



PLANT BREEDING CENTER

UNIVERSITY OF CALIFORNIA, DAVIS

UC-DAVIS STRAWBERRY BREEDING PROGRAM ANNUAL FIELD DAY

DAY-NEUTRAL CULTIVAR ADVANCEMENT & RESEARCH UPDATE
SANTA MARIA 5 APRIL 2018 & OXNARD 6 APRIL 2018

16DN009

- **HIGHEST YIELDING CULTIVAR.** 16DN009 was the highest yielding cultivar across 2015-16 and 2016-17 field trials, ranking first in every location by year combination (Table 1; Figures 1-2).
- **SIGNIFICANTLY GREATER YIELDS THAN CURRENT MARKET LEADERS.** The cumulative marketable yield of 16DN009 was 14-24% greater than Cabrillo and 63-69% greater than Monterey over locations and years (Table 1; Figures 1-2).
- **LESS RUNNER TRIMMING, LOWER PRODUCTION COSTS.** 16DN009 produces significantly fewer runners than Cabrillo and Monterey, which should translate into lower production costs (less runner trimming).
- **LONG SHELF-LIFE & GOOD FRUIT QUALITY.** The fruit quality and shelf-life of 16DN009 appear to be on par with Monterey and Cabrillo—assessments are currently underway and will be reported at the end of the season.

16DN012

- **HIGHLY RESISTANT TO FUSARIUM WILT.** 16DN012 is resistant to Fusarium wilt, whereas 16DN009 and 16DN011 are susceptible (Table 2).
- **THIRD HIGHEST YIELDING CULTIVAR.** 16DN012 was the third highest yielding cultivar across 2015-16 and 2016-17 field trials (Table 1; Figures 1-2). The cumulative marketable yield of 16DN012 was equivalent to 16DN011 and 6-9% less than 16DN009 across locations and years.
- **SIGNIFICANTLY GREATER YIELDS THAN CURRENT MARKET LEADERS.** The cumulative marketable yield of 16DN012 was 7-12% greater than Cabrillo and 54% greater than Monterey across locations and years (Table 1; Figures 1-2).
- **LESS RUNNER TRIMMING, LOWER PRODUCTION COSTS.** Similar to 16DN009, 16DN012 produces significantly fewer runners than Cabrillo and Monterey, which should translate into lower production costs (less runner trimming).
- **LONG SHELF-LIFE & GOOD FRUIT QUALITY.** The fruit quality and shelf-life of 16DN012 appear to be on par with Monterey and Cabrillo.

16DN011

- **EARLY PRODUCER & ROBUST GROWER.** 16DN011 produced fruit 1-2 weeks earlier than the other cultivars tested, and has been the most robust and healthy cultivar in low-input production systems.
- **SECOND HIGHEST YIELDING CULTIVAR.** 16DN011 was the second highest yielding cultivar across across 2015-16 and 2016-17 field trials (Table 1). The marketable yields of 16DN011 was equivalent to 16DN012 and 2-9% less than 16DN009.
- **SIGNIFICANTLY GREATER YIELDS THAN CURRENT MARKET LEADERS.** The cumulative marketable yield of 16DN011 was 10-12% greater than Cabrillo and 54-60% greater than Monterey across across locations and years (Table 1; Figures 1-2).
- **LONG SHELF-LIFE & GOOD FRUIT QUALITY.** The fruit quality and shelf-life of 16DN011 appear to be on par with Monterey and Cabrillo. Fruit quality and shelf-life assessments are currently underway and will be reported at the end of the season.

TABLE 1. Cumulative marketable yields for three experimental cultivars (16DN009, 16DN011, & 16DN012) and two check cultivars (Monterey and Cabrillo) tested in Santa Maria and Prunedale, CA in 2015-2016 and 2016-2017, where marketable fruit yield = total fruit yield × percent marketable fruit.

Cultivar	2016 Marketable Fruit Yield (g/plant)	2017 Marketable Fruit Yield (g/plant)	Percent Marketable Fruit	Yield Increase Over Monterey	Yield Increase Over Cabrillo
16DN009	1,851	2,469	87-88%	63-69%	14-24%
16DN011	1,690	2,419	84-86%	54-60%	11-14%
16DN012	1,689	2,331	87-89%	53-54%	7-13%
Cabrillo	1,489	2,175	86-87%	35-43%	
Monterey	1,096	1,511	79-82%		

