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New Developments In Strawberry Breeding

Agritech Conference, Plant City, FL
August 4, 2015

Vance Whitaker, Seonghee Lee, Sujeet Verma, Jack Roach,
Jozer Mangandi, Luis Osorio

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Outline

1) Management Recommendations
for **Sweet Sensation™ 'Florida127'**

2) New Genetic Strategies for Precision Breeding

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Sweet Sensation™ ‘Florida127’

- Flavor and Aroma
- Excellent Shelf Life
- Moderate Firmness
- Fruit Size
- Early and Total Yield

the Sweet Sensation
TELL US HOW THEY TASTE!
OPEN LID FOR DETAILS AND A CHANCE TO WIN AN iPad.
Fresh from Florida

Be aware of:

Coloring When Cold/Cloudy

Rain Damage

Vigorous Plant

Disease Resistance (N. Peres)

Disease	Causal Agent	Radiance	Florida127
Anthracnose fruit rot	*Colletotrichum acutatum*	R	HR
Angular leaf spot	*Xanthomonas fragariae*	MS	MS
Botrytis fruit rot	*Botrytis cinerea*	MS	S
Charcoal rot	*Macrophomina phaseolina*	MR	MR
Colletotrichum crown rot	*Colletotrichum gloeosporoides*	MS	MR
Phytophthora root rot	*Phytophthora cactorum*	HS	HS
Powdery mildew	*Podosphaera aphanis*	MR	S

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My Management Recommendations

#1 Oct 1st – 10th planting

#2 16” in-row spacing

#3 Don’t fertilize like ‘Radiance’ (Plant Size!)

#4 Phytophthora – Powdery Mildew – Botrytis

#5 Let it color

What's Coming Up?

Varieties for Early Planting

- Early yield distribution
- Manageable plant

Maintain Focus on Fruit Quality and Flavor

2015-16: 1 Trial Selection

2016-17: 2 Additional Trial Selections

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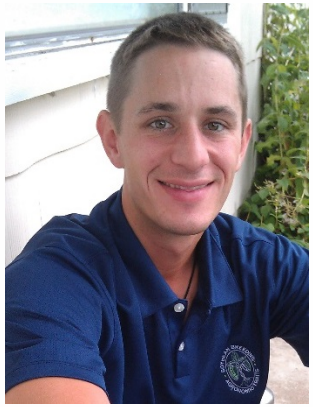
DNA Technology ➡ More Effective Breeding

(your royalty dollars at work)

