2025 Field Study

Plant Type: “Sweet 100” Cherry Tomatoes
Field Trial vs. a Retail Compost Competitor (“$Comp_{sc}$”)

Summary: Since 2023, SAI has been collaborating with a local plant nursery, as we’ve developed our soil amendment. We’re at the point where we are ready to bag it and sell it at retail. To help establish the value proposition, this plant nursery suggested that we conduct a field trial, comparing plant response to the closest product that they carry. We call this $Comp_{sc}$, which consists of composted cow manure+seafood wastes+plant bits. At the request of this local plant nursery, we purchased a bag of $Comp_{sc}$, and used it in 2 field trials.

20 June 2025 Update: we planted 3 “Sweet 100” cherry tomato plants in 2 gallon pots. The base soil was fresh potting soil; all got an initial dose of tomato fertilizer, and the same amount of water We used 3 different ratios: control, control plus the $Comp_{sc}$ at their recommended ratio of 6:1 (note: 3.3x more compost per plant than the SAI amendment), and the control plus the SAI soil amendment at 20:1. For example, 20:1 means 20 parts of the potting soil plus 1 part (at our optimal ratio) of the SAI blend (biochar+plant compost+animal manure compost+beneficial bacteria+mychorhizzal fungi+starter food for the fungi+a water retention ingredient). All SAI materials are certified by the Ca EPA and by the CDFA, and all are certified organic except for one. The control plant started at 19 cm tall, while the other two started at 16cm tall.

16 July 2025 Update: The SAI 20:1 plant is growing the fastest: it is taller, wider, and has larger leaves than the other two. (Surprisingly the $Comp_{sc}$ plant is the smallest plant.) The control plant has 7 clusters, and the most blossoms on a cluster is 13. The $Comp_{sc}$ plant has 7 clusters, and the most # of blossoms on a cluster is 11. The SAI treated plant has 11 clusters, and the most # of blossoms on a cluster is 15. Tiny tomatoes are visible.

Photo 1: 16 July 2025 plants. The control plant is on the left (green tag), the $Comp_{sc}$ plant is in the center (teal tag), and the SAI plant is on the right (red tag). A yardstick is visible in the red tagged plant.

18 August 2025 Final: On 18 August 2025, we ended the experiment with the "Sweet 100" cherry tomatoes. One plant was "control", one plant was control + $Comp_{sc}$ at their recommended ratios (6:1), the third plant was control + SAI amendment at 20:1.

Photo 2: tomatoes/plant, when we ended this field trial. $Comp_{sc}$ is on the left, control is in the center, and the SAI treated plant is on the right.

	$Comp_{sc}$	Control	SAI 20:1
# Clusters	9	9	16
# Ripe Tomatoes	12	6	17
# Green Tomatoes	11	38	42
Wt of Ripe Tomatoes (gr)	76.7	25.3	101.5

Table 1: Cherry tomato production on three plants.

The SAI treated plant had 1.8x more clusters than either of the others. The SAI treated plant produced 1.42x more ripes tomatoes than the $Comp_{sc}$ plant, and 2.8x more ripe tomatoes than the control plant. The SAI treated plant, overall produced 2.8x more tomatoes than the $Comp_{sc}$ plant, and 1.34x more tomatoes than the control plant. The SAI treated plant produced 1.3x more ripe tomatoes by weight compared to the $Comp_{sc}$ plant, and 4x more ripe tomatoes by weight compared to the control plant. These #s are in line with what we see in other comparitive trials. In the case of cherry tomatoes, we typically see 2-3x more fruits per plant, but no difference in weight. For indeterminate tomatoes, we routinely also see 2-3x more tomatoes/plant, and the average weight of the SAI tomato is typically larger.

The experiment was ended before full harvests and before frost killed the plants, due to tomato blight. We also needed the space for additional trials. (We had as many as 80 tomato plants potted and tracked in summer 2025.)