NCSU Raspberry and Blackberry Breeding Update

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Jan. 7, 2011

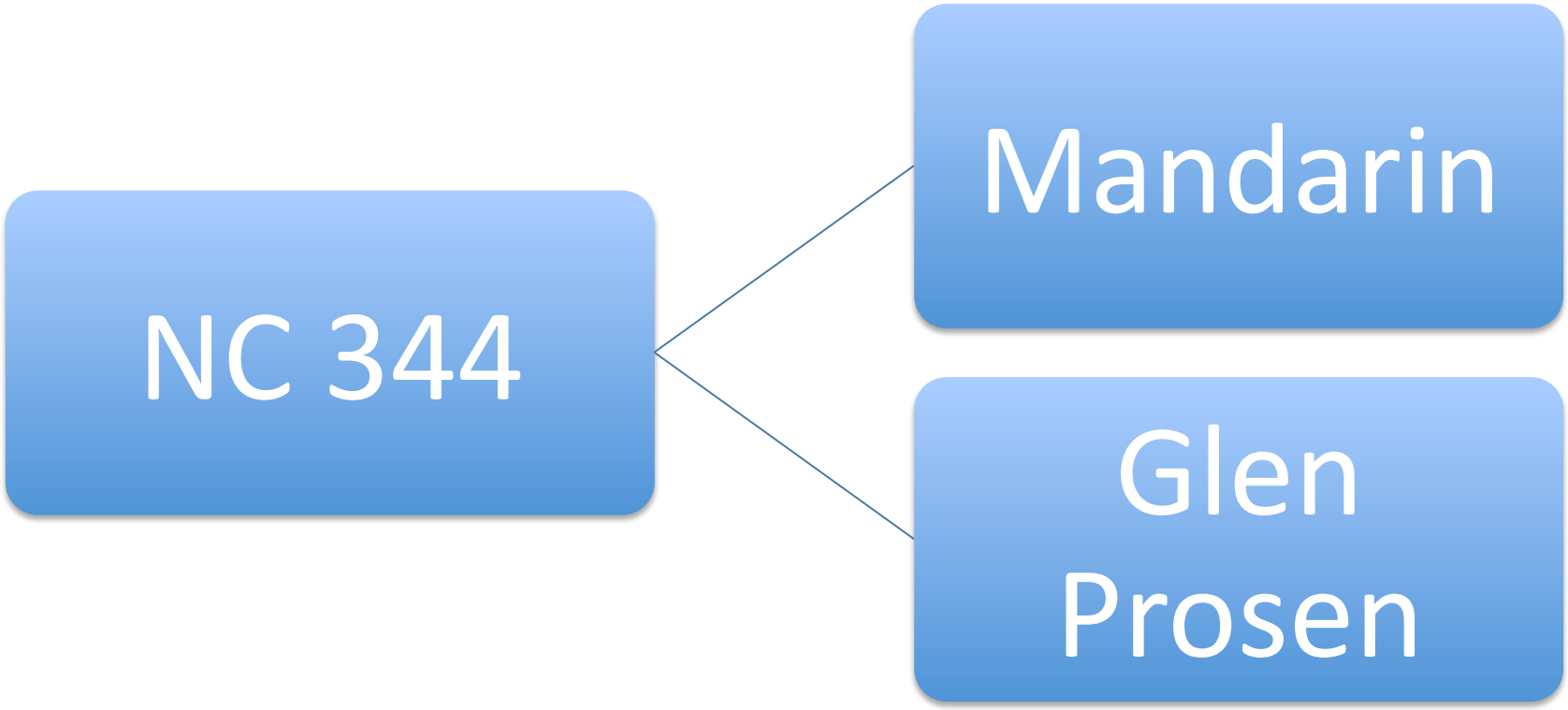
Promising Selections

- Raspberry
- Blackberry

NC 344

- Floricane-fruiting
- More heat tolerant than others
- Yields moderate
- Good Post harvest
- Flavor nice!

