Corvallo Farms

2026 Season Review and 2027 Plan

Crop year 2026 · Board meeting, Thursday, February 25, 2027

Prepared for the Board of Directors, Corvallo Farms

Prepared by Ray Corvallo, Lupe Arredondo, Tejinder Bains, Dana Whitcomb and Nora Ybarra

February 2027

Corvallo Farms and everyone named here are invented, and the data are simulated.

1. Executive summary

The board asked four questions about the 2026 season. This report answers each with the farm's own records and trials, says how sure we are, and ends with five recommendations.

In the field. A randomized irrigation trial in block N-15 found that backing off at hull split saved about 5 inches of water per acre. Nonpareil showed no detectable loss, but Monterey rows, cut at Nonpareil's split, lost about 256 lb/ac (88 to 423).

Orchard health. The October walk of all 665 five-acre sections found decline in 176 sections (880 acres). Four West Ranch blocks, W-04, W-11, W-12 and W-10, have decline in three quarters or more of their sections and come out. On 200 sections it had not seen, a risk model caught 7 in 10 declining ones; older, saltier and more water-stressed sections and Nemaguard rootstock went with higher risk.

At the huller. Except one wet run (run day 14, day shift), every kernel moisture reading sat inside the buyer's 4.0% to 6.0%; that run put 2 of its 5 readings above 6.0%. The moisture meter repeats well.

Direct sales. The randomized promotion added about $1,141 in an average promoted week (95% interval $903 to $1,380); whether it paid in profit needs the promotion's costs. Actual holiday sales fell inside the October forecast's 95% range in 10 of its 12 weeks.

Recommendations (section 6): back off Nonpareil at hull split in a short year and test Monterey's own timing; spot-replant from the walk and pull the four blocks in order; keep worm sanitation and shake timing tight; find the wet run's cause before promising the buyer; keep the randomized promotions and the October forecast-and-pack.

2. The questions and the records

1. If water is short in 2027, how do we cut it with the least crop lost, and does it matter which variety is in the row?
2. Which sections do we replant and which blocks do we pull, where do we look next year, and what goes with worm damage?
3. Can we promise the buyer kernel moisture between 4.0% and 6.0%, and can we trust our meter?
4. Did the promotions pay, did the holiday packing plan work, and how do we pack in 2027?

The records: block records for 38 almond blocks, 2019 to 2026; the 2026 irrigation by variety trial in block N-15; almond harvest samples, 2024 to 2026; the October 2026 walk of 665 five-acre sections; 200 huller kernel moisture readings from 20 run days; the moisture meter study; weekly direct sales from January 2022 to January 2027.

Words used in this report. *Leaf* is an orchard's growing season since planting (an orchard in its 18th leaf is in its 18th year). An *orchard block* is a named planting such as N-15; a trial *replicate* is one of five bands of rows across block N-15. *ET* is the water the trees would use with plenty available; *Full ET* in the trial is the water applied to replace it at the drip system's efficiency of about 90%. *RDI at hull split* backs water off from hull split to harvest. Water is in inches per acre. *Stable period* means the 195 huller readings with the wet run left out.

3. In the field

3.1 The irrigation by variety trial. In block N-15 (Nonpareil and Monterey on Hansen 536, 18th leaf, loam), five replicates each had four whole plots on their own drip valves, and the four irrigation regimes were assigned to them at random. Inside each whole plot, the Nonpareil rows and the Monterey rows were harvested separately. The valve was cut at Nonpareil hull split for both varieties. Irrigation was randomized; variety was fixed by planting.

