

Foliar Application of Calcium-25^R on Organically Grown Alfalfa, Oat, Wheat, and Soybean, Comstock – Clay County

Cooperator: Lynn Brakke
Nearest Town: Comstock

Purpose of Study:

Calcium-25^R a foliar applied product, was developed for the market in 1981 by Dr. Andrew J. Welebier of the company Bio-Gard as an organic calcium source. The product is supposed to act as a non-toxic plant growth enhancer. The company claims: “The rapid absorption of Calcium-25^R causes a plant growth stimulating effect that causes such an increase in growth, that all other nutrients from the soil are absorbed by the plant to keep up with the growth increase.” The objective of this study was to evaluate the effect of Calcium-25^R when applied on alfalfa, wheat, oats, and soybean grown under a certified organic production system.

	Crop			
	Alfalfa	Oats	Wheat	Soybean
Soil Type	Fargo clay	Fargo clay	Fargo clay	Fargo clay
Previous Crop	Soybean	Soybean	Soybean	Wheat
Planting date	4/28/2003	4/26/2004	4/26/2004	5/29/2004
Ca application	6/7/2004	6/7/2004	6/7/2004	7/7/2004
Concentration	4lb/400gallon	4lb/400gallon	4lb/250gallon	4lb/400gallon
Samples taken	7/7/2004			
Harvested		8/18/2004	8/18/2004	10/28/2004
Replications	6	4	6	8
Weed control	None	None ¹	None	Cultivation (3x)

¹ Oats and wheat were seeded with alfalfa. The growing alfalfa suppressed weed growth.

Experimental Design: Randomized complete block with 4-8 replications

Results:

No significant differences in yield and quality were observed in any of the tested crops with or without the application calcium.

Crop	Without Calcium	With Calcium	L.S.D. 0.05
Alfalfa			
Yield (lb/a)	2736	2561	N.S.
Protein (%)	22.8	23.4	N.S.
Relative Forage Quality	173	189	N.S.
Milk per Ton (lb/ton)	2521	2704	N.S.
Oats			
Yield (bu/a)	122	119	N.S.
Test weight (lb/bu)	36.8	37.1	N.S.
Wheat			
Yield (bu/a)	32.3	30.8	N.S.
Test weight (lb/bu)	61.8	61.5	N.S.
Protein (%)	13.1	13.0	N.S.
Soybean¹			
Yield (bu/a)	7.3	6.4	N.S.
Height (inch)	17.4	16.3	N.S.
All Crops Combined			
Yields expressed as % of non treated crop	100	98.3	N.S.

¹ Poor seed lot resulting in low stand (only 55,000 plants/a). Frost on August 20th affected many top leaves, but plants remained green lower in the canopy.