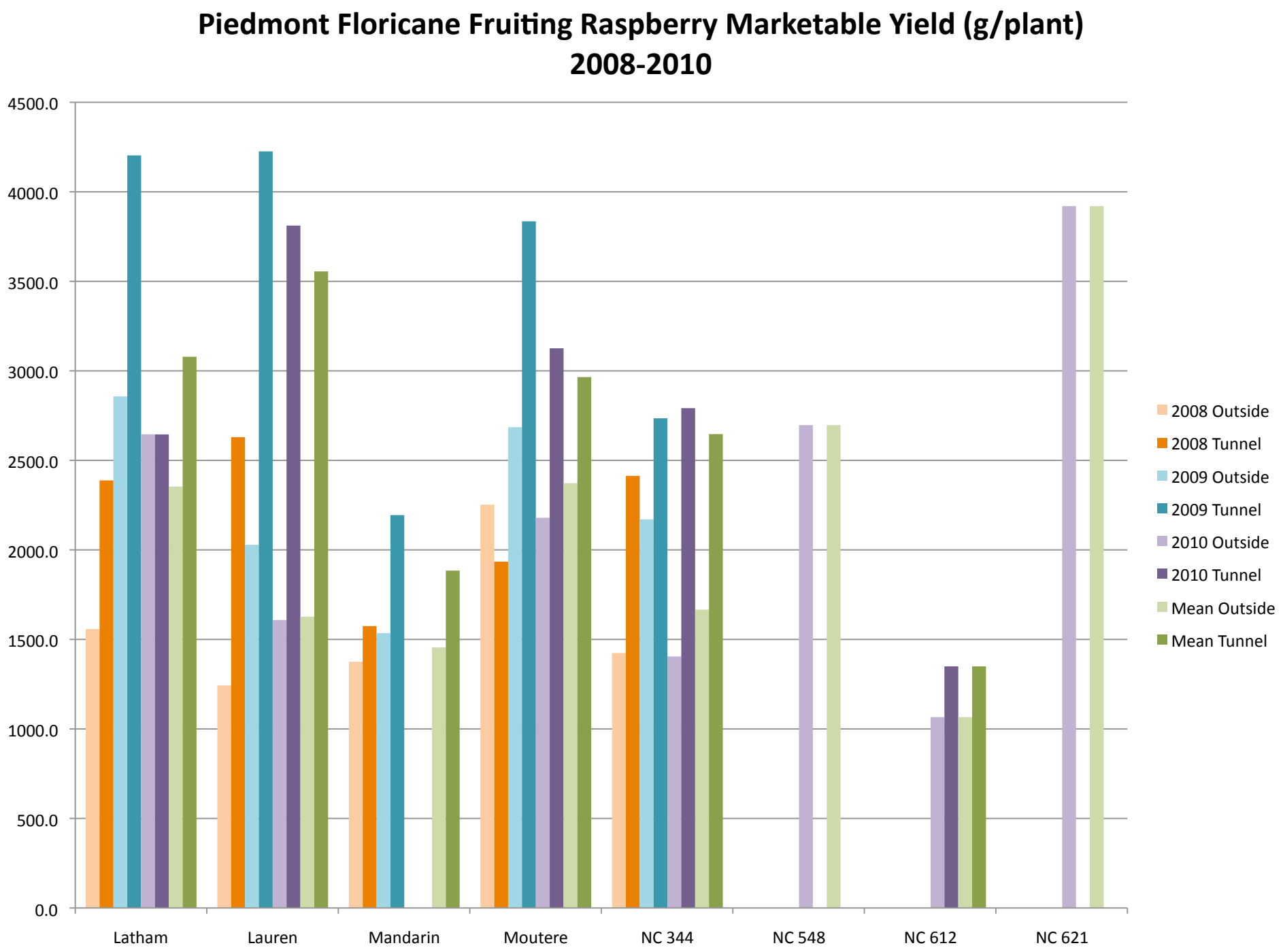
Pedigree NC 344

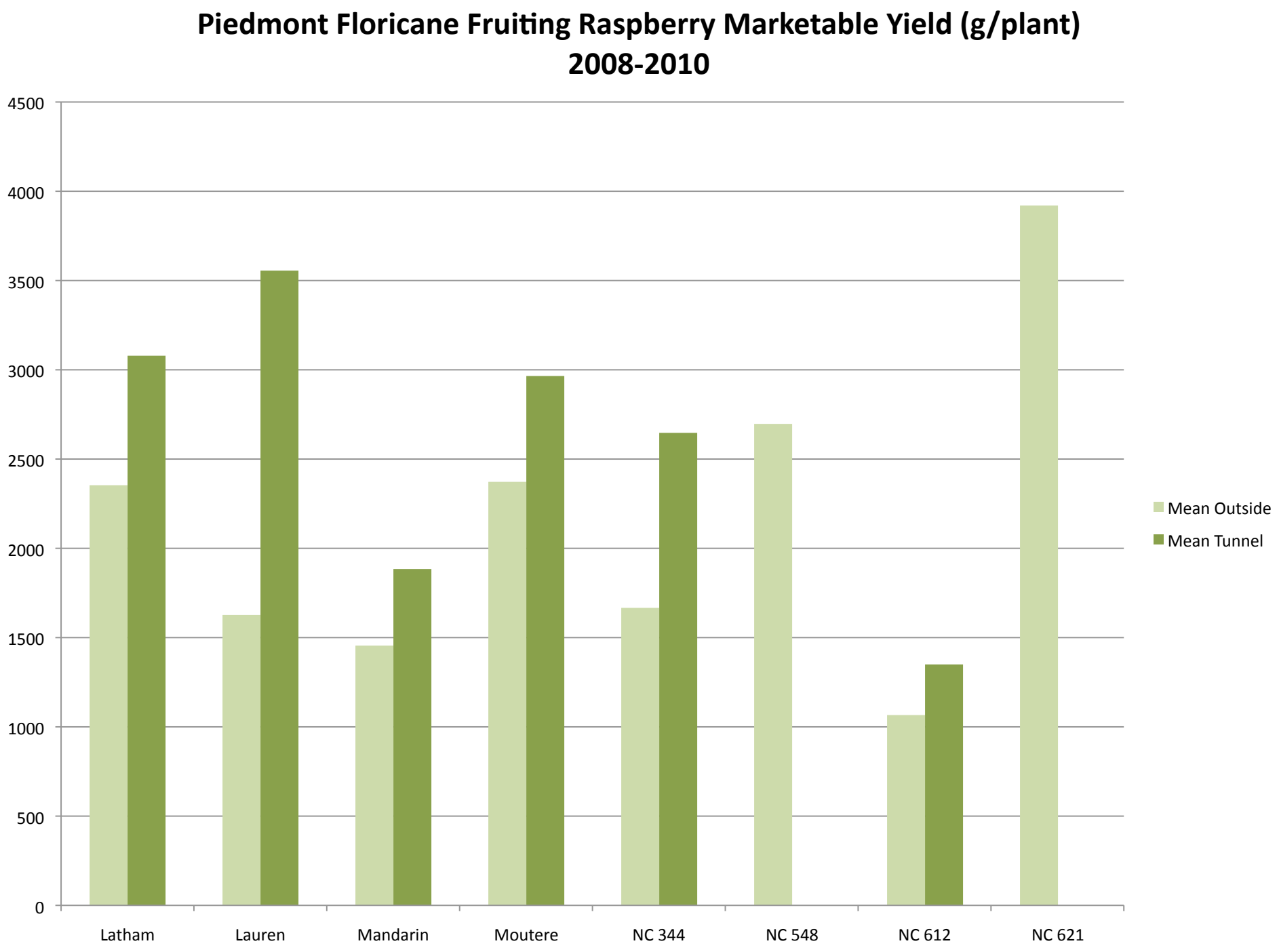


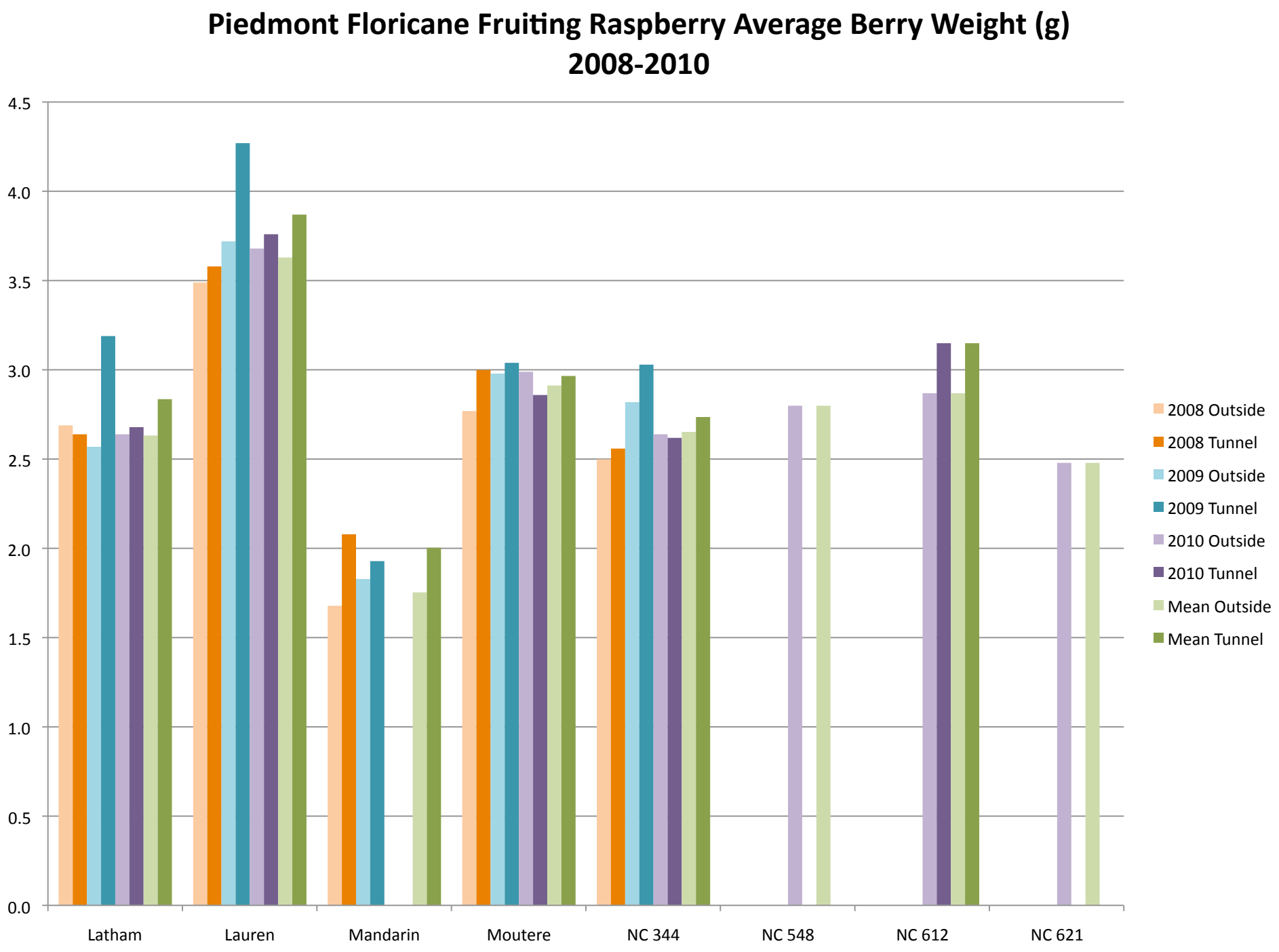