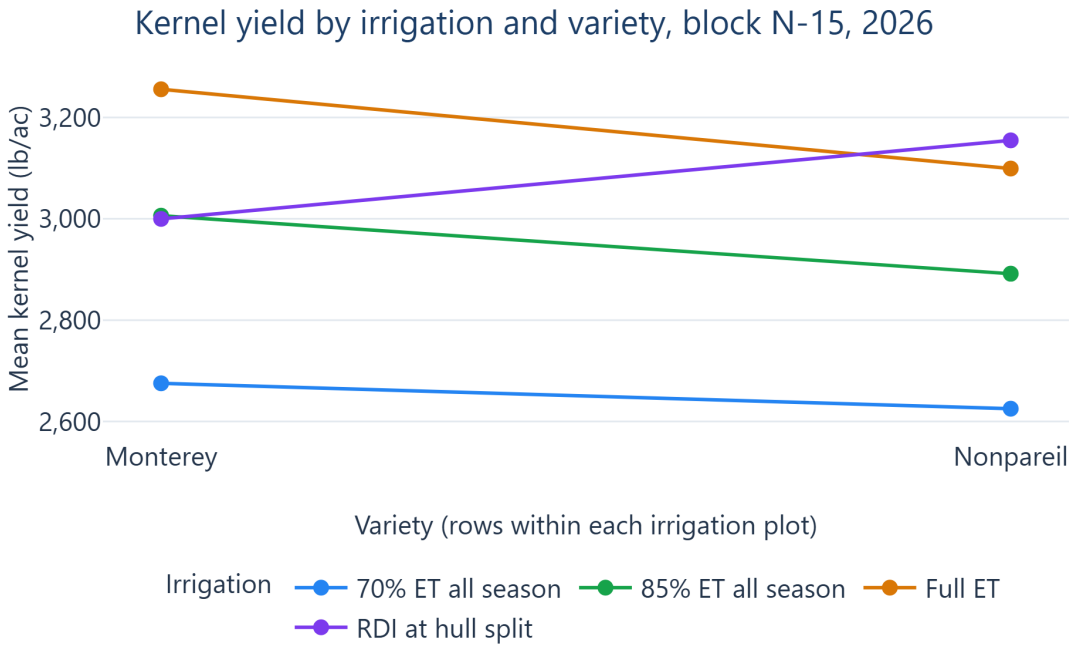

Figure 1. *Mean kernel yield (lb/ac) by irrigation regime (lines) and variety, five replicates, block N-15, 2026. On this card, 'blocks' means the trial's five replicates, not orchard blocks.*

Backing off at hull split saved 4.92 inches of water per acre (95% interval 4.31 to 5.53) against full ET's 57.88 inches. In Nonpareil the trial could not detect a yield loss: the RDI rows yielded about 56 lb/ac more than full water (interval −301 to 190), so a loss of up to about 190 lb/ac is not ruled out. In Monterey, whose rows were cut at Nonpareil's split, before their own, it cost about 256 lb/ac (88 to 423). Both are randomized trial results, and the two varieties responded differently (interaction p = .002). That the early timing is the reason is our best explanation, and year two tests it.

In Nonpareil, backing off at hull split yielded about 263 lb/ac more than 85% ET all season while using 2.7 more inches. In Monterey, as timed here, backing off at Nonpareil's split yielded about the same as 85% ET all season (difference 6 lb/ac, interval −161 to 174, so the trial cannot tell them apart).

	Nonpareil	Monterey
Full ET, mean kernel yield (lb/ac)	3,099	3,256
RDI at hull split	3,155	3,000
85% ET all season	2,892	3,006
70% ET all season	2,625	2,675
Full ET minus RDI (lb/ac, Tukey 95% interval)	−56 (−301 to 190)	256 (88 to 423)
Water applied, Full ET / RDI (inches per acre)	57.88 / 52.96	same valves

Table 1. Trial means and the key comparison. A minus sign means RDI yielded more. Intervals are simultaneous 95% intervals across the six pairs within each variety.

3.2 Eight years of block records. In eight years of the farm's records, each point of water shortfall (1% of crop need) went with about 23 lb/ac less kernel that year and 12 lb/ac less the next; each leaf past the 22nd went with about 110 lb/ac less; and each 1 dS/m more soil salt went with about 410 lb/ac less (95% interval 230 to 600). These are associations: the farm chose where to cut water, and salt comes with the west side's heavier soil and poorer water. No association with nitrogen was detected (−0.32 to +1.49 lb kernel per lb N), which is not proof of no effect; nitrogen was applied in step with last year's crop, so these records cannot show a nitrogen response.

