



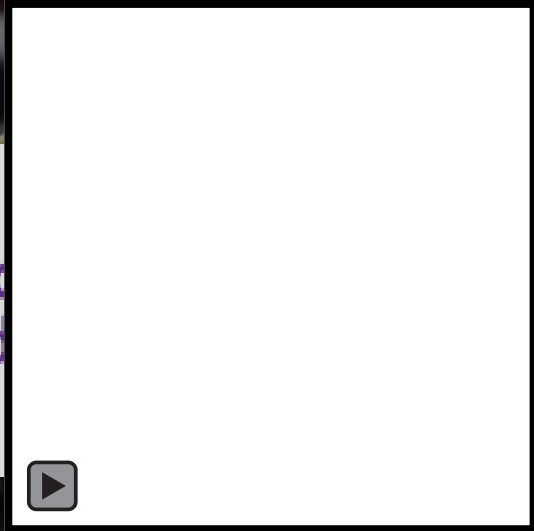
Assessing Scion Compatibility in Tomato as a Function of Yield Improvement

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Why Graft Tomatoes?

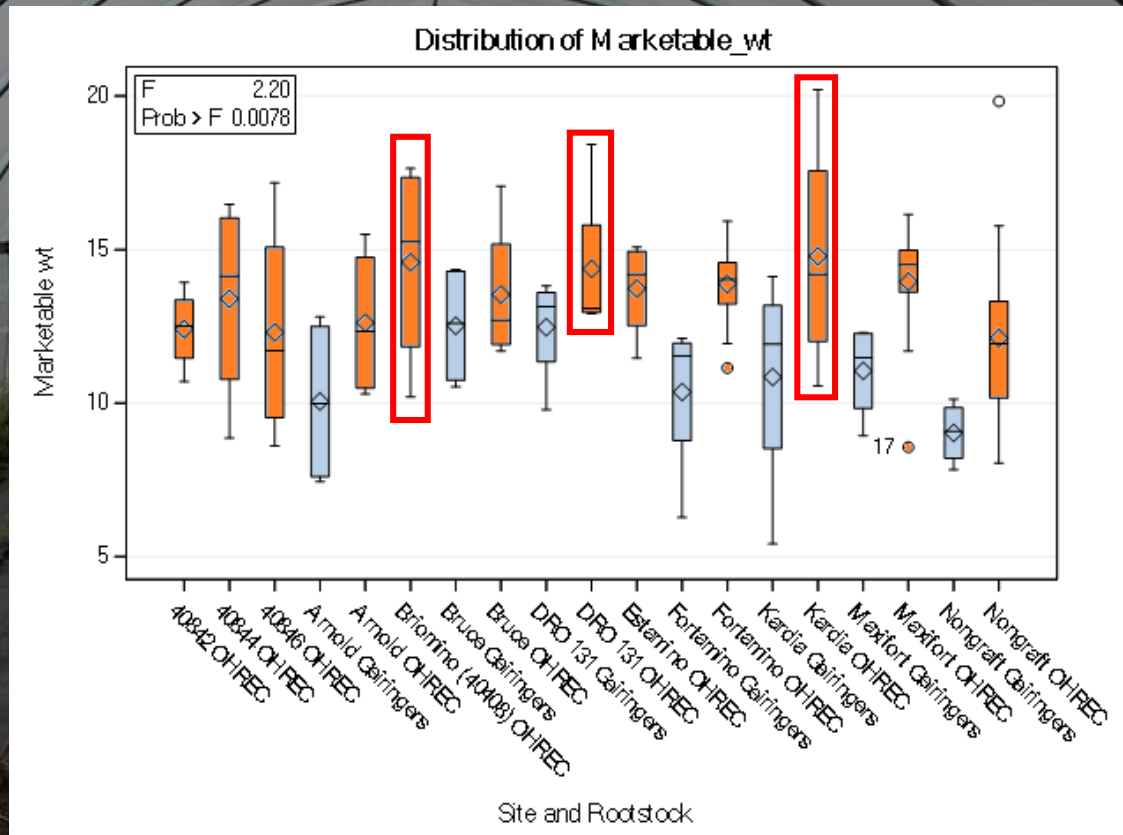
- **Enhanced root function**
 - Water and nutrient uptake
 - Nutrient assimilation and transport
 - Interface with soil ecosystem
- **Abiotic Stress tolerance**
 - High Tunnels
 - Salinity
 - Flooding
- **Improved Plant Vigor and Productivity**
 - Heirloom Production
- **Disease resistance against soilborne pathogens**
 - Alternatives to soil fumigation
 - Organic