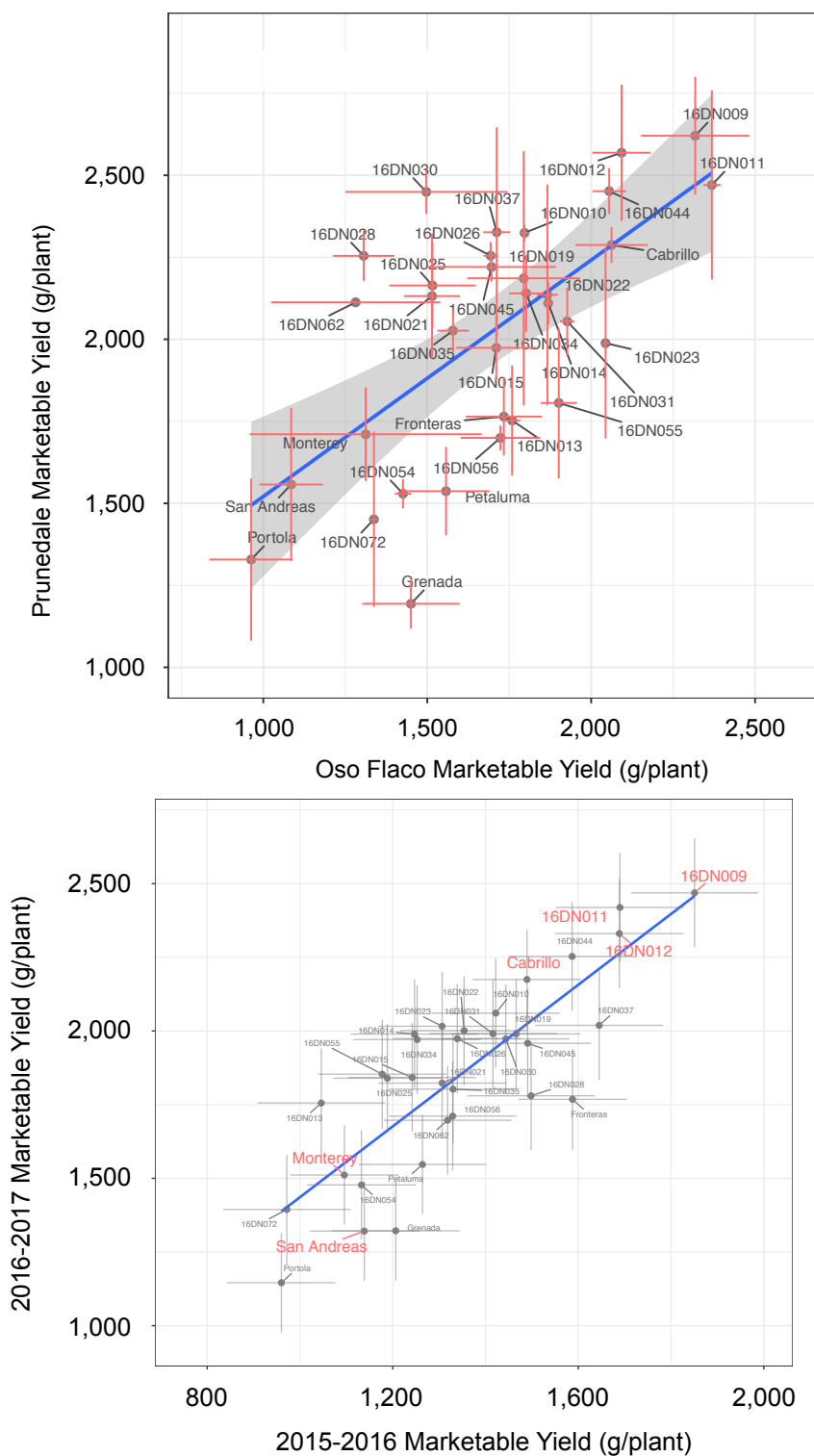


FIGURE 1. Cumulative marketable yields (g/plant) of cultivars tested in Santa Maria and Prunedale, CA in 2016 and 2017. The upper panel shows least square means across years with standard errors displayed as red crosses. The lower panel shows least square means across locations with standard errors displayed as grey crosses.

