

CANEBERRY EVALUATIONS at Santa Paula, CA

Oleg Daugovish, Mark Gaskell and Miguel Ahumada

Also participating: Bill Rutan, Anna Howell, Gina Ferrari, Kamille Garcia and
UCCE-Ventura MGs/volunteers

Planting:

Sept 2016:

Plugs of Kwanza, Kweli, Imara,
PA45 and PA Traveler

April 2017:

Plugs of APF-268T, ORUS 4545-1,
Vintage and Kokanee

1.3 ft between plugs - Raspberry

2 ft between plugs - Blackberry

Desired density:

~ 1.7 canes/ft of bed



IMARA

- **Early Production**
- **Winding canes**
- **>> shoots from the ground**
- **Fragile fruit with OK flavor**



Kwanza

- **Erect canes**
- **Large attractive sweet fruit, ok flavor**
- **Dormancy in first year**
- **White drupelets**



Kweli

- **Early Production**
- **Winding canes**
- **Crumbly fruit**
- **OK flavor**



Vintage

- **Attractive but fragile fruit**
- **Good flavor**
- **Winding low canes**



Kokanee

- **Attractive but fragile fruit**
- **Good flavor**

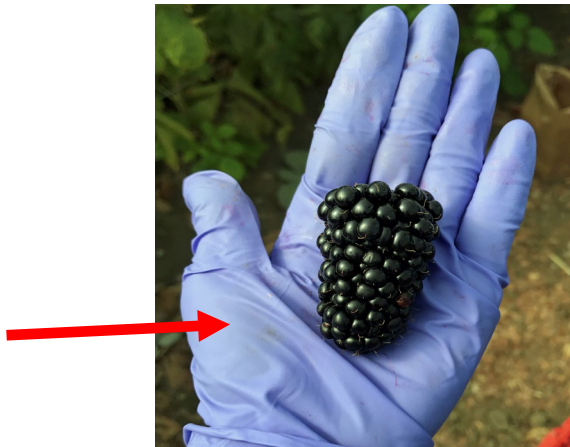


PrimeArk45

- **Heavy production, large fruit**
- **Aggressive tipping necessary for easy harvest**
- **Large fruit, good flavor**



25g blackberry



PrimeArk Traveler

- **Thornless**
- **Winding canes**
- **Poor production 1st year**
- **Midsized fruit, good flavor**



ORUS 4545-1

- **Compact growth habit**
- **Limited 1st year production**
- **Smaller fruit with good flavor**



APF 268T

- **Vegetative in 1st year**
- **Unevenly shaped drupelets**
- **Good flavor**

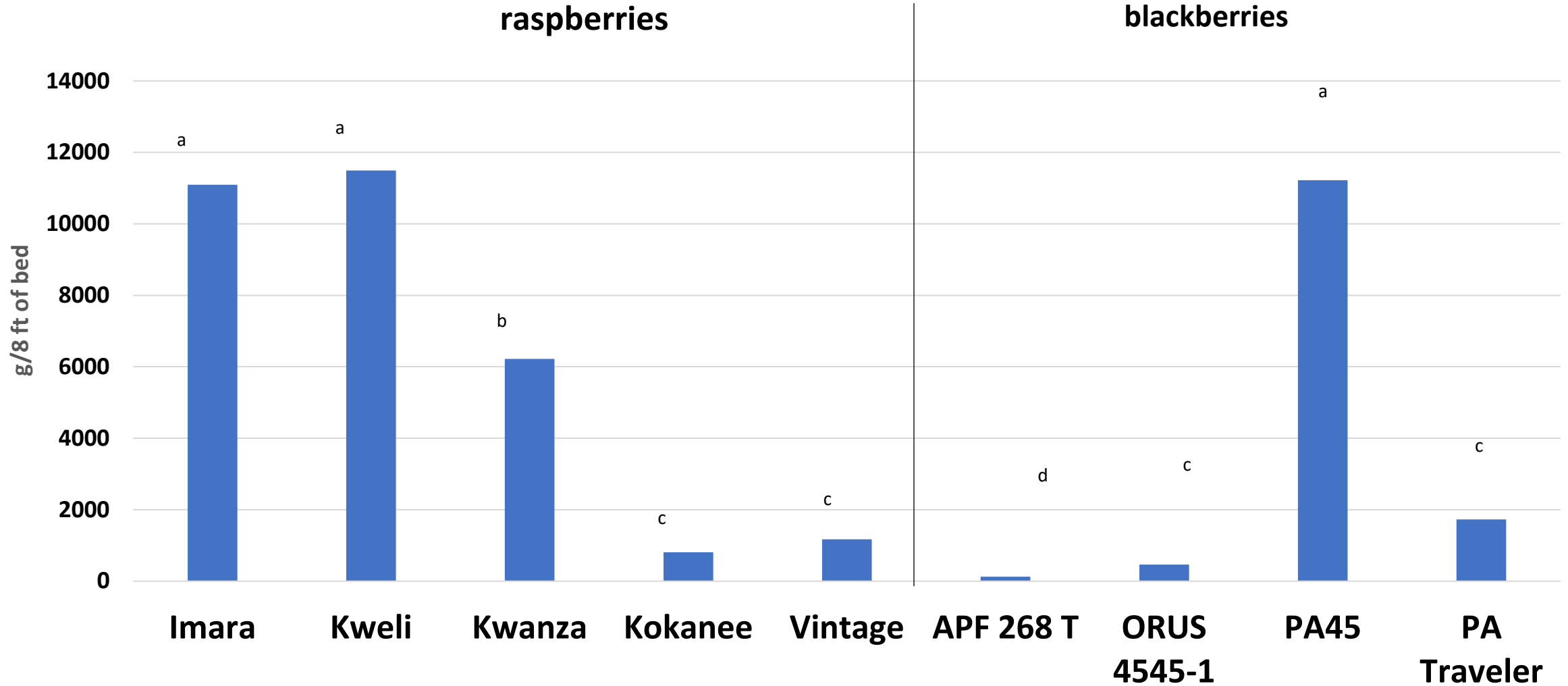


Brix # on 8-Sept-2017 (solids ~ sugars):

- **Kwanza (11.3),**
- **Imara (10),**
- **PA45 (9.8),**
- **Kweli (8.7),**
- **PA-Traveler (9)**



