

Huma® Improves Alfalfa Soil Biology In the Southwest

Field Report

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Huma® Products: 44 Mag®, Breakout®, Encapsalt®, Fertil Soil®, Iro-Max®, Manganese, Max Pak®, Super Nitro®, Super Phos®, X-Tend®, Vitol®

Background

Industrial agriculture can degrade soil quality for crops by altering the total living microbial biomass of soil. Many practices and beneficial ag products have been introduced to the market to improve soil quality. Some of these products are humic substance-based products.

Objective

The objective of this trial was to evaluate the efficacy of applying supplementary Huma® products that contain various degrees of humic substances (organic acids) and nutrients. Specifically used were the following Huma® products: Encapsalt®, Super Phos®, Max Pak®, 44 Mag®, Vitol®, Super Nitro®, Breakout®, Fertil Soil®, Manganese, Iro-Max®, and X-Tend®. The particular emphasis covered in this report is on assessing their effect on improving overall soil biology.

Materials & Methods

This trial was conducted on 4 different alfalfa fields at a commercial farm near Dateland, in southwest Arizona. The field trial spanned over several months. Fields one, two, and three received grower standard fertilizers (GS), and field four was treated with various Huma® products outlined in Table 1. A center-pivot sprinkler system provided irrigation water to all the fields. The materials were applied shortly after each cutting and/or

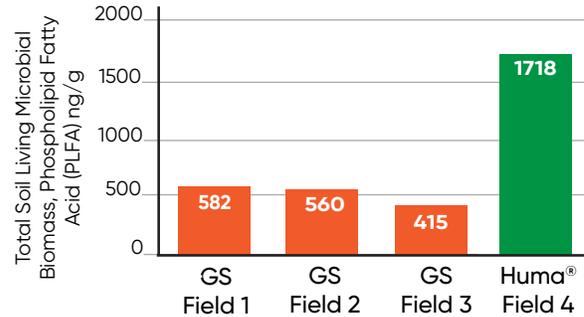


Figure 1. Effects of Huma® products on soil biology.

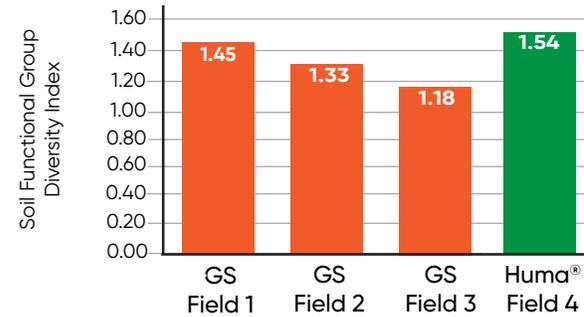


Figure 2. Effects of Huma® products on soil biology diversity.

Table 1. Applications of Huma® products and their amounts per acre during the growing season of alfalfa in southwest Arizona.

Application #1 (January)							
Super Phos®	Max Pak®	44 Mag®	Vitol®	Breakout®	Encapsalt®	X-Tend®	
45 fl oz	34 fl oz	57 fl oz	34 fl oz	22 fl oz	51 fl oz	34 fl oz	
Application #2 (Mid-January)							
Super Phos®	Manganese	Iro-Max®	44 Mag®	Vitol®	Breakout®	Encapsalt®	X-Tend®
32 fl oz	32 fl oz	32 fl oz	96 fl oz	64 fl oz	32 fl oz	32 fl oz	34 fl oz
Application #3 (February)							
Super Phos®	Max Pak®	44 Mag®	Vitol®	Super Nitro®			
32 fl oz	32 fl oz	32 fl oz	32 fl oz	64 fl oz			
Application #4 (March)							
Encapsalt®	Super Phos®	44 Mag®	Max Pak®	Breakout®			
32 fl oz	32 fl oz	32 fl oz	32 fl oz	22 fl oz			
Application #5 (April)							
Encapsalt®	Super Phos®	44 Mag®	Max Pak®	Vitol®			
32 fl oz	32 fl oz	32 fl oz	32 fl oz	32 fl oz			
Application #6 (May)							
Super Phos®	Manganese	Vitol®	Super Nitro®	Fertil Soil®	Breakout®		
32 fl oz	32 fl oz	32 fl oz	64 fl oz	64 fl oz	32 fl oz		

at the mid-point of a cutting through the sprinkler system. Standardized protocols were used to assess soil biology at Ward Laboratories in Kearney, Nebr.

Results

Huma® products significantly enhanced soil biology. The total microbial biomass in the alfalfa field treated with various Huma® products was several times higher than in fields using regular fertilizers (Figure 1). Additionally, the diversity of microorganisms in the Huma®-treated field surpassed that of the fields receiving only the standard fertilizer program (Figure 2).

Conclusions

Soil biology can be improved in the long run and short run. Applying Huma® products that contain natural humic substances and organic acids can improve soil biology in a much shorter time in a sustainable way. The Huma® products can be used for improving crop growth and soil microbiome. They can efficiently revitalize agricultural land and assist with regenerative agriculture.