

WA38 plots at Sunrise and Roza WSU farms



Purpose

To provide insights to how WA 38 interacts with 2 rootstocks and 3 production systems.

- Rootstocks: M.9 Nic 29, and G.41.
- Three systems: Vertical 10 x 3; Angle 12 x 1.5; Two leaders 10 x 3 (leaders 1.5 feet spacing).

At planting:

- Trees were 5/8 to ¾" caliper.
- M.9 Nic 29 had about 9 feathers per tree,
- G. 41 had 22 smaller feathers and flatter branch angles.

Losses:

- Four of 500 trees in G.41 growing in the angle system had broken unions by being stepped on by the pruners.
- Fire blight killed several trees on M9 Nic 29 in the 5th and 6th leaf, with strikes from bloom, oozing and blight cankers in the graft unions. No fire blight strikes were observed in G.41 trees.

Characteristics

- G. 41 is one of the Geneva replant tolerant rootstocks and grows more vigorously compared to M9 and B9 in its non-bearing phase.
- In WA 38, the replant vigor of G.41 can combine with the increase number of shoots and growth due to pruning and the added vigor from lack of fruit set. This combination requires thoughtful decisions how to manage irrigation, nutrition, pruning and the application of growth regulators.



Rootstocks



WA38 traits

Bourse shoots:

- Up to 12" are higher fruit set structures.
- Avoid clicking them, especially on vigorous trees.
- Cropping is essential to calm the trees.

Bloom and fruit set:

- 40% of the flower clusters fail to set.
- WA 38 needs twice as many fruiting sites per tree than Fuji, Gala or Honeycrisp.
- Do not chemical thin WA 38 until consistent fruit set indicates that the practice is warranted.
- Do not hand thin WA 38 until the last drop is completed in early July.

Fruit quality:

- Fruit quality on 1 year wood is good.
- 50% of the crop comes on 1 year wood.
- The one year wood fruit set in the top of the tree is a strong/dominate trait of WA 38, limiting growth.
- One year wood in the bottom of the tree with caliper less than 5/16 or 8 mm is high fruit set wood, do not prune!

Yield efficiency:

- Higher in small caliper wood. less than 10 mm (3/8").
- Larger caliper shoots tend to have more blind wood, less flowers and less fruit set
- Trees with shoot growth greater than 12" will have more green spot disorder in relation to the amount of excessive shoot growth.

Vertical and The Angle canopies had two training practices to minimize blind wood

- Bending to the horizontal wire.
- Click pruning.



Bending

- Limbs greater than 5/16" were trained down the wire
- Resulted in strong vertical shoots where the bend occurred. Apex of the bended shoot became lower than the middle of the shoot, and the resulted changes of auxin movement allowed lateral buds to break.
- At the Roza, trees that were bended had strong sucker growth and fairly large caliper shoots.

Two types of click pruning

1. Consistently shortening all one year shoots.
2. Prune only excessively large shoots to 2 or 3 buds near the base of the growth ring.

Tips

- Pay attention to the buds in the axil of the leaf to be sure there is a growing point (a lateral bud).
- It is helpful to prune to a bottom of the shoot bud, it will grow less and be flat.
- The pruning can done in dormant trees, or in May/June after shoots reach 10 leaves.

Click
Pruning