Marketable fruit yield: Jul 1 - Oct 1, 2017



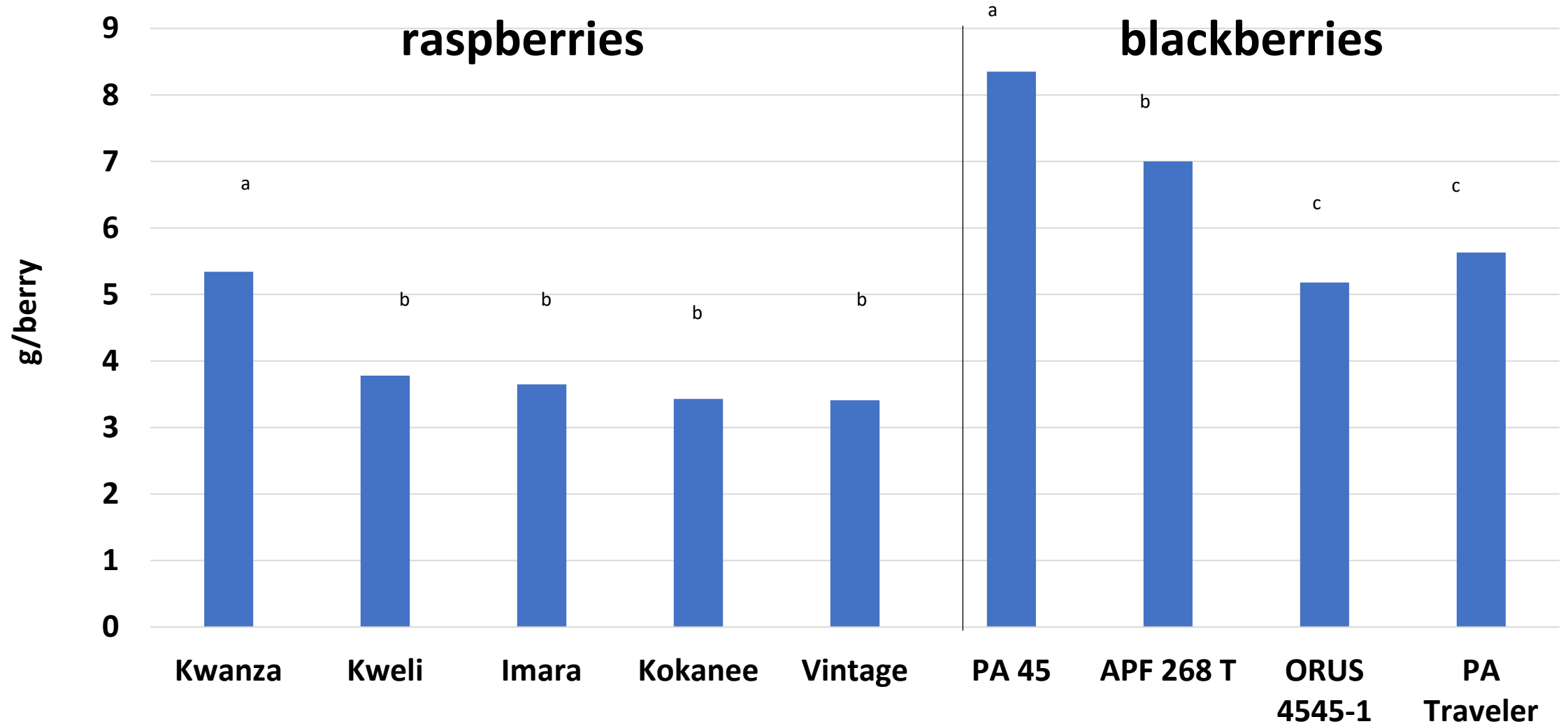
Late Marketable fruit yield: Oct 1 – Dec 31, 2017

	g/plot, ($p = 0.05$)
PA45	6620 a
Kokanee	2333 b
Vintage	1250 b
Traveler	1671 b
ORUS 4545-1	445 c
APF 268T	268 c

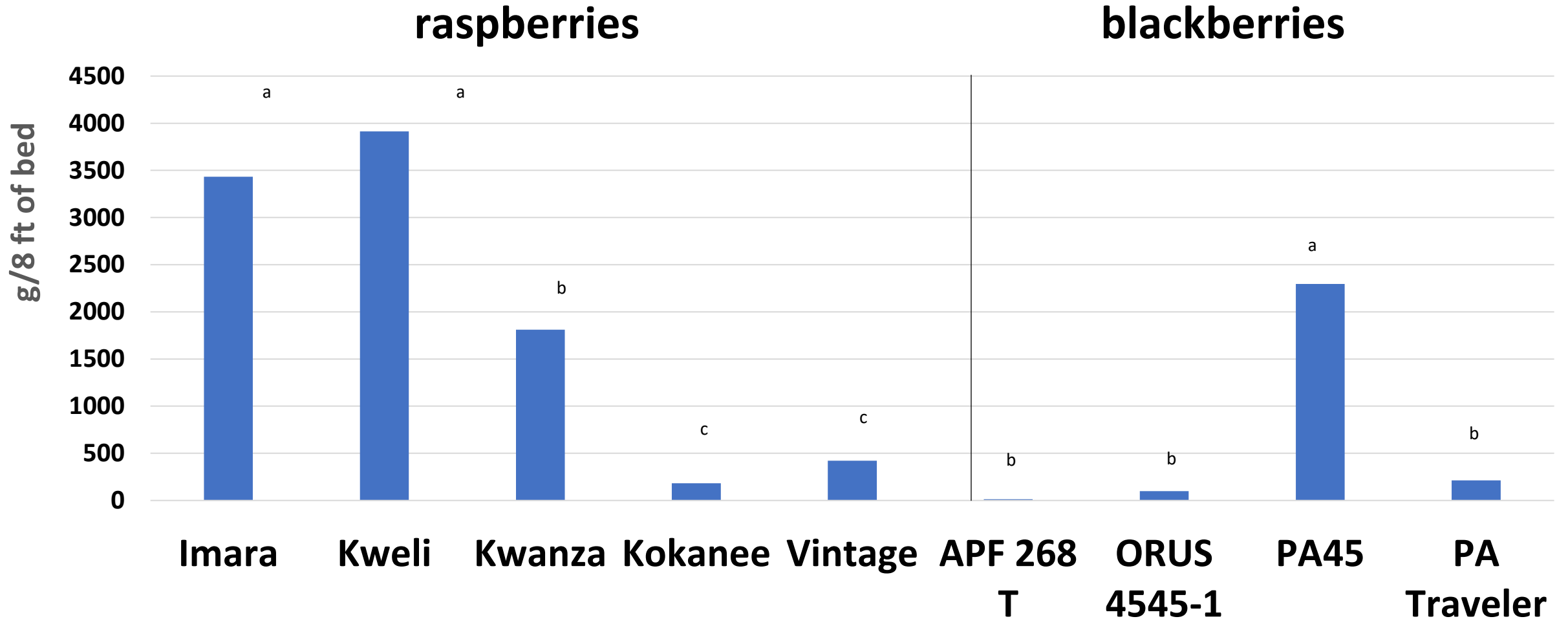
September- heavy fruit production



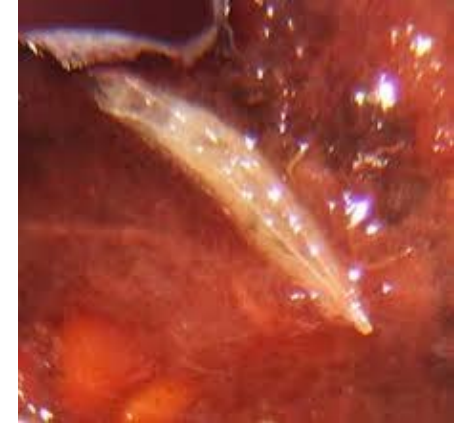
Average fruit size: Jul-Oct 2017



Unmarketable fruit yield: Jul 1 – Oct 1, 2017



Problems: Spotted-wing drosophila



- Traps and sanitation only (no sprays)
- Harvest:
 - Once a week: Up to 60% fruit unmarketable during warmest weeks of the season
 - Twice a week: 20-25%
- Cold nights in November = no SWD damage
- All unmarketable fruit removed (fed to chickens)

