

Experiment Info:

Experiment:13-101

Transplanted:May 27th

Variety: Spartan

Population:2050

Plot Size 7.5' x 30'

Replications:three

Harvest:Sept 29th

Soil Test Values (ppm):

Farm / Field 105

pH: 6.7

CEC: 6.9

OM: 1.7

P1: 15

K: 46

S: 10

% K: 1.7

% Mg: 16.3

% Ca: 81.1

% H: -

% Na: 0.9

Zn: 1.3

Mn: 7

Fe: 31

Cu: 0.4

B: 0.5

Objective:

Determine the impact of pre-plant and foliar fertilizer combinations on the yield of pumpkins.

Materials & Methods:

- The plots were established on May 26th by banding or broadcasting the appropriate fertilizers down the middle each plot area and then covering the center 2 ft of each 7.5 ft wide plot with plastic mulch.
- Transplants were placed every 34" into the plastic on May 28th. Each 30 ft plot length contained 11 "Spartan" variety pumpkin plants.
- During the course of the growing season, irrigation, fungicides and insecticides were applied uniformly to all plots as necessary.
- Foliar fertilizer applications began on July 9th when the first blooms were observed. Two additional applications were made every 10-14 days until the vines touched and row closure. A total of three applications were made during the growing season. The fertiRain was applied according to the rates described in Table P1. The fertilizer was combined with water and applied in a total volume of 15 gallons per acre using a backpack sprayer and flat-fan nozzles operated at approximately 40 PSI.
- At harvest, the vines were used to trace each ripe pumpkin back to its home plots so they could be accurately collected, counted and weighted for determining yields. Green pumpkins were very few and generally small this year. They were not counted or measured, and therefore not included in any of the trial summaries.

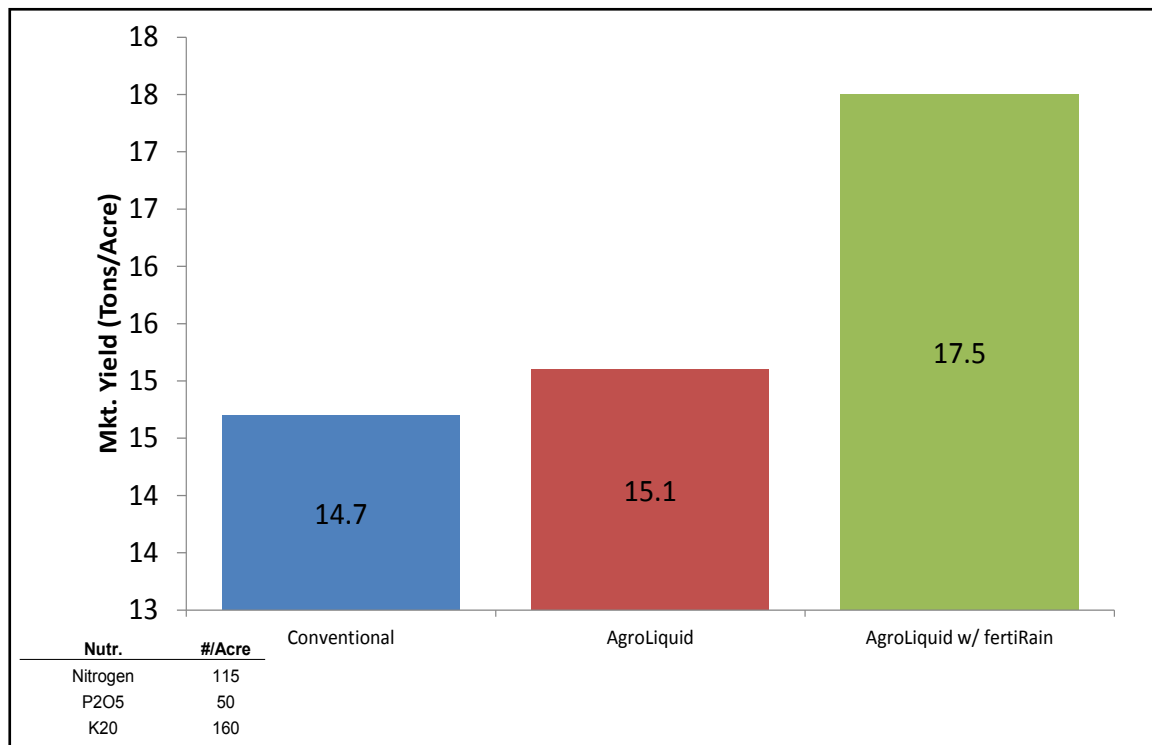


Figure JP1. Pumpkin yields for two different fertility programs and the advantage of using fertiRain as a foliar during the 2013 season.