David Loewen, MS Student

HT Rootstock Trials

- OHREC Trial
 - Kardia, Briomino, and DRO 131
 - marketable yields above 14 lbs/plant
 - 40844 produced largest fruit (0.55 lbs/fruit)
- Geiringer trial
 - Bruce and DRO 131



Scion Variety Trial

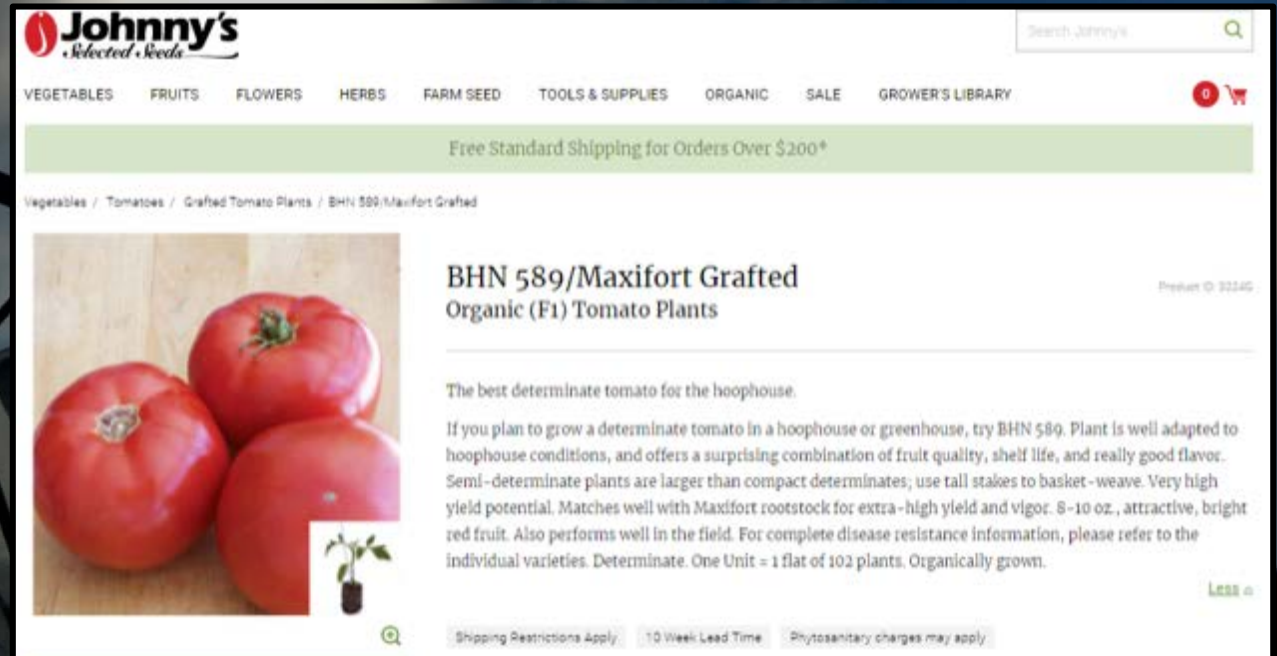


Trial Setup

- OHREC
- 3-season multi-bay "Haygrove"
- 4 replications x 10 scions with a grafted and non-grafted treatment
- 2016 - 2017
- yield, marketability, and biomass data

