



Case Study

Cherries: Trunk Cross-Sectional Area



Case Study

Cherries: Trunk Cross-Sectional Area

This case study examines a farmer-led trial by cherry grower Mike Omeg of Orchard View Farms in Oregon. With the objective of increasing growth in young trees, Omeg compared an AEA nutritional program side-by-side with a conventional management program. He measured performance by the tree's Trunk Cross Sectional Area (TCSA).

Key Achievements:

- **89% increase** in Trunk Cross Sectional Area of young trees vs. control.



Background

Mike Omeg is director of orchard operations at Orchard View Farms, which grows 3,600 acres of sweet cherries in The Dalles, Oregon. As an orchardist, one of Omeg's major objectives is to get blocks of young trees into production as quickly as possible. The way to achieve this is to create as much high-quality growth as quickly as possible. At the time of the study, Omeg had been using AEA programs in his orchards for a number of years. He designed this study to determine how AEA programs would specifically affect the growth of young trees.

Trial Design

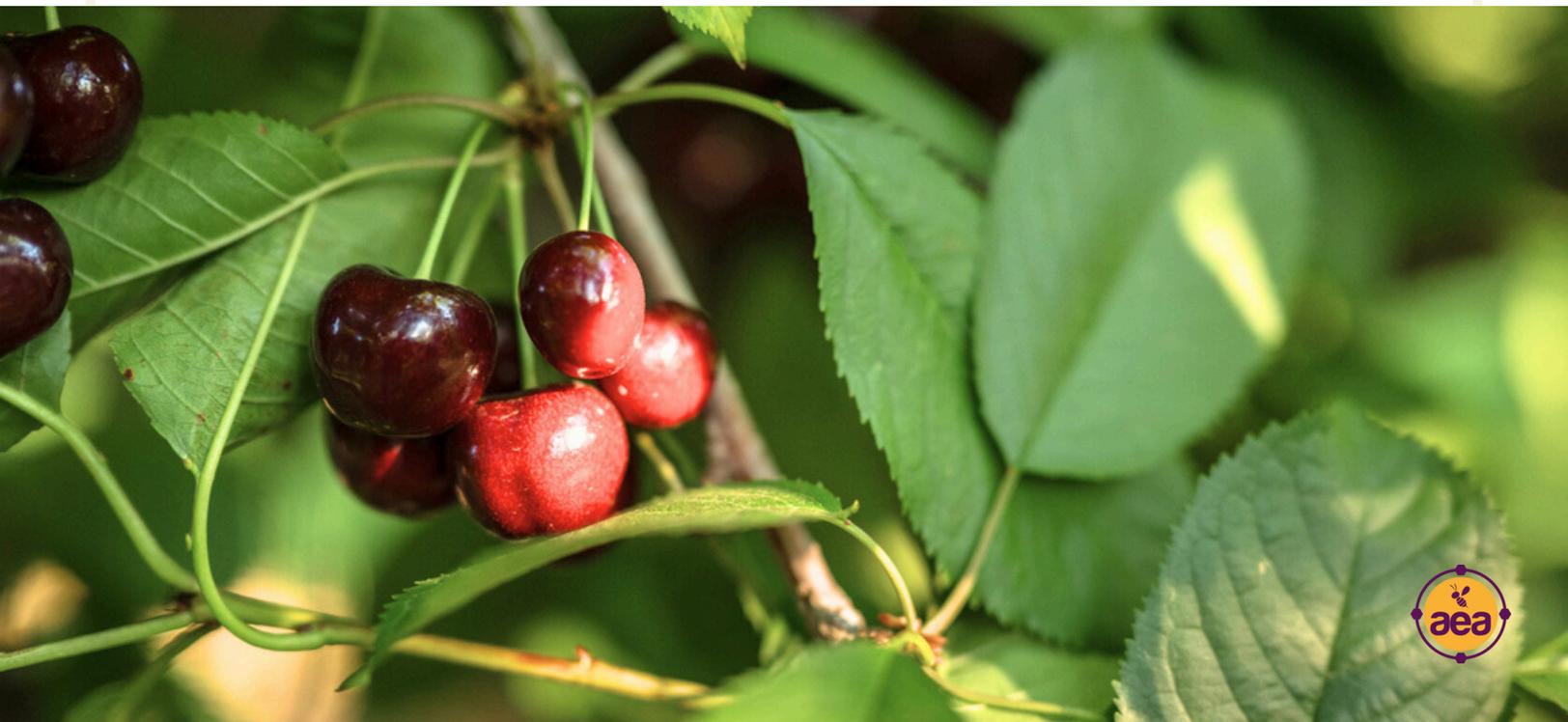
In the treatment block, Omeg selected between 5-12 trees from each of 11 varieties. He used a comparable number of trees of the same varieties in other blocks of the orchard as a control. In total, the trial and control each comprised 90 trees. The trees were on one of three rootstocks—Gisela 12, Krymsk 6, or Mazzard. All trees of a given variety were on the same rootstock. Some were bare-root, while some had been potted. All the trees were the same age; the trial took place a year after they had been planted out.

