

Experiment Info:

Exp.: 13-P102
 Planted: 30-May-11
 Variety: Jewel
 Population: 10,900 (planted)
 Plot Size 4'x20'
 Replications: Four
 Harvest: Early
 June - Multiple

Soil Test Values (ppm):

Farm / Field 106
 pH 6.6
 CEC 8.9
 OM 2
 P1 33
 K 46
 S 10
 % K 1.3
 % Mg 16.9
 % Ca 75.3
 % H 5.9
 % Na 0.6
 Zn 1.9
 Mn 3
 Fe 45
 Cu 0.8
 B 0.4

Objective:

Compare strawberry yield and quality as affected by the type of fertilizer used for their growth and development.

Materials & Methods:

- In the spring of 2011, the strawberries for this trial were planted 12" apart on alternating sides of a 2 ft wide bed. As plants developed, they were allowed to set runners across the top of each bed. By the end of the season, the tops of most beds were full of strawberry plants. The treatments described in Table S1 were followed in 2011 and the spring of 2012. No straw or mulch was applied in the fall of 2011 for over-wintering these strawberries.
- On April 22, 2013 the spring applications of fertilizer were made prior to any significant vegetative development. The dry products used for these applications were broadcast over the center section of each plot and all liquid fertilizers were banded with 12" streamer bars directly over the center of each bed as described in the a Table S1.
- During the course of the growing season, irrigation, fungicides and insecticides were applied uniformly to all plots as necessary. As the strawberries began produce mature berries, harvests were conducted at regular intervals to quantify the yields from each treatment.
- On July 15th, the second half of the fertilizer applications was made to all plots. This was a couple weeks after the strawberries no longer were producing berries and new runners were noticeable. These applications were to promote new development that would be the source of strawberries during the 2014 season.

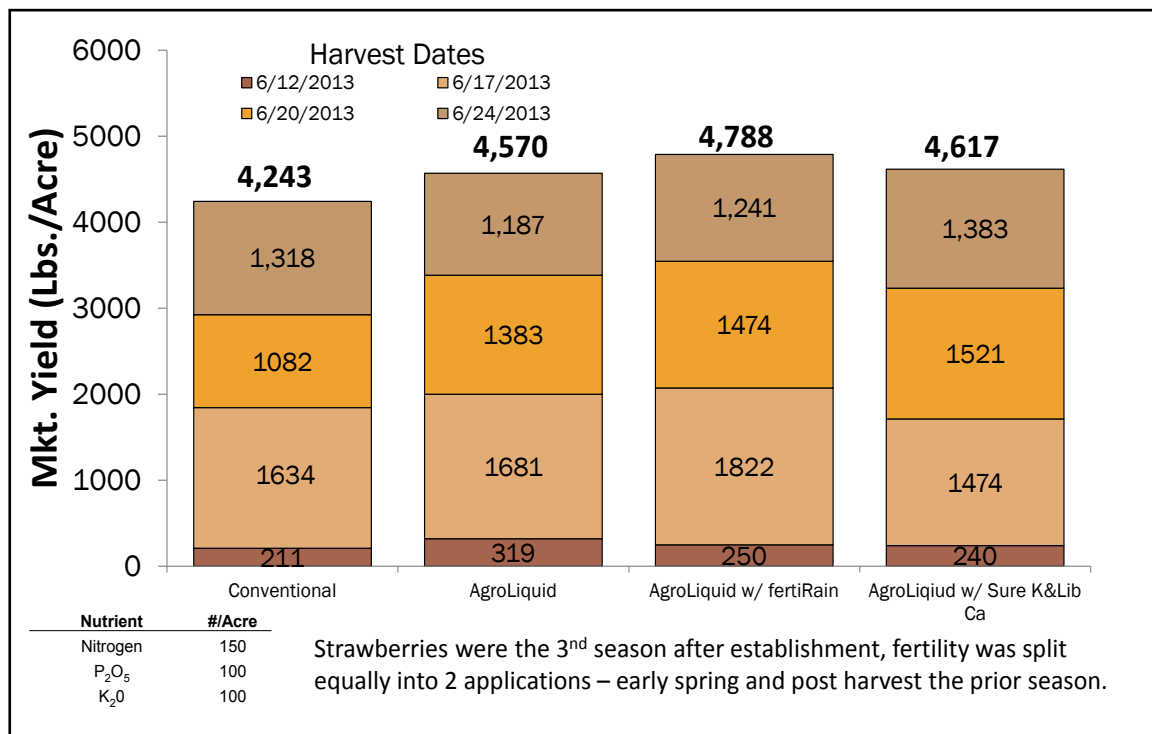


Figure A1. Cumulative yields from four harvests of fresh market strawberries.

S1. Strawberry fertility program comparisons and benefits from foliar fertilizers in 2013, Variety= Jewel.

Treatment		Rate/A (gal or lb/A)	Timing	Lbs/Acre Nutrient*	NUE*	Yield lbs/Acre
1	28%UAN + 10-34-0 + SOP 28%UAN + 10-34-0 Conventional	20.7 + 12.9 + 200# 20.7 + 12.9	spring summer	355.85	11.9	4,243
2	HN + PG + SK + M-500 + Mn HN + PG Agro-Liquid	15 + 4.1 + 8.3 + 3 qt + 1pt 15 + 4.2	spring summer	126.86	36.0	4,570
3	HN + PG + SK + M-500 + Mn HN + PG Ferti-Rain Agro w/ fertiRain	15 + 4.1 + 8.3 + 3 qt + 1pt 15 + 4.1 1 GPA / A / wk	spring summer 1st bloom-harvest	133.99	35.7	4,788
4	HN + PG + SK + M-500 + Mn HN + PG Sure-K + LiberateCa Agro w/ Lib Ca	15 + 4.1 + 8.3 + 3 qt + 1pt 15 + 4.1 2 GPA + 1 pt / A / wk	spring summer 1st bloom-harvest	135.32	34.1	4,617

*Micronutrients not included in total fertilizer per acre calculations. **NUE = Nutrient Use Efficiency = Lbs Yield / Total Lb. N,P,K&S as Fertilizer Applied, HN = High NRG-N, PG = Pro-Germinator, SK = Sure-K

Conclusions:

- The spring weather in Michigan for 2013 was fairly cool and wet and the strawberries development was somewhat delayed. However, as the conditions warmed and the plants began to grow, the overall vigor and development appeared very good among all treatments. Still, this was the third full season for these the strawberries in this location, the yields showed some decline from prior seasons.
- The AgroLiquid program (Trt #2) out yielded the conventional fertility program (Trt #1) on the first three of four individual harvests and when as well as the total yield when all four measured harvests were combined.
- The foliar applications which started at first bloom (Trt #3 & 4) promoted increased yields of strawberries. The two middle harvest dates showed the greatest response from these foliar applications of fertiRain or Sure-K + Liberate Ca. However, the greatest total yield occurred for the strawberries produced with AgroLiquid programs and fertiRain foliar (Trt #3).
- The Nutrient Use Efficiency (NUE) for the AgroLiquid based program (Trt # 2) was 3X greater than that of the conventional based fertility program. More yield with less actual fertilizer applied. While the foliar treatments produced higher yields, they also utilized additional fertilizer. The net affect was a slight reduction in the NUE, but values were still dramatically above that of the conventional fertilizer program. All AgroLiquid fertilizer based programs like these could be very positive environmentally in the sandy soils where strawberries are commonly grown.
- There was no measurements made for berry firmness, but observations by the individuals harvesting the plots were that the AgroLiquid treated strawberries were firmer and generally sweeter at each harvest.