

Substrate and Plastic Mulch Color Assessment for Open-Field Tabletop Strawberry Production in Conventional and Organic Systems

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Background

Weed, nematode, disease, and labor issues faced by strawberry farms

New production methods and alternative systems



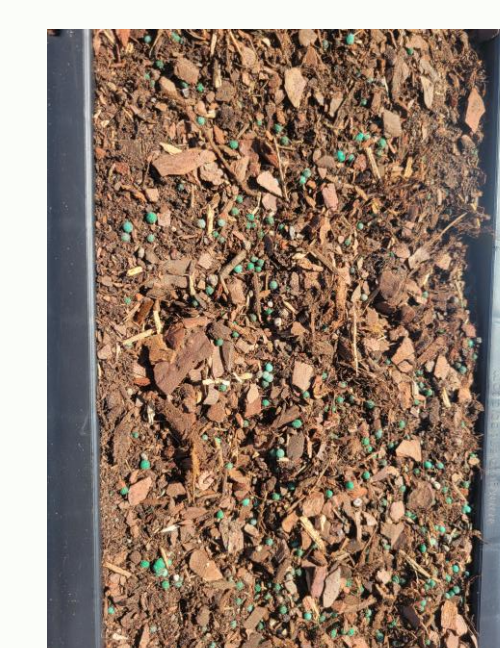
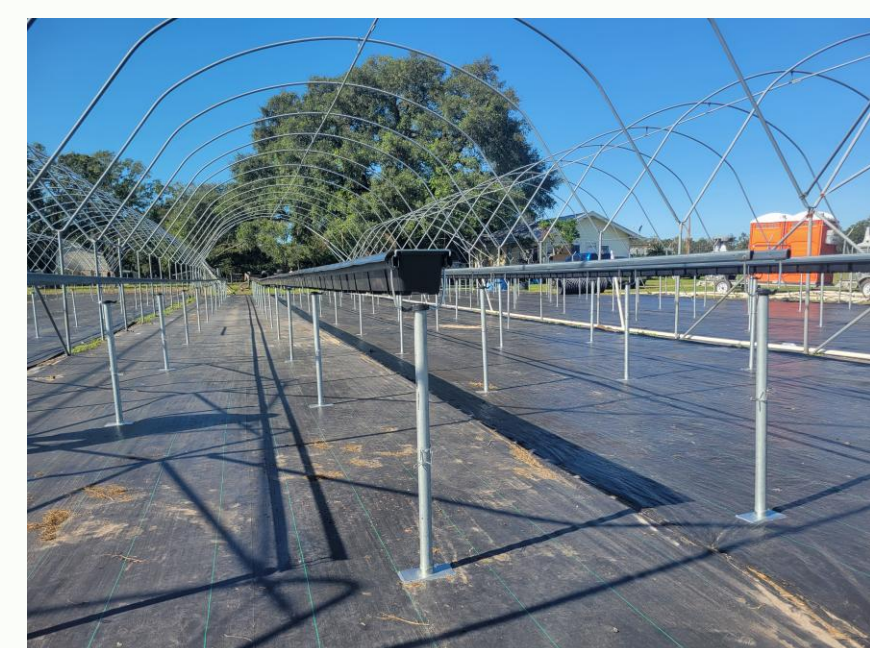
Feasibility of developing innovative and adaptive tabletop strawberry systems in Florida for overcoming production constraints

Project Development



- 3-year on-farm project: 9/2024 – 9/2027
- Open-field soilless substrate-based tabletop systems
- Organic and conventional production

1. Substrate testing using locally available organic amendments: Pine bark + composts and other formulations as growing media in tabletop hydroponic strawberry systems
2. Strawberry cultivar assessment: Adaptation to tabletop hydroponic systems under organic and conventional production, respectively
3. Market potential exploration: Cost-benefit analysis; “added value” of strawberries produced in tabletop systems, consumer perception
4. Extension programming: Technology transfer and developing customizable tabletop strawberry systems



- 2024 - 2025 season: Bare-root ‘Encore’ transplanted on 11/20/2024
- Substrate treatments: 1) Coco coir (Control); 2) Pine bark + yard waste compost (P1); 3) Pine bark + yard waste compost + vermicompost (P2)
- Plastic mulch treatments: Black vs. white in organic and conventional systems