Jozer Mangandi

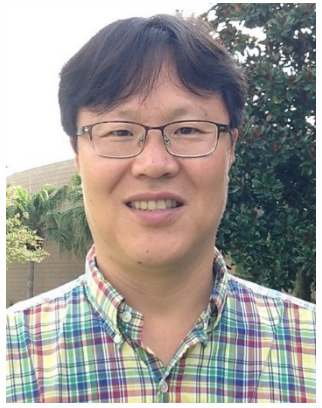
Dr. Alan Chambers



Jack Roach

Dr. Sujeet Verma

Dr. Luis Osorio



Dr. Seonghee Lee

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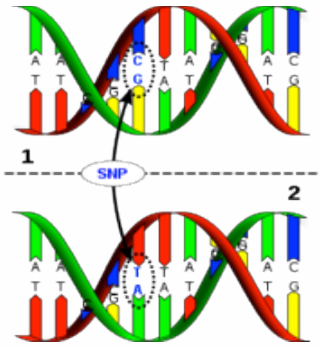
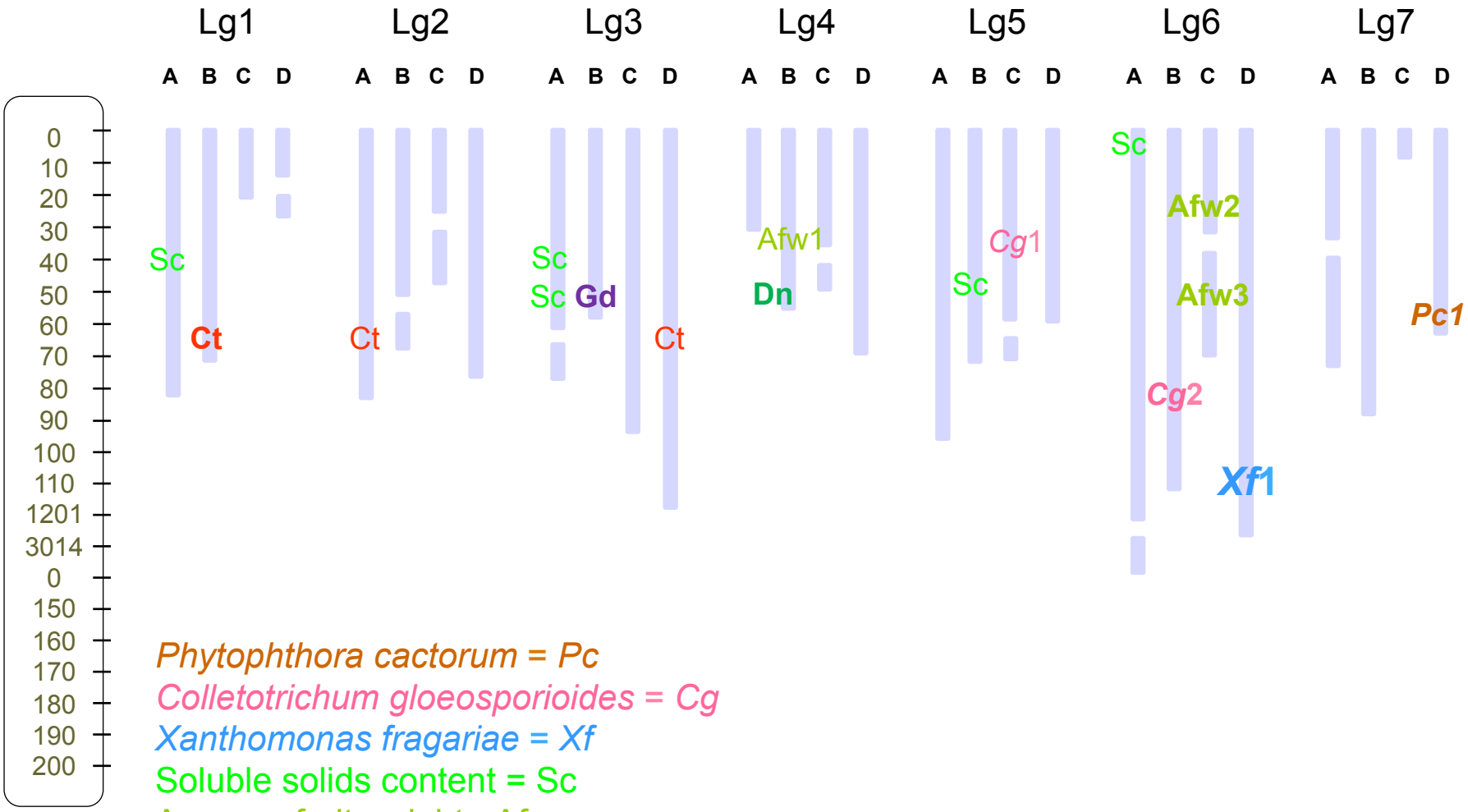