NC 344

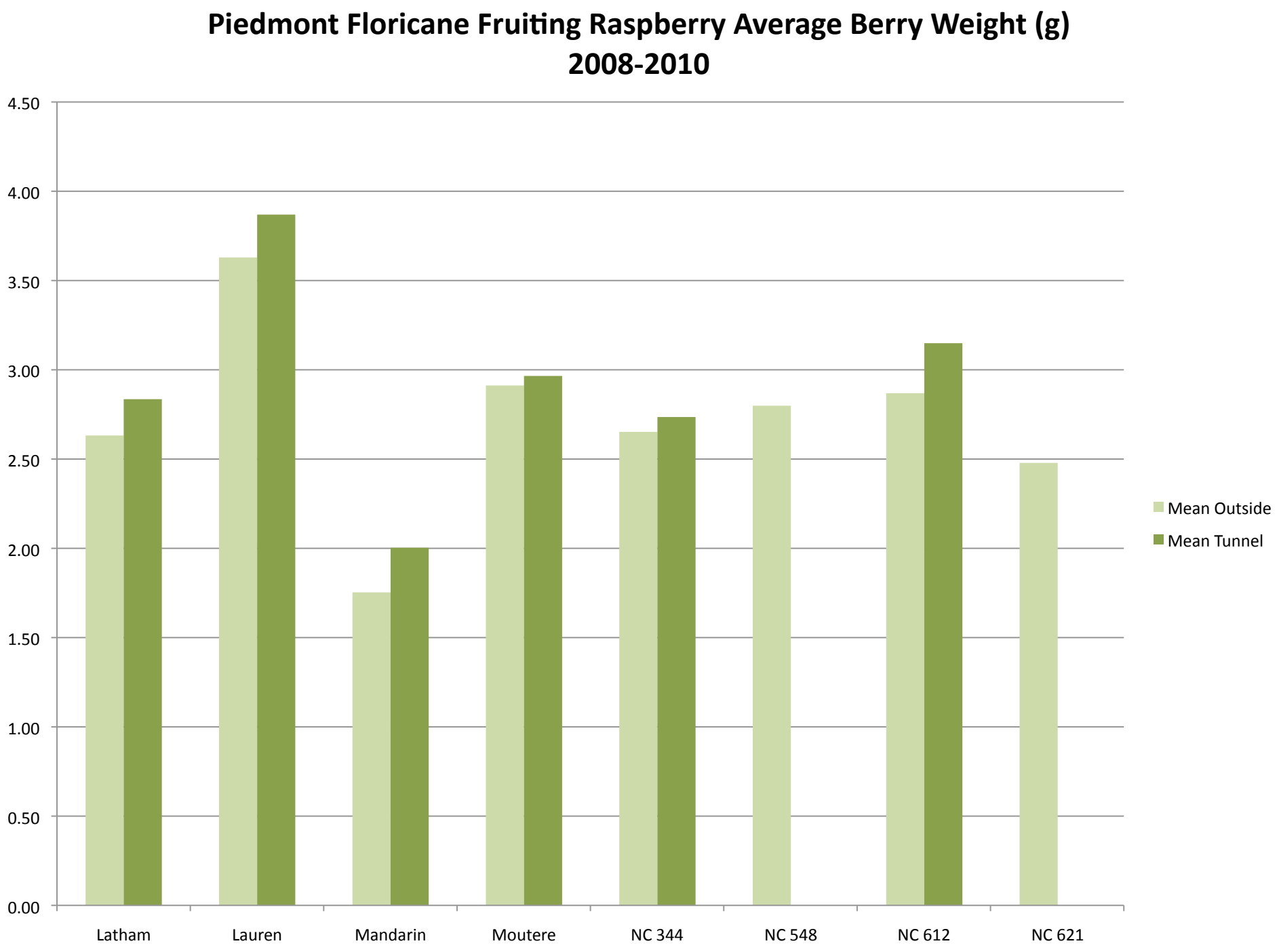
NC 344

Lauren
NC 344
Mandarin
Moutere
NC 612
Pocahantans
Latham
NC 430


Piedmont Floricane Fruiting Raspberry Marketable Yield (g/plant)
2008-2010
4500.0
4000.0
3500.0
3000.0
2500.0
2000.0
1500.0
1000.0
500.0
0.0
Latham
Lauren
Mandarin
Moutere
NC 344
NC 548
NC 612
NC 621
2008 Outside
2008 Tunnel
2009 Outside
2009 Tunnel
2010 Outside
2010 Tunnel
Mean Outside
Mean Tunnel

