



## A Brief History of Lassen Canyon Nursery's Breeding Program and Releases

**Presented by Travis Stegmeir**





# Personnel

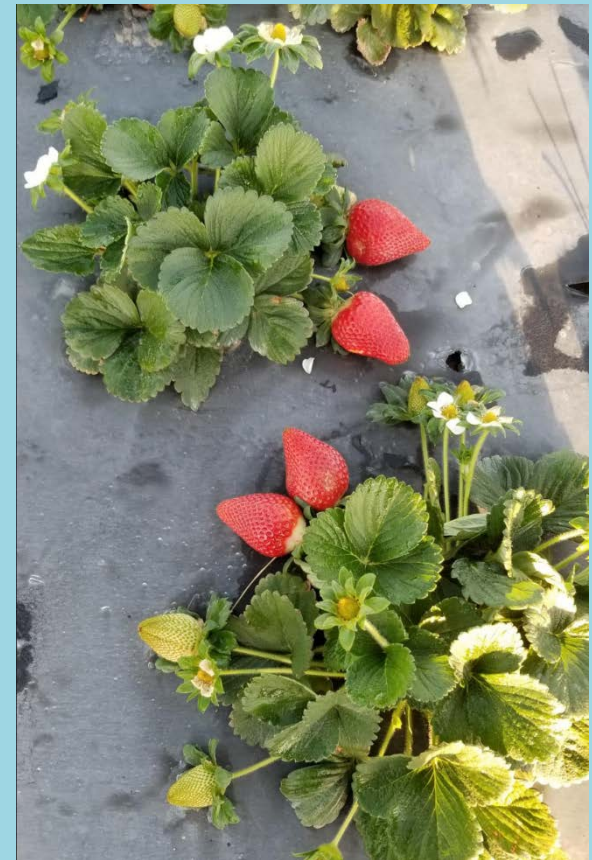
- Breeders: Jim Bagdasarian and Travis Stegmeir
- Breeding Associate: Nick Pinkerton
- Huge support from all of LCN!!!





# History and Focus

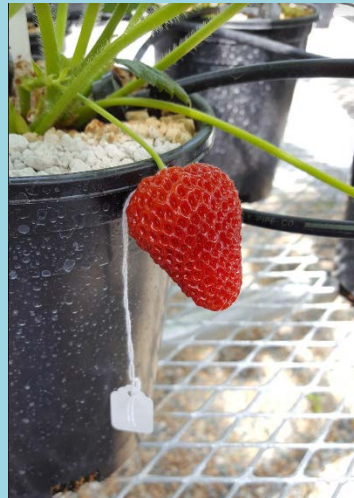
- Program started in 2000 by Jim Bagdasarian
- Focus
  - Flavor
  - Production
  - Fruit quality
  - Pathogen tolerance







# Breeding Process







# Breeding Process

- We grow/evaluate ~10,000 seedlings a year





# Breeding Process

- Seed germinated after crosses completed
- Seedlings are transplanted and allowed to grow in the greenhouse until spring
- Seedlings transplanted to the nursery to allow growth/runnering
- In fall, two clones of each seedling are dug and planted in two locations in fruiting fields
  - Oxnard
  - Watsonville