Other Problems:

- Dormancy of canes
- Birds- minimal
- Sunburn ??
- ~~Scaring of fruit (wind and cane movement)~~
- Occasional red berry mite
- Broad mite
- White drupelets – physiological
- High Cl and very low Fe and Mn
- ~~Gray mold on fruit~~



End of the season root-zone soil analyses

Salts	Our root zone levels	Optimal range
Chloride:	1,290 lbs/AF (470ppm)	50-500 lbs/AF
Sulfate	10,600 lbs/AF	1,500-5,000 lbs/AF
pH	7.8-8.0	5.5-6.5
Zinc	4-5 lbs/AF	10-150 lbs/A
NO3-N	6-12 lbs/A	120-160 lbs/AF

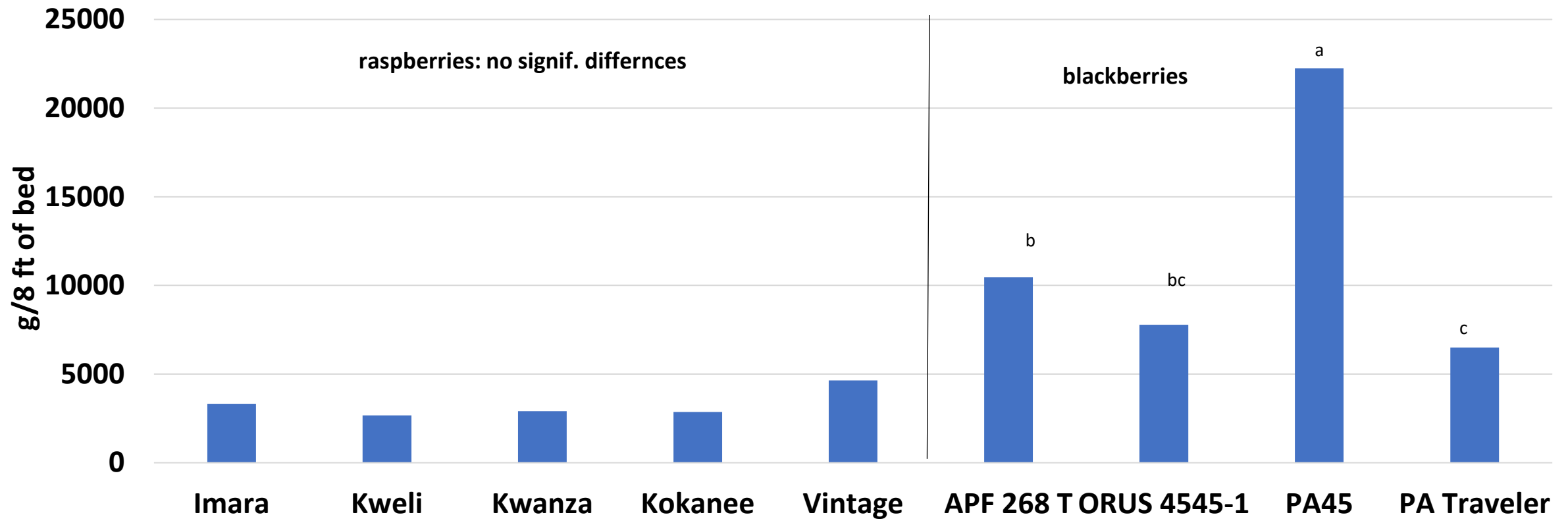
Poor growth
in winter



2018 season

Marketable yield

May - Nov 2018



Management regimes (per 8 ft plot):

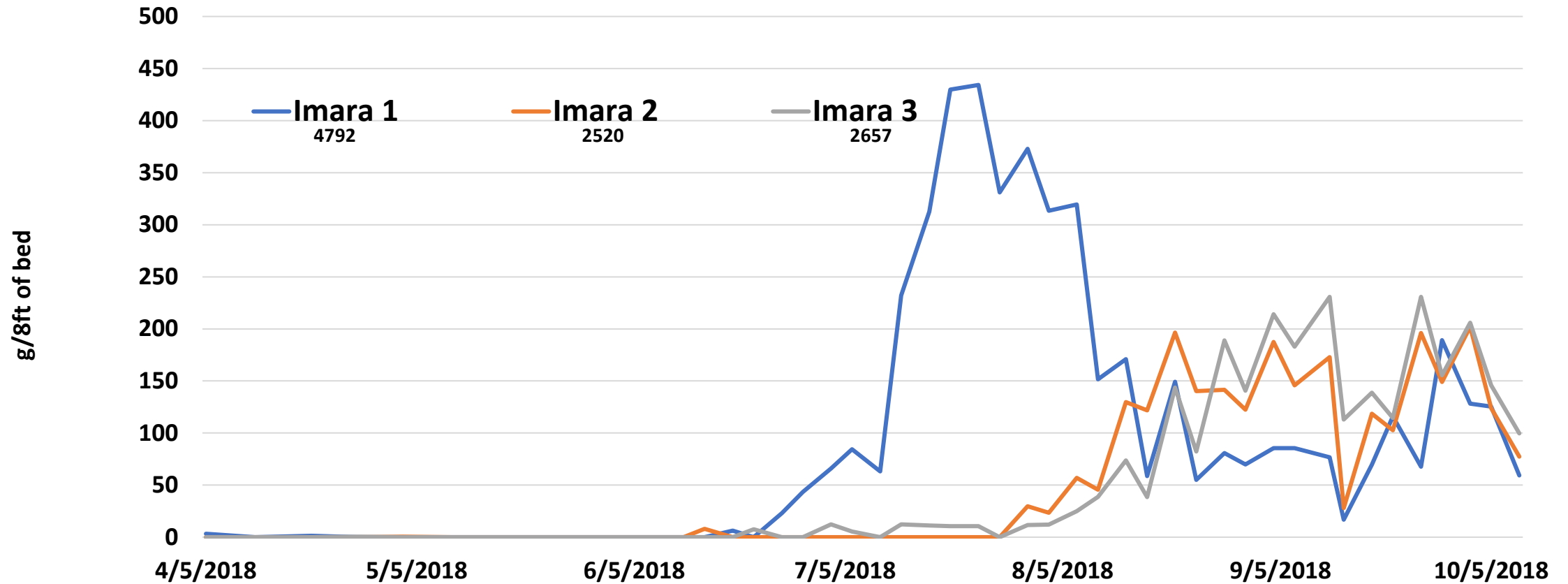
RASPBERRY

1. Cut in fall at 3 ft high (for floricanes production) and also allow 25 primocanes/plot
2. Cut in fall at 3 ft and allow 25 primocanes/plot, but cut floricanes at the ground in spring
3. Mow to the ground in fall, maintain 25 primocanes/plot afterwards