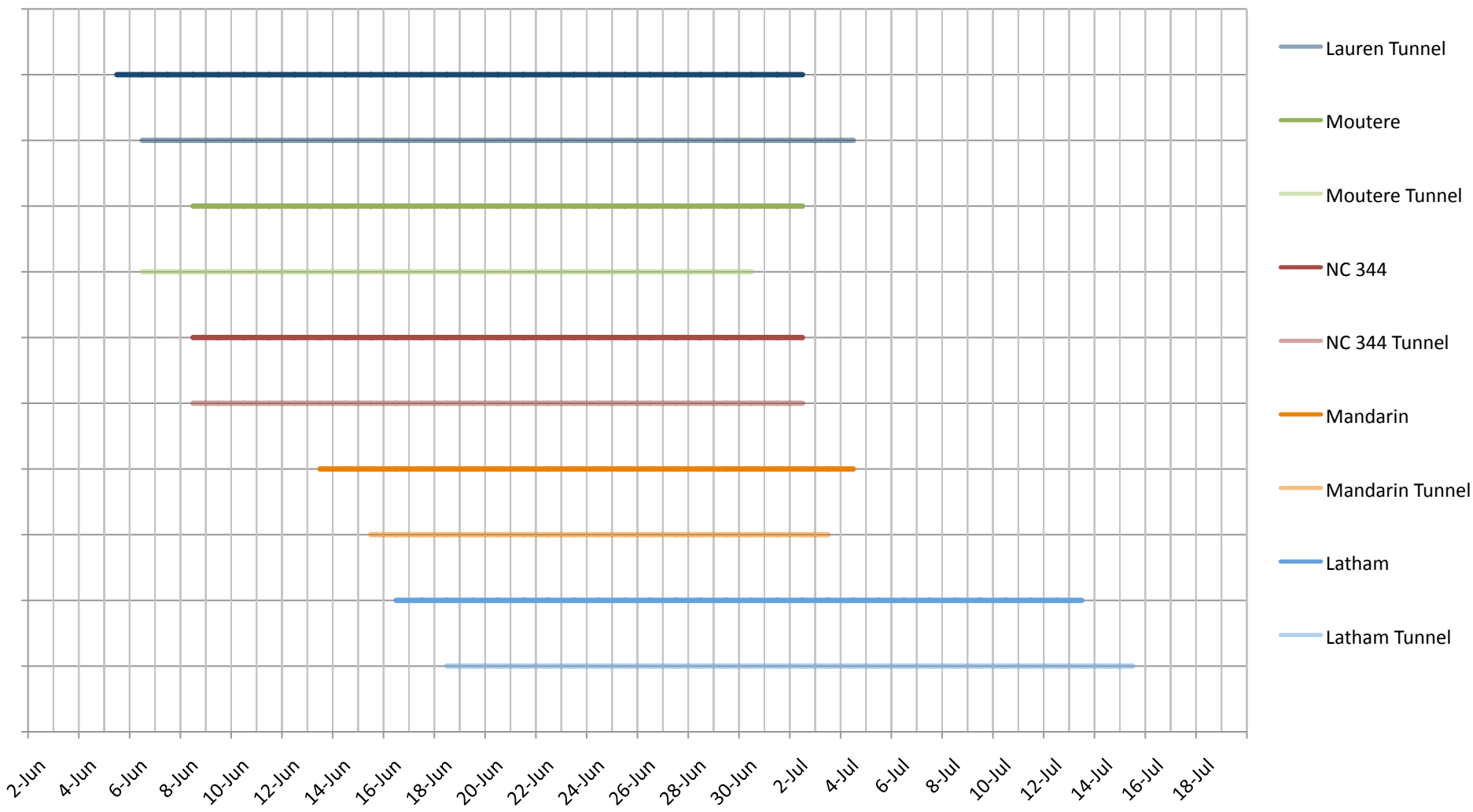

Piedmont Floricane Fruiting Raspberry Marketable Yield (g/plant)
2008-2010
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Latham
Lauren
Mandarin
Moutere
NC 344
NC 548
NC 612
NC 621
Mean Outside
Mean Tunnel


Piedmont Floricane Fruiting Raspberry Average Berry Weight (g)
2008-2010
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Latham
Lauren
Mandarin
Moutere
NC 344
NC 548
NC 612
NC 621
2008 Outside
2008 Tunnel
2009 Outside
2009 Tunnel
2010 Outside
2010 Tunnel
Mean Outside
Mean Tunnel


Piedmont Floricane Fruiting Raspberry Average Berry Weight (g)
2008-2010
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Latham
Lauren
Mandarin
Moutere
NC 344
NC 548
NC 612
NC 621
Mean Outside
Mean Tunnel

Floricane Fruiting Raspberry 2008 Harvest Dates

(Outside vs. Tunnel)



Post Harvest
FF Raspberry

LOCATION	Cultivar	Ave berry wt (g)	Berry darkness	Berry shrivel	Weight loss (%)	Moldy berries (%)	Leaky (%)	Soft (%)	OVERALL rating
			Ratings (1-5)						
OUTSIDE									
SALS	Lauren	4	1.5	1.4	2.5	24.3	40.4	53.4	-18.1
SALS	NC605	2.9	2.4	1	2.4	23.6	28.7	49.3	-1.6
SALS	Moutere	2.9	1.7	2.3	2.3	10.2	30	39.4	20.5
SALS	NC621	3.1	0.6	2.8	4.5	2.6	21.9	52.1	23.5
SALS	NC638	3	1.3	0.9	3	16.8	18	32	33.2
SALS	NC548	3.3	1.7	1.1	2.2	18.3	12.2	30.2	39.3
TUNNEL									
SALS	Latham	2.8	2.1	1.5	2.7	9.8	29.4	53.2	7.7
SALS	NC344	3.1	1.9	2.8	2.6	19.1	23.9	31.9	25
SALS	NC612	2	2.5	2	4.4	15.7	21.7	51.4	11.2