- 2025 - 2026 season: Bare-root ‘Encore’ transplanted on 10/13/2025
- Substrate treatments: 1) Coco coir (Control); 2) Pine bark + yard waste compost + vermicompost (P2)
- Plastic mulch treatments: Black vs. white in organic and conventional systems

Ongoing Open-field Tabletop Strawberry Project (First and Second Seasons)

- 2024 - 2025 season:
 - Harvests: 1/30/2025 - 4/30/2025
 - 24 harvests
 - P2 substrate yielded highest
 - White plastic mulch outperformed the black mulch
 - P2 was compared with coco coir in season 2



Conventional – Coco coir

Organic – Coco coir

Conventional – P1

Organic – P1

Conventional – P2

Organic – P2



White mulch Black mulch

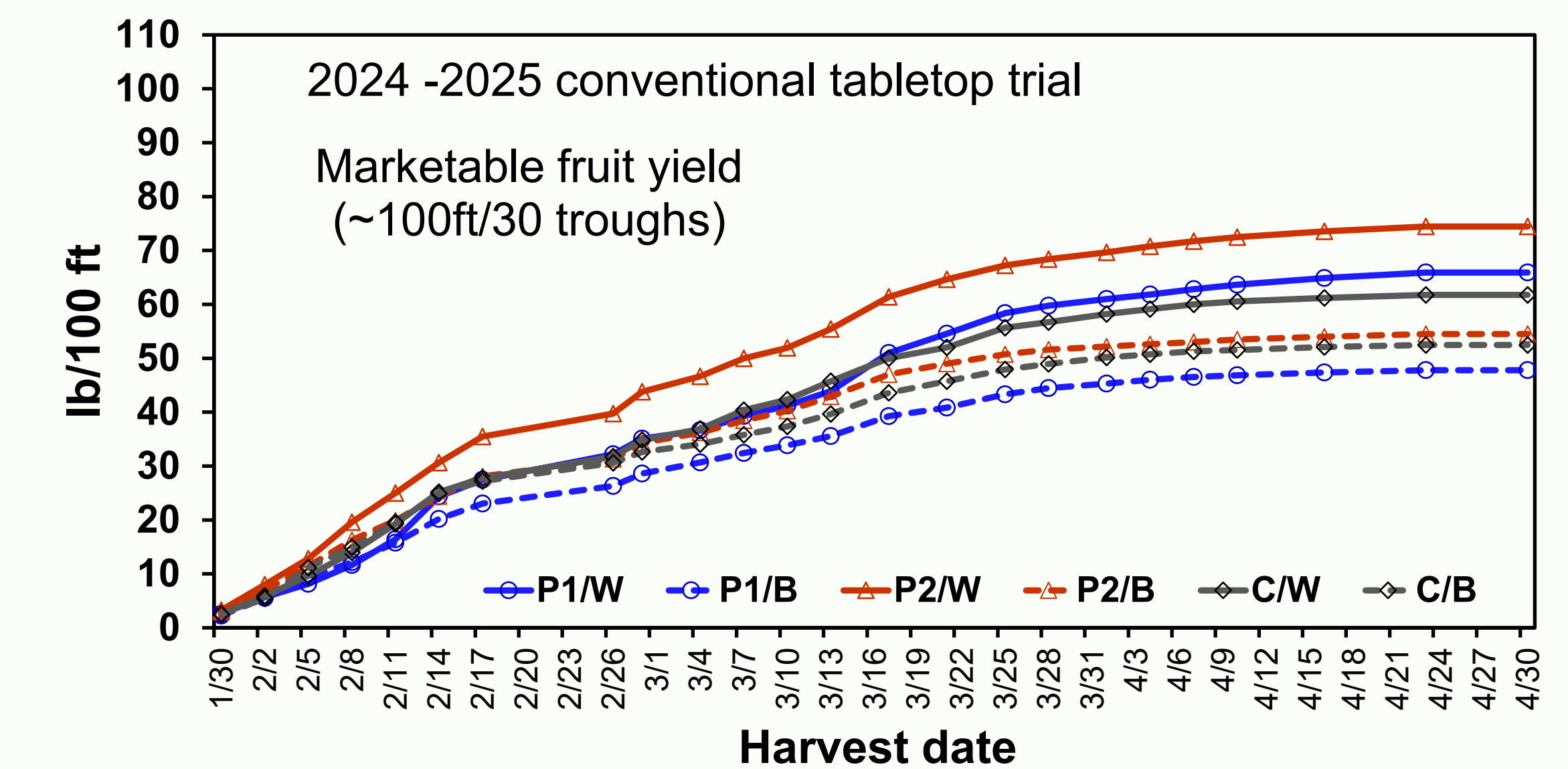
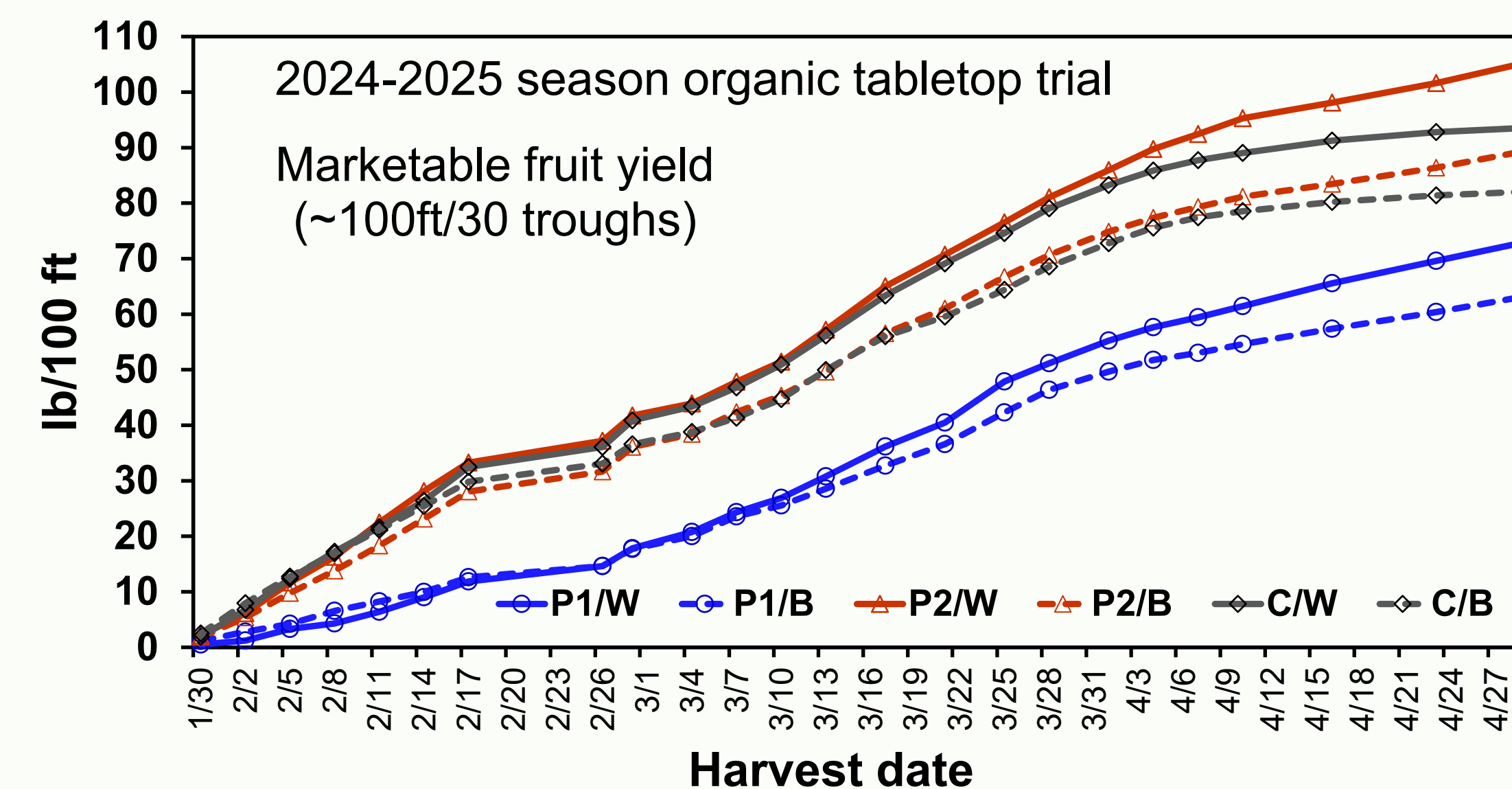
White mulch Black mulch

