

Experiment Info:

Exp.: P-101-13

Planted: 5-1-10

Variety: Jersey Supreme

Population: 8,740

Plot Size 5' x 20'

Replications: Five

Harvest: Multiple

Foliars: Four

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:

Determine the best means to fertilize asparagus plants for maximum yields per harvest and over the entire harvest season.

Materials & Methods:

- The asparagus for this trial was planted as one year old crowns in 2008. In that initial year, only the spring fertilizer applications were made. Starting in 2009, the treatments described in Table A1, have been followed
- The dry products used for these applications were broadcast over the center section of each plot and lightly incorporated as the plots were tilled for weed control in the spring prior to any spear emergence. All liquid fertilizers were banded with 12" wide streamer bars directly over the area of crown development. During the course of the growing season, irrigation and pesticides were applied uniformly to all plots as necessary.
- Foliar applications (Table A1) started in Mid-June, typically two weeks after the final harvest and continued on a monthly basis for a total of four foliar applications per season. After a killing frost in the fall of 2011, the plots were mowed and left until the spring of 2012 when the plots were cleaned and prepared for a new season of growth and harvesting.
- Very warm temperatures in February and March of 2012 broke plant dormancy earlier than normal. As spears began to emerge, regular attempts were made to harvest marketable sized asparagus spears. However, when overnight frosts damaged the spears there was no formal evaluations made. Damaged spears were simply cut and dropped within the plot areas. Since this is a relatively new planting, and early season losses to overnight frosts, the interval of harvest evaluations for 2012 was relatively short.
- As the size and quantity of the spears fell, and the asparagus harvest stopped and it was allowed to grow vegetatively for the remainder of the 2012 season.

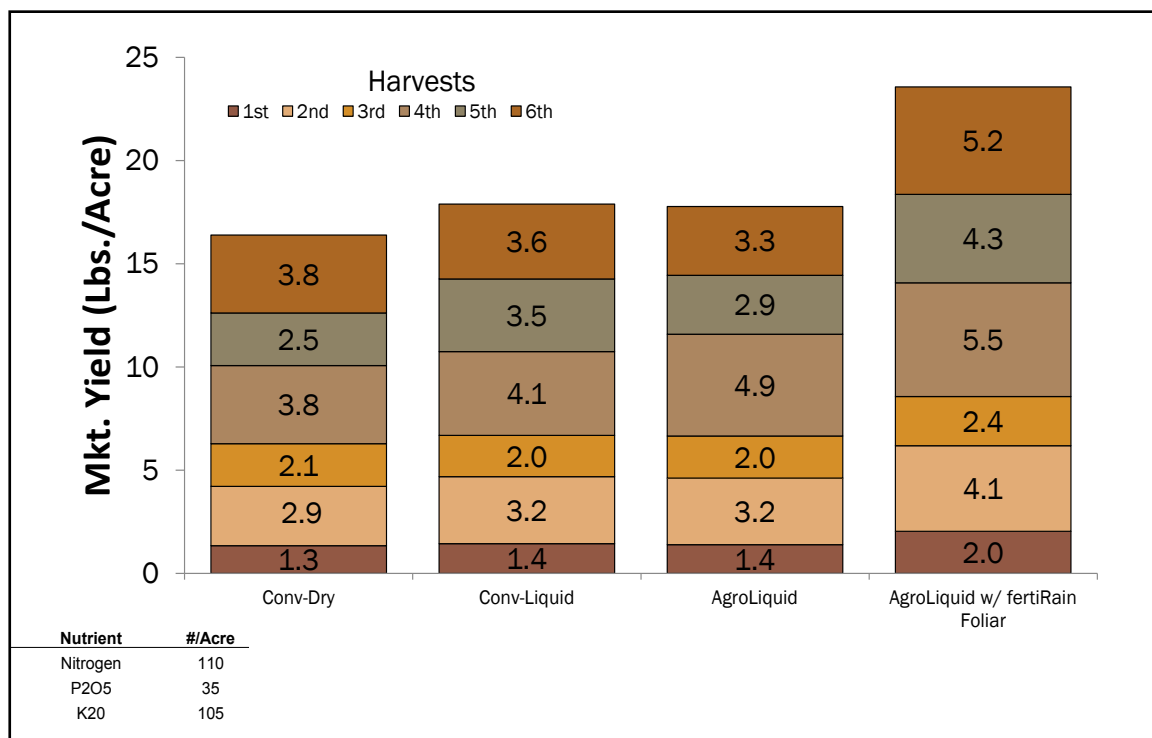


Figure A1. Cumulative yields from three harvests of fresh market asparagus.

Table A1. Asparagus soil fertility program comparisons and the benefit of foliar fertiRain on crop yield, 13-P101, Jersey Supreme.

Treatment	Rate/A (gal or lb/A)	Tim	Nutrient lbs/A	NUE**	Yield Tons/A
1 46-0-0+0-0-60+18-46-0+Mn+Zn 46-0-0+0-0-60 Conv Dry	97#+75#+100#+4#+4# 115#+75#	spring summer	250.5	130.9	16.4
2 28% + 0-0-60 + 10-34-0 + Mn+Zn 28% + 0-0-60 Conv Liq	18+75#+11.8+4#+4# 18+75#	spring summer	258.1	135.5	17.5
3 HN + PG + SK + M-500 + Mn HN + SK AgroLiquid Base	11+5+6+3qt+1 qt 11+6	spring summer	93.7	379.4	17.8
4 HN + PG + SK + M-500 + Mn HN + SK ferti-Rain fertiRain @ fern	11+5+6+3qt+1 qt 11+6 2	spring summer Monthly - Fern	108.0	436.6	23.6

*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:

- The AgroLiquid programs (Trt # 3&4) were similar or out yielded both conventional fertility programs (Trt #1&2) in the first four harvests. However, when all measured harvests were combined, the AgroLiquid (Trt #3) and the Conventional Liquid program (Trt #2) were very similar. Still, both out performed the Conventional Dry program (Trt #1) for total yield.
- Foliar application of fertiRain added to the AgroLiquid program on asparagus after it was allowed to go to fern in 2012 resulted in dramatic yield increases for the 2013 season. Every measured harvest was increased compared to all other treatments during the 2013 season. Foliar feeding the asparagus fern development the prior season resulted in stronger yields this season. This has been consistently shown over the last several years in this trial.
- The Nutrient Use Efficiency for the AgroLiquid based programs (Trt # 3-4) was 3X to 4X greater than observed for conventional based fertility programs. More yield with less actual fertilizer applied. This can be very significant environmentally in the sandy soils where asparagus is commonly grown.