

California survey of Botrytis fruit rot in Santa Maria strawberry fields with and without fungicide applications, 2023

Joseph Ramirez

Master's student



CAL POLY
Strawberry Center



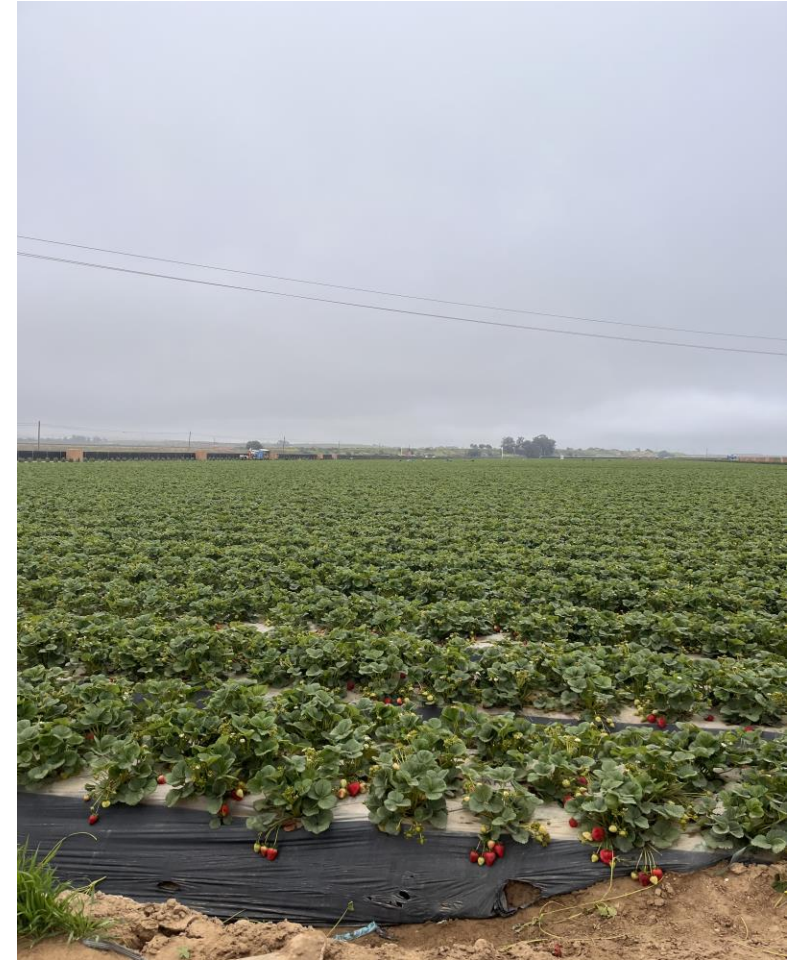
Survey in grower's fields

- Objectives
 - To compare BFR incidence in:
 - Fungicide treatment (grower's practice)
 - No-fungicide treatment
 - To evaluate weather data under the model of Florida's Strawberry Advisory System (StAS)



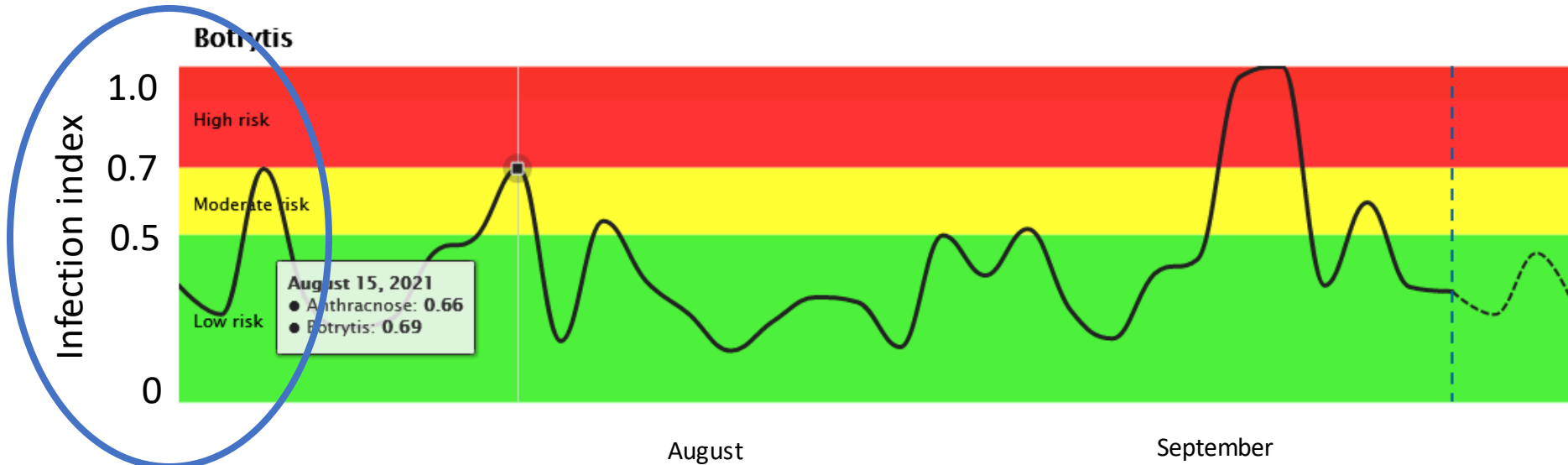
Fungicide and no-fungicide treatment

- 7 contiguous beds (about 0.2 acre) **no-fungicide** spraying



BFR Risk Factor

- Calculate risk factor based on:
 - Temperature
 - Leaf wetness duration (LWD)

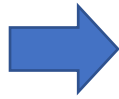


- Moderate risk = LWD 14-18 hr and temperatures between 62-77°F
- High risk = LWD > 18 hr and temperatures between 62-77°F



In-field BFR assessment

- Weekly in-field assessment:
sampling size: 50 fruit x 4 replicates = 200 fruit total



- BFR incidence (%): $\frac{\text{Number of BFR fruit}}{\text{Number of total fruit}} * 100\%$



Postharvest BFR assessment

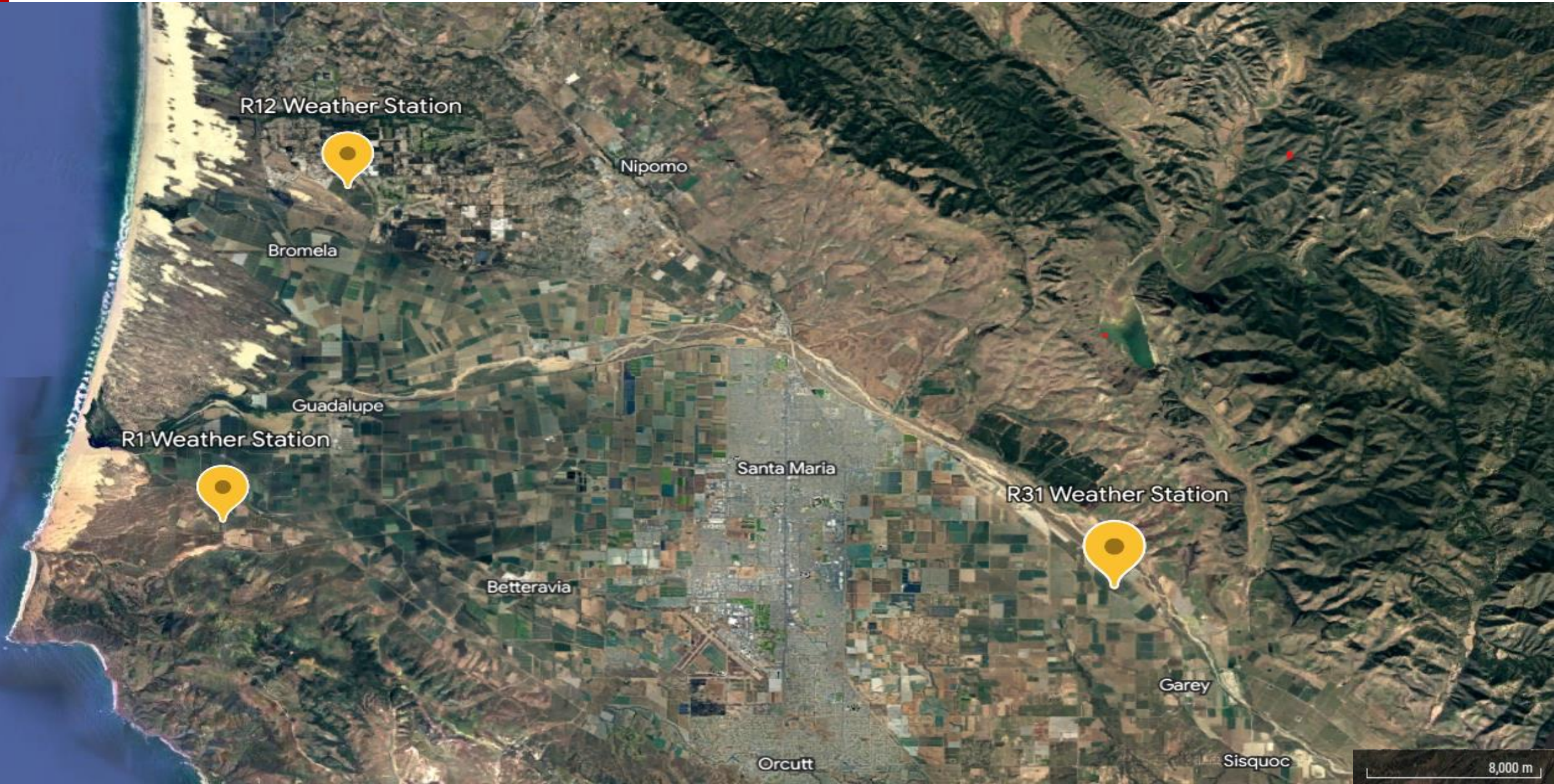
- Weekly postharvest assessment:



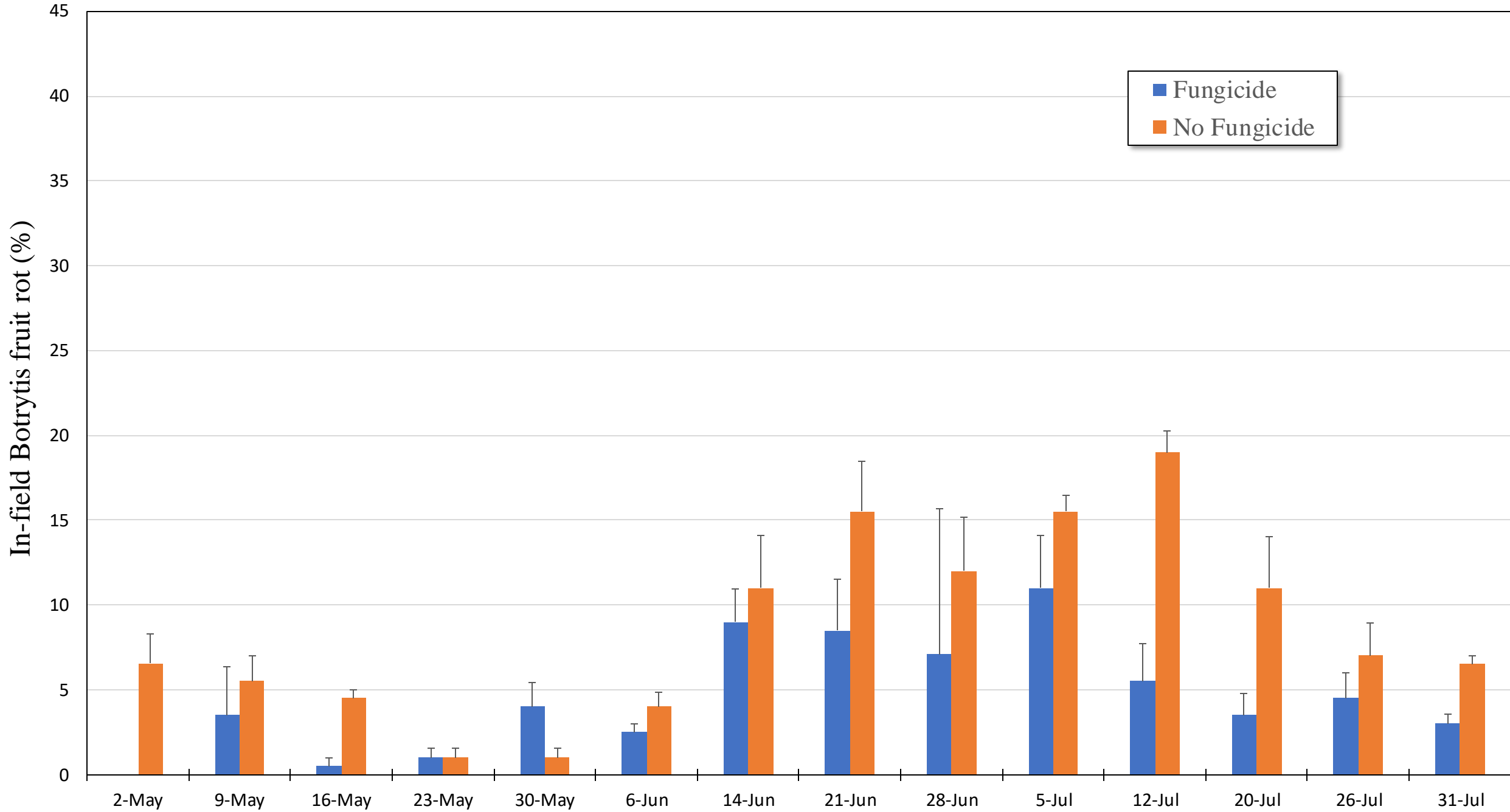
- BFR incidence (%): $\frac{\text{Number of BFR fruit}}{\text{Number of total fruit}} * 100\%$