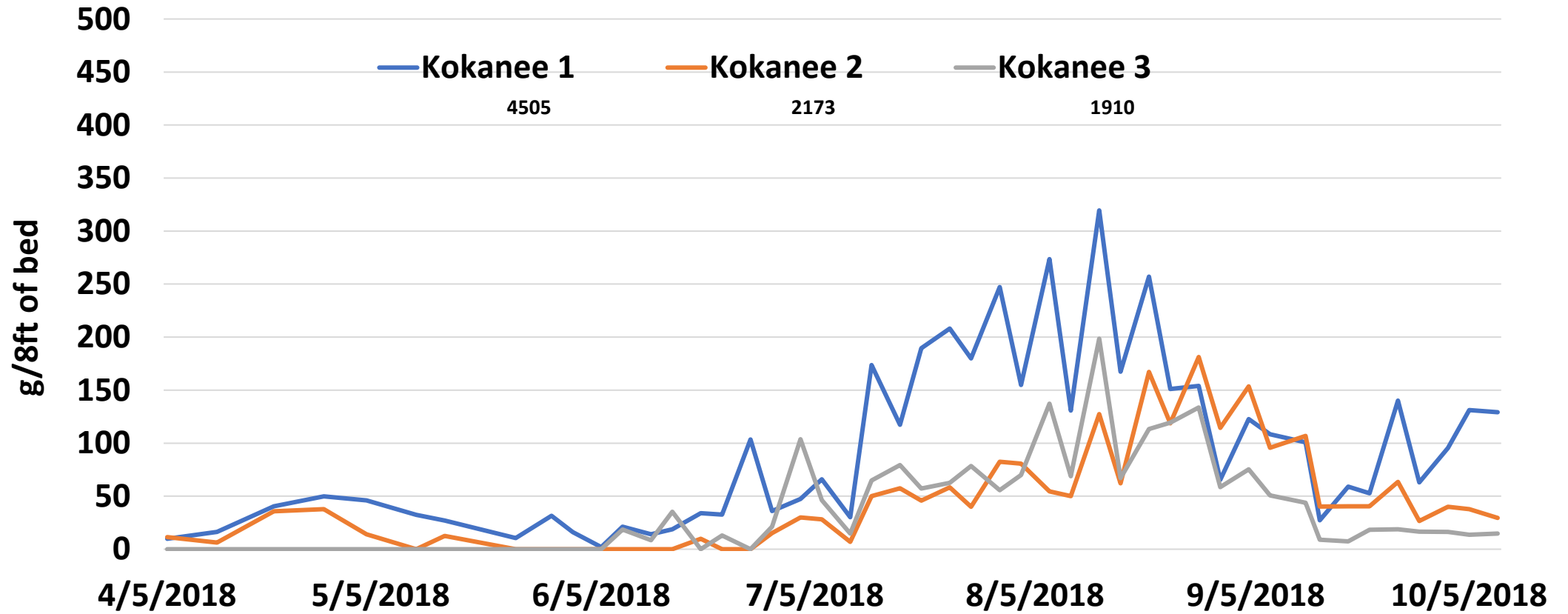
BLACKBERRY

1. Cut in winter at 3 ft high (for floricanes production)
2. Cut in winter at 3 ft for floricanes production + in season tipping
3. Mow to the ground in winter, tipping in spring