The treatment consisted of 2 AEA fertilizer applications per week: 1 foliar and 1 fertigation. The foliar treatments were calibrated based on sap analysis and field observations throughout the season, while the fertigation was based on Omeg's experience with formulas that would maximize soil biology. The control block did not receive any AEA applications. Treatment began on May 5 and ended October 8.

After the treatment was complete, the trees' Trunk Cross Sectional Area (TCSA) was calculated using the formula

$$\text{TCSA} = \pi * (\text{Avg diameter}/2)^2$$

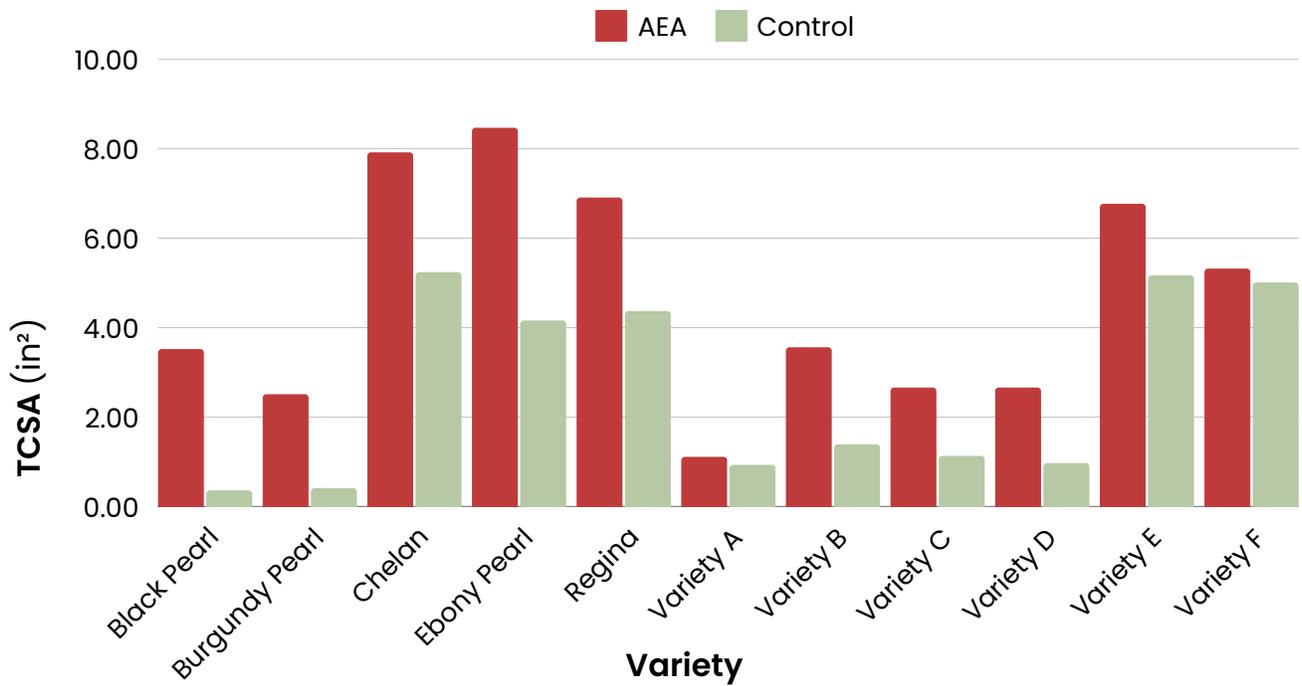
A tree's average diameter was determined by measuring the tree's diameter 30 inches from the ground using a caliper, along two axes: north-south and east-west. The mean of those two measurements gave the average diameter.