Term	Estimate (lb/ac)	95% interval (lb/ac)
Water shortfall (% of ET), per point	−23.08	−28.40 to −17.77
Prior shortfall (% of ET), per point	−12.46	−17.77 to −7.15
Leaf past 22nd, per leaf	−109.82	−135.66 to −83.97
Soil ECe (dS/m), per dS/m	−413.48	−597.34 to −229.63
Rootstock Nemaguard vs Hansen 536	−168.29	−284.81 to −51.77
Nitrogen (lb N/ac), per lb	0.58	−0.32 to 1.49
Ranch West vs North	81.26	−158.48 to 321.01

Table 2. Block records 2019 to 2026, 267 block-years from 36 mature blocks; estimates in lb/ac with 95% intervals. Associations, not causes.

4. Orchard health

4.1 The October walk and the pull decisions. Lupe Arredondo's crew inspected all 665 five-acre sections after harvest and found decline (10% or more of trees declining, cankered or dead) in 176 sections, 880 acres, in 30 of the 38 orchard blocks. The replant list comes from this walk.

Orchard block	Sections with decline	Leaf 2026	Stand 2026 (% of trees)	Mean kernel yield 2025-2026 (lb/ac)	Decision
W-04	26 of 31	28th	95	1,761	Pull after the 2027 harvest
W-11	12 of 16	27th	81	1,817	Pull after the 2027 harvest
W-12	13 of 15	27th	81	1,737	Pull after the 2027 harvest
W-10	27 of 31	24th	86	2,013	Pull after the 2028 harvest

Table 3. The four blocks with decline in three quarters or more of their sections.

All four have decline in three quarters or more of their sections. W-04, W-11 and W-12 are the oldest of the four (27th and 28th leaf) and the lowest yielding; W-11 and W-12 have lost a fifth of their trees. W-10 is three to four leaves younger and still yields about 2,010 lb/ac, so it carries one more crop and is pulled after the 2028 harvest. Age alone does not decide it: N-20 and N-11 are as old, but the walk found decline in only 4 of 12 and 3 of 12 of their sections.

Of the 176 declining sections, 78 are in the four pull blocks and go out with their block; the other 98, in 26 blocks, are spot-replanted from the walk. W-10's 27 declining sections are left in place and farmed for the 2027 and 2028 crops. What goes back on the pulled ground (almonds, pistachios or nothing for now) is not decided by these records.

4.2 Where to look next year. A risk model was fitted to 465 sections and tested on 200 sections it had not seen. On those 200, it caught 38 of the 54 declining sections (70%; plausibly 57% to 81%) while wrongly flagging 12 of the 146 healthy ones; of the sections it flagged, 76% had declined. Calling every section healthy would already be 73% accurate, so the catch rate and the false flags are the numbers that matter.

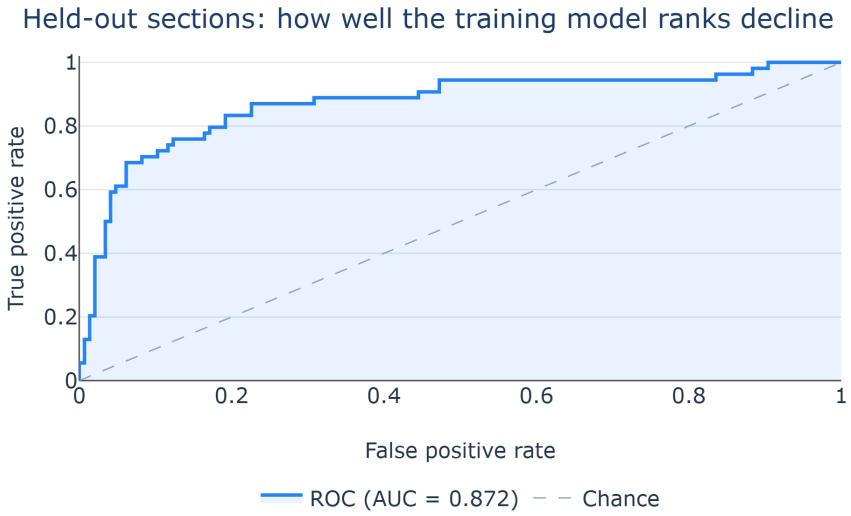

Figure 2. *On the 200 held-out sections, the model ranked a declining section above a healthy one 87% of the time (ROC area 0.872, 95% interval 0.808 to 0.936). The held-out sections come from the same 38 blocks the model was fitted on.*

Older, saltier and more water-stressed sections, and Nemaguard rootstock, went with higher risk; January mummies and last year's crop showed little or no association. Rootstock was not assigned at random, so this does not show that changing rootstock would lower decline.