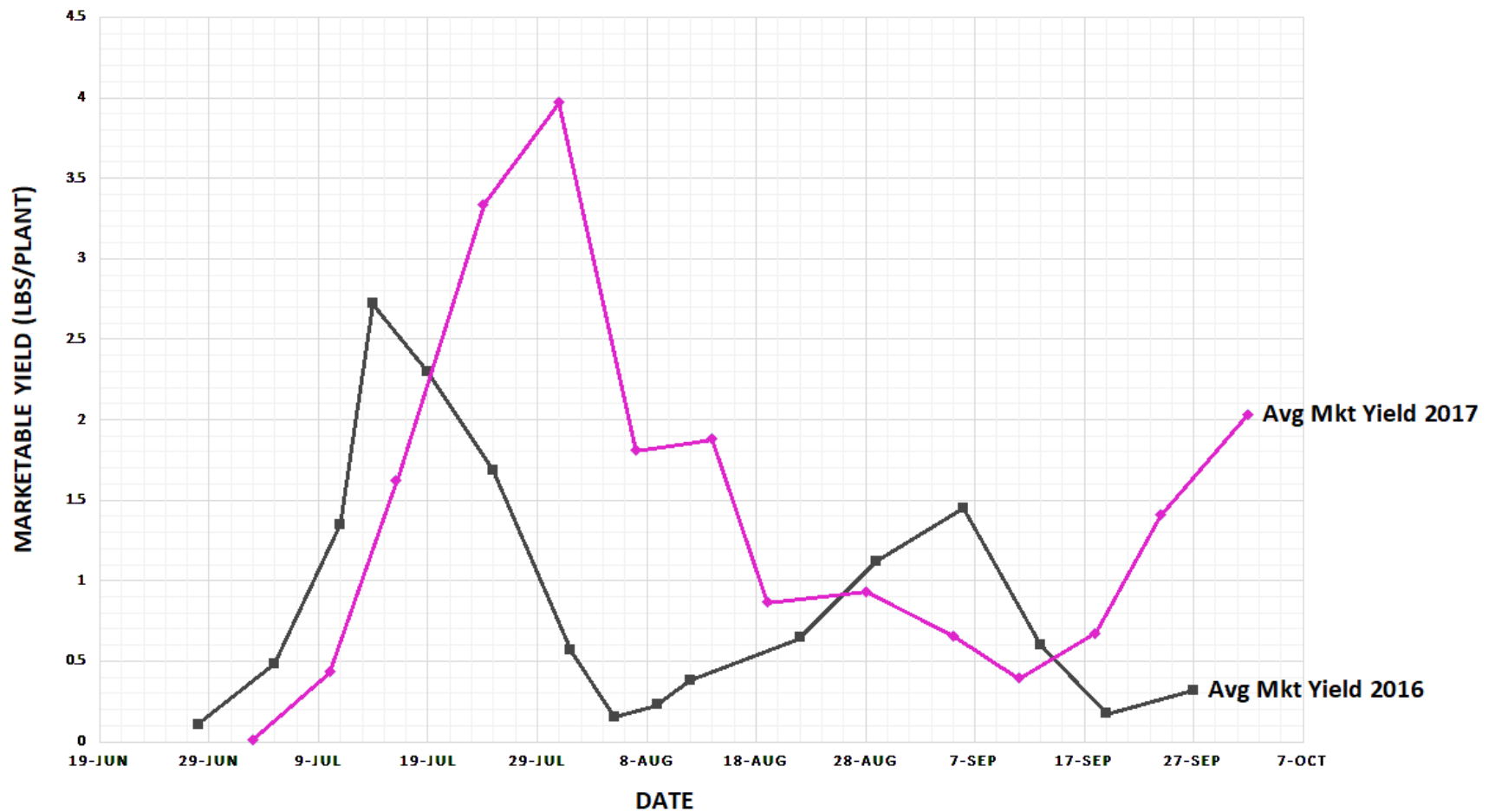
Scion Varieties and rationale

- Richmond
- Scarlet Red
- Skyway
- Fletcher
- Summerpick
- Tasti Lee
- BHN 589
- Primo Red
- Red Morning
- Red Deuce
- Maxifort - De Ruiter (Monsanto)