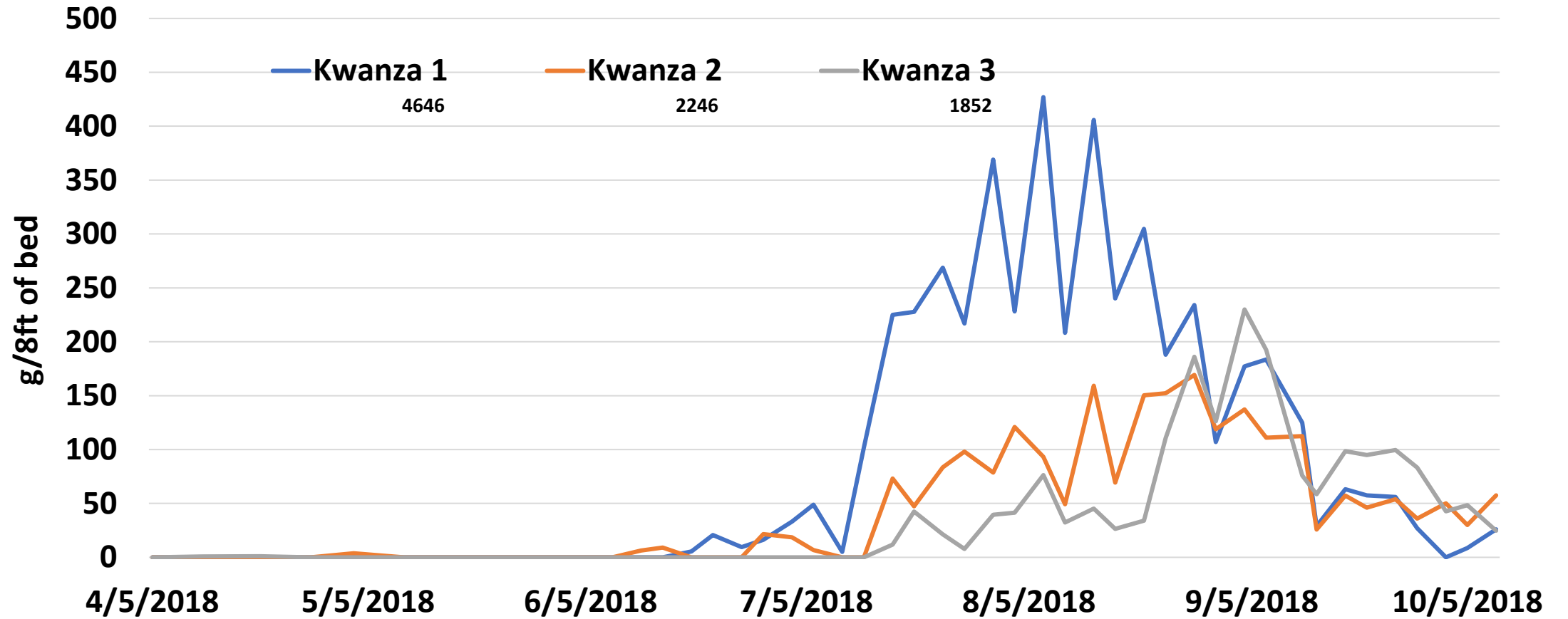
Marketable yield



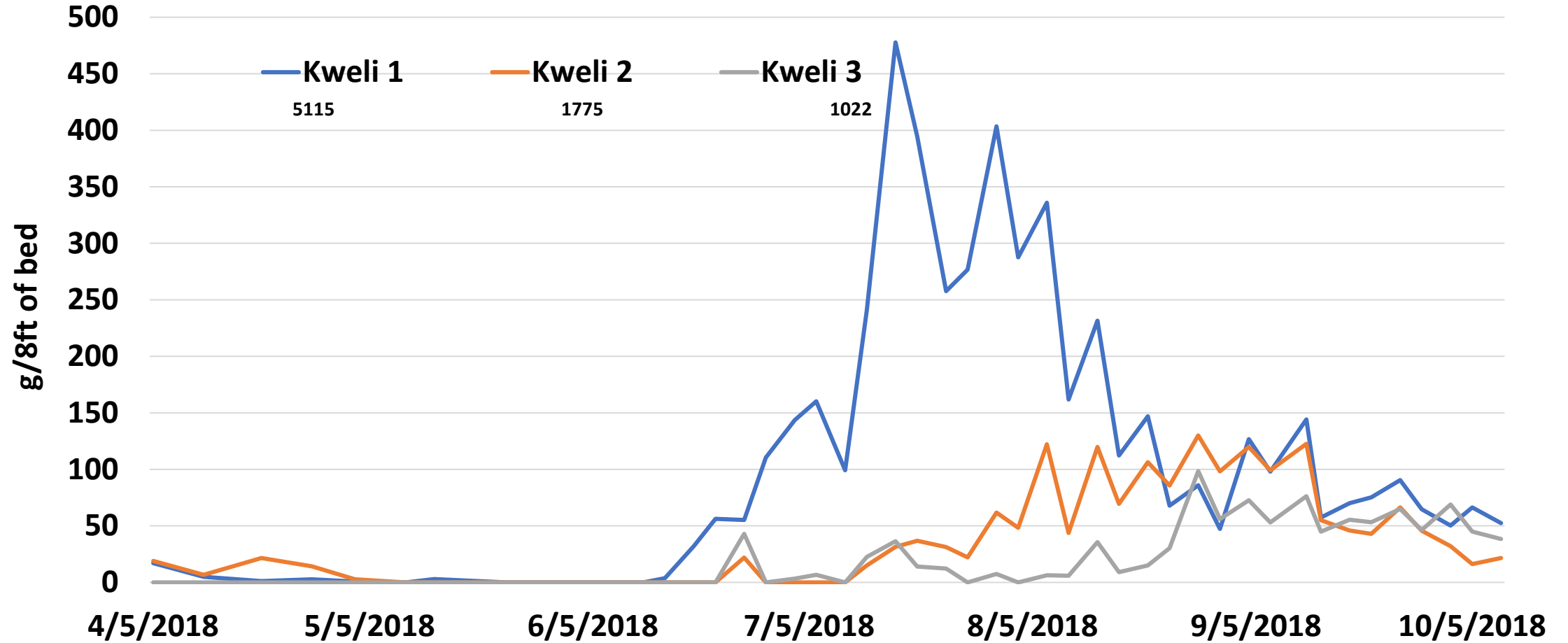
Marketable yield



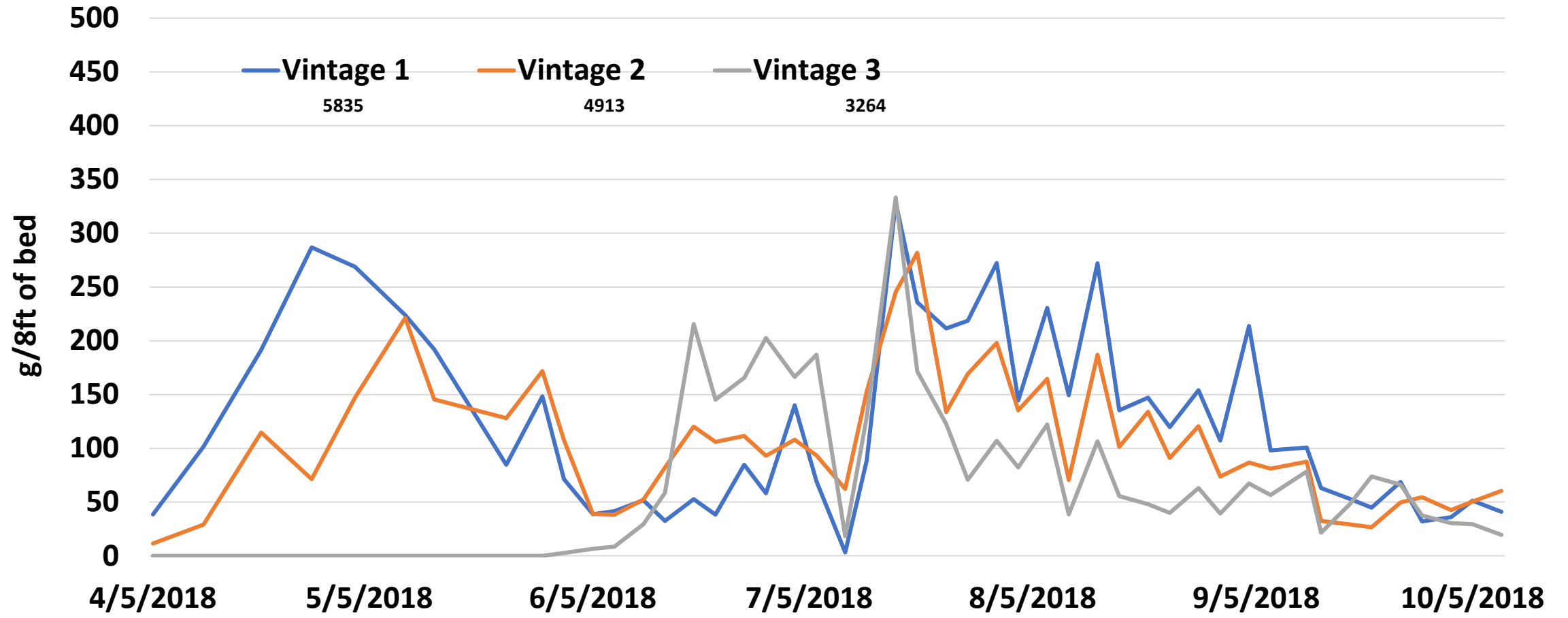
Marketable yield



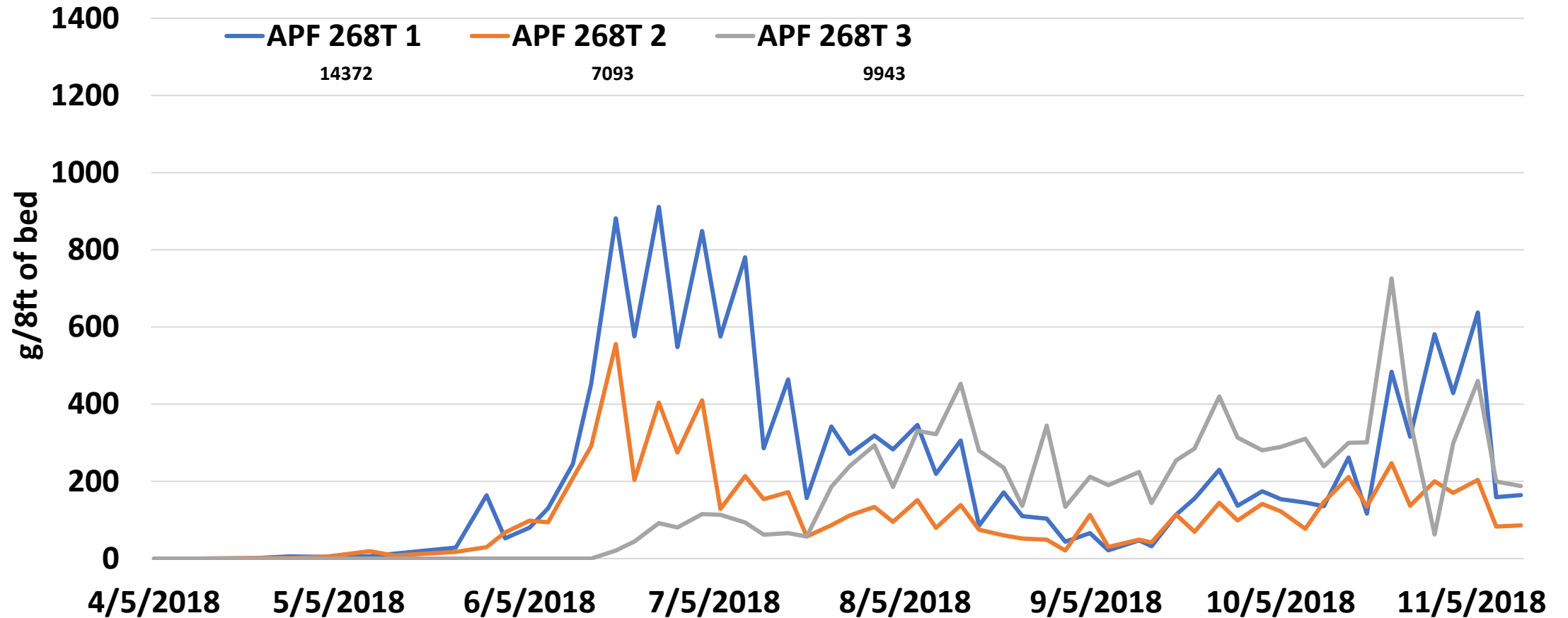
Marketable yield



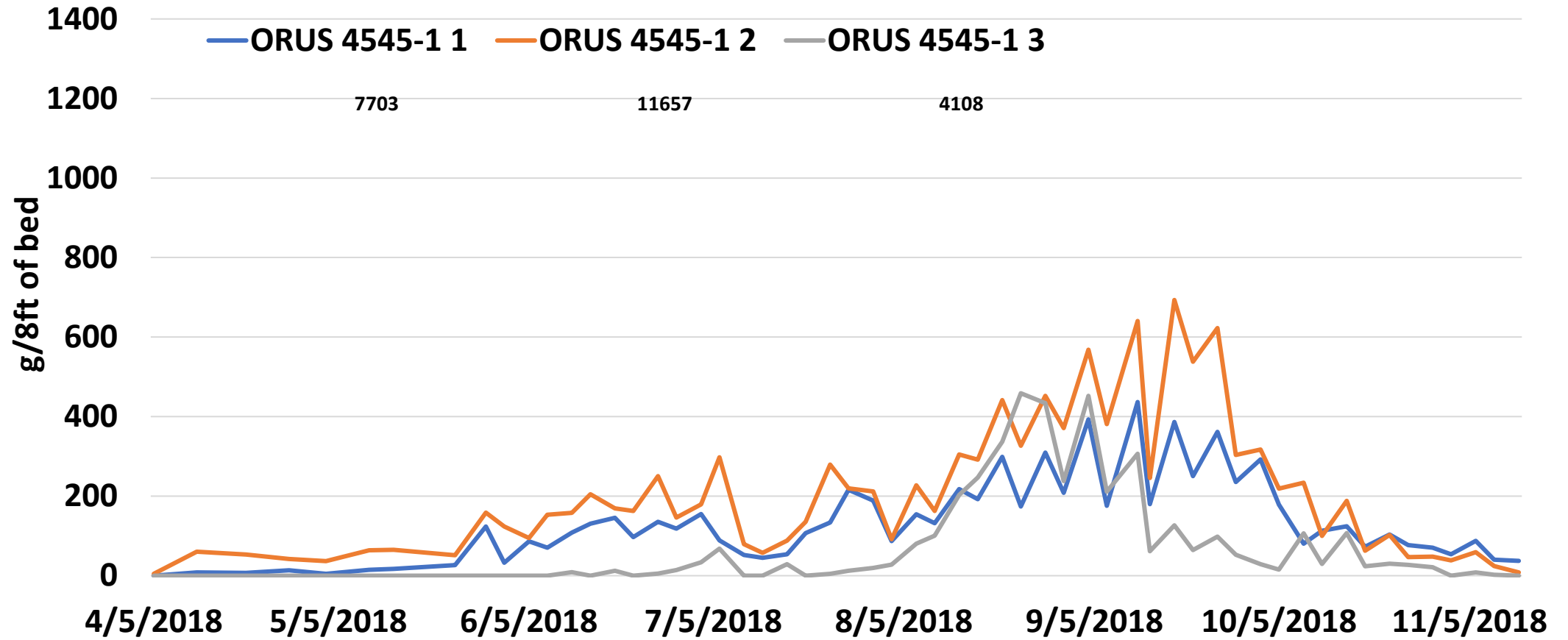
Marketable yield



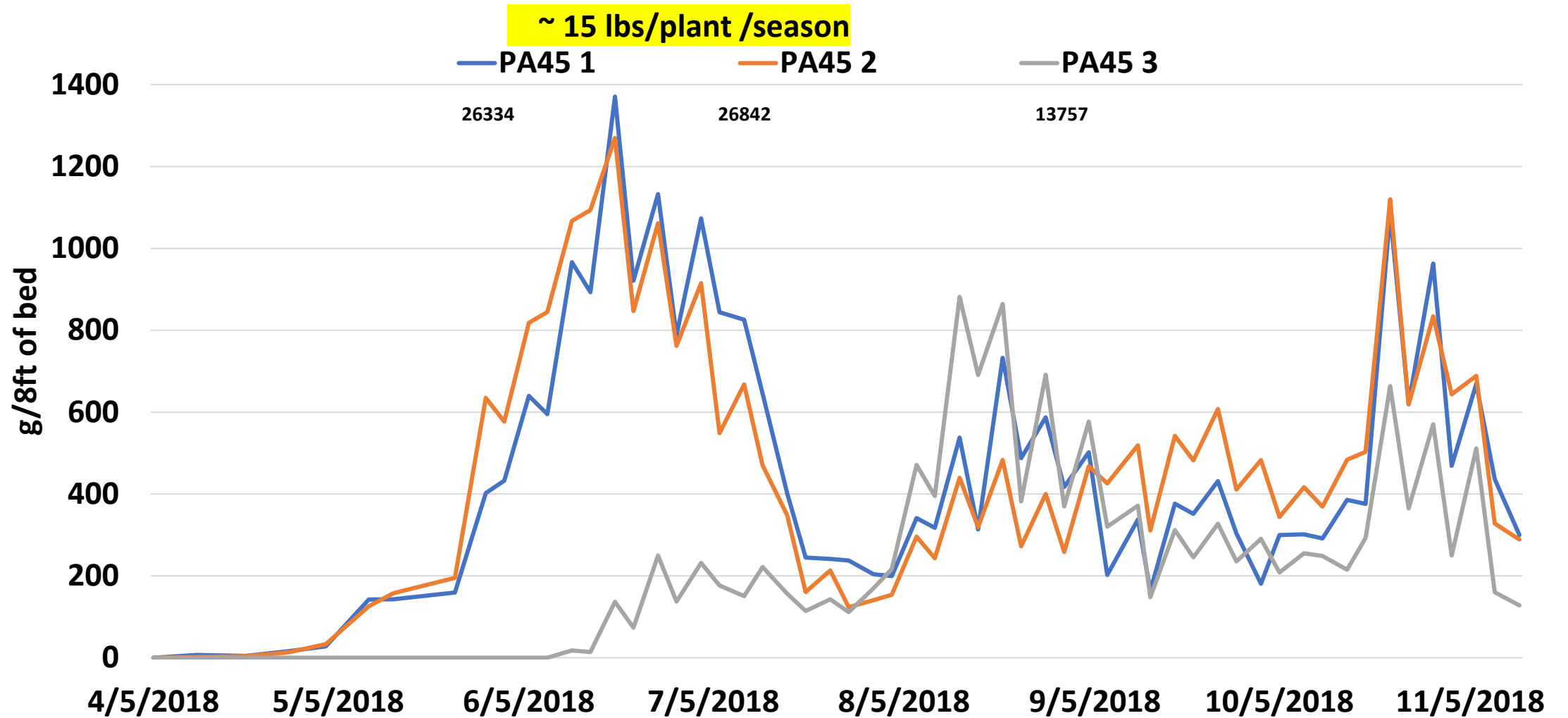