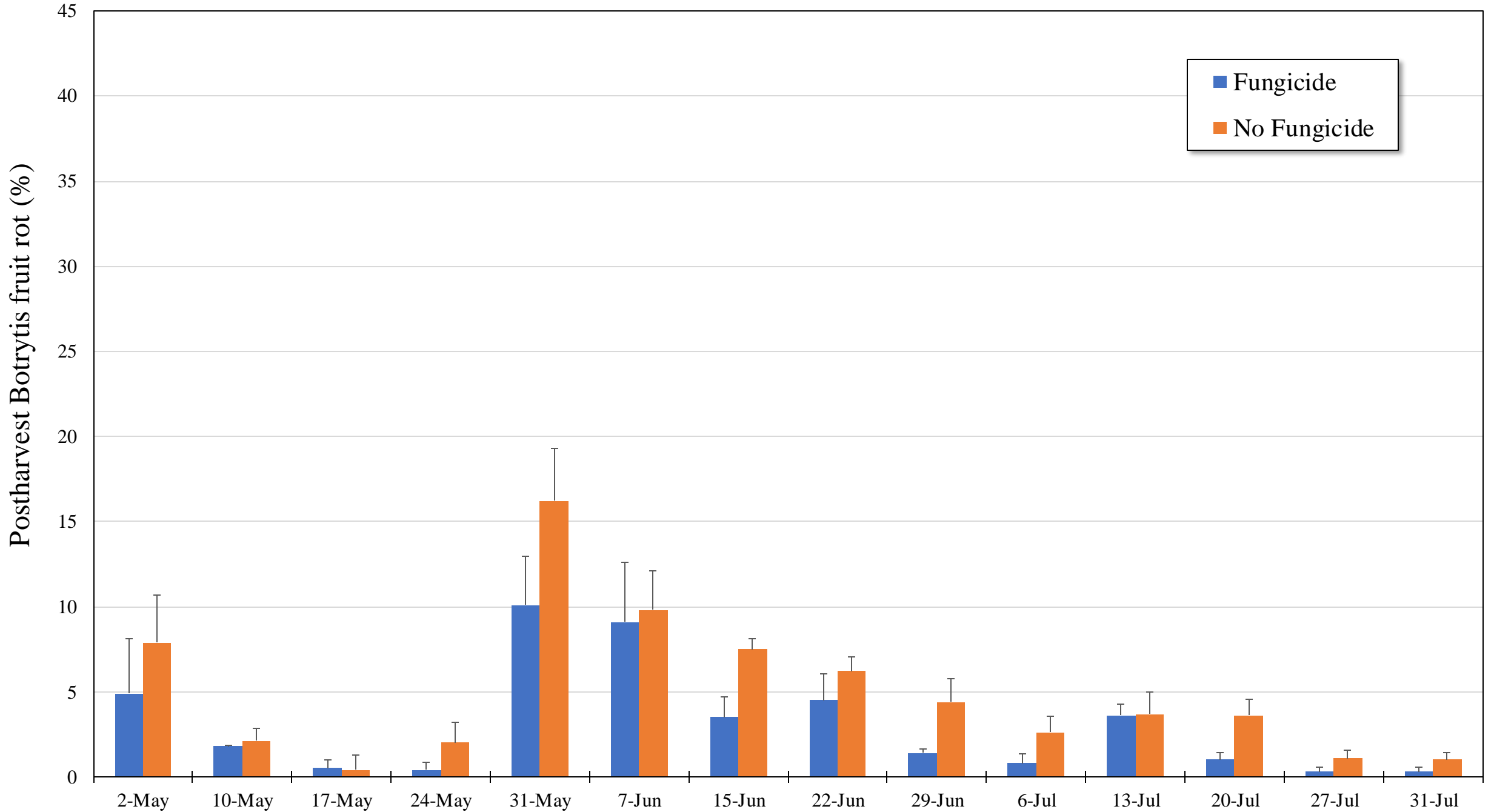
Experimental sites in Santa Maria



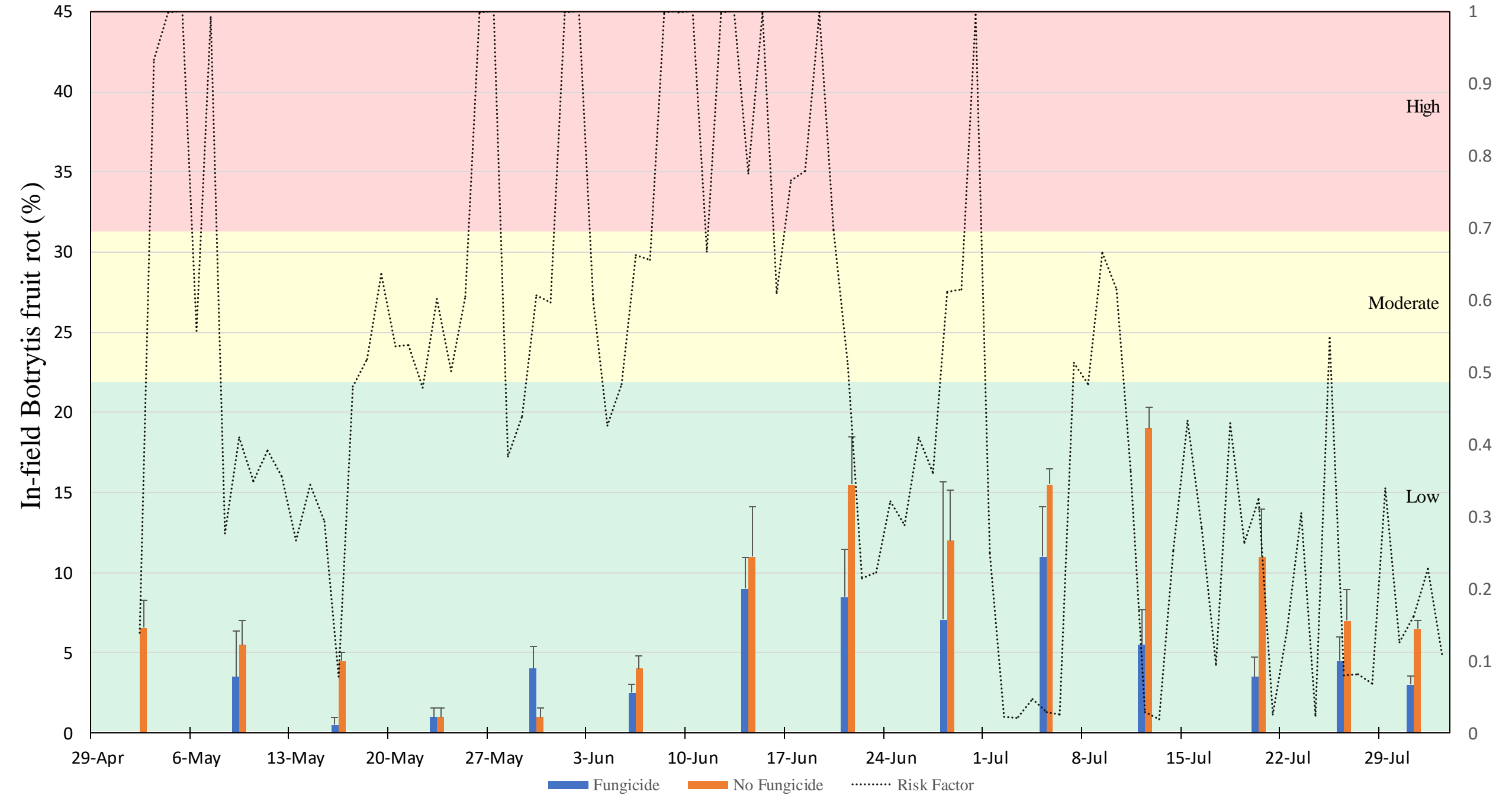
Ranch 31 In-field 2023



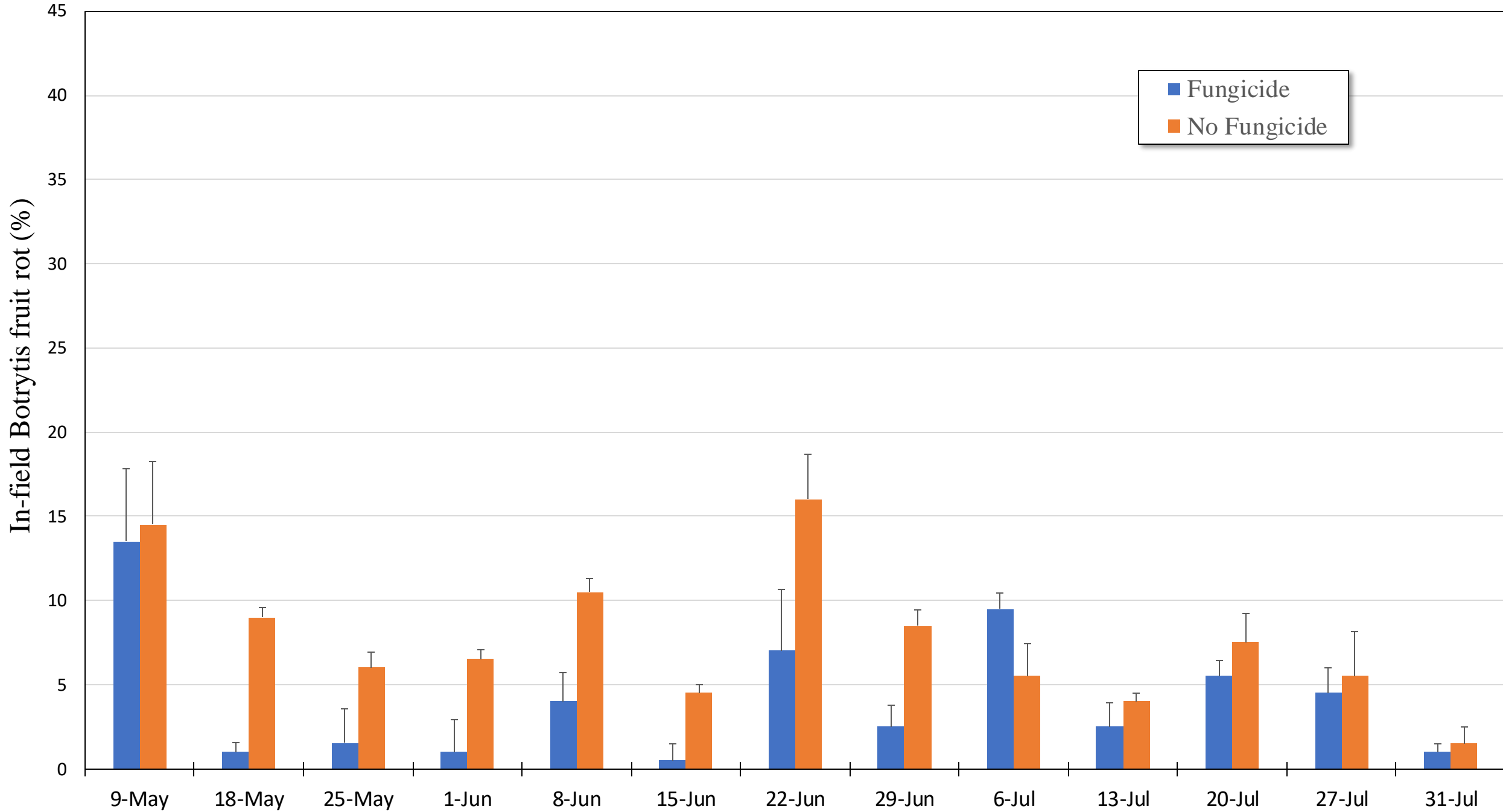
Ranch 31 Posharvest 2023



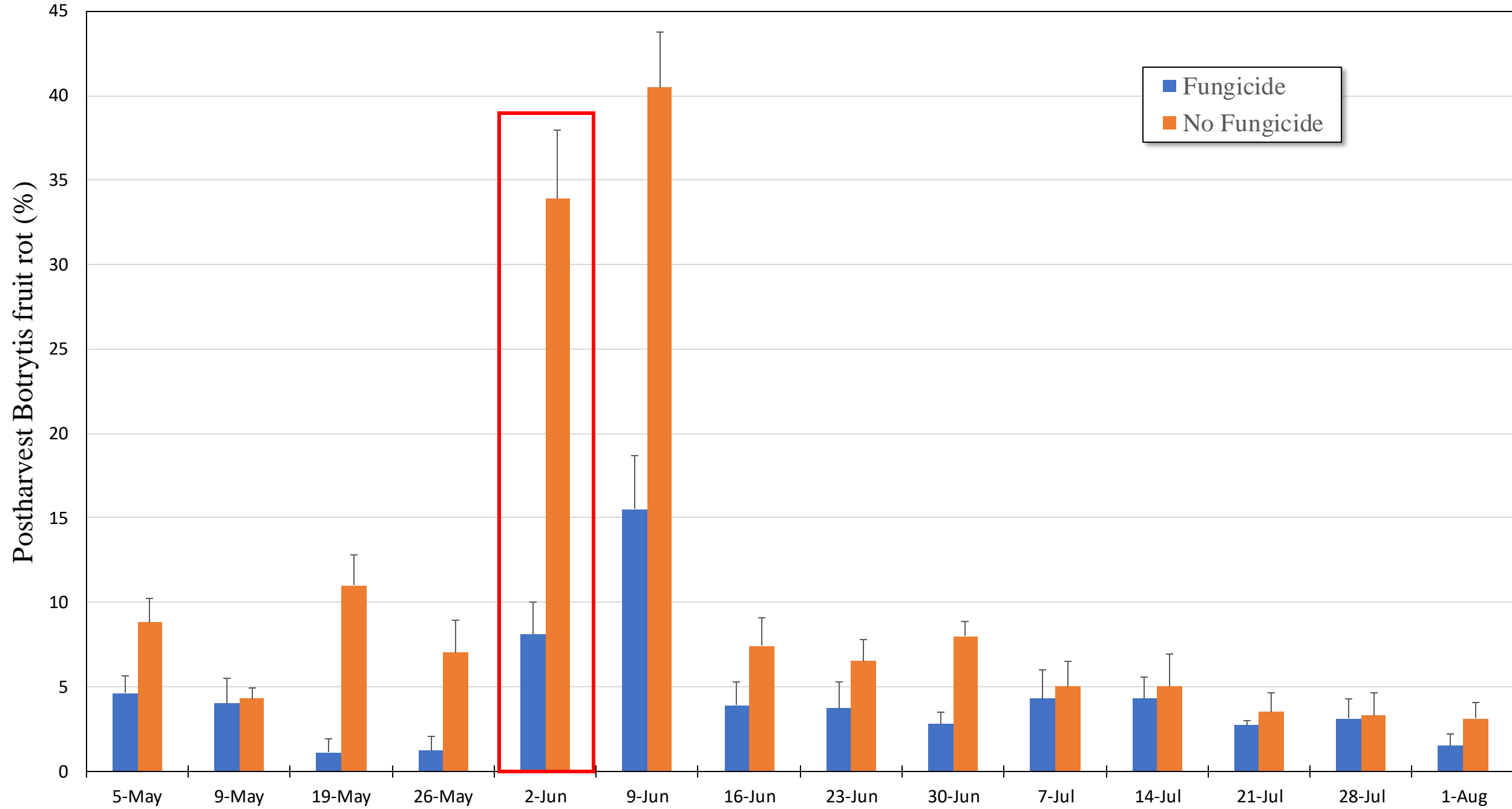
Ranch 31



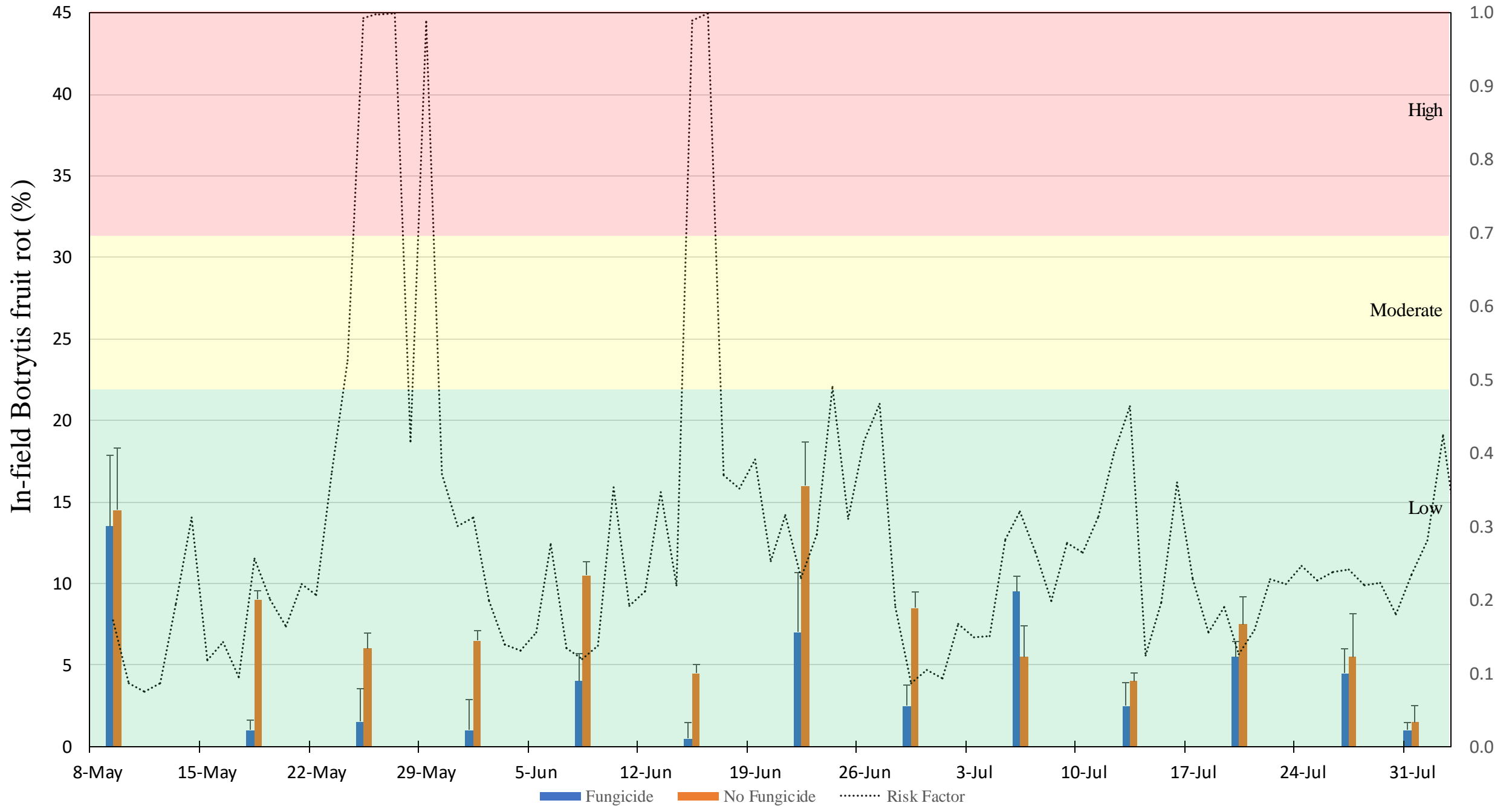
