



Modern Ag Product COMPLEXED FERTILIZER

By Norman Wilson, Ph.D.

A new term has entered the vocabulary of farmers across the country. This new term is complexed fertilizer. Complexing is a relatively new technology in fertilizer stabilization but on which uses a concept as old as life on earth.

A great number of biochemical reactions in living organisms involve organic bonding or more specifically, carbon bonding. Complexed fertilizer utilizes this unique property of organic carbon to stabilize and protect fertilizer elements. Modern Ag Products have developed Nutri-Aid as a complexing agent which can be added to most liquid fertilizer formulations to produce complexed fertilizer. The application rate of Nutri-Aid will depend upon the fertilizer application rate and soil structure.

The use of fertilizer to enhance crop yields has been practiced by farmers for centuries. In the past, fertilizer nutrients, supplied in an organic form, were found in manure, compost, blood meal, bone meal, fish meal, ect. in these organic forms the nutrients were naturally complexed.

Modern chemical fertilizers supply nutrients with guaranteed analysis of NO_3 , P_2O_4 , SO_4 , K_2O , ect. Modern fertilizers tend to be chemically pure and highly reactive. Much of that reactivity is activated immediately upon soil contact.

Unfortunately, many of these reactions do not contribute to plant nutrition. Nitrates and sulfates can volatilize or leach resulting in loss of these nutrients. Phosphates can chemically react with calcium or aluminum to become insoluble and virtually unavailable. Potassium can become fixed on clay particles reducing availability to the crop. These chemical and physical reactions result in significant economic loss and reduce crop response.

Organic chelation or complexing is nature's method of protecting plant nutrients from loss and maintaining them in an available form in the root zone. Soil humus organically complexes mineral nutrients and acts as a reservoir of available nutrients. Plants can take up organically complexed nutrients directly in the organic form or in the chemical form as they are slowly released.

The crop response per unit of fertilizer applied is always greater in soils with high humus content. Unfortunately, modern intensive farming slowly depletes soil humus. Farmers have found increased fertilizer usage is required to maintain yields. The use of complexed fertilizers and attention to soil biological activity can be a solution to this problem. The use of Modern Ag Products Nutri-Aid mixed with fertilizers and followed by proper application can result in a 30% or more improvement in fertilizer response. The expectation

Of poor fertilizer efficiency often results in excessive application rates. This practice is wasteful and may result in environmental hazards such as salt build up and leaching of nitrates into ground water. Over application of fertilizer can result in rapid loss of soil humus and deterioration of soil structure.

Complexed fertilizer can improve crop response while reducing waste and environmental concerns. The application of any fertilizer should correspond as closely as practical to expected requirement of the crop. The type of crop stage of development, and soil structure will often dictate the type of fertilizer to be applied.

Multiple applications with planter bands and sidedress placement are desirable. When possible, fertilizer should be concentrated in the root zone in a manner that will minimize soil contact. Water guns and sprinkler applications are recommended when sidedressing is not feasible. Micro nutrients are best applied as foliar sprays. Plant leaf analysis is highly recommended to monitor crop needs, plan fertilizer applications, and insure balanced nutrition.