Applied to all 665 sections, the model flags 35 sections that the walk found healthy. They share the declining sections' age, salt and stress. Twenty of them lie outside the four pull blocks (W-06 6, N-07 5, W-05 3, W-09 3, N-14 2, N-06 1) and are scouted by April 15, 2027; the other 15 are in blocks already set for pulling.

4.3 Worm damage. In the almond harvest samples, 2024 to 2026, blocks with more January mummies and a longer wait from hull split to shake went with more worm damage: shaking 14 days later went with about 1.84 times the damage rate. The farm keeps its working targets (not estimated from these records): mummies down to 0.2 a tree by February 1 and shaking within about ten days of full hull split.

5. At the huller

The buyer's contract requires shelled kernel moisture between 4.0% and 6.0%. The plant sampled five readings per shift on 20 run days, 200 readings in all.

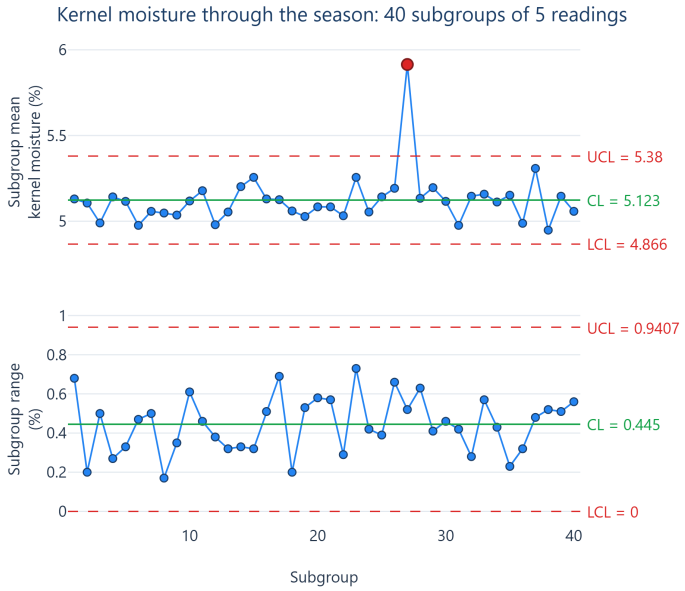

Figure 3. *Kernel moisture (%), subgroup means and ranges, 40 subgroups of 5 readings. Center 5.12%; limits 4.87% to 5.38%. One signal: subgroup 27, the wet run (run day 14, day shift), mean 5.91%.*

Two of the 200 readings were above 6.0% (the highest 6.10%), both in the wet run; none was below 4.0%. When the process ran normally, every reading was between 4.65% and 5.63%, well inside the buyer's range (Cpk 1.57 on the stable period; Cpk is a ratio, not a percentage). On all 200 readings, Ppk 1.29 is below the usual 1.33. So what we can promise the buyer depends on finding and preventing the wet run's cause.

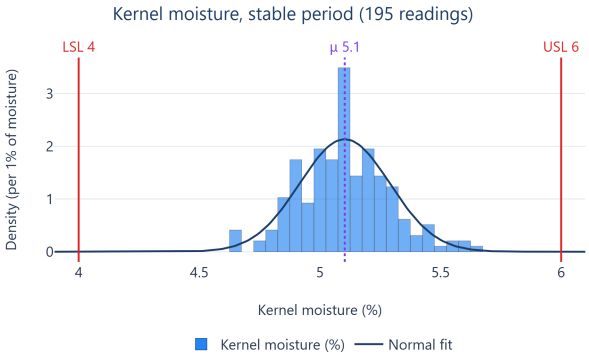

Figure 4. *Stable period only (195 readings, wet run left out). All 200 readings: 2 above 6.0%, both in the wet run. The card's normal-model estimate, about 1 reading per million outside the range (1.2 within, 0.83 overall), cannot be checked this far out with 195 readings.*

The moisture meter study (10 sealed samples, three lab technicians led by Marisol Ochoa, three readings each) found the meter's own variation to be 5.04% of the study's variation and 13.3% of the buyer's 2-point tolerance, which the card reads as conditionally acceptable (10% to 30%). That shows the meter agrees with itself and between technicians, not that it reads true; it will be checked against the oven method.