Results

In all 11 varieties, the AEA-treated trees had a greater TCSA than the control trees. The increases ranged from 6% to a whopping 874%. In more than half of the varieties, the TCSA of the AEA-treated trees was over twice that of the control trees.

Variety	Control	AEA	Difference
Black Pearl	0.36	3.52	874%
Burgundy Pearl	0.41	2.51	517%
Chelan	5.24	7.92	51%
Ebony Pearl	4.16	8.47	103%
Regina	4.37	6.91	58%
Variety A	0.93	1.11	19%
Variety B	1.39	3.56	156%
Variety C	1.13	2.66	134%
Variety D	0.97	2.66	175%
Variety E	5.17	6.77	31%
Variety F	5.01	5.32	6%
Average	2.56	4.84	89%



On average, the TCSA of the AEA-treated trees was 89% greater than the control trees: 4.84 in² to 2.56 in².



Untreated

Dallesport
TCSA - 0.36"

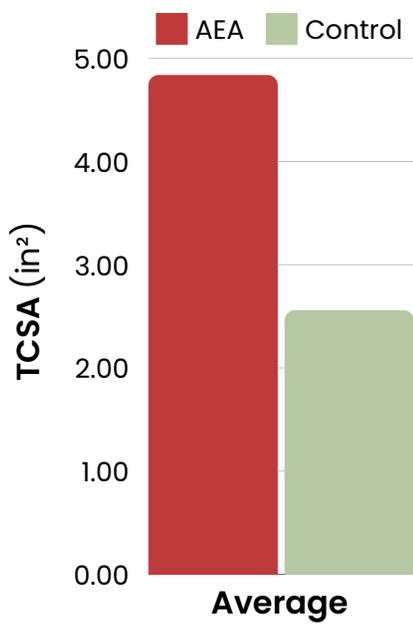


Treated

Driveway
TCSA - 3.52" (877% larger)

Black Pearl (Gisela 12) potted tree, planted in 2020





Conclusion

Getting young trees off to a strong start is imperative for a fruit grower. With well-established root systems and strong shoot growth, trees are more able to withstand abiotic stressors like drought and frost. Most importantly, bigger, healthier trees will bear fruit sooner and yield more in their early years, providing a serious improvement to the grower's bottom line.

In this trial, Mike Omeg showed that twice-weekly doses of AEA nutrition create a dramatic effect on the growth of young trees. "If you drive by this orchard, you think it's a few years older than it is," says Omeg.

These results require serious consideration from growers looking to accelerate the growth of newly-planted trees, and bring them into bearing sooner.

About Advancing Eco Agriculture

Advancing Eco Agriculture (AEA) helps farmers succeed by empowering them to grow crops that are more productive, resilient and profitable. We provide data-based agronomic consultation and a range of powerful liquid mineral nutrition and biological products.

AEA is dedicated to a whole-systems approach to revitalizing soil and plant health, looking beyond symptoms by diagnosing root causes and providing treatments. This approach, informed by more than 18 years of data and on-farm experience, increases yields and crop performance, reduces or eliminates the need for pesticides and fertilizers, and generates immediate economic returns for farmers.



(800) 495-6603
 hello@advancingecoag.com
 advancingecoag.com