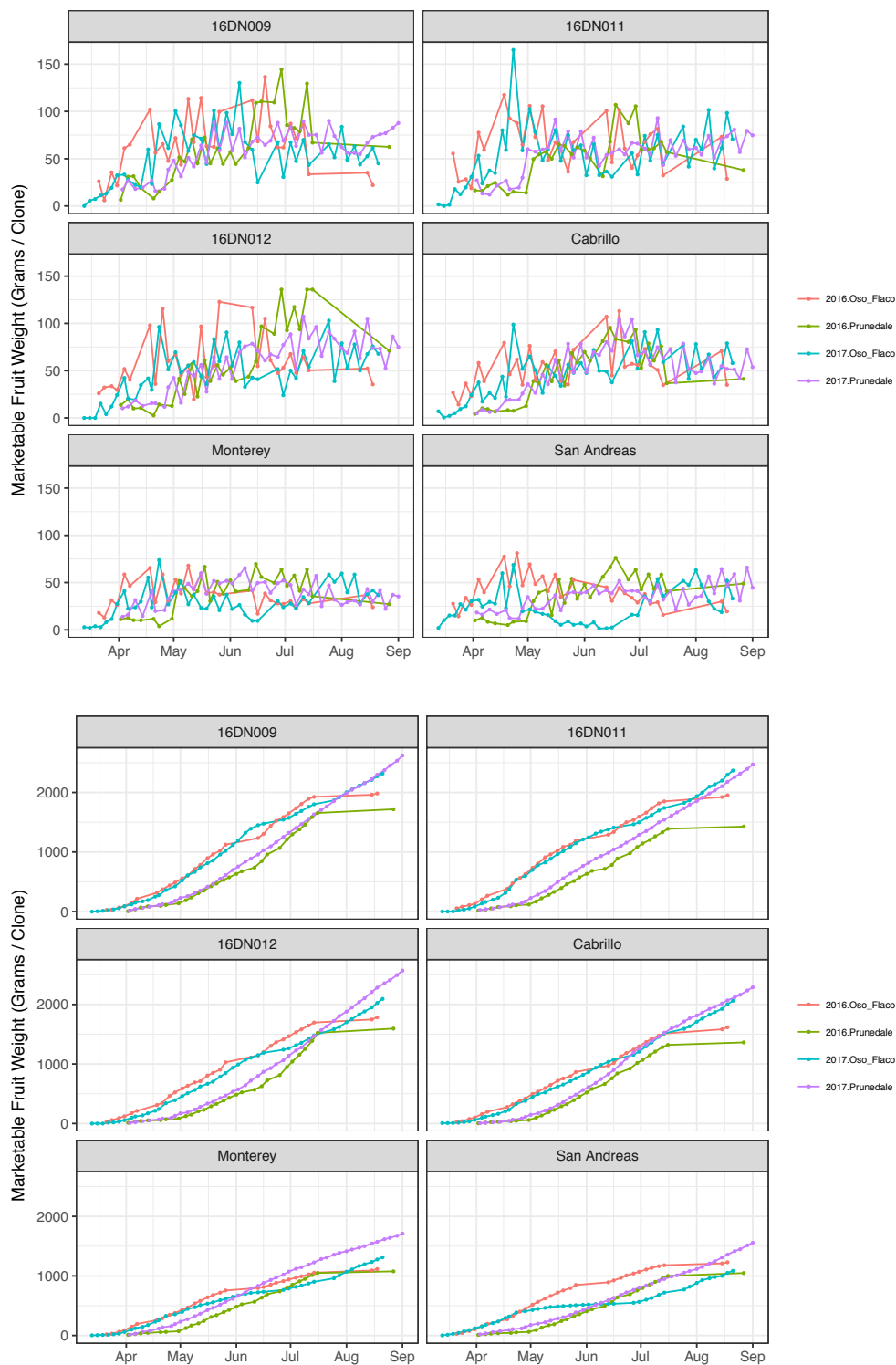


FIGURE 2. Marketable yields (g/plant) for individual harvests (upper panel) and cumulative marketable yields (g/plant; lower panel) of cultivars tested in Santa Maria and Prunedale, CA in 2016 and 2017. The points are least square means at each harvest (upper panel) or summed over harvests (lower panel).

TABLE 2. Fusarium wilt, Verticillium wilt, Phytophthora crown rot, and Macrophomina (charcoal rot) resistance scores for day-neutral cultivars screened in artificially inoculated fields in Davis, CA in 2015-2016, 2016-2017, and 2017-2018, where 1 = highly resistant, 2 = resistant, 3 = intermediate, 4 = susceptible, and 5 = highly susceptible. Experiments are currently underway to assess Phytophthora crown rot resistance.

Cultivar	Fusarium Wilt	Verticillium Wilt	Phytophthora Crown Rot	Macrophomina
16DN009	4.5	3.5	TBD	5.0
16DN011	4.5	3.6	TBD	5.0
16DN012	1.3	2.7	TBD	5.0
Cabrillo	4.4	2.6	TBD	5.0
Monterey	4.5	2.6	TBD	4.5