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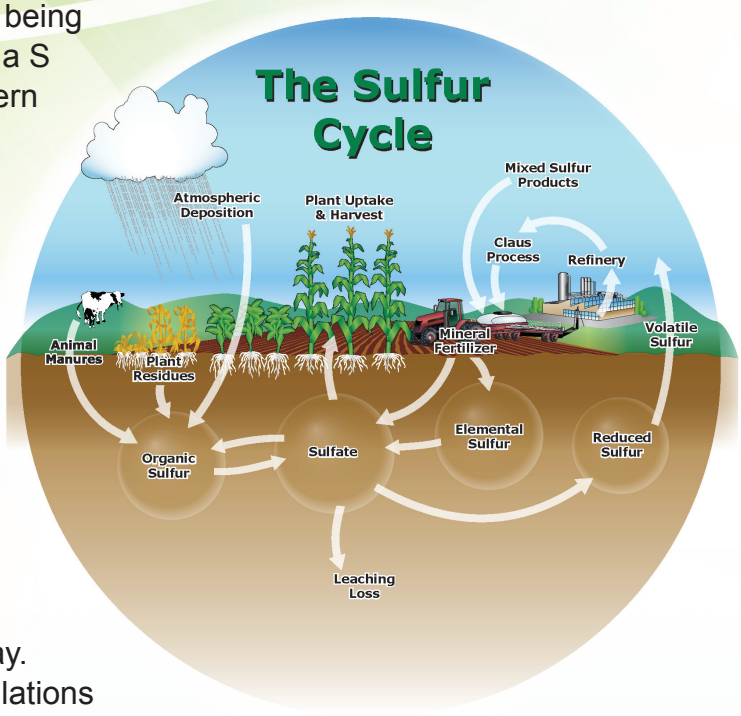
WHY ALL THE FUSS ABOUT SULFUR FERTILIZERS?

A few decades ago there was very little mention of adding sulfur (S) as a fertilizer. In the late 1970s, I can remember my soil fertility professor at the University of Alberta being credited with documenting a S deficient field soil in Southern Alberta—an area where S deficiencies were not thought to be possible. It wasn't that crops back then didn't need or use S, but just that most soils supplied adequate amounts to meet crop demand.

Reasons for this include:

- Most early phosphorus (P) fertilizers contained more S than they do today. For example, early formulations of mono-ammonium phosphate (MAP) fertilizer (11-48-0) contained as much as 2.4% S and today's 11-52-0 product can contain as little as 0.75% S.
- More S demanding crops are grown more now than ever before. The most common example for western Canada is canola. Canola acres are now only second to spring wheat in the region and canola absorbs about twice as much S compared to wheat under similar growing conditions.
- Overall crop yield potentials have increased due to higher yielding varieties, which means greater uptake of sulfate from soil and increased removal in the harvested portions of crops.



- The air emissions of S have been reduced. Earlier emissions from coal-thermal electric generation facilities, diesel engine exhausts from transport trucks and freight trains, gas and oil refining plants, and other industrial manufacturing plants contained higher levels of sulfur dioxide (SO_2). Many fields near industrialized areas previously received deposition of

"Emissions of SO_2 have been reduced with stricter environmental standards."

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“Canola absorbs about twice as much S as wheat under similar growing conditions.”

oxidized forms of S, usually in rain containing these S compounds, and was commonly called acid rain. This meant there were often adequate or even excess amounts of S for crop growth. The acid rain adversely decreased soil and especially water pH to the extent of disrupting ecosystem health. The SO_2 reductions are achieved by removing the majority of SO_2 out of industrial emissions, a process called “scrubbing” out the SO_2, and also fuels for diesel engines are now required to meet low-S content standards.

Because of less additions of S along with P fertilizers, greater removals of S from fields due to higher S-removing crops, higher yielding crops, and less SO_2 emissions into the air, there is a greater need to apply S-containing fertilizers to agricultural fields to meet crop S needs.

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