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| **The Roles of Chloride in Crop Production**   * Photosynthesis and enzyme activation * Transport of other nutrients in plants * Water movement in the cell * Stomatal Operation * Suppression of plant diseases * Enhanced disease tolerance of crops * Reduced late season lodging * Accelerated plant development   **Characteristics of Chloride Sources**   * Potassium Chloride: Not used much on high K soils, makes low analysis fluid, limited concentrations in UAN mixes. * Magnesium Chloride: Available in fluid form BUT cannot have P anywhere in system. * Ammonium Chloride: high CL concentration, available in fluid form, mixes well with N, P, S, micronutrients. |  |  | |  |  |  | | --- | --- | --- | | Cl Rate (lbs./Acre) | Dickinson County Yield (bu/Acre) | Clay County, KS Yield (bu/Acre) | | 0 | 103 | 54 | | 10 | 108 | 62 | | 20 | 113 | 62 | | 30 | 120 | 60 | | **Average** | **111** | **59.50** |   ***2015 Chloride Study***  ***Sorghum Yields***  **Chloride Fertilization Application Considerations**   * CL is very soluble so broadcast applications work well * Placement with the seed at planting may limit rates due to potential injury from Cl salts   *FOR MANY GROWERS, CHLORIDE FERTILIZATION MAY BE THE SOURCES OF THE NEXT BUSHEL OF YIELD AND DOLLAR OF PROFIT!*   |  | | --- | | Abilene Products, Inc.  818 SE 4th  Abilene, KS 67410  Phone: 785.263.3037  Fax: 785.263.1331  Dale Koop: 785.479.3753  Email: dale@abileneproducts.com  Visit us at [*www.cropservicecenter.com*](http://www.cropservicecenter.com)! | |  | |  | |  | |  | |  | | |  |  |  | | --- | --- | --- | |  |  |  | | |  |  | |  | | --- | | CL1-25_004 | |  | | Chloride In Crop Production |  | | Abilene Products, Inc. | |

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| Bump Your Wheat Yields with Chloride There’s mounting evidence that wheat growers are overlooking a simple, inexpensive crop input called chloride. University research has continually established the importance of chloride in crop production. Research has shown that the application of adequate amounts of chloride can result in:   * Increased kernel and test weights * Earlier heading and flowering * Significant yield increases * Suppression of fungal diseases * Prevention of late season lodging   **Kansas State University**  **Wheat and Chloride Test Results 2006**  **Belleville, KS (2145)**   |  |  | | --- | --- | | Chloride lbs./Acre | Bushels/Acre | | 0 | 38 | | 10 | 43 | | 20 | 45 | | 30 | 44 | | 40 | 45 |   \*Yield increases of 7 to 10% in response to chloride is common.  \*\*Yield responses vary among varieties due to application of chloride. |  |  | **2015 Wheat Variety Test**   |  |  |  | | --- | --- | --- | | **Wheat** | **CL** | **Check** | | Armour | 61.5 | 44.5 | | Redhawk | 42.5 | 33.5 | | Winterhawk | 55.5 | 37.5 | | Wizard | 43.5 | 48.5 | | Everest | 49.5 | 43 | | Endurance | 41.5 | 41.5 | | Pistol | 36 | 40 | | 1863 | 48 | 49 | | Southwind | 49 | 42 | | T158 | 51.5 | 49 | | WB 4458 | 59.5 | 48.5 | | Cedar | 62 | 50.5 | | Hotrod | 53 | 46 | | Grainfield | 54 | 43 | | Wolf | 50 | 48.5 | | Average | 50.47 | 44.33 |   **Dickinson County, KS**  The key to profitable chloride use lies in a proper soil test. A soil chloride test is not normally included in routine soil testing reports, it must be requested! Usually a 2 foot soil test is taken to determine soil chloride levels. Critical levels can be adjusted if a 6’2/3” sample has been taken. Soils are considered to be deficient in wheat for chloride when the sample shows 35# or less chloride per acre. The most common rate of chloride applied is 20# per acre. An application of 20#’s of chloride can return an investment of 2 to 3 fold.  ***Continued on next page….*** |  |  | *Continued from previous page...*  Chloride may be applied before, during or after planting but he easiest way however, would be a liquid top-dress application at the same time nitrogen is applied. Research in Kansas continues to show that wheat responds consistently to chloride fertilization.  **Chloride Increases Sorghum Yield, Decreases Lodging Kansas**  Nutrient Rates, lb./A Yield Lodging  N K20 Cl bu/A %  75 80 60 99 1.7  75 80 0 91 6.8  Silt loam soil, low soil test K  KSU Soil test chloride: unknown    Proper chloride fertilization also can reduce lodging, which occurs when harvest is delayed by rain or other factors. Retention of water in the plant and delayed maturity may be reasons for such a response. |