Table JP1. Fertility programs for Jack-o-Lantern type Pumpkins. Spartin Variety, Exp 13-101

Treatment	Rate/A (gal or lb/A)	"Method of Application"	Nut.* Lb/A	NUE**	Yield Tons/A
1 0-0-60 + Mn + Zn + B 28% UAN + 10-34-0	271# + 5# + 1# + 4# 33 + 12.9	PPI Band	327.4	90.0	14.7
2 HN + PG + SK + Micro 500 + B	23 + 3.8 + 12.5 + 0.5 + 0.125	Band	92.2	379.5	15.1
3 HN + PG + SK + Micro 500 + B ferti-Rain	23 + 3.8 + 12.5 + 0.5 + 0.125 2 qt x 3	Band foliar	102.9	340.1	17.5

*Micronutrients not included in total fertilizer per acre calculations. **NUE = Nutrient Use Efficiency = Tons Yield / Total Lb. N,P,K&S as Fertilizer Applied, HN=High NRG-N, PG= Pro-Germinator, SK= Sure-K, eN28% = 28% UAN w/ eNhance @ 2 gallons per ton

Conclusions:

- The yield of all vine crops during the 2013 growing season was reduced due to very dry conditions in June and July compared to many previous seasons at the NCRS. Still some very similar types of responses were observed in the research conducted.
- Yields for the AgroLiquid fertility program (Trt #2) were only slightly better (0.4 tons/A) than the Conventional program (Trt #1).
- Three applications of fertiRain starting at early bloom increased the pumpkin yields dramatically (Trt #3). Yield increases of 2.4 and 2.8 tons per acre were found compared to the AgroLiquid and Conventional fertilizer programs respectively.
- The seven year average (Figure JP2) for these same treatments shows similar type yield response. AgroLiquid programs with or without fertiRain yielded the best pumpkins. Still, adding fertiRain has consistently provided 1-2 tons of additional pumpkin yield each season.
- The Nutrient Use Efficiency (NUE) for all AgroLiquid programs were three fold or greater than that observed for the conventional fertility programs (Table JP1).

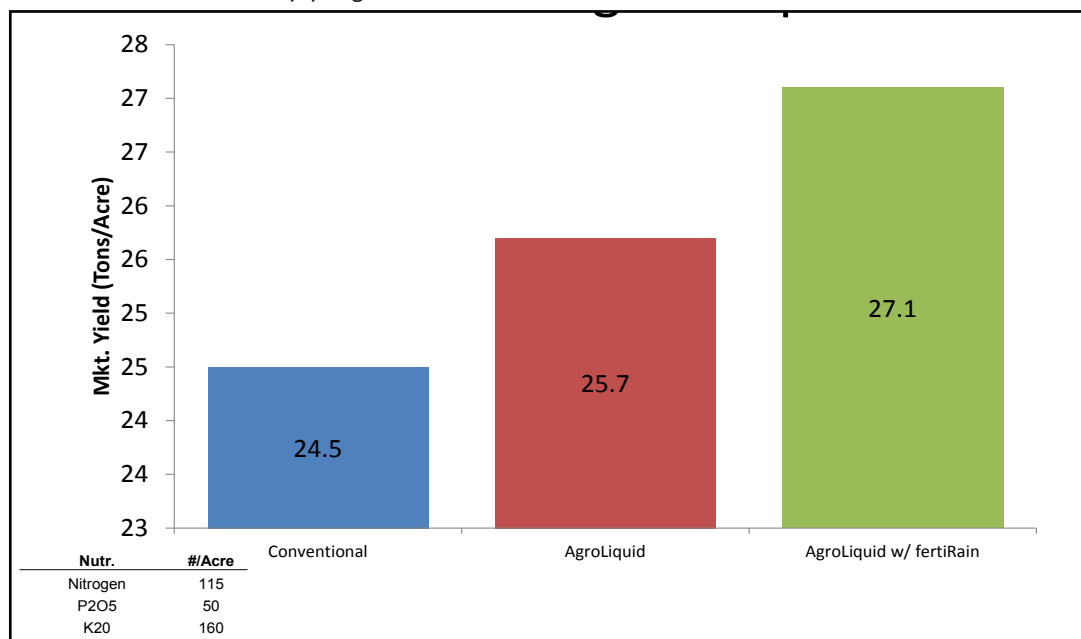


Figure JP2. Seven year average for Pumpkin yields at the NCRS, St. Johns, MI 2007-2013.