Marketable yield



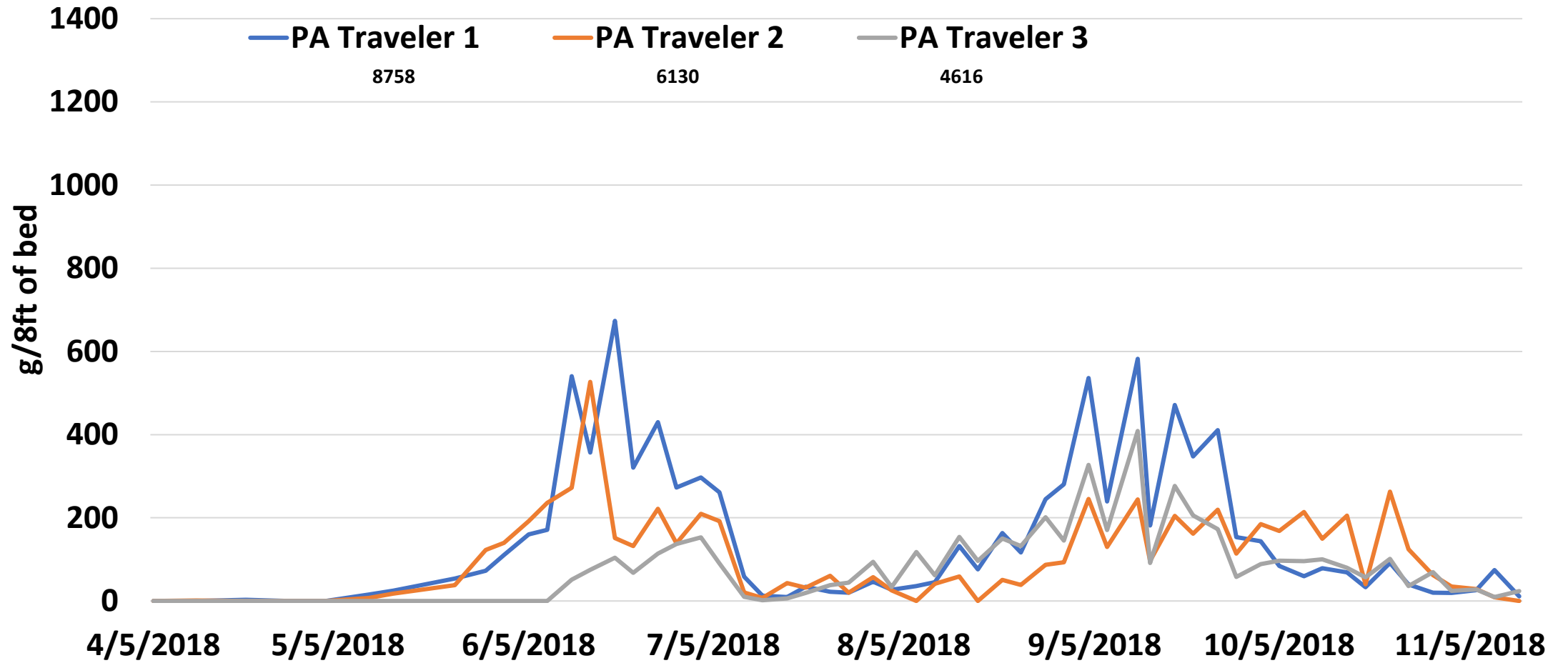
Marketable yield



Marketable yield



Marketable yield



ORUS 4545-1: August



September

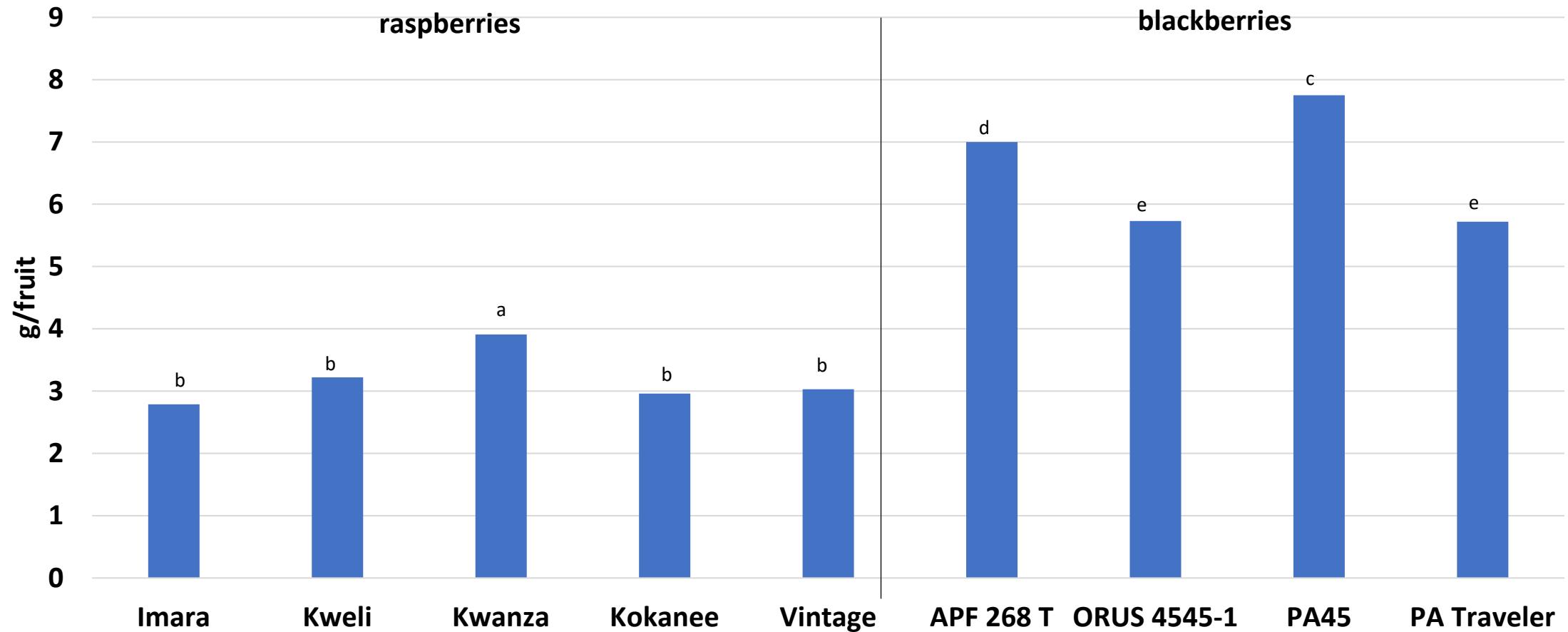


APF 268T: August



- **Shiny,**
- **Large,**
- **Slightly misshapen fruit**

Fruit size, 2018