White mulch Black mulch

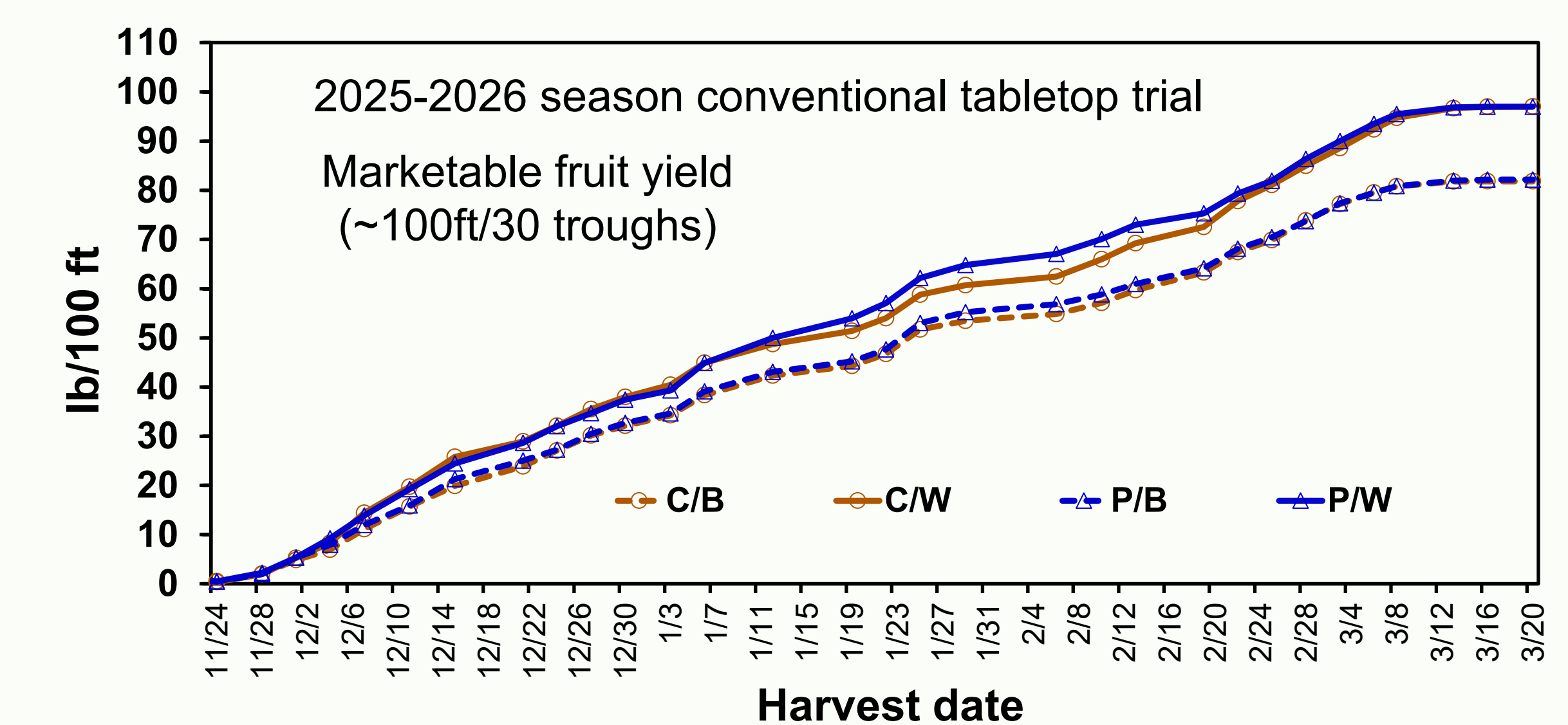
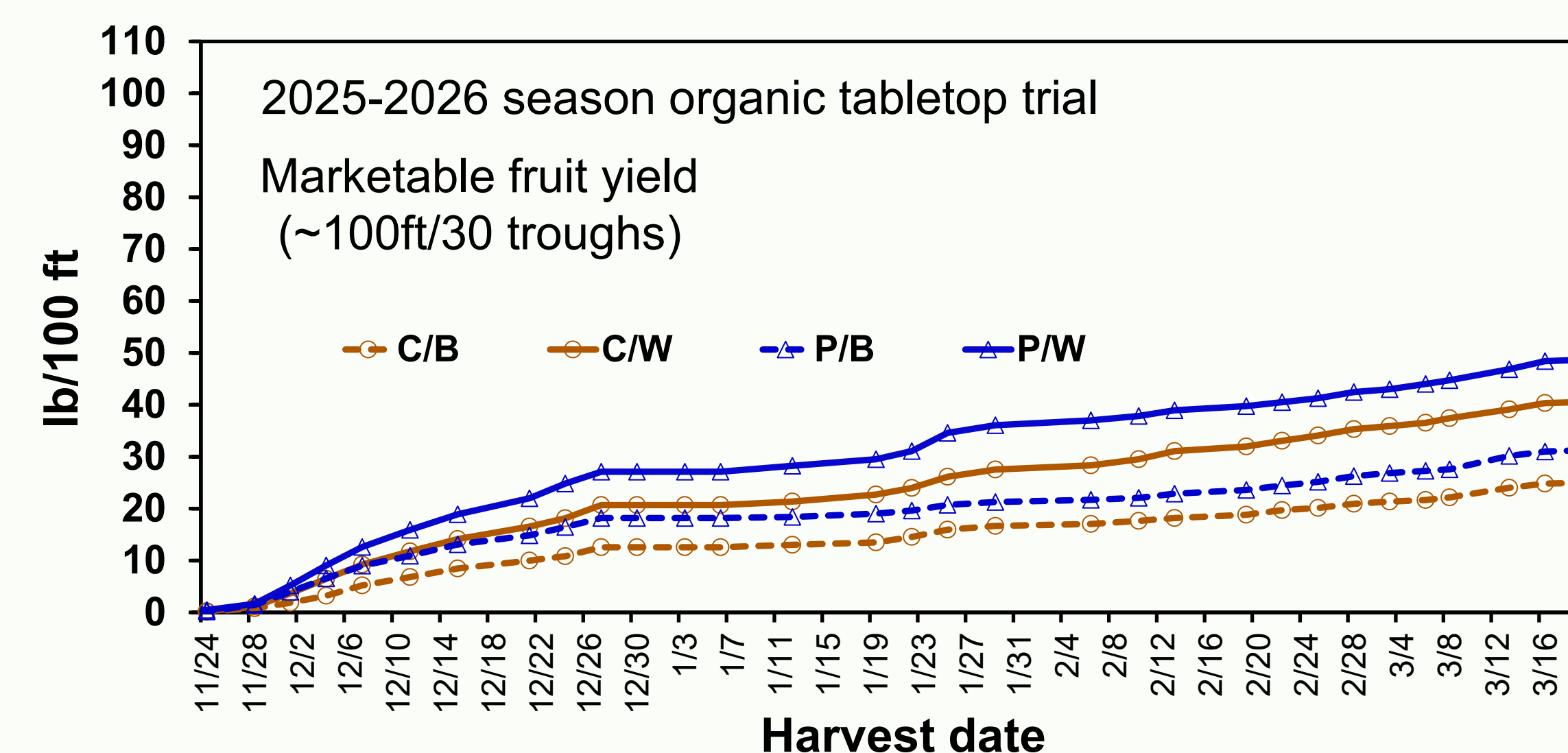
White mulch Black mulch

White mulch Black mulch

White mulch Black mulch



- 2025 - 2026 season:
 - Harvests: 11/24/2025 - 3/20/2026
 - 32 harvests
 - Hard freezes



- Organic tabletop trial whole-season marketable yield: Pine bark > Coco substrate ($p < 0.05$); white > black mulch ($p < 0.001$)
- Conventional tabletop trial whole-season marketable yield: Pine bark = Coco substrate ($p = 0.995$); white > black mulch ($p < 0.001$)

Acknowledgments

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