

Quantum Growth® Increases Cotton Yield with Less Fertilizer

Location: Cotton Farm — Buttonwillow, California

Background: Like most agricultural operations, this cotton farmer is continually looking for cost effective solutions to optimizing yields in all types of weather and disease pressure conditions. Based on results Quantum had demonstrated and achieved on other crops, the Buttonwillow farm was anxious to determine potential benefits on cotton production.

Objective: The goals of the project were well defined:

- Improve plant production volume including fiber, seed, and total weight
- Increase production quality as determined by quality of fiber and seed
- Improve plant health as determined by fiber and seed
- Reduce nitrogen fertilizer use vs. standard recommended protocol

Results Achieved: All plots with added Quantum Growth increased the cotton yield per acre.

- Plots with reduced nitrogen fertilizer application performed better as the amount of fertilizer was reduced.
- With 64% reduction in ammonia fertilizer applied, **a yield increase of over 7% or 160 lbs of cotton per acre was achieved.**
- Based on this study, further reduction in ammonia could produce additional yield increase for an even greater return on investment (ROI).
- Less fertilizer also mitigates salt build-up and negative effects of synthetic fertilizers on soil biology

Plot	Quantum Growth	NH ₃ units/acre	% NH ₃ reduction	Cost savings per acre	Yield lbs.	% Yield increase
1	None	250	0	0	5274	0
2	1 gal/acre	130	48%	\$71.71	5280	0.11%
3	1 gal/acre	120	52%	\$77.69	5334	1.14%
4	1 gal/acre	102	59%	\$88.71	5488	4.06%
5	1 gal/acre	90	64%	\$95.62	5648	7.09%

The design of the field test included five 10-acre plots. The control used a standard fertilizer protocol. Each of the remaining plots used 1 gal/acre of Quantum Growth and various amounts of nitrogen fertilizer to determine optimal application parameters for the following season. Reductions in the application of anhydrous ammonia, ranging from 48% to 64%, were compared to the control that used the standard 250 units/acre. (One unit of fertilizer equals 1.2195 lbs. at a cost of \$0.59 per unit)

For more information on Quantum Growth products call 866.871.0154

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