Ranch 12 In-field 2023



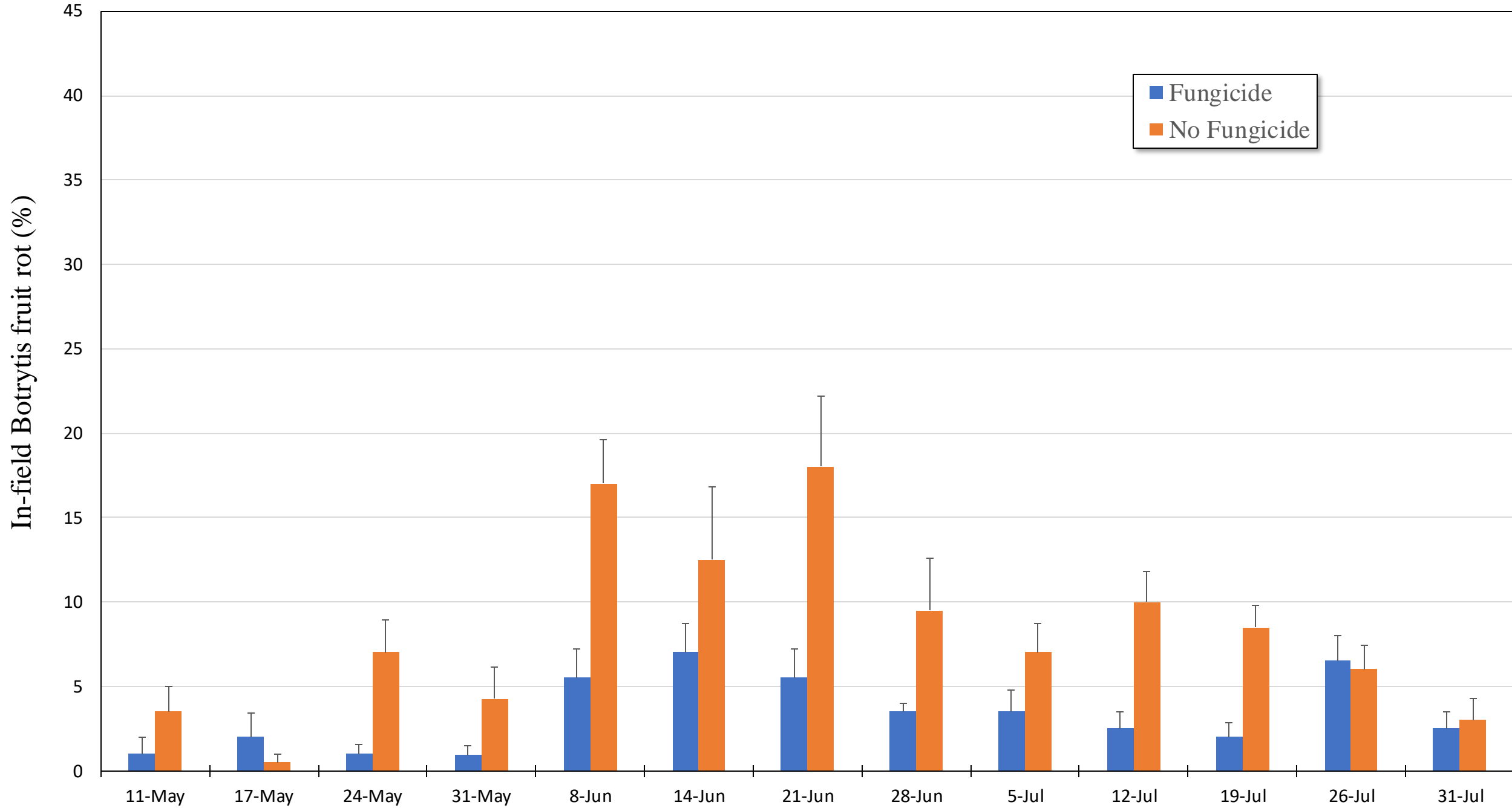
Ranch 12 Postharvest 2023



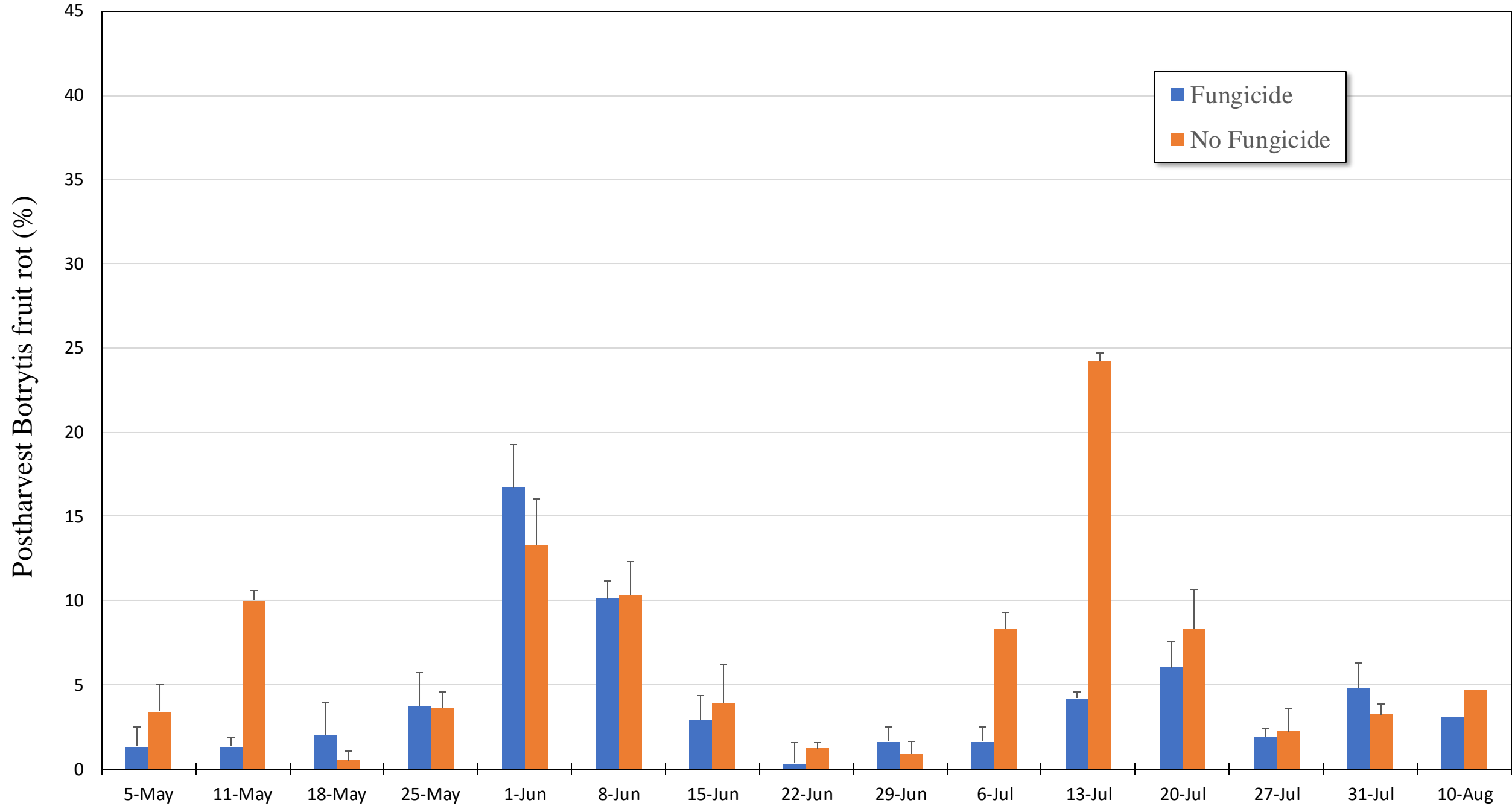
Ranch 12 In-field



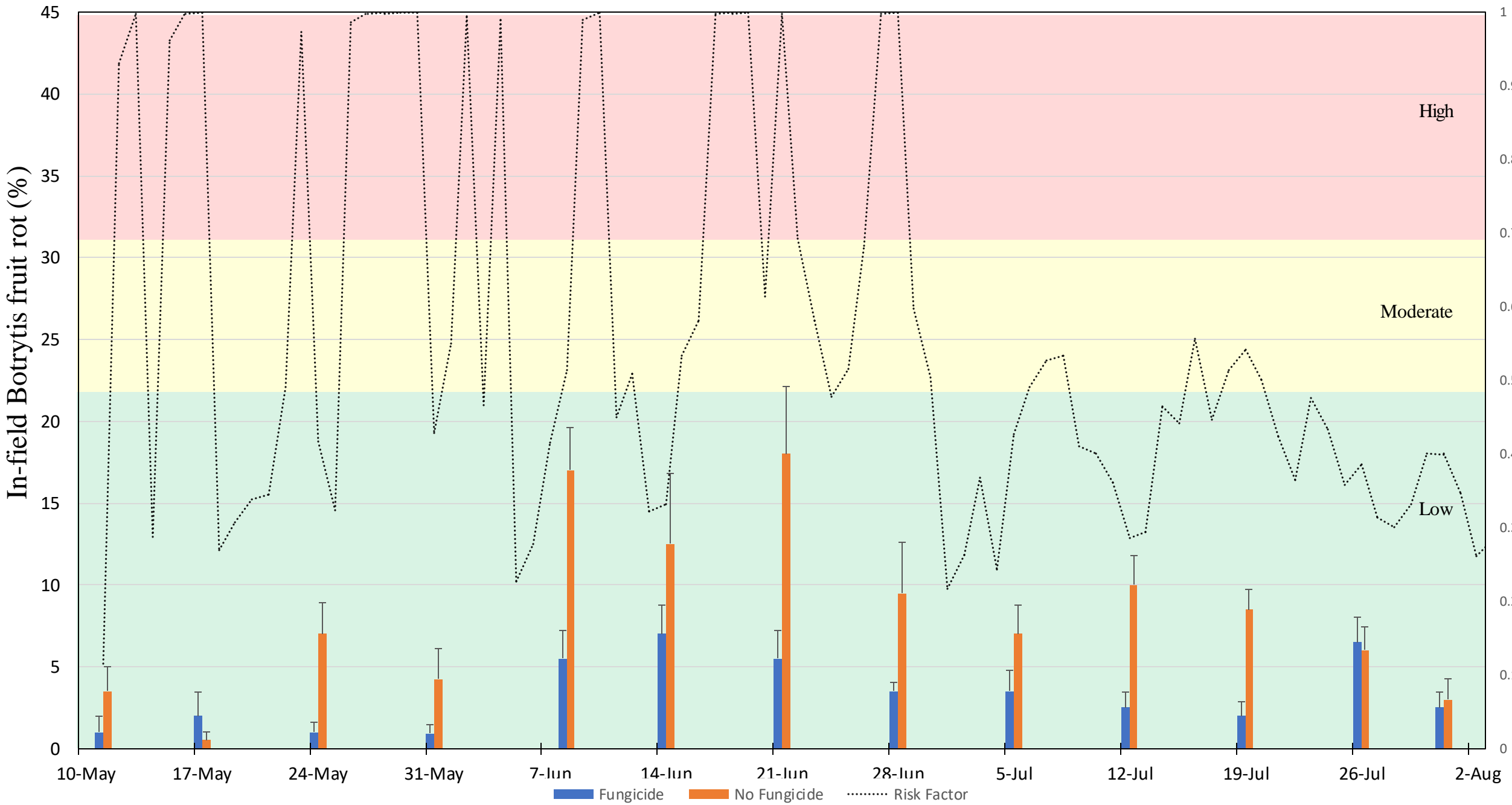
Ranch 1 In-field 2023



Ranch 1 Postharvest 2023



Ranch 1 In-Field



Conclusions

- Field and postharvest incidence:
 - Fungicide treatments had a lower BFR percentage compared to no fungicide.
- Did StAS accurately predict risk of BFR?
 - Still an on going experiment
 - Need to collect additional data
- This years results differed from previous two years



Questions?



