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TAKE ANOTHER LOOK AT CHLORIDE?

Chloride is an essential plant nutrient that is required for proper plant growth and yield. Since it is needed in relatively small quantities, it is classified as a micronutrient. Nevertheless, it is a critical and frequently overlooked component of a complete soil fertility program.

In the West, and in some other regions, there has probably been more emphasis placed on avoiding excess levels of chloride and salinity than on regularly occurring deficiencies. However, evidence continues to mount that there are many regions where crops could benefit from additional chloride.

Chloride plays several important roles in plants, but the crop response usually comes from a classical nutrient response and/or suppression of fungal diseases. While many crops respond favorably to applied chloride, wheat and other small grains are the crops that receive the most chloride in the West. Some wheat varieties exhibit chloride deficiency symptoms, also referred to as physiological leaf spot, under low soil chloride conditions. The symptoms are similar in appearance to tan spot or septoria, with no associated pathogen. Chloride has been proven to suppress septoria, leaf spot, stripe rust, tan spot, common root rot, and take-all root rot in wheat. Adequate chloride is demonstrated by increased yield, higher test weights, and greater kernel plumpness.

How do crops get chloride? Chloride is an anion and moves freely in the soil with water. Rainfall near the ocean tends to deposit sufficient chloride, but wheat-producing regions more than 200 miles from the coast may respond to chloride fertilization. Irrigation water usually supplies adequate chloride to meet plant needs. However, regions with rain-fed cropping may not have sufficient chloride for top plant performance and yield.

Research has shown that there is no difference in crop response to various chloride-containing fertilizers. The most common chloride source is muriate of potash (0-0-60; 47% chloride). Other available sources of chloride include magnesium chloride and calcium chloride.

Will chloride fertilization pay? Substantial profit can result from chloride fertilization where it is needed. Like all plant nutrients, chloride responses will only occur where there is an insufficient nutrient supply. An adequate chloride supply will benefit small grain production by accelerating plant development, reducing lodging, and improving disease resistance.

Given the demonstrated yield and quality boost that chloride provides for many crops, it is time to reconsider whether your crops will benefit from providing some of this overlooked micronutrient to your fertilization program.

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For more information, contact Dr. Robert L. Mikkelsen, West Director, PPI, 617 Oeste Drive, Davis, CA 95616. Phone: (530) 758-4237. E-mail: rmikkelsen@ppi-far.org.