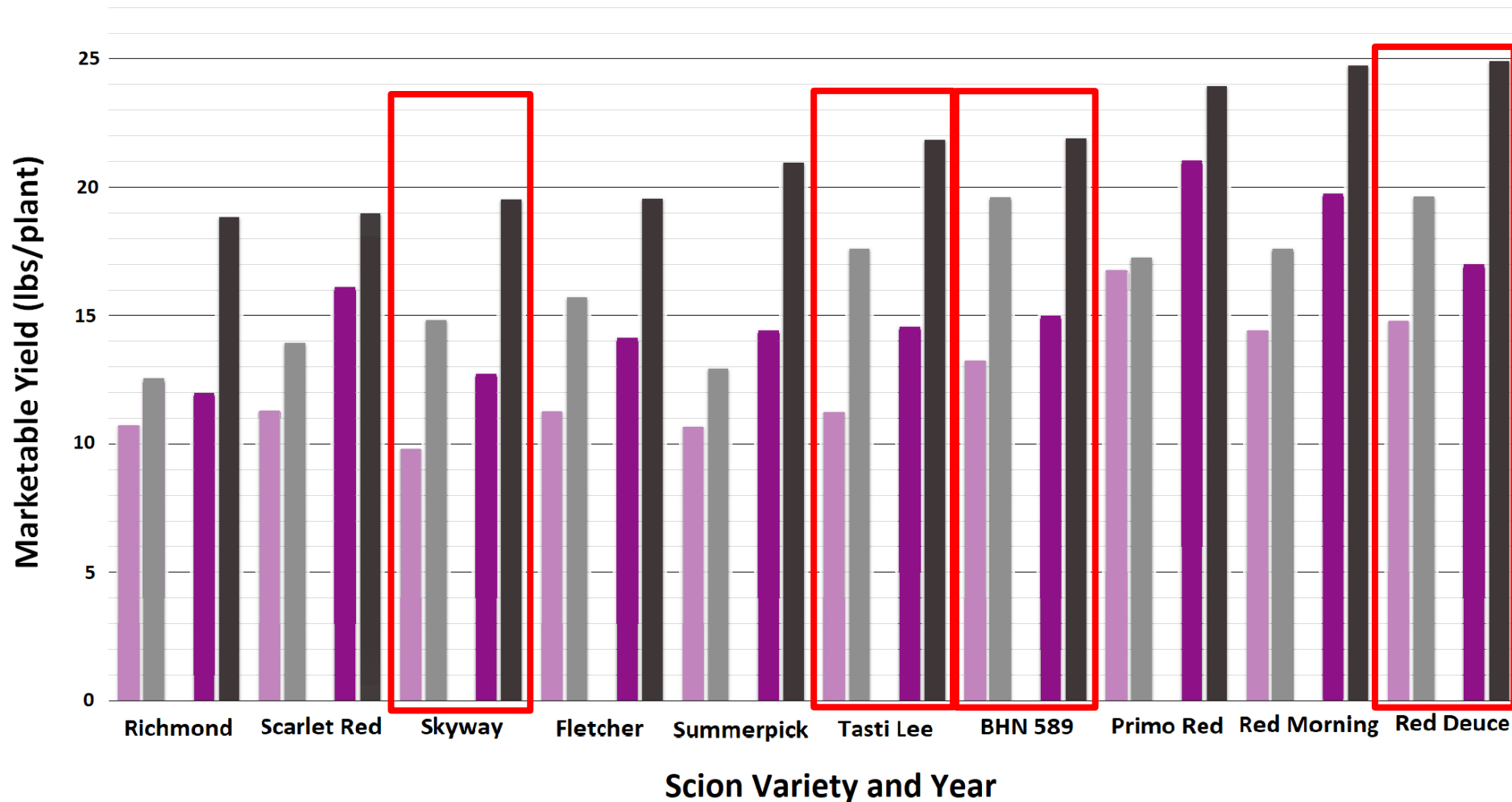


Year-to-Year Differences

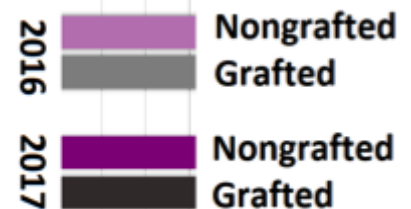
MARKETABLE YIELD (LBS