CAL POLY
Strawberry Center



Evaluating Host Resistance to Macrophomina Root Rot and Verticillium Wilt in Strawberries

Joseph Ramirez

Master's student

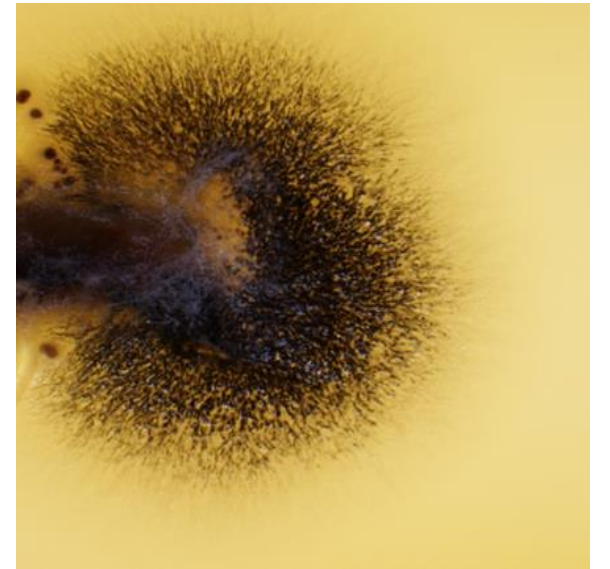
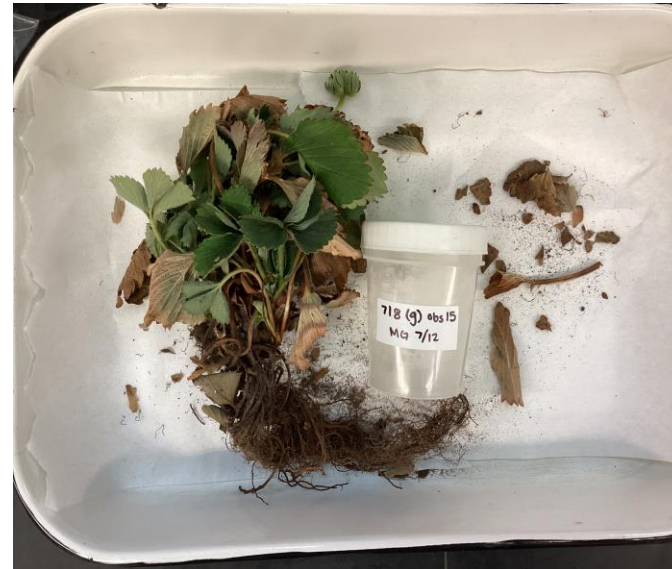
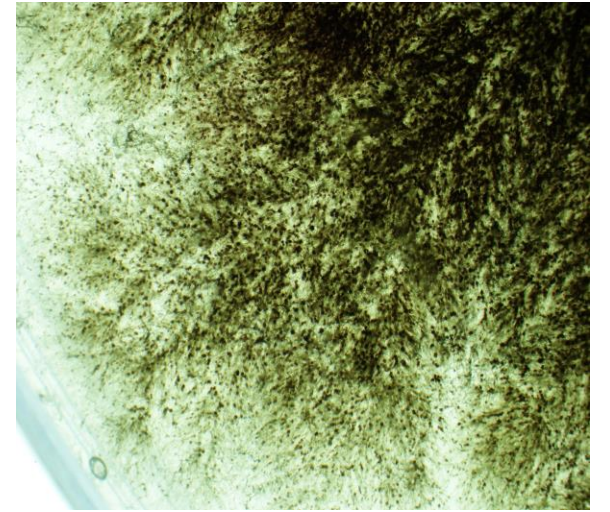


Cultivar trial setup

- 63 cultivars and 5 replications
- 20-plant plots
- Planted on November 2, 2022
- Naturally infested (*Verticillium*) or artificially inoculated (*Macrophomina*)
- Trials held in two separate fields
- Observations every two weeks



