

Start of 2025, Inspecting 2024 plants

Plant Type: Padre Almonds

Summary: At a commercial orchard in Turlock, Ca, in early 2024, the farmer planted about 700 new trees, of which we selected 15 to monitor through the growing season as our “control”. They received the farmer’s “best known practices”(BKM); these are considered “control”. We planted 105 more, which all received the BKM, additionally with 17 different variations of SAI applied and provided soil amendments, and planting practices, as field trials. We’ve monitored those 105 trees, along with 15 control trees, and 17 trees planted in 2023- to follow them longitudinally. 6 of the 2023 trees are “control”; their averages will be compared to these others.

On 24 February 2025, we began our new plantings at this orchard, up from 105 SAI plantings in 2024, to about 500 SAI plantings in 2025. Since the existing trees are just starting to bloom, we inspected the trees to get an early indicator if the SAI treated trees planted in 2024 might reveal early indicators that might predict earlier harvests- due to accelerated tree size. Photos taken below on 2/24/25; not enough blossoms out yet to form a prediction.

| | <u>Height (cm)</u> | <u>Canopy Width (cm)</u> | <u>Trunk Diameter (cm)</u> |
|------------------------|--------------------|--------------------------|----------------------------|
| 2023 Control: | 369 | 186 | 5.0 |
| 2024 Control: | 245 | 128 | 2.6 |
| 2024 SAI (JB) treated: | 383 | 201 | 3.6 |



Photo 1: a 2024 control tree, on the small size of the distribution. (note the green tag)



Photos 2, 3: both started 2024 as monitored control trees (note green tags), i.e. no SAI amendments at initial planting. Mid-year, on 4 June 2024, we performed a “drill and fill”. For this experiment, we identified 20 pairs of adjacent trees of the same vintage/treatment, selected the one that was shorter, with a more narrow canopy, and with a skinnier trunk. The “runt” tree was then given a “drill & fill” (D&F) treatment. D&F is when we use a portable drill and an augur, drill holes down into the top of the root zone, then deliver a controlled dose of the SAI soil amendments (biochar, plant compost, vegetable eating animal manure compost, and live microbes) per surface area we are dosing mid year.

In 19 of 20 cases, the “runt” tree which received the D&F caught up or surpassed the bigger tree, in 2H’24. You can see this with your eye; note the difference in tree height between the control tree on the left, and the control tree on the right – which received the D&F. Note also the ‘density/bushy-ness’ difference between these two trees. Since this was after one year, clearly the D&F tree will start 2025 with perhaps 2x the leaves as the untreated tree, thus compounding the benefits over the next few years.

Not shown: when inspecting for the “largest leaves”, the trees receiving the SAI treatment were up to 4.2x larger than the largest leaves on the trees which did not receive the SAI treatment.



Photo 4: this tree represents the “JB” treatment, the best treatment of the 17 treatments experimented with in 2024 plantings. Note the tree height is over 2x taller than the man (he is 6’1” tall). Note more branches, a wider canopy, and the larger leaves (not shown).

We also observed that the SAI trees with a particular combination of ingredients, held their leaves 2-3 weeks later than the trees without this combination. Thus, we anticipate that these trees will come “roaring back” sooner in the spring- since they probably stored more sugars in the wood in the fall, due to more leaves and larger leaves, which held on to the tree later into October. It was EZ to spot these trees from the road, in the orchard. You could drive by the orchard, see nearly all the trees were barren- except for the several dozen that still had leaves into late October ’24. Sure enough, stop the car, walk up to the tree with leaves, and there’s the SAI tag.

Blossom count to follow, in the next few weeks. We expect that the of the 2024 plantings, the SAI treated trees will have many more blossoms than the 2024 control trees. The more interesting question is, “what is the blossom count comparing the 2023 control trees to the 2024 SAI/JB treated trees?. We’ll know in the next few weeks.

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