Overall rating is 100-sum(moldy+leaky+soft)
Marketable rating is 100-(sum(moldy+leaky+soft)/3)

Courtesy Dr. Penny Perkins-Veazie

Floricane-fruiting raspberries

- Canes live for 2 years, fruit produced in 2nd year
- Season is earlier than primocane fruiting types
- Can avoid some of summer heat during harvest

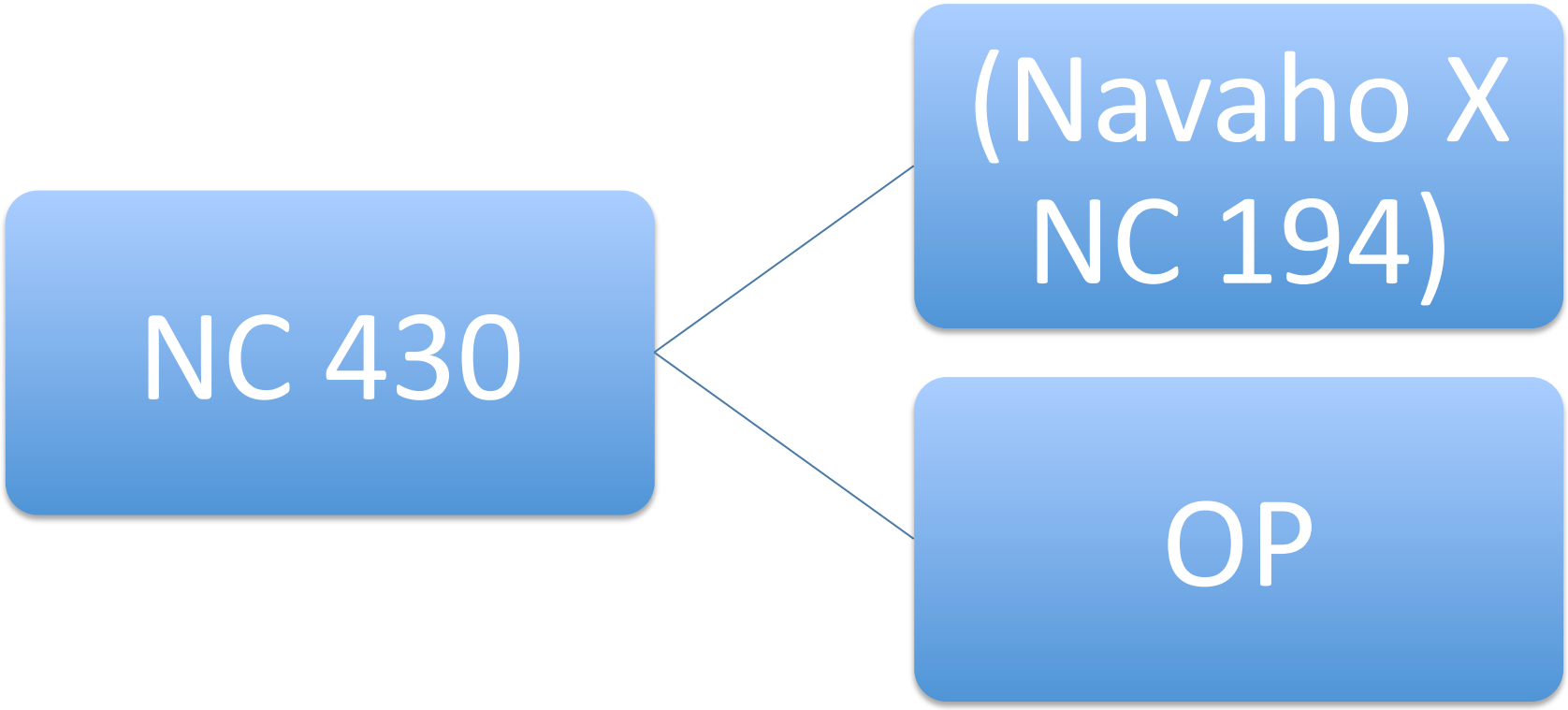
Some words about Floricane-Fruiting Raspberries in tunnels