Field Observations



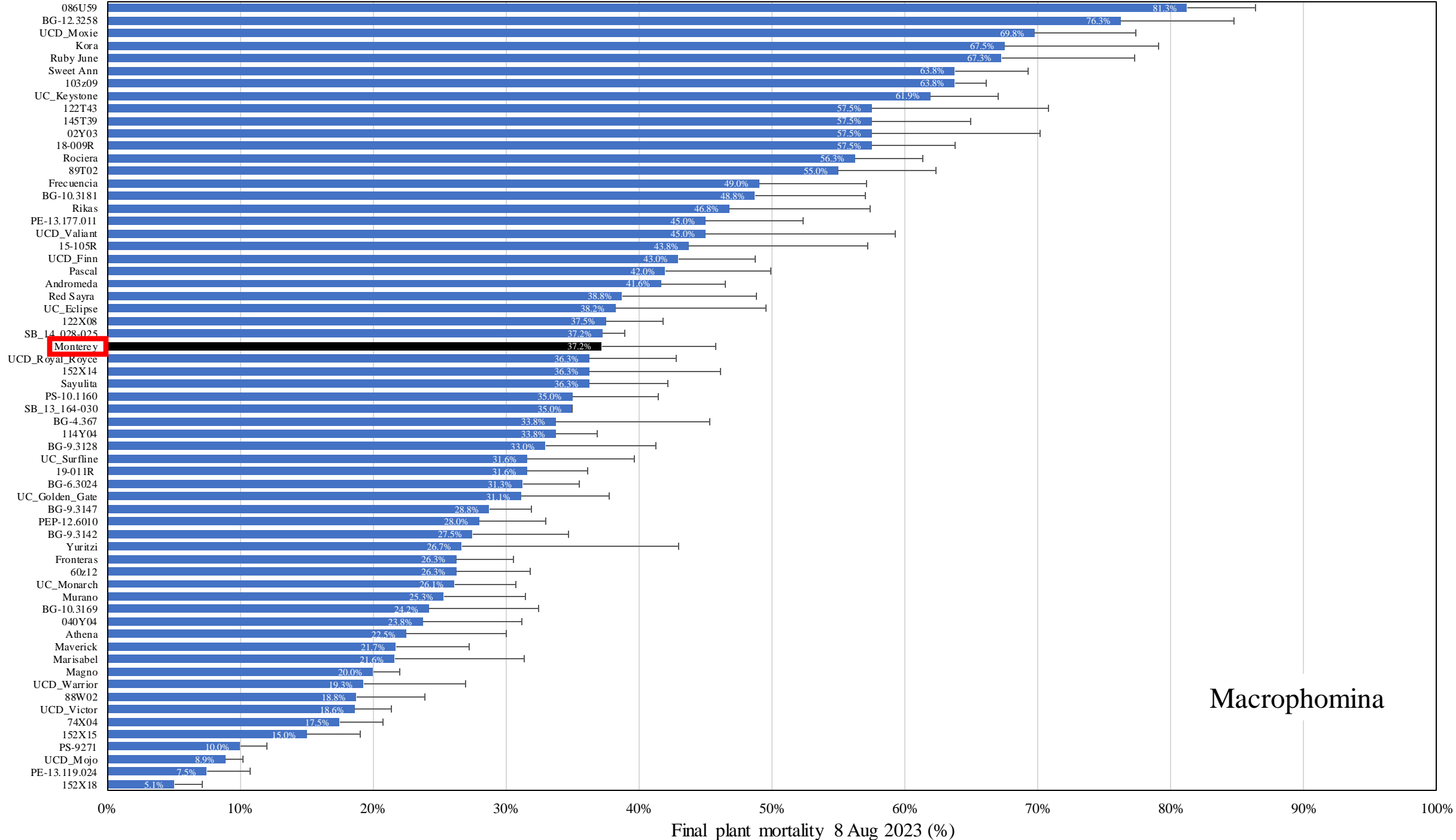
Field 35 at Strawberry Center



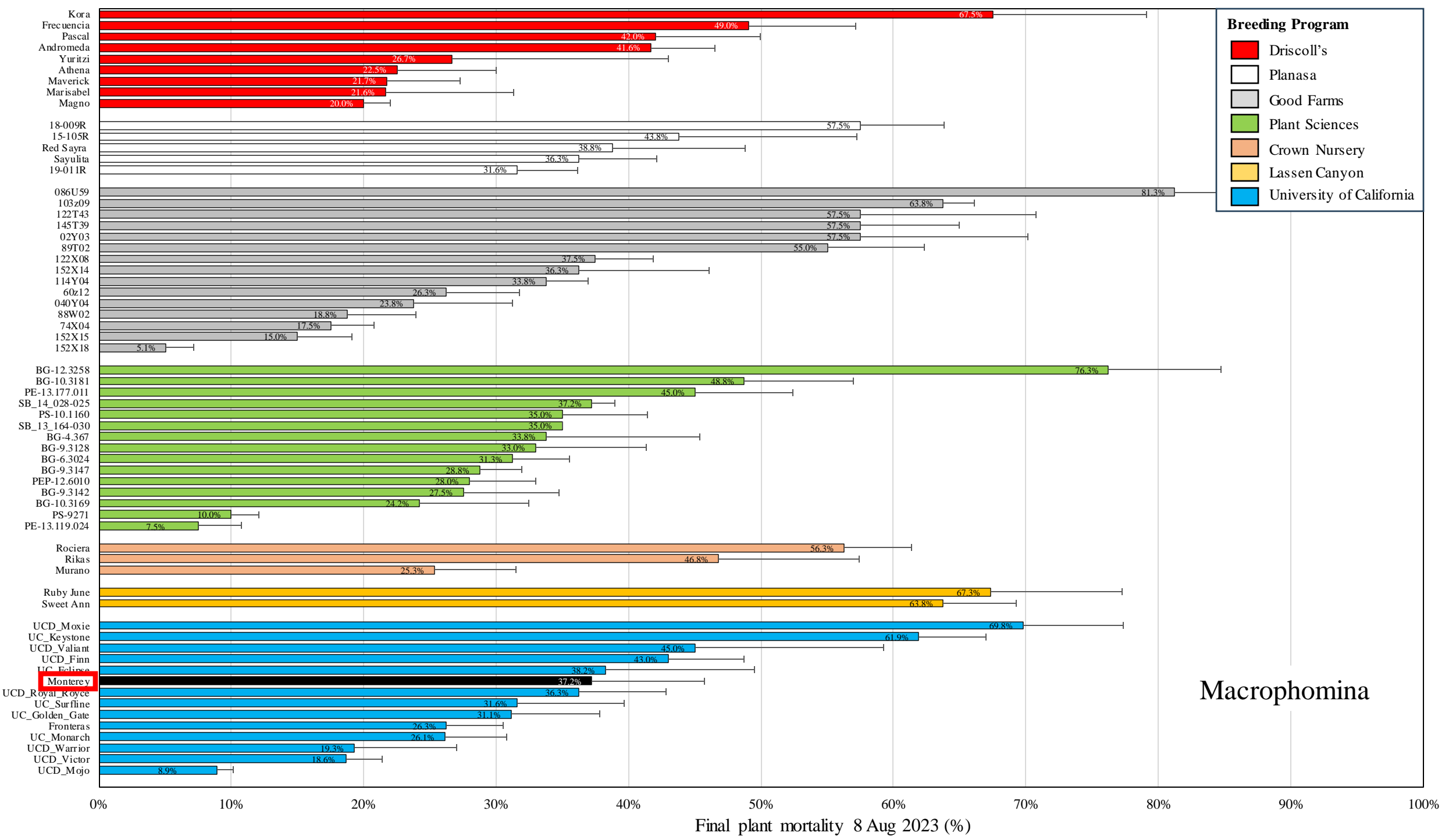
Macrophomina root rot trial

- Artificially inoculated:

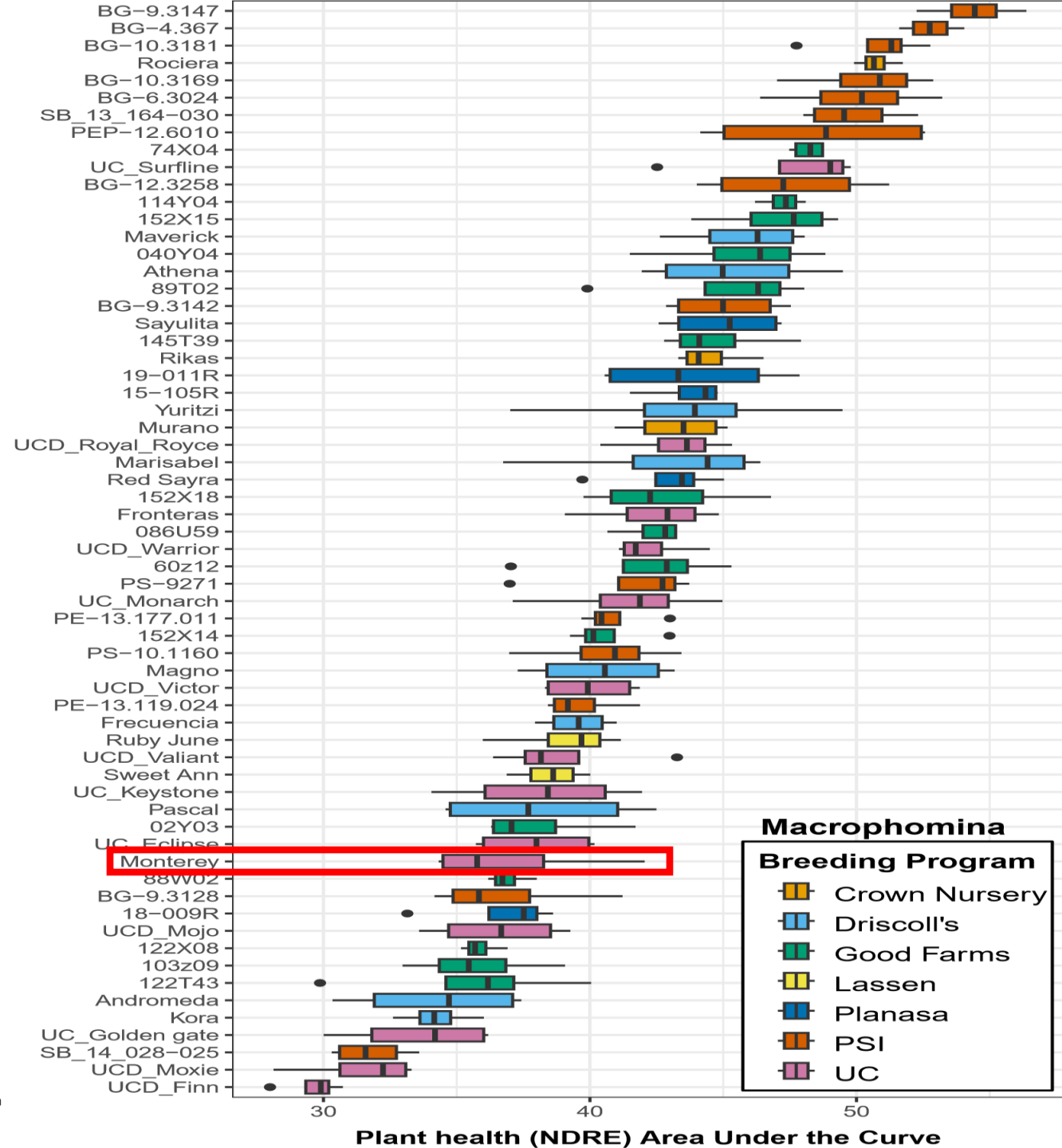




Macrophomina



Genotype (cultivar/elite breeding line)



