

AmiSorb Research Summary for the North Central Region

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What is Amisorb?

- Is not toxic, is not absorbed and is biodegradable
- High (5000) molecular weight
- Polyaspartic acid (carpramid), related to Nutrasweet
- Originally used to prevent scale in boilers, heat exchanges, etc.
- Also used in adhesives, shampoos, sulfur absorbents and dispersants

What does Amisorb do?

- Improve nutrient uptake
- Artificially increases the area occupied by roots (increased root branching and root hair development)
- Results in increased yields and quality
- Interferes with the precipitation rxn's of metallic salts

Effect of AmiSorb rate on the yield of several vegetable crops

AmiSorb rate	Yield			
	Celery lb/10 plt	Onion --lb/50 ft row--	Potato	Bell pepper lb/10 plt
0	19.0	68.5	76.9	16.8
2	20.6	58.0	75.7	18.6
4	20.2	54.2	80.2	19.7
6	20.7	57.7	80.2	24.3
LSD _{0.05}	NS	NS	NS	5.0

Adapted from Warncke, Michigan State University, personal communication.

Summary of AmiSorb yield responses for several crops (1995-1998)

	Corn	Soybean	Wheat	Grain sorghum
Number of site years	33	10	49	6
Number with sig. response	9	1	13	1
Percent with sig response	27	10	27	1.7
Avg yield chg, bu/a all sites	+1.75	+0.63	+1.07	+0.32

Effect of Amisorb on Corn Grain Yield at Dixon Springs, IL 1996

N rate	Between Rows		Under Rows	
	-Amsb	+Amsb	-Amsb	+Amsb
lb/a	-----bu/a-----			
60	104	117	112	119
120	130	134	141	134
180	138	124	130	133
LSD	NS		NS	
Amisorb				

Adapted from Ebelhar 1997

Effect of Amisorb on Corn Grain Yield at Urbana IL, 1996

Amisorb placement	Yield (Avg. 3 hybrids) bu/a
control	134
band over row	141
band between row w/o incorp.	149
band between row w/ incorp.	150
LSD _{0.05}	9.9

Adapted from Below 1997; 2 qt/a Amisorb in 20 gal/a H₂O

Effect of Amisorb on average corn, soybean and wheat yields, Wisconsin, 1997.

	Corn	Soybean	Wheat*
Control	146	50.4	53.6
2 qt w/starter	161	51.4	50.3
2 qt sidedress	154	52.1	55.0
Stat. Significance	*	NS	NS

Adapted from Oplinger et al., 1997

*Amisorb with fall or spring N treatments, respectively.

Effect on Plant Nutrient Levels

- Increased N, K, Ca, Mg, Mn and Zn in hydroponic wheat
- Did not significantly increase N, P, K, Ca or Mg uptake with coastal bermuda grass (Texas A&M)
- Increased ear leaf N concentrations at low N rate only (Princeton, KY)
- Did not affect ear leaf concentration of P, K, Ca, Mg, S, Zn, B, Cu, Mn or Fe (Princeton, KY)

Summary

Corn responses appear most consistent

Check all data available

Field responses mixed

Caution advised