

Experiment Info:

Experimental Info 13-P104

Planted: 5-29-10

Variety: Concord

Population: 545

Plot Size 10' x 32' (four vines)

Replications: Three

Harvest: 9-18-13

Soil Test Values (ppm):

Farm / Field 108

pH 7.3

CEC 8.6

OM 1.3

P1 211

K 124

S 2

% K 3.7

% Mg 21.6

% Ca 74.4

% H -

% Na 0.3

Zn 13

Mn 5

Fe 34

Cu 1.7

B 0.8

Objective:

Compare fertility programs impact on the development and yield of young White Riesling vines in Central Michigan.

Materials & Methods:

In the spring of 2010, this research vineyard was established with two rows of White Riesling grapes. The rows were space ten feet apart and the in-row spacing for the vines was five feet between vines. Each plot contained five vines (5 vines x 5 ft). These vines were established and growth directed for a Single Curtain, Bi-lateral Cordon with a standard two-wire trellis without any crop load during the first two seasons of growth. Little or no cane pruning occurred prior to 2012. Only the removal of all but one renewal spur at the base of each vine regularly occurred each season. Each fall after all leaves had dropped, the graft union on each vine was covered with 2-3" of soil to provide some frost/freeze protection for these vines. During early March of 2013, the vines were all pruned back to a uniform number of nodes prior to bud break. After bud break and early leaf development, the soil coving the graft union was removed from all vines and any unnecessary renewal spurs were cut back to near the base of the vine and spring fertilizer treatments were applied. Pesticide applications to provide disease and insect control were applied uniformly across all plots as necessary during the growing season. Foliar fertilizer applications were applied to selected plots at full bloom, bunch closure and Veraison utilizing a backpack sprayer. At maturity, all clusters were harvested and weighted for all five vines within each plot. Four random clusters were then selected from each plot, combined, crushed and the Brix levels determined just after harvest.

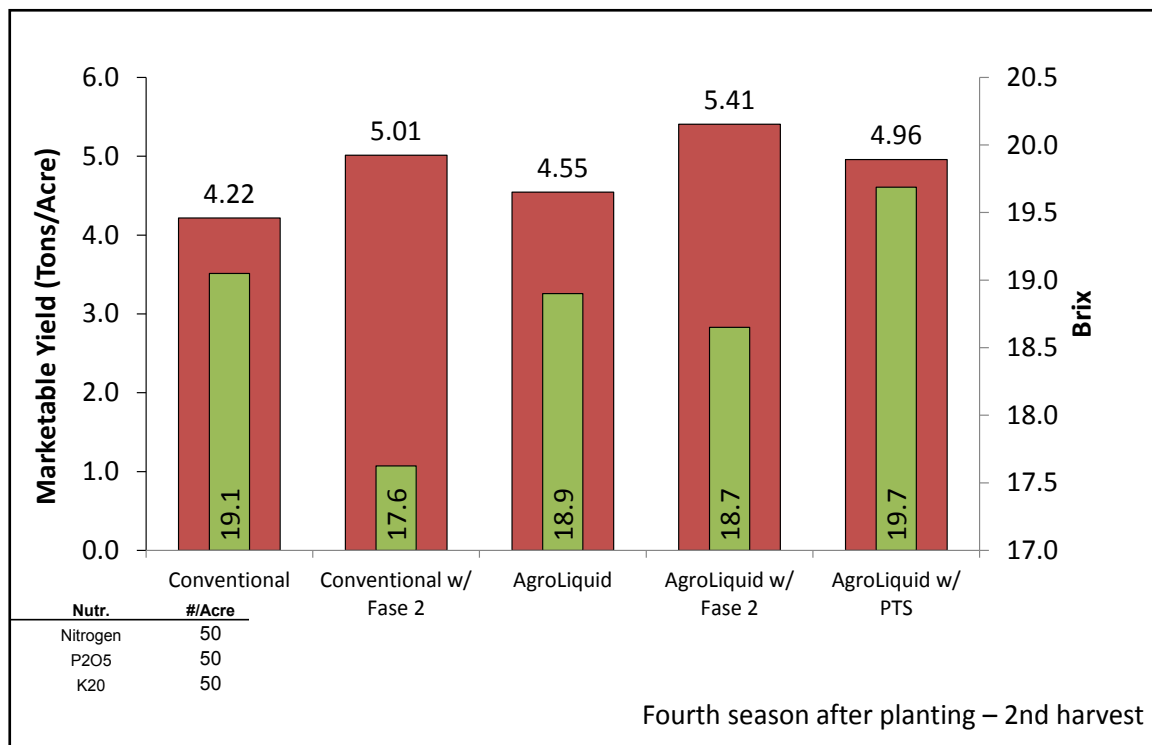


Figure RG1. Yield results for two grape varieties from the 2012 growing season.

CG1. Fertility programs and yield information for Concord Grapes, 2013. Experiment 13-P104

Treatment		Rate/A (gal or lb/A)	"Method of Application"	Nut.* Lb/A	NUE**	Yield Tons/A
1	Conventional 28% UAN + 10-34-0 + SOP	12 + 12.9 + 100#	Band	155.8	54.1	4.2
2	Conventional w/ Fase 2 28% UAN + 10-34-0 + SOP Fase 2	12 + 12.9 + 100# 2 qt x 3 apps	Band Foliar	206.0	48.7	5.0
3	AgroLiquid HN + PG + SK + Micro 500 + Mn	11 + 4.2 + 4.2 + 1 + 0.125	Band	97.1	93.6	4.5
4	AgroLiquid w/ Fase 2 HN + PG + SK + Micro 500 + Mn Fase 2	11 + 4.2 + 4.2 + 1 + 0.125 2 qt x 3 apps	Band Foliar	54.5	198.5	5.4
5	AgroLiquid w/ PTS HN + PG + SK + Micro 500 + Mn PTS	11 + 4.2 + 4.2 + 1 + 0.125 2 oz x 3 apps	Band Foliar	52.1	190.3	5.0

*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, PTS = Protristim

Conclusions:

- The yield of Riesling grapes was 0.3 tons/Acre higher for the AgroLiquid fertility program (Trt 3) than the conventional program (Trt 1). The soluble solids or Brix values were similar for these two treatments this season showing both had similar maturity. Previously, there was an advantage observed for the AgroLiquid program.
- Three applications of Fase 2 at selected growth stages (treatments 2 & 4) resulted in yield increases of 0.8 and 0.9 tons per acre for the Riesling grapes produced with the conventional fertility products or the AgroLiquid products compared to their respective programs without the foliar. While the basic fertility components were different, the positive yield response to the Fase 2 was similar.
- Fase 2 added to the conventional fertility program (Trt 2) resulted in the lowest Brix values observed in the trial, over 1.5 points behind the conventional program without Fase 2 (Trt 1). The higher yields from the Fase 2 would require additional time to achieve a similar maturity of the grapes not receiving the foliar. With the AgroLiquid programs (Trt 3 & 4) the yield increase was slightly larger with the Fase 2 treatments, but the resulting Brix values was only 0.2 points lower than the base program. Therefore, only a small difference in maturity was observed with the use of Fase 2 when AgroLiquid products were used for the fertility program.
- The Brix measurement from all treatments was highest for the AgroLiquid program with foliar applications of PTS or Protristim (Trt 5). The yield was also increased by 0.4 tons per acre compared to the similar program without the foliar (Trt 3). This Brix increase of 0.8 points would have allowed this block of grapes to be harvested earlier than all other treatments if this was the main criteria by which harvest was based. A modest increase in yield with increased maturity may make this the most attractive fertility program evaluated in 2013.