

Dry Farming Early Girl Tomatoes

Early Girl is the recommended tomato variety for dry farming, but why the hype? Here we discuss some of the benefits and drawbacks of growing this beloved red slicer.

Traits and Yields

Early Girl tomatoes have many traits that make them exceptional for commercial dry farming. According to Jim Leap at UCSC, they have deep root systems, flavorful fruit, thick skins that makes their fruit easy to handle, and the plants hold their fruit for up to a week after ripening.

Marketable Yield (from OSU on-farm trials)

| Year Density | Average Farm (lbs/acre) | Lowest Yielding Farm (lbs/acre) | Highest Yielding Farm (lbs/acre) |
|-----------------------|-------------------------|---------------------------------|----------------------------------|
| 2018 20 sqft/plant | 10,800 | 2,800 | 24,300 |
| 2019 20 sqft/plant | 15,700 | 4,100 | 28,800 |
| 2019 40 sqft/plant | 11,700 | 900 | 27,400 |

Yields were lower in 2018 than in 2019. This may be the result of weather; 2018 was a hotter, drier year.

Site Suitability

In site suitability experiments conducted over two years (2018, 2019) the OSU Dry Farming Project investigated whether site variables were associated with increased Early Girl tomato yield and fruit quality. We found that the most important variables were high soil available water holding capacity (yield, fruit size), an absence of impermeable soil layers (yield), pH between 5.5 and 6.5 (yield), adequate phosphorus (yield), and a cool, humid, and sheltered microclimate (fruit size).

Resources

Information on dry farm tomato production in coastal California

<https://casfs.ucsc.edu/about/publications/grower-guides/pdf-downloads/dry-farmed-tomatoes.pdf>

Video on tomato production at Molino Creek farm

<https://www.youtube.com/watch?v=mcNarcVICmg>

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Blossom end rot (BER)

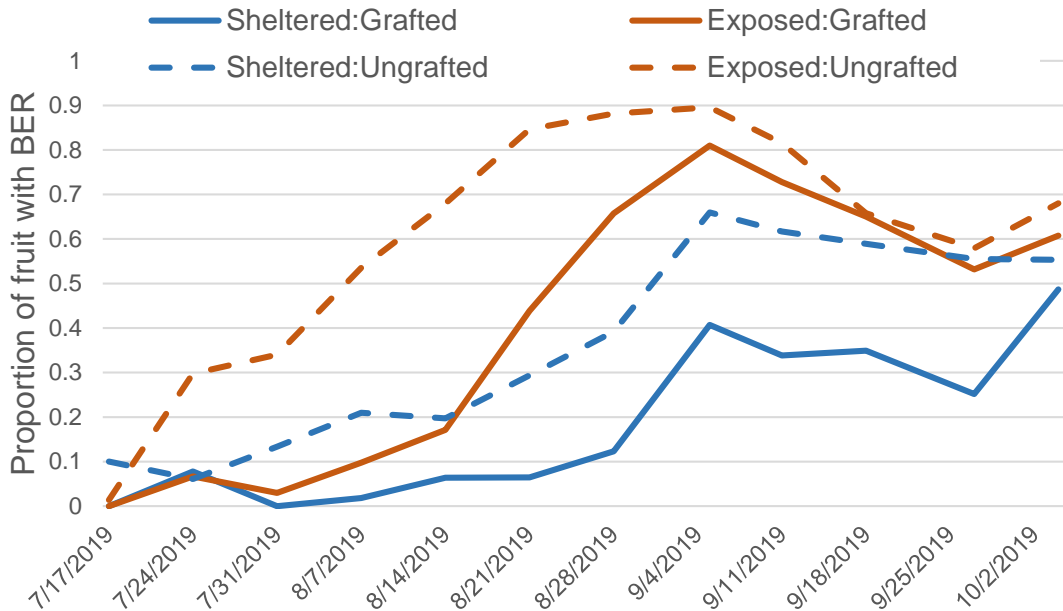
BER can be very prevalent in dry farmed tomatoes. In 2019, the average farm lost 33% of their fruit to BER, and rates on some farms were as high as 90%. Rates of BER were higher later in the season than early in the season. %BER in our trials was associated with low soil available water holding capacity (AWHC), dry air, exposed sites (without trees or solar panels as sun and/or wind blocks), and an interaction between soil AWHC and soil fertility. This interaction indicated that BER might be exacerbated by a sequence of luxurious growth early in the growing season (due to good soil nutrition) followed by severe drought stress (from low or even moderate AWHC).

Funding provided by:

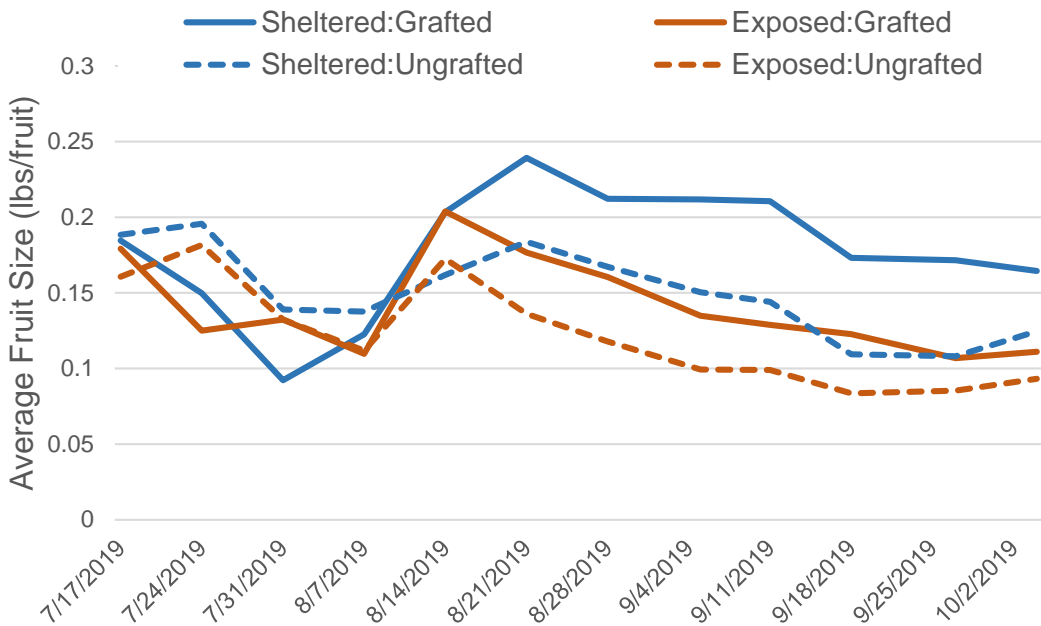


Grafting and Spacing

Two farms hosted replicated trials in 2019 to investigate the effects of planting density and grafting on Early Girl tomato yields and fruit quality. Early Girl grafted on Fortamino rootstock yielded more fruit per acre (averaging 4120 lbs/acre more) than ungrafted tomatoes. They also had larger fruit with lower % BER, though the fruits were slightly less sweet (~0.75 lower °Brix). Spacing also influenced yields and fruit quality. Higher planting densities (more plants/acre) had higher yields. Higher density plantings also had smaller fruit and lower % BER. See figures below.



Impact of grafting and 'sheltering' on Early Girl %BER



Impact of grafting and 'sheltering' on Early Girl fruit size