

Experiment Info:

Exper.:	WA-Apple1
Planted:	2001
Variety:	Gala
Population:	18' x 20'
Plot size:	3 rows = 2 acres
Replications:	Four
Harvest:	25- August

Soil Test Values (ppm):

Soil	Sandy Loam
pH:	6.4
CEC:	10.6
%OM:	4.0
Bray P1:	12
Bicarb P:	-
K:	122
S:	18
%K:	-
%Mg:	9.20
%Ca:	86.20
%H:	-
%Na:	0.50
Zn:	6.9
Mn:	-
Fe:	-
Cu:	-
B:	-

Objective:

Determine the impact of Pro-Germinator alone or with the addition of Micro 500 foliar on the yield and quality of Gala apples in Washington State apple production, 2013.

Materials & Methods:

During the spring of 2013, six adjacent rows of Gala apples were treated with Pro-Germinator at 5 gallons per acre at bud break. The applications were applied with a ground sprayer which directed the fertilizer below the tree canopy of established fruit trees.

1. Grower Standard program was 70-24-10-89S-4.9Mg-0.6Zn- 1B. These nutrients were applied as K-Mag, Ammonium Sulfate, Micro Essentials 12-40-0-10S -1Zn, and 15% Boron granule's.
2. Over the top of the grower standard program, Pro-Germinator was applied as a directed spray (approximately 5' wide) under the tree canopy once each spring at a rate of 5 GPA along selected rows in the orchard. All plots had an area equal number of trees.
3. In the third plot area, Pro-Germinator was applied as in the second treatment, then Micro 500 was applied three times at 1 qt. per acre with an air-blast orchard sprayer to an equal sized area. Application timings were petal fall, early fruit set and 30-40 days prior to anticipate harvest. This treatment could have been combined with a fungicide, but for the purpose of this trial it was applied alone.

- Harvest evaluations were made on Aug 25th for each plot area. The apples were harvested based on color and maturity by a commercial crew and then four random samples of 20 apples from the harvested bin were collected and individually measured to determine their size.

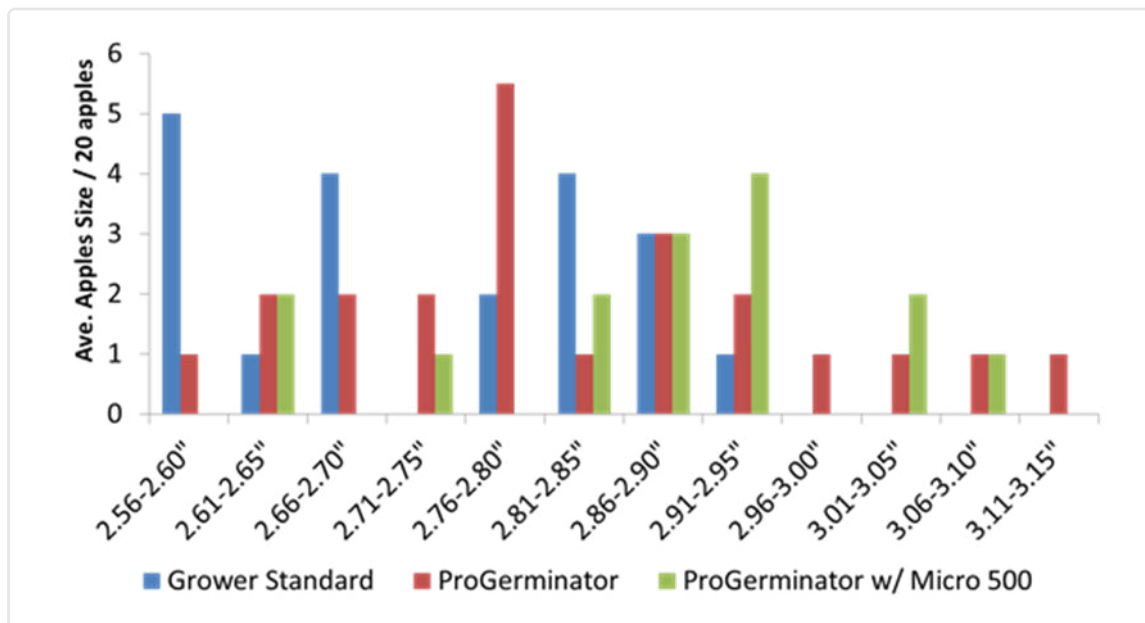


Figure A1. Effect of three fertility programs on Gala apple size distribution (inches), 1st Harvest

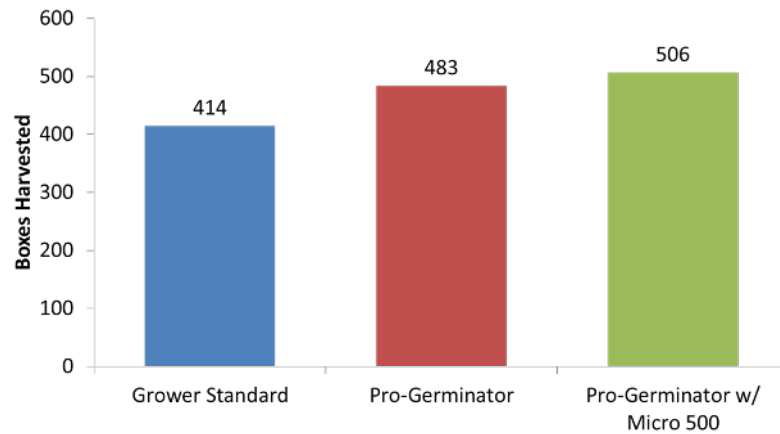


Figure A2. Effect of three fertility programs on Apple yield per plot (marketable boxes).

Table A1. Apple quality evaluations at initial harvest, Gala Apples, Entiat, WA 2013.

Date	Treatment	Ave Size/grade	Trees per bin	Ave Pressure	Min Pressure	Starch Ave.	Starch Min	Starch Max	Sol Solids
Aug 21	Grower Standard	4.8 oz 2.72" - 138	22	20.0	17.2	2.6	2.0	4.0	11.9
	Pro-Germinator	5.4 oz 2.83" - 125	21	19.9	17.2	2.8	2.0	5.0	10.2
	PG & Micro 500	5.9 oz 2.90" - 113	18	20.3	16.0	2.7	2.0	5.0	12.3

Conclusions:

- The addition of Pro-Germinator to the apple fertility program resulted in larger sized apples and therefore fewer trees were harvested per bin of apples and more boxes of apples were harvested per plot. The apple size was increased by 0.6 oz. on average compared to the grower standard. However, the apples in the plots treated with Pro-Germinator were approximately one week past ideal maturity at the time of harvest according to the owner of the orchard. He communicated to the researcher for this trial that had this entire orchard been treated with Pro-Germinator, harvest would have started several days earlier.
- The addition Micro 500 foliar application saw some additional increase in apple size compared to the other treatments and had the greatest number of marketable apples being harvested per plot. As harvest was based on the color of the apples, the addition of Micro 500 likely promoted better color in addition to size so a higher percentage of the apples were picked and a larger 1st harvest.
- Internal quality evaluations showed some improvement in starch values for the AgroLiquid treatments with little or no change in pressure reading. Still, due to differences in maturity caused by the AgroLiquid treatments the true differences in quality could not be determined.
- This trial was a contract research trial conducted by Holland Agriculture Services, Pasco, WA. These pages are intended to summarize key points from that trial, but were not written by the researcher; should you have any specific questions or comments related to this trial, please contact us.