

## Horticulture Research Reports – 2016

TITLE:

Fertility program effects on cucumber yield in Central Michigan.

Experiment 16-304

Experiment Information:

Planted: 6/5/2016

Harvested: 8/2/2016

Yield Goal: 175 bu/acre

Target Fertilizer: 80-80-80 + Micros

Variety: Deli King

Population: 24,000

Row Width: 30"

Previous Crop:

Plot Size: 201'

Replications: 3 Reps

Soil Test Values:

pH: 7.0

CEC: 7.3

%OM: 1.6%

Bray P1: 22

Bicarb P: 27

K: 67 ppm

S: 11 ppm

%K: 2.4

%Mg: 16.7

%Ca: 80.1

%Na: 0.8

Zn: 1.6 ppm

Mn: 10 ppm

B: 0.5 ppm

Objective:

Compare different fertility programs for effects on the yield of pickling cucumbers in Central Michigan.

Materials & Methods:

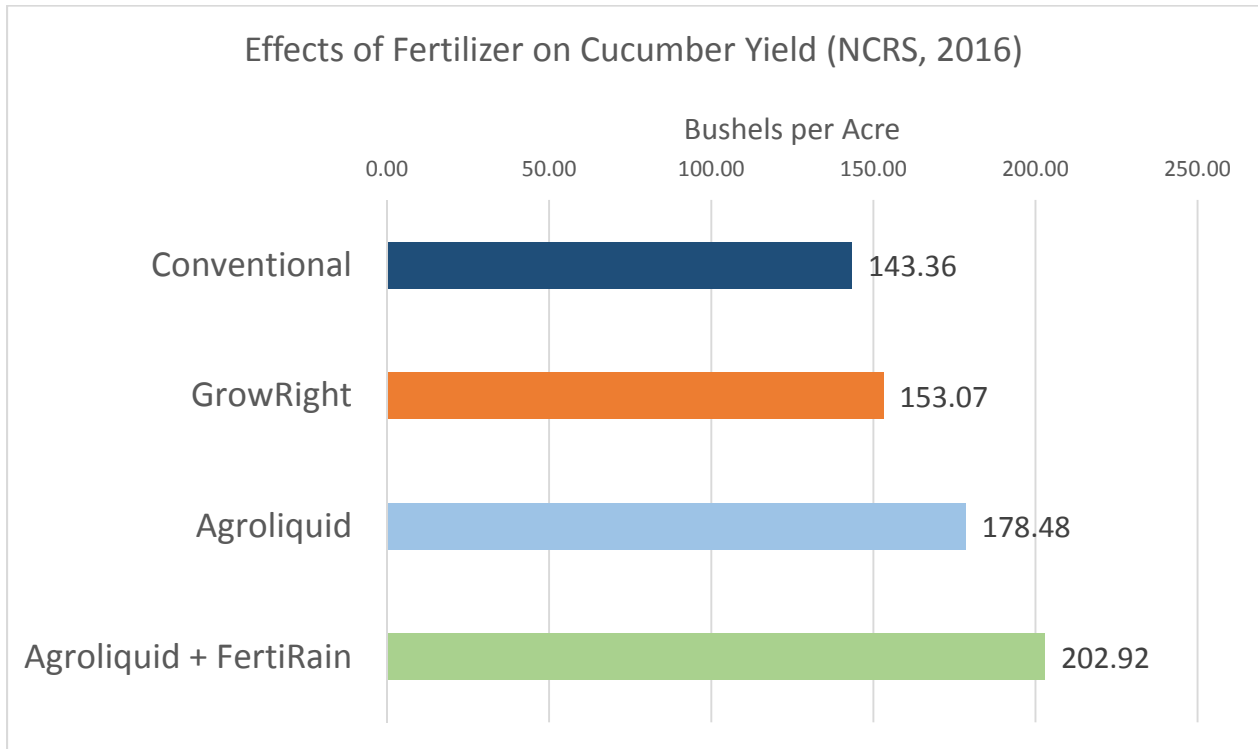
In the spring of 2016, this experiment was planted using a Monseem planter with a setting of planting the cucumber seeds at a population of 24,000 seeds per acre. After planting, an irrigation system using T-style drip tape was placed just to the side of the planted row to be used for both irrigation and fertigation practices. The tape ran the entire length of the 210 foot plot and was connected to a common header hose at the front of the plot. All of the treatments received the same amount of irrigation water. At the time of applying the different fertilizers, the drip tape lines were detached from the header hose and reattached to the injection device in order to prevent cross-contamination. Foliar fertilizer applications were applied to selected plots at flowering utilizing a backpack sprayer. At harvest, all cucumbers were harvested and weighed by replications within each treatment.

Treatments:

The treatments used in this particular experiment were developed to match the nutrient demand needed to produce a yield of 175 bushels to the acre and takes into account the available nutrients in the soil. Below is the treatment list using the particular different fertilizers and rates of application.

<b>TREATMENT NAME</b>	<b>PRODUCT NAME</b>	<b>RATE PER ACRE</b>	<b>HOW MATERIAL APPLIED AND TIME</b>
<b>CONVENTIONAL</b>	28% UAN 10-34-0	12.0 gallons 12.0 gallons	Injected into the drip tape after planting
<b>GROWRIGHT</b>	GrowRight	24 gallons	Injected into the drip tape after planting
<b>AGROLIQUID BASE PROGRAM</b>	High NRG-N Pro-Germinator Sure-K Micro-500	4 gallons 10 gallons 6 gallons 0.5 gallon	Injected into the drip tape after planting
<b>AGROLIQUID BASE PROGRAM + FERITRAIN</b>	High NRG-N Pro-Germinator Sure-K Micro-500 FeritRain	4 gallons 10 gallons 6 gallons 0.5 gallon 1 gallon	Injected into the drip tape after planting  Applied three times during the season as a foliar ( at first expanded leaf, after flowering, 1 weeks prior to harvest)

Results:



Conclusions:

- Comparison of all the treatments show that the use of Agroliquid products out yielded the conventional fertilizer.
- The use of three foliar applications of the FertiRain product helped increase the yield compared to the basic Agroliquid program by more than 25 bushels per acre.
- Yield was shown to advance past the targeted goal of 175 bushels per acre with both the Agroliquid base program (+3.48 bushels more per acre) and Agroliquid base program plus the addition of FertiRain (+27.9 bushels per acre).
- Results of this project conclude that fertigation using Agroliquid products are more effective than using conventional fertilizer products. Below is a photo of the injection device used.