Axiom® SNP array

Understand Trait Genetics

DNA Tests for Breeding

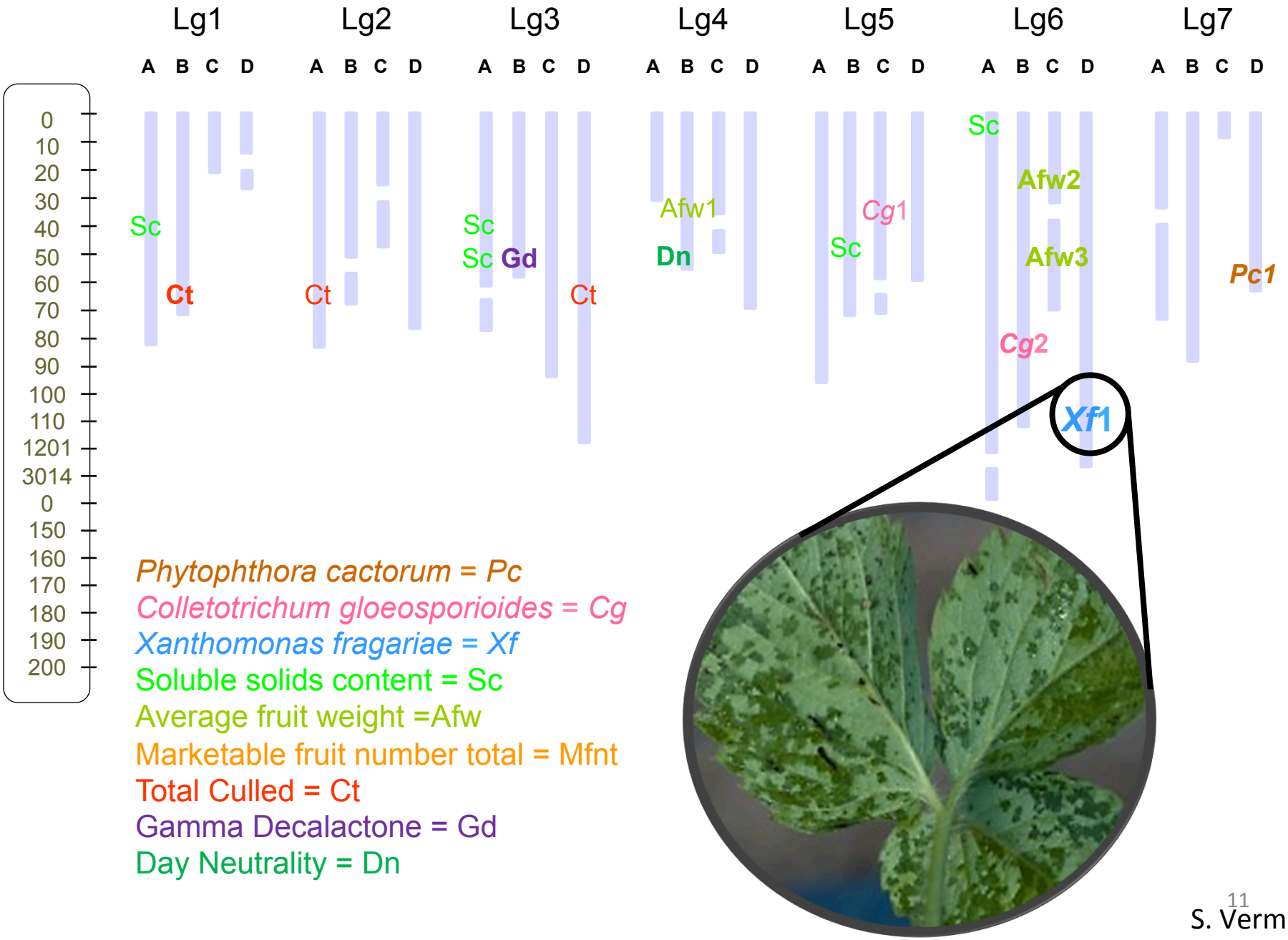
QTL overview



Phytophthora cactorum = Pc
Colletotrichum gloeosporioides = Cg
Xanthomonas fragariae = Xf
Soluble solids content = Sc
Average fruit weight =Afw
Marketable fruit number total = Mfnt
Total Culled = Ct
Gamma Decalactone = Gd
Day Neutrality = Dn

