

**Experiment Info:**

Exp.:	13-101
TransPlanted:	6-4
Variety:	Ruby Seedless
Population:	3500
Plot Size	7.5 ft x 30 ft
Replications:	Four
Harvest:	Multiple

**Soil Test Values (ppm):**

Farm / Field	105
pH	7
CEC	6.8
% OM	1.2
P1	89
K	80
S	11
% K	3
% Mg	23.2
% Ca	72.7
% H	-
% Na	1.1
Zn	1
Mn	5
B	0.5

**Objective:**

Determine the impact of fertilizer type and foliar fertilizers on the marketable yield and maturity of watermelons.

**Materials & Methods:**

- The plots were established on June 11th 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 planted every 34" into the plastic on June 12th. Each 30 ft plot length contained 8 Ruby Seedless watermelon plants and 2 pollinator plants (Variety = Ace). Additional pollinator plants were located just outside the plots in the borders areas.
- During the course of the growing season, irrigation, fungicides and insecticides were applied uniformly to all plots as necessary.
- Foliar fertilizer applications began when the first blooms were observed and additional applications were made every 10-14 days until mid-harvest. A total of six applications were made during the growing season. All the products and rates used are described in Table W1 were 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 each harvest, the vines were used to trace each ripe melon back to their home plots so they could be accurately collected, counted and weighted for determining yields. Melons less than 7 lbs and those produced by the pollinator variety were not used for yield evaluations in this trial.

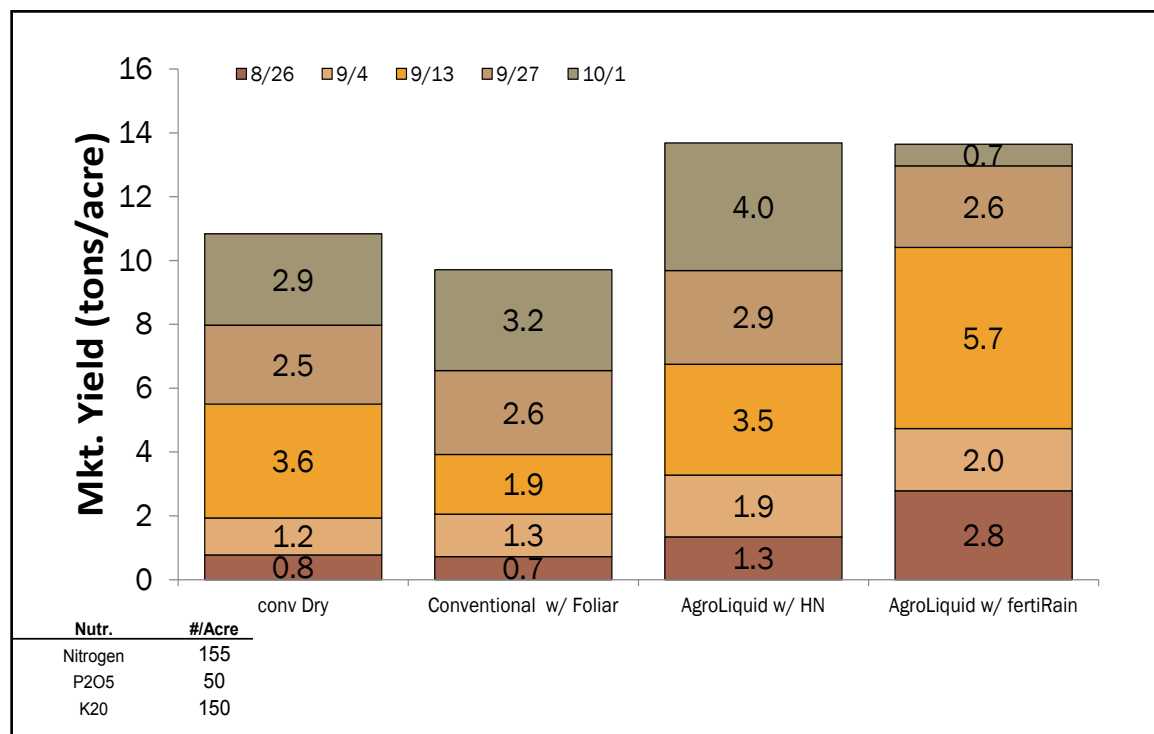


Figure W1. Watermelon yields by harvest date for different fertility programs and additive benefit of foliar fertilizer applications on the yields.

Table W1. Watermelon fertility programs and foliar fertilizer additions to an AgroLiquid program. Experiment 13-101, Ruby Seedless

Treatment	Rate/A (gal and lb/A)	"Method of Application"	Nutrients*	NUE**	Yield Tons/A
1 0-0-60 + DAP + B 10-34-0 28% UAN & 10-34-0  Conventional	181# + 56.5# + 4# 2 45 + 4	broadcast transplant band	314.5	10.8	68.7
2 0-0-60 + DAP + B 10-34-0 28% UAN & 10-34-0 Plant Products 20-20-20  Conv + Foliar	181# + 56.5# + 4# 2 45 + 4 3 lb	broadcast transplant band foliar	317.4	9.7	61.1
3 PG + Micro 500 + B HN + PG + Sure-K  AgroLiquid	1 + 1 + .25 30 + 3 + 10.2	transplant band	111.3	13.7	246.2
4 PG + Micro 500 + B HN + PG + Sure-K fertiRain  AgroLiquid&fertiRain	1 + 1 + .25 30 + 3 + 10.2 4 x 2 qt	transplant band foliar	114.9	13.6	236.8

\* \* 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, PPI = preplant incorporated

**Conclusions:**

- Yields for the AgroLiquid fertility program (Trt #3) were typically greater than that of the Conventional program (Trt #1) for each harvest date (Figure W1). The end result was nearly 3 tons more melons per acre for the AgroLiquid program over the measured harvest period. However, the yield after four harvests with the AgroLiquid program nearly matched that of the conventional fertility program after five.
- Foliar fertilizer applications have traditionally added to the yield potential for most fertility programs. However, during the 2013 season they actually were found to reduce yields, especially for the conventional fertilizer program. With the AgroLiquid program plus fertiRain (Trt #4), the early season harvests showed yield improvements over the AgroLiquid Program without any foliar (Trt #3). However, the later season yields were reduced. This was almost opposite of what was observed from the application of Plant Product 20-20-20 over the conventional fertilizer program – early season yields were reduced and later season yield improved compared to the conventional program without any foliar (Trt #1). The decline in yield for the conventional foliar (Plant Products 20-20-20) was not typical of what has been observed in prior years.
- The yield after only three harvests for the AgroLiquid fertility program with fertiRain was similar to that from the conventional program after all five harvests.
- Applications of fertiRain treatments (Trt #4) didn't not appear to increase the overall yield of watermelons. However, as the early season melons tend to demand a higher price, there still would likely have been a financial advantage to the use of fertiRain for most growers. Additionally, the last harvest could have been dropped from this treatment with minimal impact on total yield. The same would not have been true for all other treatments.
- The harvests for the 2013 season were later and lower yielding than many previous seasons. This was likely caused by late planting due to wet spring conditions.
- The Nutrient Use Efficiency for the AgroLiquid programs was approximately 4X that achieved by the conventional fertility programs. Increased yields with lower impact on the environment.