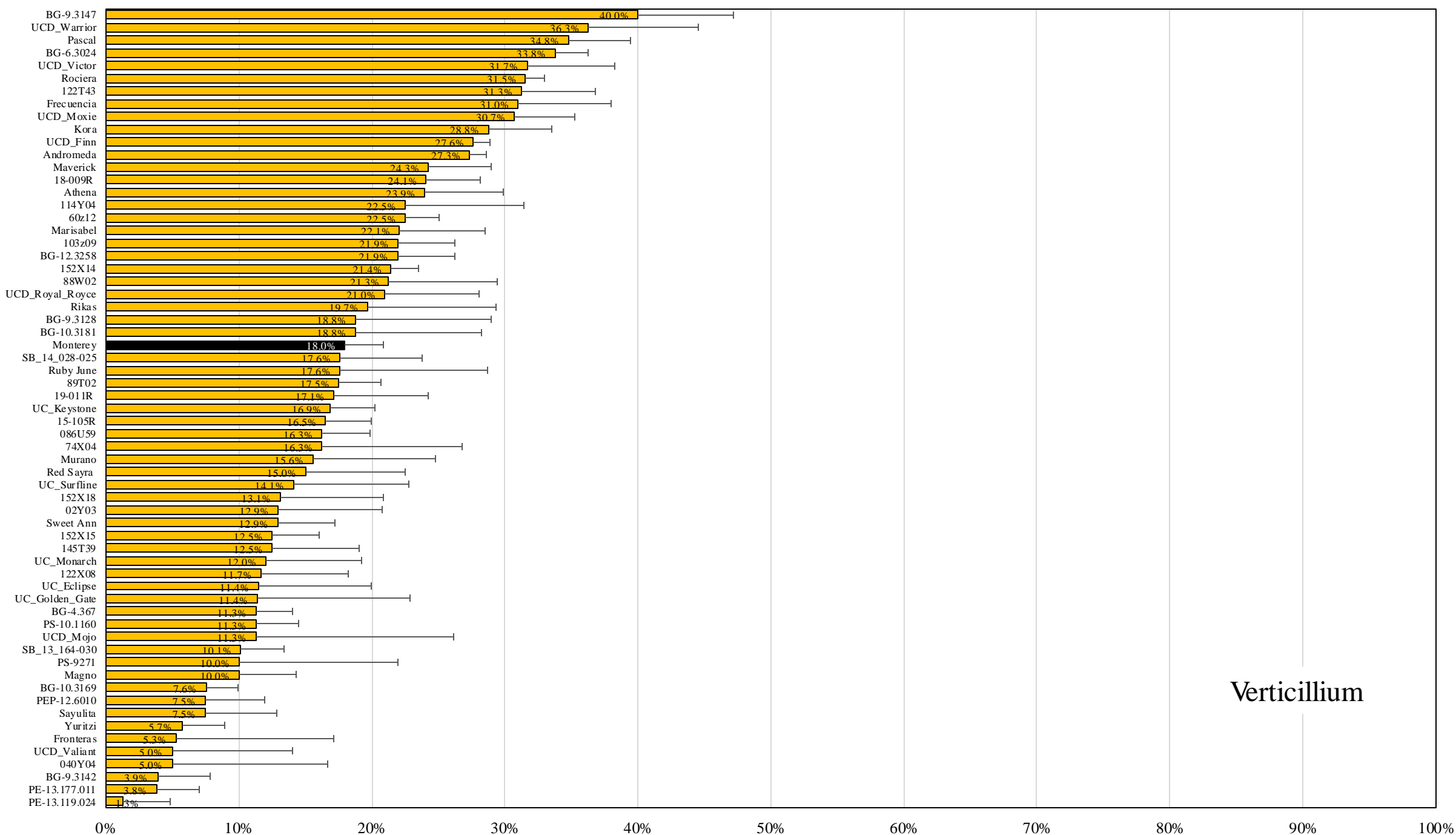
Field 25 at Strawberry Center



Verticillium wilt trial

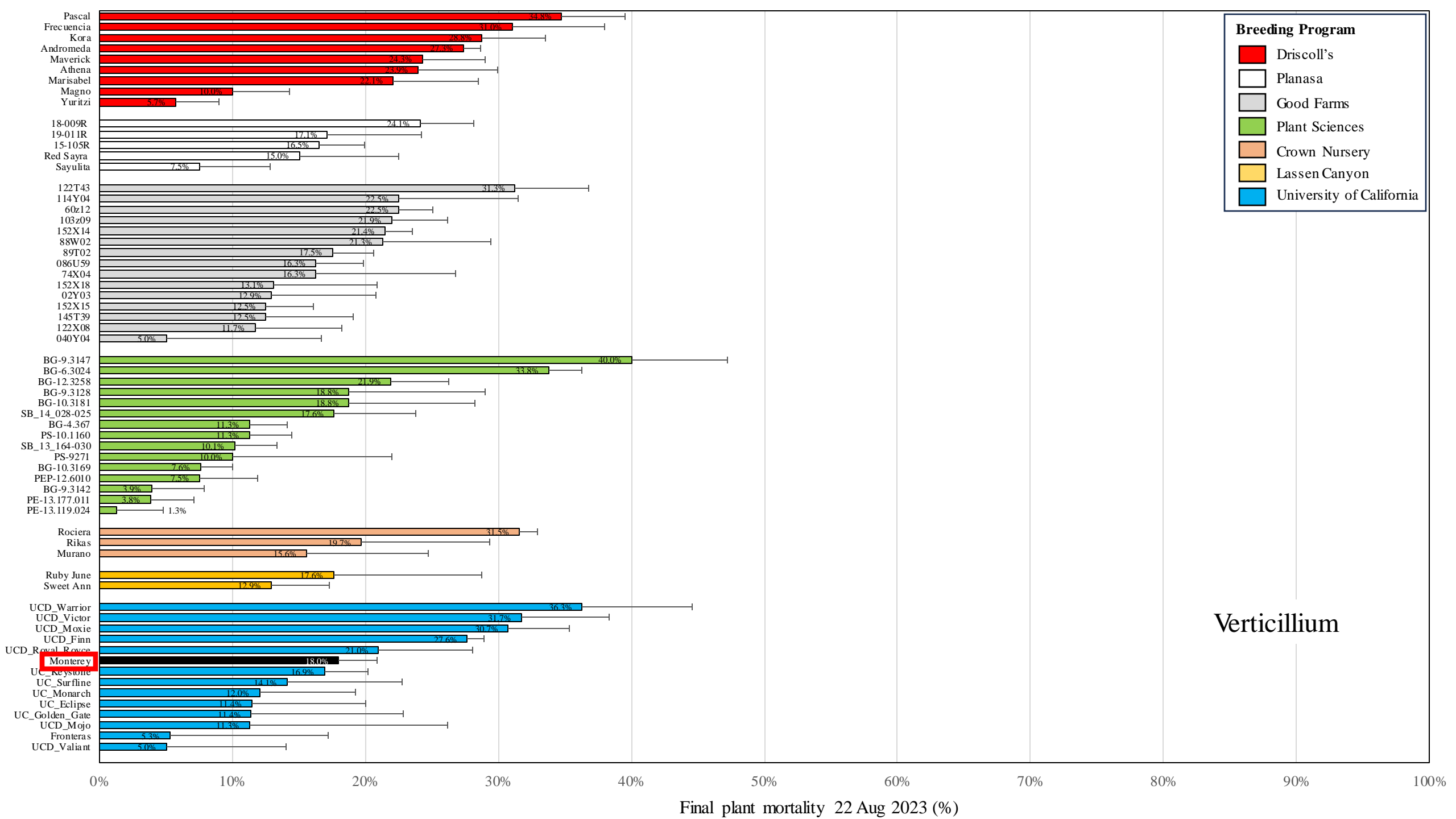
- Soil naturally infested with *Verticillium dahliae*
- Field 25 has a history of Verticillium wilt
- Many years of *V. dahliae*-susceptible vegetable crops



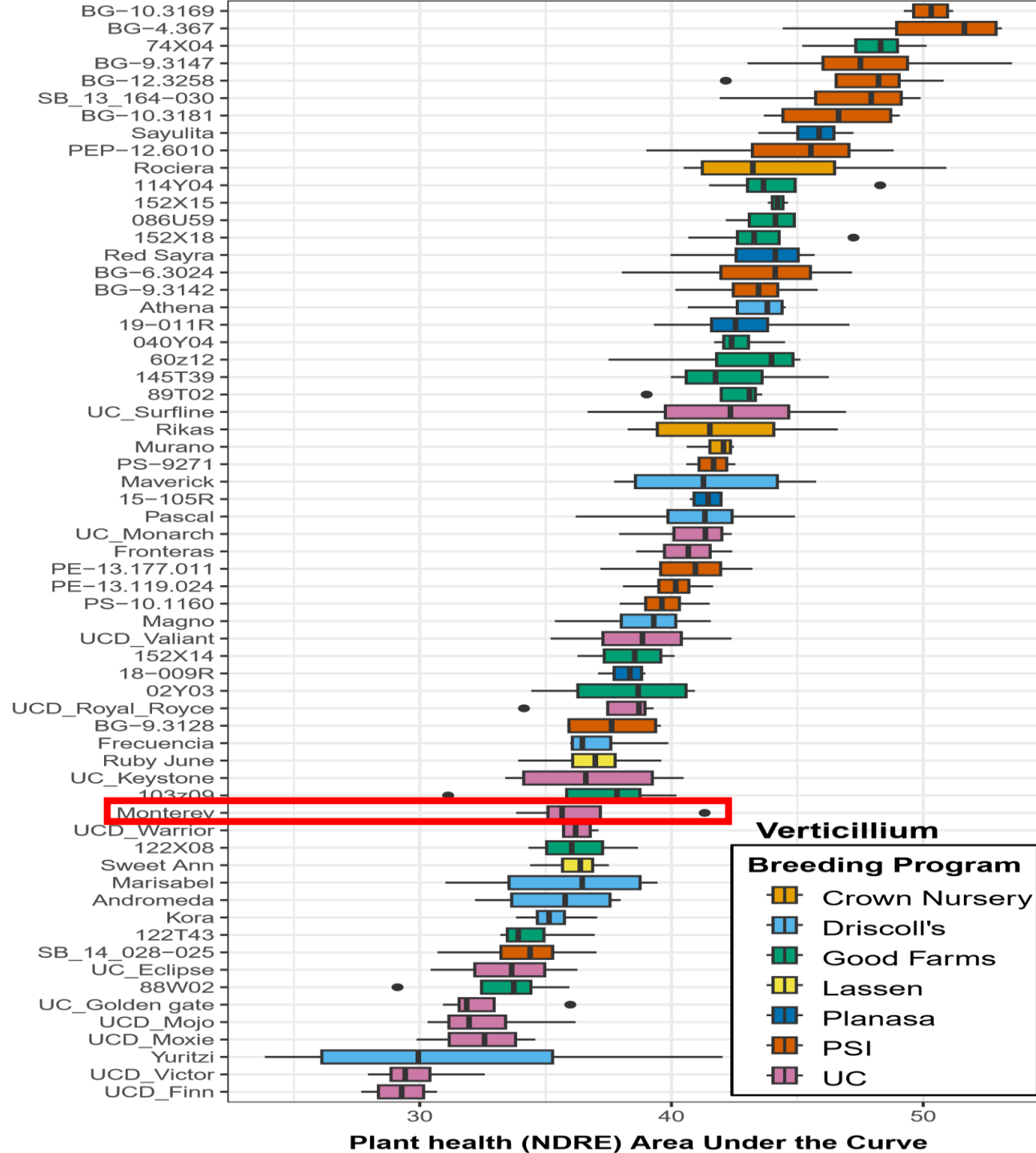


Verticillium

Final plant mortality 22 Aug 2023 (%)



Genotype (cultivar/elite breeding line)



CAL POLY
Strawberry Center

aerial
PLOT

Figure by
Kaitlin Rim



Conclusions

- Macrophomina trial
 - Ranged from 5-80%
 - Mortality increased later in the season
- Verticillium trial
 - Ranged from 1-40%
 - Weather could have played a role
- For further information:
<https://strawberry.calpoly.edu/our-work>
- My contact information:
jrami233@calpoly.edu



Questions?



CAL POLY
Strawberry Center