S. Verma

QTL overview



S. Verma

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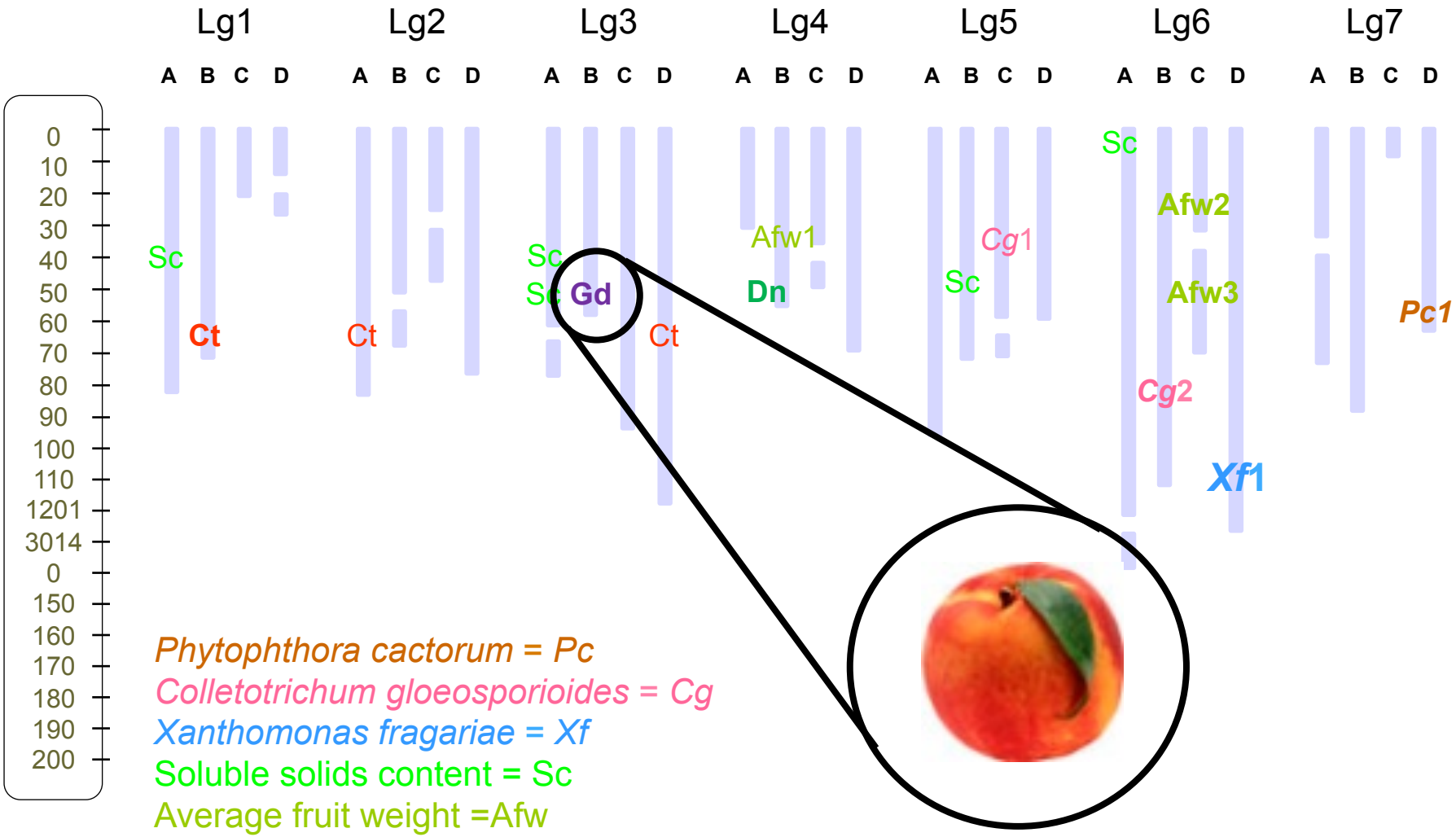