PER PLANT) BY DATE



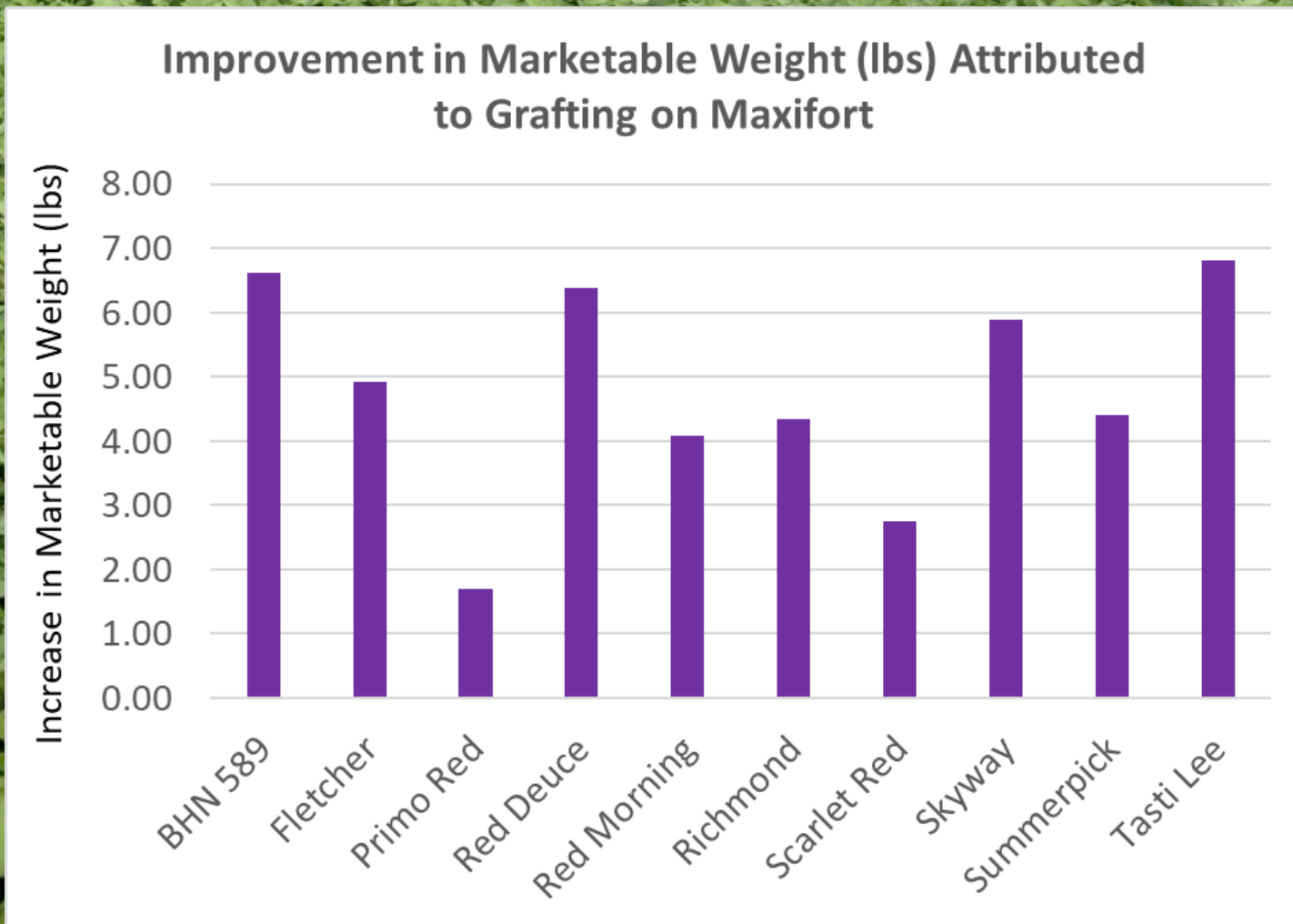
Average Marketable Yield (lbs/plant) By Year and Scion Variety