6. Direct sales

Nora Ybarra's team ran promotions in weeks chosen at random, half the weeks in each season of each year. In 252 weeks of sales, the randomized promotion added about $1,141 in an average promoted week (95% interval $903 to $1,380, for the average promoted week, not any single week). Whether it paid in profit needs Dana Whitcomb's costs, which are not in these records.

On Friday, October 30, 2026, the farm forecast the next 12 weeks and packed 8,845 bags for the nine holiday weeks at the $12 planning price.

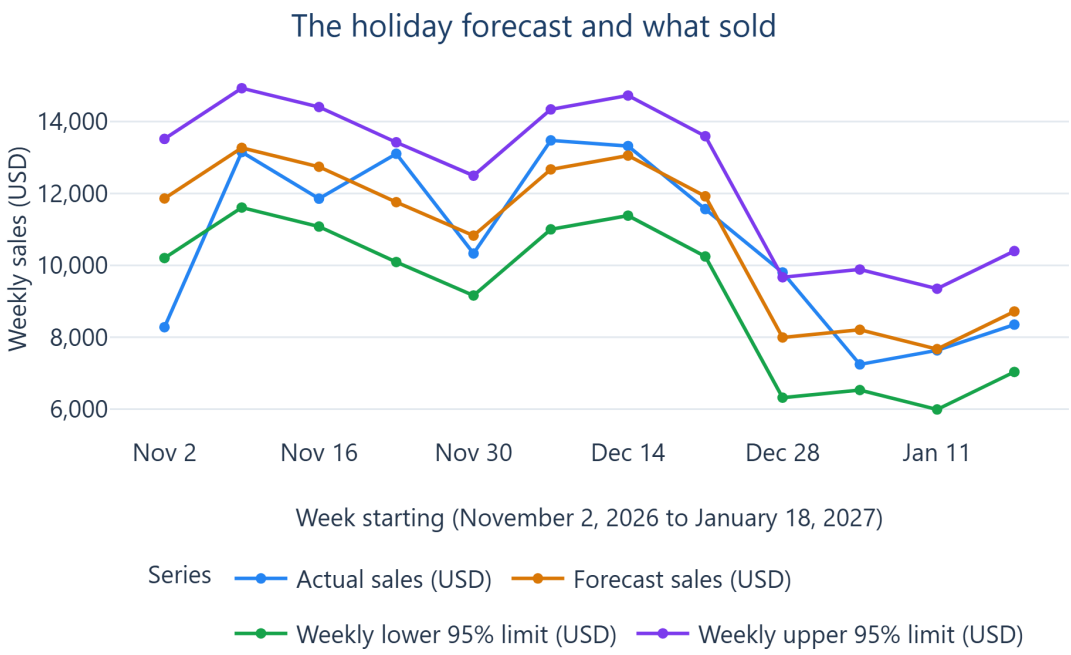

Figure 5. *Weekly sales (USD), forecast with 95% limits and actual. Ten of the 12 weeks fell inside the limits; November 2 fell below and December 28 above.*

The October forecast's 95% range held in 10 of 12 weeks, close to the 11 or 12 such limits should give, and the nine packing weeks sold $104,887 against a forecast of $106,096, because the misses on single weeks partly cancelled. A forecast is a range, not a promise.

7. Recommendations

1. **Short-year water.** Nonpareil rows: back off at hull split, not all season (trial result: no detectable loss, 4.92 inches saved, 263 lb/ac more than 85% ET all season). Monterey rows: if water is short in 2027 before year two reports, Ray decides between full water and backing off at Monterey's own split; the trial shows only that backing off at Nonpareil's split cost Monterey about 256 lb/ac. Year two tests the Monterey timing. Owner: Ray; Dana costs any split valves.
2. **Orchard.** Spot-replant the 98 declining sections outside the four pull blocks; pull W-04, W-11 and W-12 after the 2027 harvest and W-10 after the 2028 harvest (the walk: 26 of 31, 12 of 16, 13 of 15 and 27 of 31 sections declining); scout the 20 watch-list sections outside the four pull blocks by April 15, 2027. Owners: Ray and Lupe. What goes back on pulled ground is a separate decision.
3. **Worm.** Keep the working targets: mummies to 0.2 a tree by February 1, shake within about ten days of full hull split; record hull-split spray dates by block (evidence: 1.84 times the damage rate with a 14-day later shake). Owner: Lupe.
4. **Huller.** Investigate the run day 14 day shift; tell the buyer the plant is capable when it runs normally and what is being done so a wet run is caught before it ships; recheck any reading close to 6.0%; check the meter against the oven method (evidence: 2 of 200 readings above 6.0%, both in the wet run; Cpk 1.57 on the stable period). Owner: Tejinder, with Marisol.
5. **Sales.** Keep the randomized promotion calendar; Dana prices a promoted week before the 2027 season; repeat the October forecast-and-pack (evidence: $1,141 in an average promoted week; 10 of 12 weeks inside the forecast range). Owners: Nora and Dana.

