at Agriculture Canada's farm near London, he said.

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This coming season Agriculture Canada researchers will work to determine how much the bacteria can reduce the crop's requirement for commercial fertilizers.

"For sure, it could not completely replace commercial fertilizer," Yuan said.

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Along with reducing phosphorous runoff from farm fields, there would be big environmental gains if bacteria can reduce the need for nitrogen fertilizer, Yuan said.

Nitrogen requires a lot of energy to produce, contributing to carbon dioxide emissions.

"If you can reduce production of fertilizer you can cut down on CO2," he said.

Read full, original post: Bacteria discovered by scientists in London cuts dependence on commercial fertilizers