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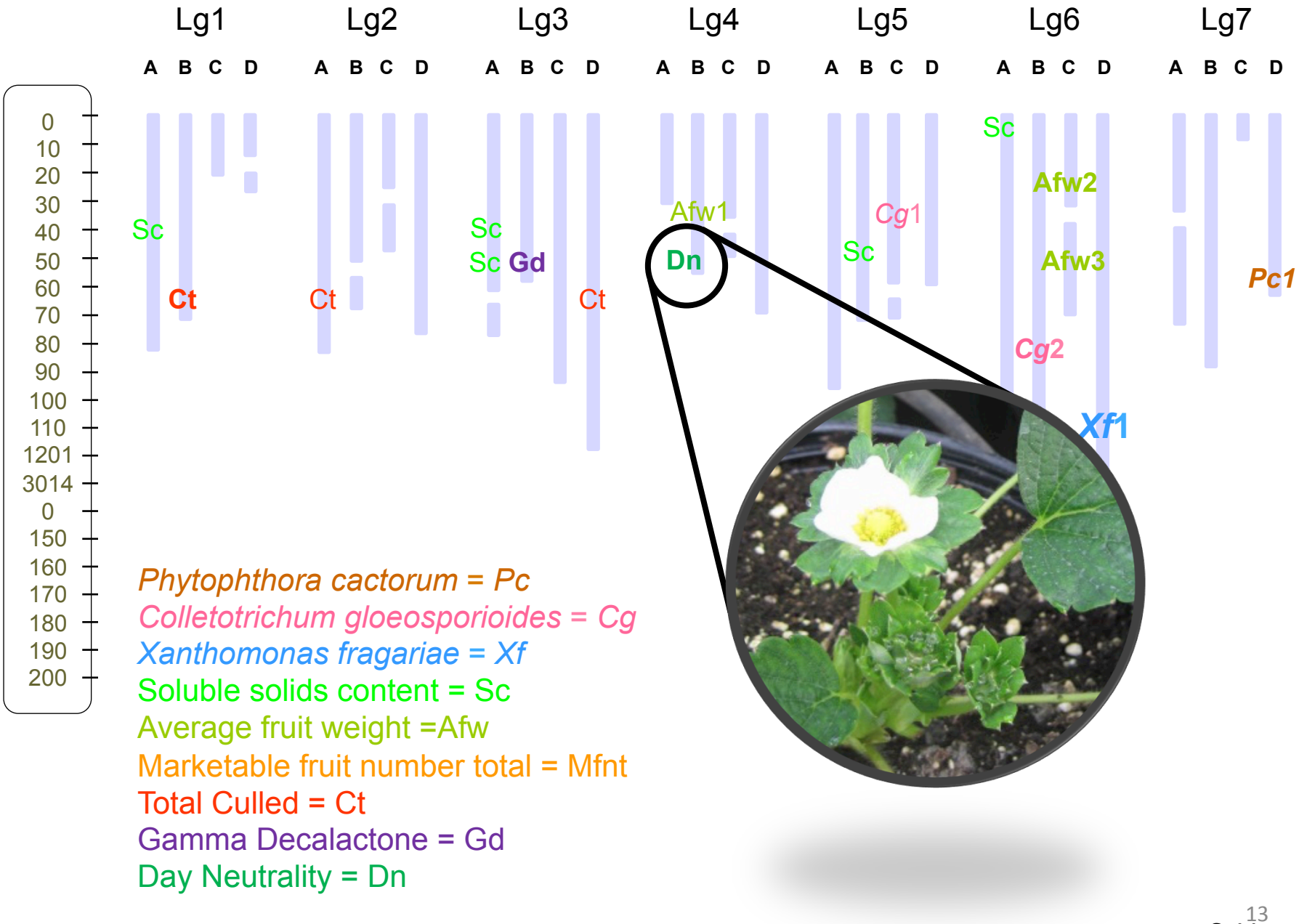

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S. Verma

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Crossing

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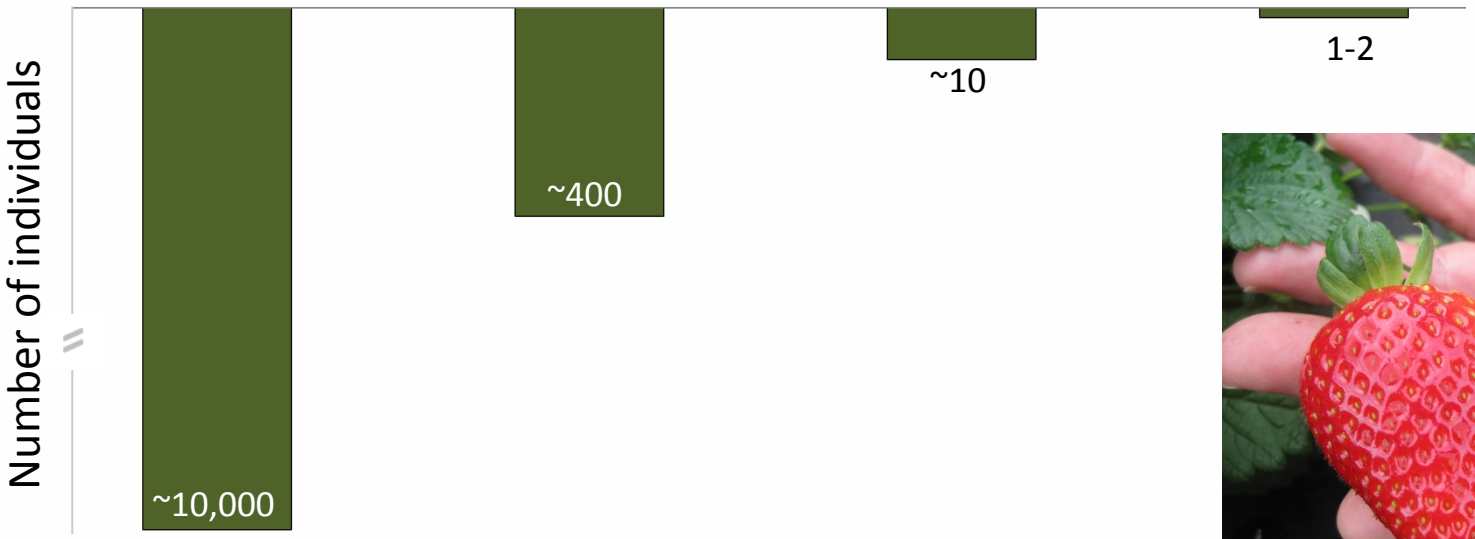
Crossing

