Cherry Reduced Post-Harvest Irrigation Demonstration – Project Update

Farm Demonstration | **March | 2026**

Location

- Creston, BC

Collaborators

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Author(s)

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Highlights

- Retrofitted older irrigation system with in-line monitoring sensors and flow controls.
- Installation of soil moisture monitoring equipment.
- Reduced post-harvest orchard irrigation application by 13-16 hours per zone per week, resulting in significant water savings during the month of September.

Changing weather patterns, recurring drought, and urban growth have significantly increased water demand in the Creston Valley. As a result, growers are exploring irrigation monitoring and conservation strategies, including deficit irrigation, which offers post-harvest water savings during the hottest part of the season when irrigation districts and their systems are already under peak demand.

What is Reduced Post Harvest Irrigation?

A technique used to conserve available irrigation water by reducing the application of water to the crop, in this case, during the summer period following the cherry harvest, safeguarding fruit yield and quality. Studies performed by AAFC have found that a 30-50% reduction in water volume applied to cherries had no negative effects on fruit quality, yield nor the timing of flower bud development and bud cold hardiness (Houghton et. al, 2023).

On-Farm Demonstration Objectives

This interim report examines a demonstration of reduced post-harvest irrigation in a local cherry orchard, monitored using irrigation zone level controls. The overall objective of this work is to provide local growers with water conservation guidance and practical tools for effective irrigation management in mature orchards.

Figure 1. Irrigation valve, retrofitted with Verdi zone level irrigation controller.

The 2025 Season in Creston

Increasingly variable weather patterns are the new normal in the Creston Valley. Since 2021, cherry growers have experienced a heat dome, cold wet springs, recurring summer/fall droughts and a near total crop loss. Table 1 shows the Total Annual Rainfall recorded at the Central Erickson weather station between the years of 2023 and 2025. This station was installed in 2022 as part of the Creston Valley weather station network that is now incorporated into the new BC AgriWeather Network (2025).

Table 1. Cumulative annual rainfall for Central Erickson (BC Agriweather Network)

Year	Annual Rainfall (mm)	April 1 - Sept 30 Rainfall (mm)
2023	407.7	249.4
2024	430.3	124.0
2025	477.0	161.5

Although continued drought conditions were predicted for 2025, higher than expected mid season rainfall created challenges for fruit quality and affected project outcomes (Figure 3).

Farm Demonstration Site

- 6 acre, commercial cherry orchard.
- Test block approx. 1 acre in size, mature Staccato (Mazzard).
- Soil is a silt loam (Creston series)
- Good soil moisture retention and representative of Erickson growing region
- Two existing irrigation zones of similar size.
- Flow controls were added to each of the zones.
- 2- 80 cm/32” digital soil probes installed.

Figure 2. Mature Staccato Cherry (Mazzard) in October 2025, showing the grower standard (Zone A) on the right and the deficit irrigation treatment (Zone B) on the left.

Trial Design

The demonstration trial consisted of one orchard block, separated through the centre to operate as two unique irrigation zones. Zone A (West/Right) received the grower standard post-harvest treatment and Zone B (East/Left) received the deficit irrigation treatment (Figure 2).

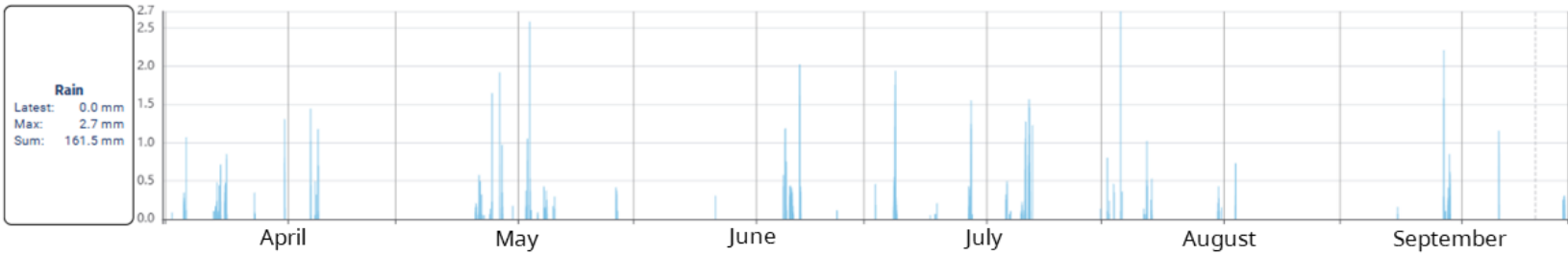

Figure 3. Representation of precipitation events during the 2025 growing season, Central Erickson weather station, Creston BC (BC AgriWeather Network)

Orchard Irrigation

During peak demand the orchard received approximately 16 hrs/week of irrigation. The system had a manual shut-off and 2 irrigation sets were being run by the grower for 6 hrs and an additional 3rd set for 4 hours per week.

Post-Harvest Irrigation

Harvest ended on August 20. The entire block was watered immediately following the cherry harvest with the final full cycle of irrigation occurring on September 3 in both zones, totalling 6 hours of application at an average flow rate of 14 L/min. From September 4 to October 6, post-harvest deficit irrigation was applied to both zones as compared to full in-season applications :

- Zone A was watered 1 hour, 3 times per week for 1 month (reduction of 13 hours per week).
- Zone B received no water, with the exception of one 22 minute application done in error.

Water was last applied to Zone A on October 6, and the irrigation system was drained on October 10 prior to the weather changing. Final system blow-out occurred on October 19, 2025.

Figure 4. Mature Staccato orchard, Creston, BC

Observations & Next Steps

The 2025 season was unusually wet, resulting in higher soil water storage than in previous drought years. Kokanee Fruit Co.'s initial deficit irrigation trial showed no significant differences in soil moisture between zones A & B, and no visible tree stress was observed in either zone. However, zone B, which received no irrigation in September and October, showed earlier senescence and leaf drop than zone A.

Implementing a post-harvest irrigation reduction during the month of September of 3 hours per week after peak use (16 hours/week) was estimated to save:

• 52 hours of irrigation application time between Block A and B during the deficit period

• 6 hours of manual labour

• An extreme water savings of 99% was observed in Block B as compared to Block A. The impact of this deficit will require further monitoring in future seasons.

For More Information

Reducing post-harvest irrigation in sweet cherry production (PDF):

BC Agriculture Water Calculator:

BC AgriWeather: www.bcagriweather.com

AgriServiceBC@gov.bc.ca

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