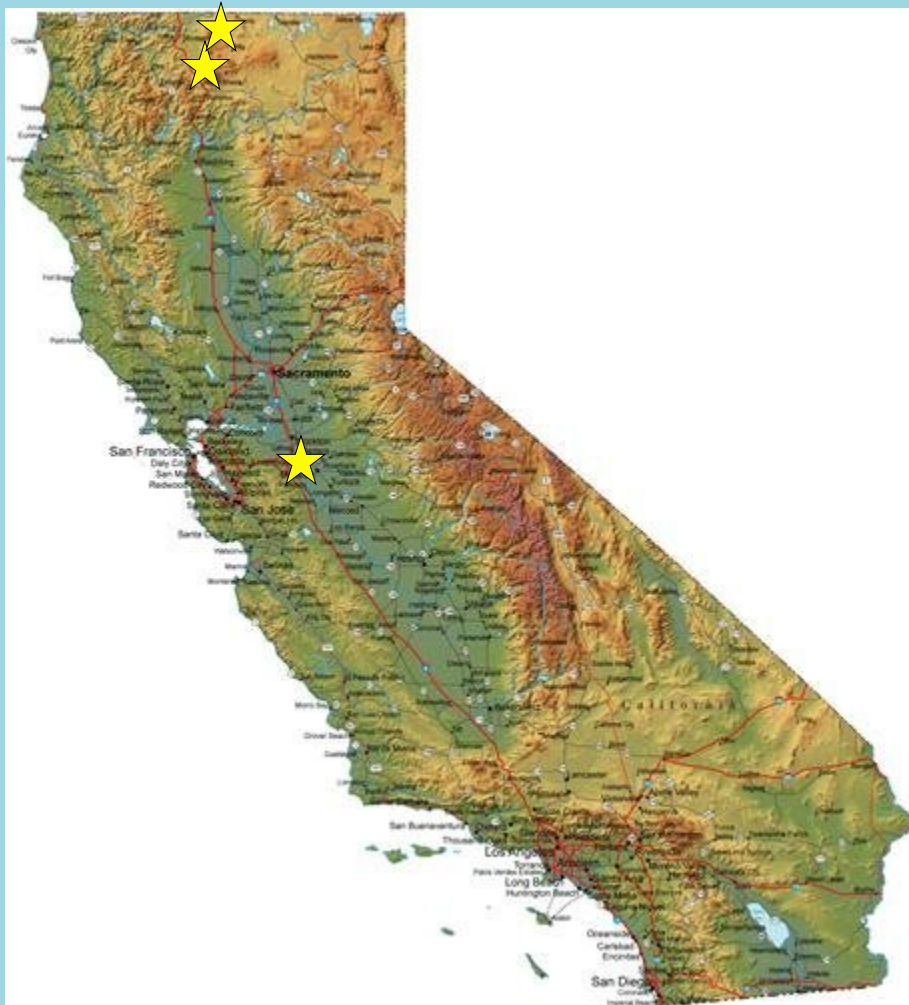
# Breeding Process

- Selections made in fruiting field
- Stock of selected varieties are planted at high elevation for numbers increase to provide 20 plant plots in our 5 locations
- Superior advanced selections are increased and planted in larger numbers





# California Nurseries



- Macdoel
- Shastina
- Manteca







# California test plots



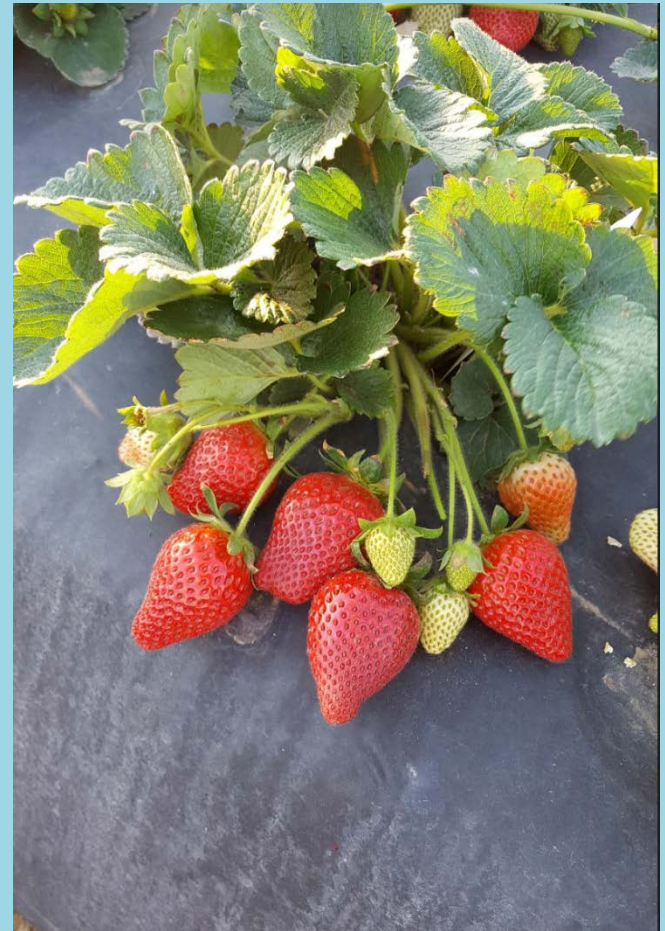
- Watsonville (2)
  - Advanced selections
  - Seedlings and advanced selections
- Santa Maria
  - Advanced selections
- Oxnard
  - Seedlings and advanced selections
- Irvine
  - Advanced selections





## Other test locations

- Select material also trialed in other locations:
- US locations:
  - Florida
  - North Carolina
- Canada
- Mexico
- China







# LCB Releases

- 7 releases
  - Sweet Ann (2012)
  - Scarlet (2014)
  - Lucia (Louie\*) (2014)
  - Ruby June (Haley\*) (2014)
  - Sangria (2018)
  - Emilia (2018)
  - Camila (2018)



\*European patents required different names





# Sweet Ann

- Plant Characteristics
  - Day neutral
  - High vigor plant
  - Open architecture
  - Low runner production
- Fruit Quality
  - Large (31 g avg\*)
  - Excellent flavor
  - Long, conic fruit
  - Medium firm
  - Medium red color
  - Tip to top ripening pattern
  - High yielding (2001 g/plant\*)



\*Watsonville 2017



# Scarlet

- Plant Characteristics
  - Short day
  - Medium/high plant vigor
  - Slightly dense architecture
  - Low runner production
- Fruit Quality
  - Firm
  - Great flavor
  - Large size (Avg. 27g\*)
  - Conic shape with few creases
  - Lighter red color
  - High yielding (1458 g/plant\*)