8. What these results do not show

- The trial is one year in one block with five replicates; variety was not randomized, and the dates of Nonpareil and Monterey hull split are not in the records.
- The block records, the decline model and the worm samples show associations, not causes.
- The decline model was tested on new sections from the same blocks, not on new blocks or another farm.
- Capability on the stable period describes the plant only once the wet run's cause is found and kept out. The meter takes 13.3% of the buyer's 2-point range, conditionally acceptable by the usual bands.
- No promotion cost, margin or inventory is in the records, so profit and stock-outs cannot be judged. Twelve weeks cannot confirm the forecast range.
- No dollar values are given for water or crop. Corvallo Farms' 14 pistachio blocks are not analysed in this review.

9. Approval

We have read this report and agree that it fairly states the 2026 season and the evidence for its recommendations.

Decision of the Chief Executive Officer, February 25, 2027

Having heard the board on February 25, 2027, I approve the recommendations of this report and direct the following actions.

#	Action	Owner	Due	From recommendation
1	Adopt the 2027 short-year water rule: Nonpareil rows back off at hull split, not all season; for Monterey rows, decide between full water and backing off at Monterey's own split if water is short before year two reports.	Ray Corvallo	April 1, 2027	1
2	Price split valves for Monterey rows in mixed blocks.	Dana Whitcomb	March 31, 2027	1
3	Run year two of the irrigation by variety trial in block N-15, with the Monterey back-off timed to Monterey's own hull split, and record hull-split dates and pressure-chamber readings by plot.	Ray Corvallo	Trial set up by June 15, 2027; results to the board in February 2028	1
4	Scout the 20 watch-list sections outside the four pull blocks.	Lupe Arredondo	April 15, 2027	2

#	Action	Owner	Due	From recommendation
5	Spot-replant the 98 declining sections outside the four pull blocks; order trees.	Ray Corvallo and Lupe Arredondo	Trees ordered by June 30, 2027; replanting in the 2027 to 2028 dormant season	2
6	Pull W-04, W-11 and W-12 after the 2027 harvest; leave W-10 in place, its 27 declining sections included, until it is pulled after the 2028 harvest.	Ray Corvallo	W-04, W-11, W-12 by December 15, 2027; W-10 after the 2028 harvest	2
7	Bring the board a decision on what goes back on the pulled ground.	Gloria Corvallo, with Ray Corvallo and Dana Whitcomb	September 30, 2027	2
8	Record hull-split spray dates by block for the 2027 season; shake within about ten days of full hull split; count mummies by January 15, 2028 and reach 0.2 a tree by February 1, 2028.	Lupe Arredondo	Through the 2027 harvest; February 1, 2028	3
9	Find the cause of the run day 14 day shift wet run and put a tarp and rain procedure in place.	Tejinder Bains	Cause by March 31, 2027; procedure by August 1, 2027	4
10	Tell the buyer the plant is capable when it runs normally and what is being done so a wet run is caught before it ships.	Tejinder Bains, with Gloria Corvallo	March 15, 2027	4
11	Recheck any reading close to 6.0% and check the meter against the oven method at least three times in the 2027 season.	Marisol Ochoa	Through the 2027 harvest	4
12	Price a promoted week (cost and margin) before the 2027 season.	Dana Whitcomb	April 30, 2027	5
13	Keep the randomized promotion calendar; repeat the October forecast-and-pack for the 2027 holidays.	Nora Ybarra	Calendar through 2027; packing decision by October 29, 2027	5

Gloria Corvallo, Owner and Chief Executive Officer