Summer Nursery

Crossing

Summer Nursery

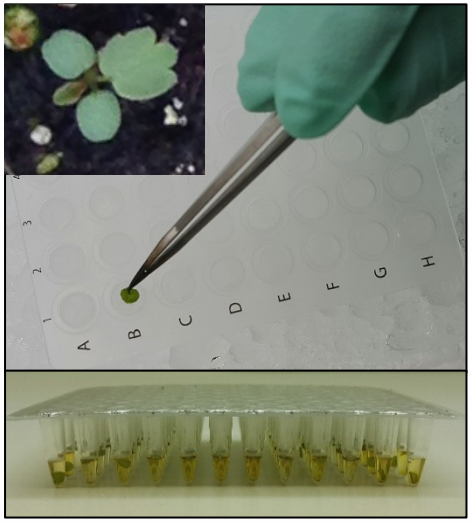
Stage 1 → Stage 2 → Stage 3 → Grower Trials → Cultivar Release

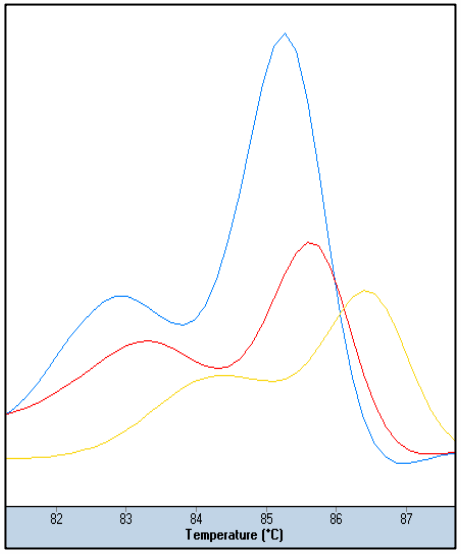


S. Lee

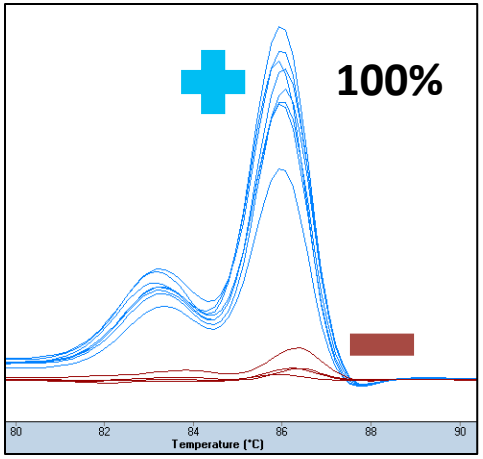
Crossing

Summer Nursery



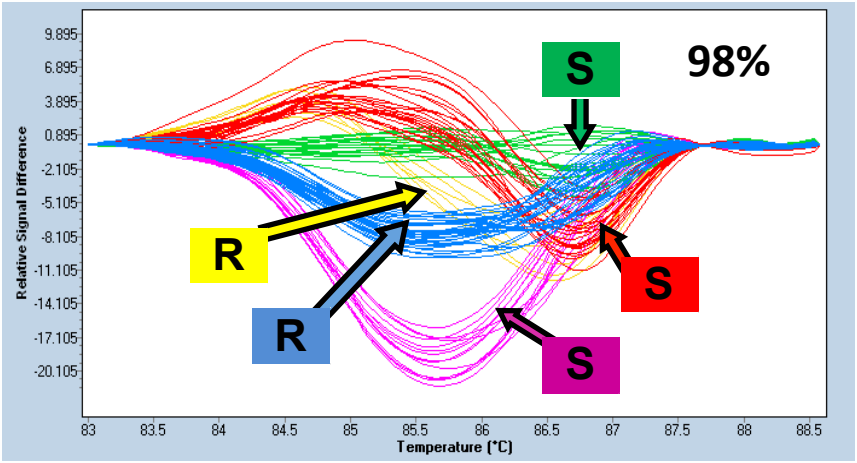


S. Lee
J. Roach



~~6,000 seedlings~~

3,000 seedlings



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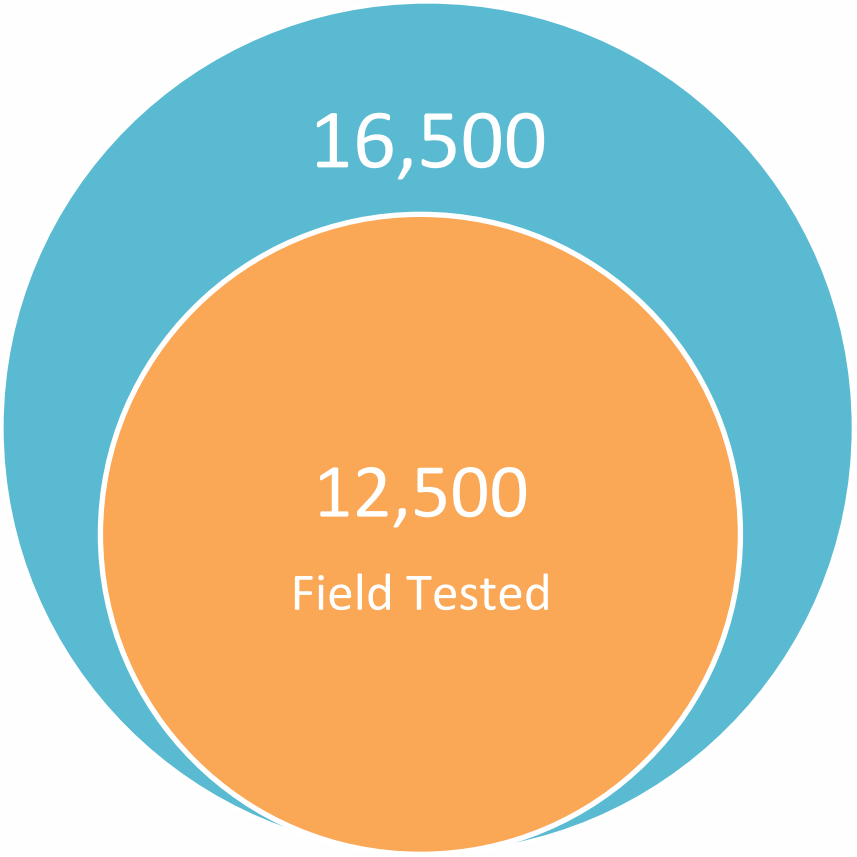
2015
Effective vs. Field Tested Population Size



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Key Contributors

- Natalia Peres
- Kevin Folta
- Luis Osorio
- Andrew Jamieson
- Eric van de Weg
- Nahla Bassil

Strawberry Lab and Others

- Angel Arredondo
- Kelsey Cearley
- Tomas Hasing
- Jose Hernandez
- Jozer Mangandi
- Claire Martin
- Jim Mertely
- David Moore
- Catalina Moyer
- Younghee Noh
- Luis Osorio
- Wantanee Prescott
- Teresa Seijo

UF UNIVERSITY of FLORIDA Gulf Coast Research and Education Center

FSGA Florida Strawberry Growers Association

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES EST. 1868

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Questions?