\*Watsonville 2017







# Lucia

- Plant Characteristics
  - Short day
  - Medium/high plant vigor
  - Open architecture
  - Low runner production
- Fruit Quality
  - Medium firm
  - Good flavor
  - Light red color
  - Uniformly conic
  - Med/large size (avg. 25g\*)
  - High yielding (1582 g/plant\*)

\*Watsonville 2017





# Ruby June



- Plant Characteristics
  - Short day
  - Moderate vigor
  - Moderate runner production
  - Short compact architecture
- Fruit Quality
  - Exceptional flavor
  - Full red color
  - Medium firm
  - Conic with few creases
  - Medium size (Avg. 23g\*)
  - High yielding (Avg. 1595 g/plant\*)



\*Watsonville 2017





# Sangria

- Plant Characteristics
  - Short day
  - Partially open architecture
  - Moderate vigor
  - Low runner production
- Fruit Quality
  - Moderate firmness
  - Good flavor
  - Full red color
  - Conic shape
  - Large size (Avg. 24g\*)
  - High yielding (Avg. 1505 g/plant\*)

\*Watsonville 2017





# Emilia

- Plant Characteristics
  - Short day
  - High vigor
  - Slightly dense architecture
  - Low runner production
- Fruit Quality
  - Firm
  - Good flavor
  - Long conic shape
  - Light red color
  - Large size (Avg. 29g\*)
  - High yielding (Avg. 1626 g/plant\*)



\*Watsonville 2017

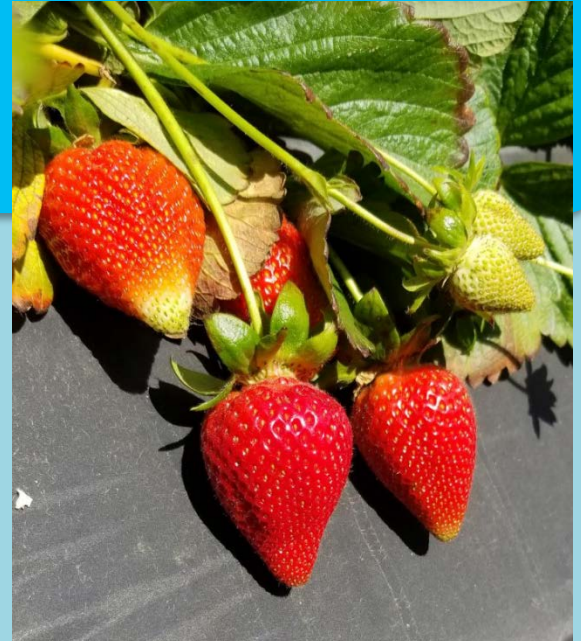




# Camila

- Plant Characteristics
  - Short day
  - High vigor
  - Slightly dense architecture
  - Low runner production
- Fruit Quality
  - Firm
  - Good flavor
  - Long conic shape
  - Light red color
  - Med/Large fruit (Avg. 23g\*)
  - High yielding (Avg. 1855 g/plant\*)

\*Watsonville 2017





# Disease trials (Vert.)

## Verticillium wilt

- Sweet Ann
  - 13.75% mortality<sup>1</sup>
- Scarlet
  - 22.5% mortality<sup>1</sup>
- Lucia
  - 27.5% mortality<sup>1</sup>
- Ruby June
  - 35.4% mortality<sup>1</sup>
- Sangria
  - 47.5% mortality<sup>1</sup>
- Emilia
  - 41.3% mortality<sup>1</sup>
- Camila
  - 27.5% mortality<sup>1</sup>
- San Andreas
  - 8.3% mortality<sup>1</sup>
- Fronteras
  - 17.5% mortality<sup>1</sup>
- Monterey
  - 26.2% mortality<sup>1</sup>
- Festival
  - 61.7% mortality<sup>1</sup>

<sup>1</sup>Cal Poly inoculated disease plot screening 2016-2017





# Disease trials (Mac.)

## Macrophomina

- Sweet Ann
  - 68.8% mortality<sup>1</sup>
- Scarlet
  - 74.6% mortality<sup>1</sup>
- Lucia
  - 56.9% mortality<sup>1</sup>
- Ruby June
  - 89.9% mortality<sup>1</sup>
- Sangria
  - 52.5% mortality<sup>1</sup>
- Emilia
  - 46.3% mortality<sup>1</sup>
- Camila
  - 60.0% mortality<sup>1</sup>
- San Andreas
  - 26.6% Mortality<sup>1</sup>
- Fronteras
  - 40.3% Mortality<sup>1</sup>
- Monterey
  - 69.1% Mortality<sup>1</sup>
- Festival
  - 81.5% Mortality<sup>1</sup>

<sup>1</sup>Cal Poly inoculated disease plot screening 2016-2017



# *Lassen Canyon Breeding*

**MORE TO  
COME!!**