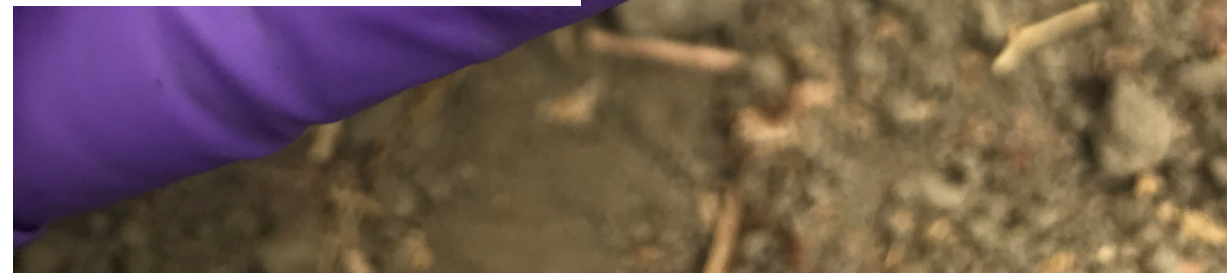
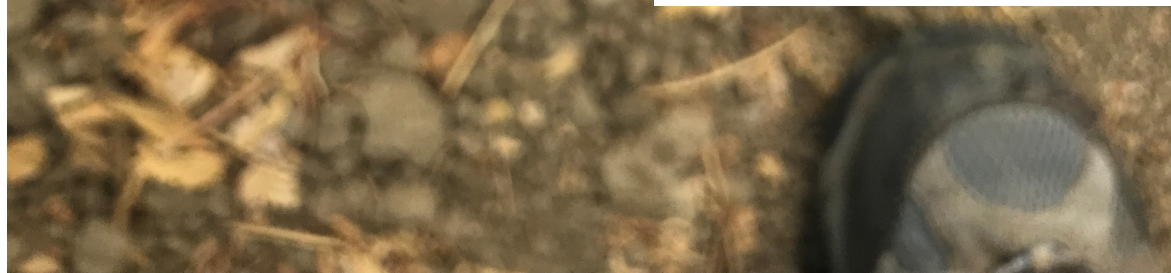


Heat damage to flowers = poor pollination





Heat damage to fruit



Broad mite and micronutrient deficiency

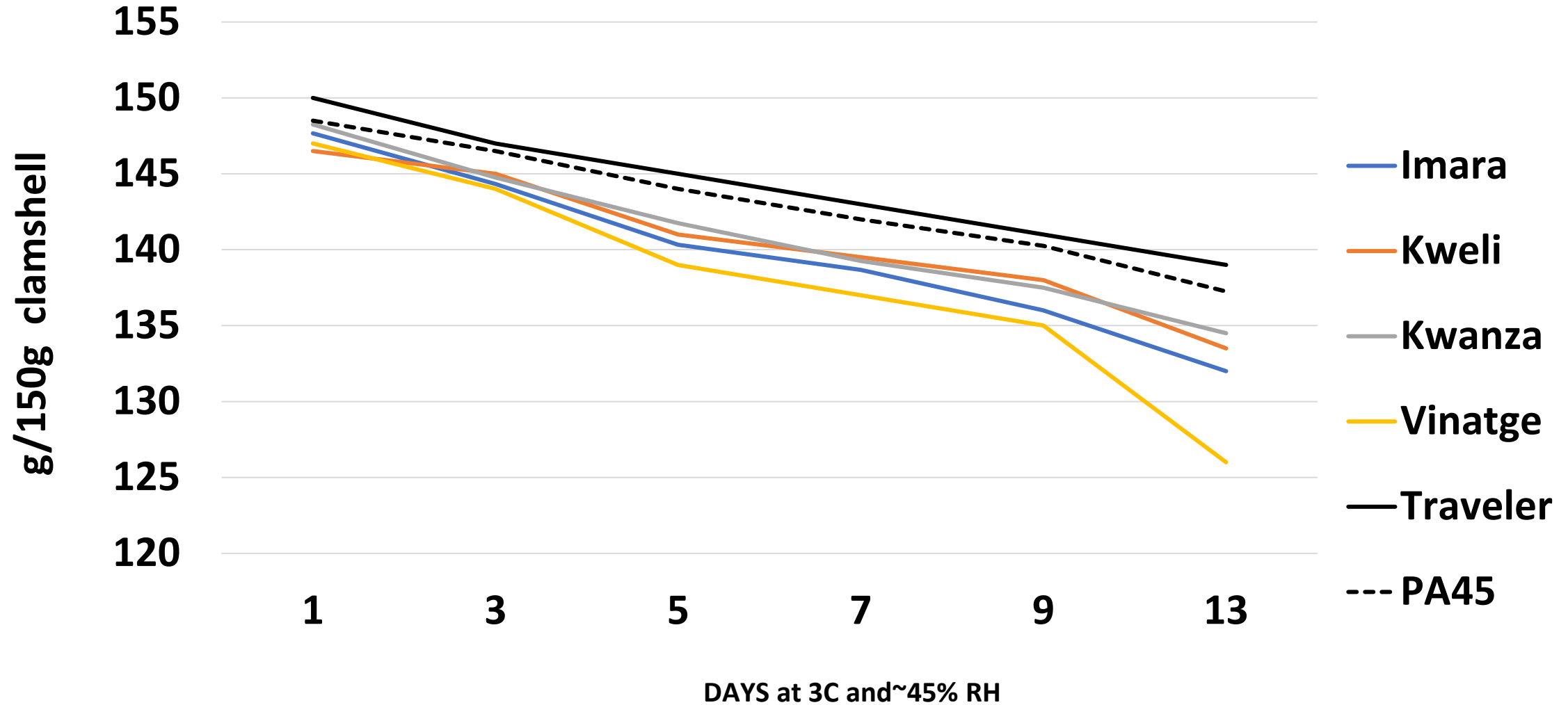




Kwanza : white crumbly drupelets



Fresh fruit weight in cold storage



1 day in storage



13 days in storage



Unmarketable fruit after storage

	Imara	Kweli	Kwanza	Vintage	PA45	PA Traveler
# fruit/150g clam shell	43	42	27	47	15	21
Unmarketable after 1 d	1	0.5	0.5	1	0.5	0
Unmarketable after 3 d	2	1	2	3	1	1
Unmarketable after 7 d	6	3.5	4.5	10	2	2

Thanks to Hansen fund, CDFA and UCCE-Ventura MGS/Volunteers for support