Grafting improves Marketable Yield of: 'Skyway, Tasti Lee, BHN 589, & Red Deuce



Assessing Scion Compatibility

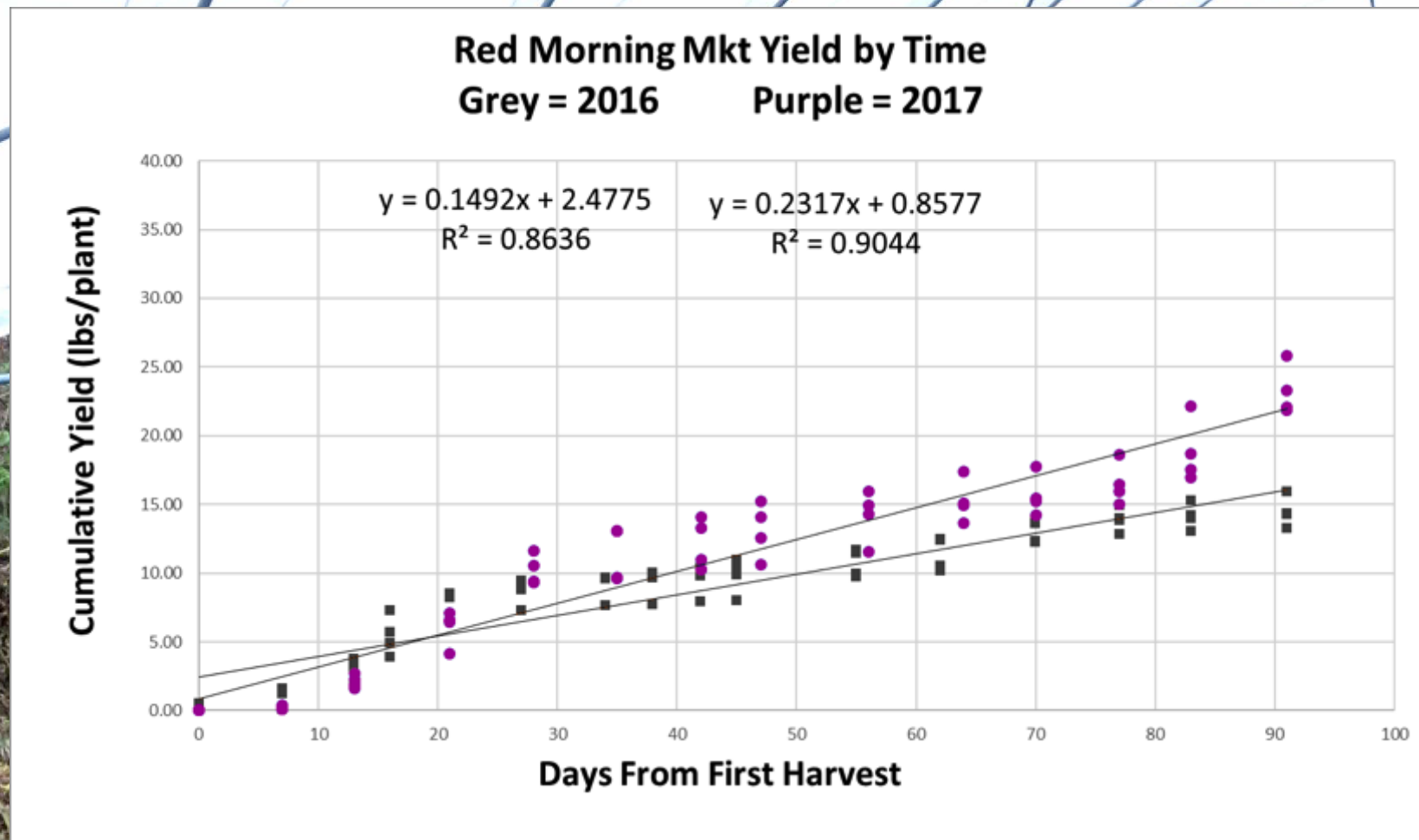


Assessing Scion Compatibility

Scion Variety	Improvement from Grafting	
	Mkt Weight	% Improvement
BHN 589	6.63	31.95%
Fletcher	4.93	27.92%
Primo Red	1.70	8.24%
Red Deuce	6.38	28.63%
Red Morning	4.08	19.28%
Richmond	4.34	27.67%
Scarlet Red	2.74	16.68%
Skyway	5.90	34.34%
Summerpick	4.40	25.98%
Tasti Lee	6.82	34.58%

