

2020 Dry Farm Tomato Variety Trial: Summary

APPROACH

- Tomato varieties were selected as they were 1) reported to be blossom end rot (BER) resistant, 2) regional farm/seed company favorites, or 3) OSU breeding lines. Rootstocks were selected as they were grown by regional farms and/or available as organic seed.
- Ungrafted varieties were evaluated at the OSU research farm; grafted scion/rootstock combinations were evaluated at the OSU research farm and at an organic farm.
- Trials were not replicated (one plot of 5 plants per variety or scion/rootstock combination)
- Tomatoes were harvested weekly.
- Data collection on small-fruited (cherry/saladette) varieties was discontinued early as they did not exhibit BER and project resources were insufficient to take harvest data on all plots.

RESULTS

Important note: Because the trials were not replicated it is not possible to determine if differences in yield and % blossom end rot (BER) are significant. As an example of plot-plot variability, Early Girl was grown in 4 plots at OSU and BER incidence ranged from 41-71% and yield from 25– 31 T/A. All 48 low-BER varieties listed in the full Variety Trial Report will be grown by the project again in 2021 to better quantify and rank performance.

Ungrafted varieties

- Varieties with low % BER (<15%) and highest unblemished yields (by type) are listed in the table below.
- Additional varieties of BER <15% are listed in the full report; read through the entire list to identify additional varieties of interest.
- Use hyperlinks on variety names for variety descriptions and photos from seed sources.
- Consult Appendix A for project variety photos.
- Consult Appendix B for season-long variety-specific yield, fruit size and % BER figures.
- Consult Appendix D for list of small-fruited varieties. It is likely that most small-fruited tomato varieties can be dry-farmed successfully with little to no risk of BER losses.
- Consult Appendix E for the list of low performing varieties.
- Early Girl, grown widely in coastal CA dry farming systems, was low performing due to high BER incidence and small fruit size. Poor Early Girl performance has been shown previously in western Oregon site suitability and grafted tomato trials; Early Girl is not recommended.

Grafted scion/rootstock combinations

- Yields of high performing scion/rootstock combinations were much higher than the yields of the highest-yielding ungrafted varieties (grafting improves productivity!).
- Consult Appendix C for the complete grafted tomato trial report.
- DRO141TX, Fortamino, and Maxifort rootstocks increased yield and fruit size and decreased BER incidence in diverse varieties used as scion, while other rootstocks were less effective or ineffective in improving productivity and quality.

- The varieties used as scion in 2020 grafting trials were typically not high performing when grown ungrafted; in 2021, high performing varieties identified in 2020 will be used as scion in grafting trials.

Tables: Varieties of Highest Unblemished Yield (ungrafted)

Varieties of highest unblemished yield and <15% BER. Fresh eating tomato average fruit size > 0.20 lbs. Column color indicates fruit color group. Find more complete descriptions in Variety Trial Report with links to seed source webpages.

Large red fresh eating	Total unblemished yield (T/A)	BER (%)	Average fruit size (lbs)	Issues
Cosmonaut Volkov	20	3	0.28	green shoulders
Frederik (hybrid)	32	2	0.29	
Great Lakes	23	1	0.36	
Jersey Breeze	30	11	0.43	catface
Marmande	48	1	0.27	catface/green shoulder
Mavritanskite	35	9	0.56	catface/green shoulder
Nevsky	29	8	0.41	green shoulder
Perfect Rogue	22	12	0.27	catface
Spring King	24	3	0.25	catface/green shoulder
Starfire	26	8	0.33	

Large other color fresh eating	Total unblemished yield (T/A)	BER (%)	Average fruit size (lbs)	Issues
Azoychka	42	1	0.35	catface
Dwarf Sweet Sue	29	3	0.52	catface
Gold Medal	21	5	0.52	catface
Manyel	38	5	0.28	
Astrakhanskie	41	6	0.68	catface/green shoulder
Cherokee Purple	39	7	0.50	catface
Siberian Giant Pink	36	1	0.63	catface/green shoulder
Tiffen Mennonite	37	0	0.63	catface/green shoulder

Paste	Total unblemished yield (T/A)	BER (%)	Average fruit size (lbs)	Issues
Baylor Paste	21	11	0.14	green shoulder
Fakel	22	6	0.11	
Lampchen	25	8	0.13	green shoulder
Quadro	21	5	0.11	green shoulder
Teardrop	30	1	0.12	