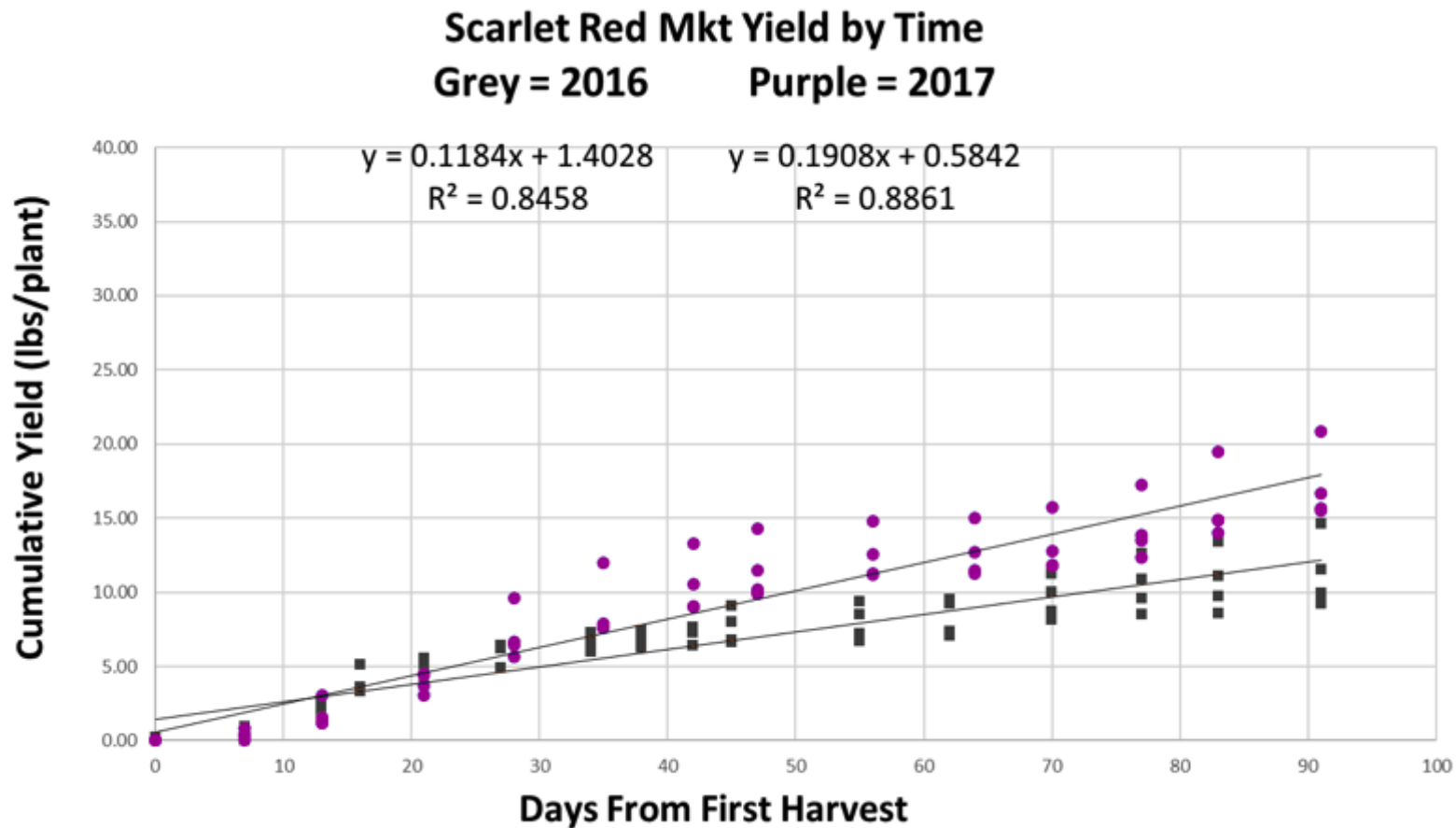
Winners

Production Consistency



Winners

Production Consistency



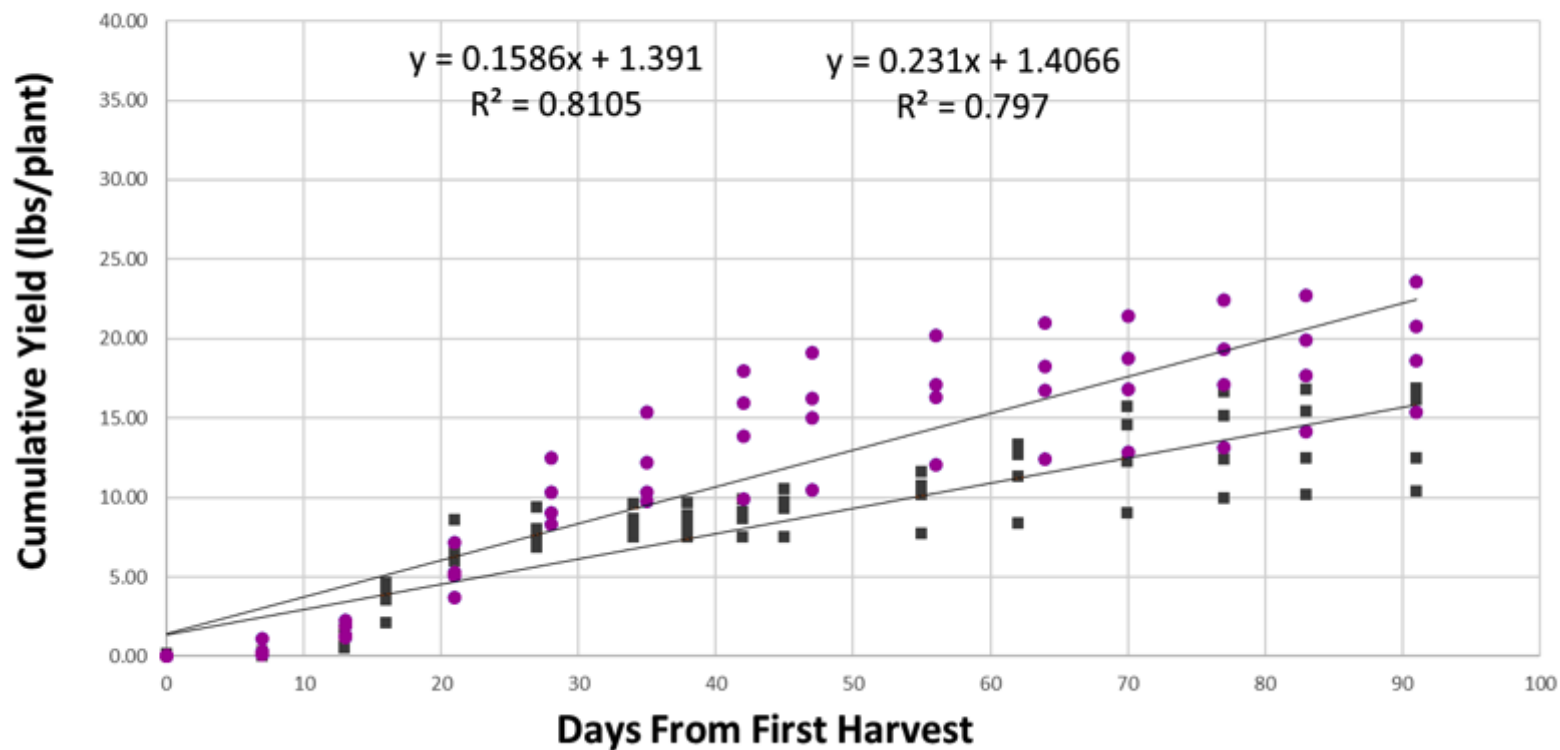
Losers

Production Consistency

Scarlet Red on Maxifort Mkt Yield by Time

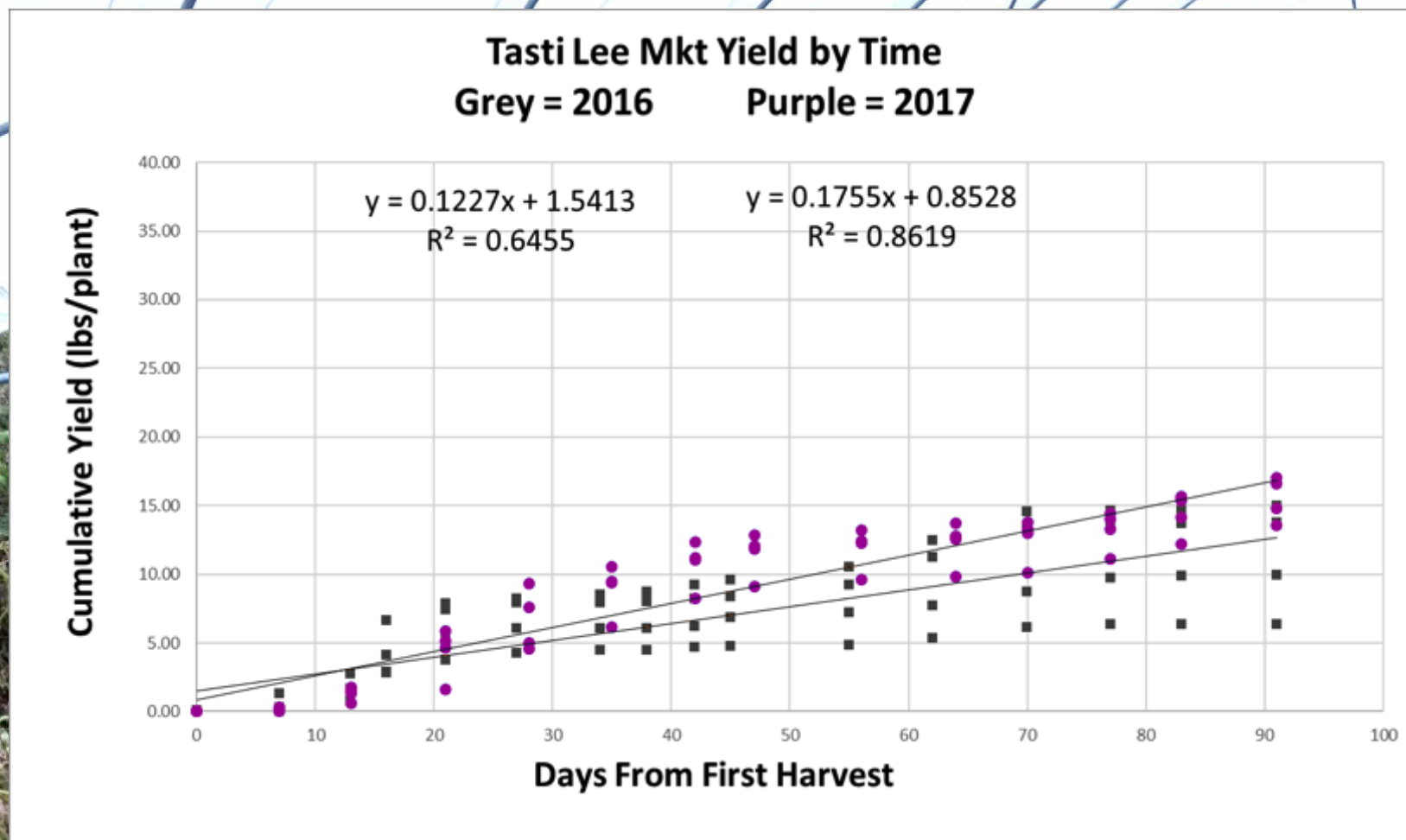
Grey = 2016

Purple = 2017



Inconsistent Losers

Production Consistency



Conclusions & Recommendations

- High Tunnel Scion Trial
- Strong interaction between year and yield
- 'Red Deuce', 'Skyway', and 'Tasti Lee' = good (new) candidates for Grafting
- Red Deuce / Maxifort = highest Marketable yields
- Primo Red = insignificant yield improvements, but highest producing non-grafted variety (2016 and 2017)



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Thanks



QUESTIONS?