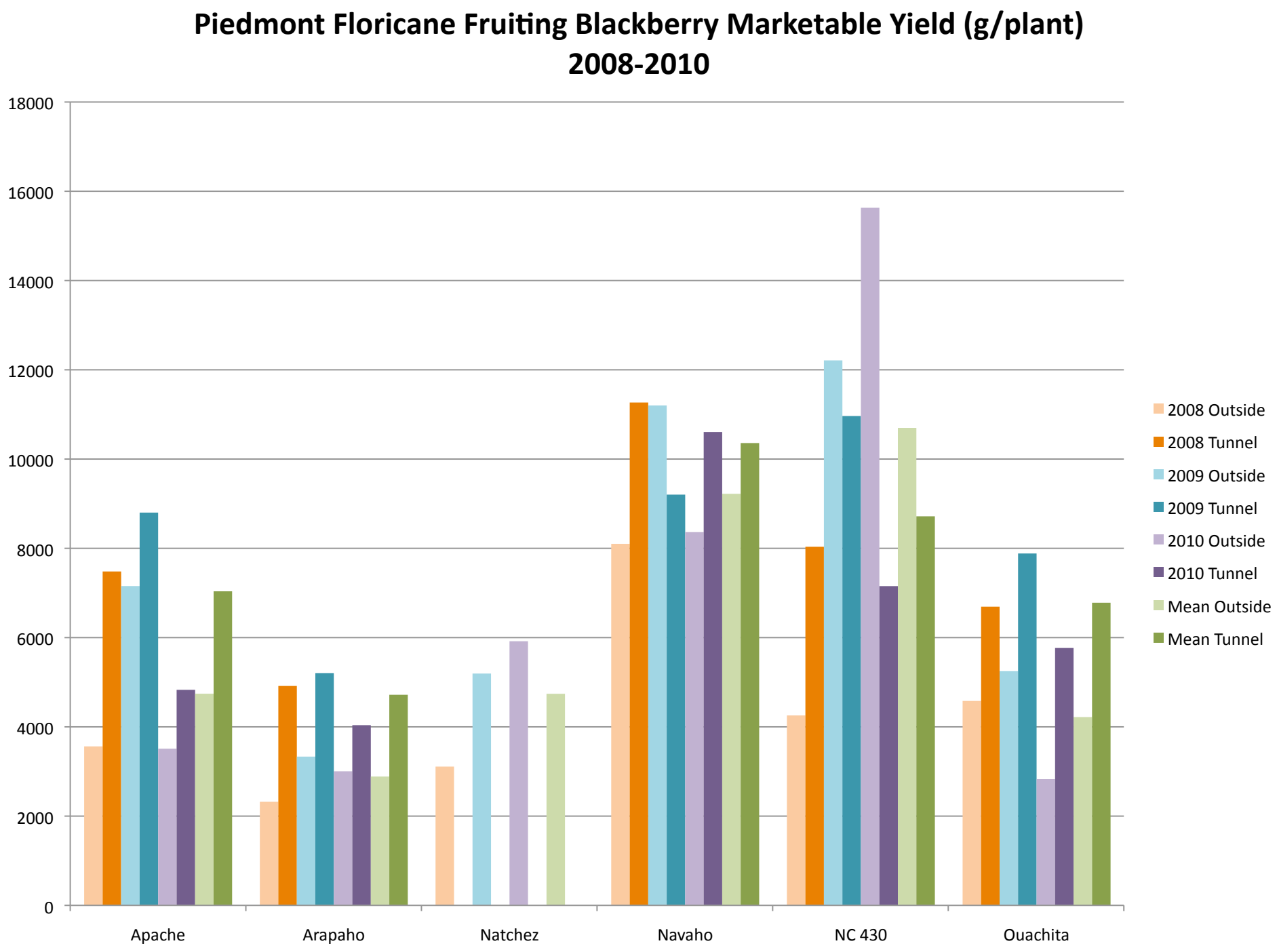
- Tunnels increase yield
- Berry weight “no difference”
- Yield bump do to more berries
- Moutere, Latham, NC 344, NC 612, NC 638, NC 548 best PH
  - tunnel effect unknown on specific cvs
  - Tunnel berries less decay and less leak
- Moutere, Latham, NC 621, NC 344 highest yields

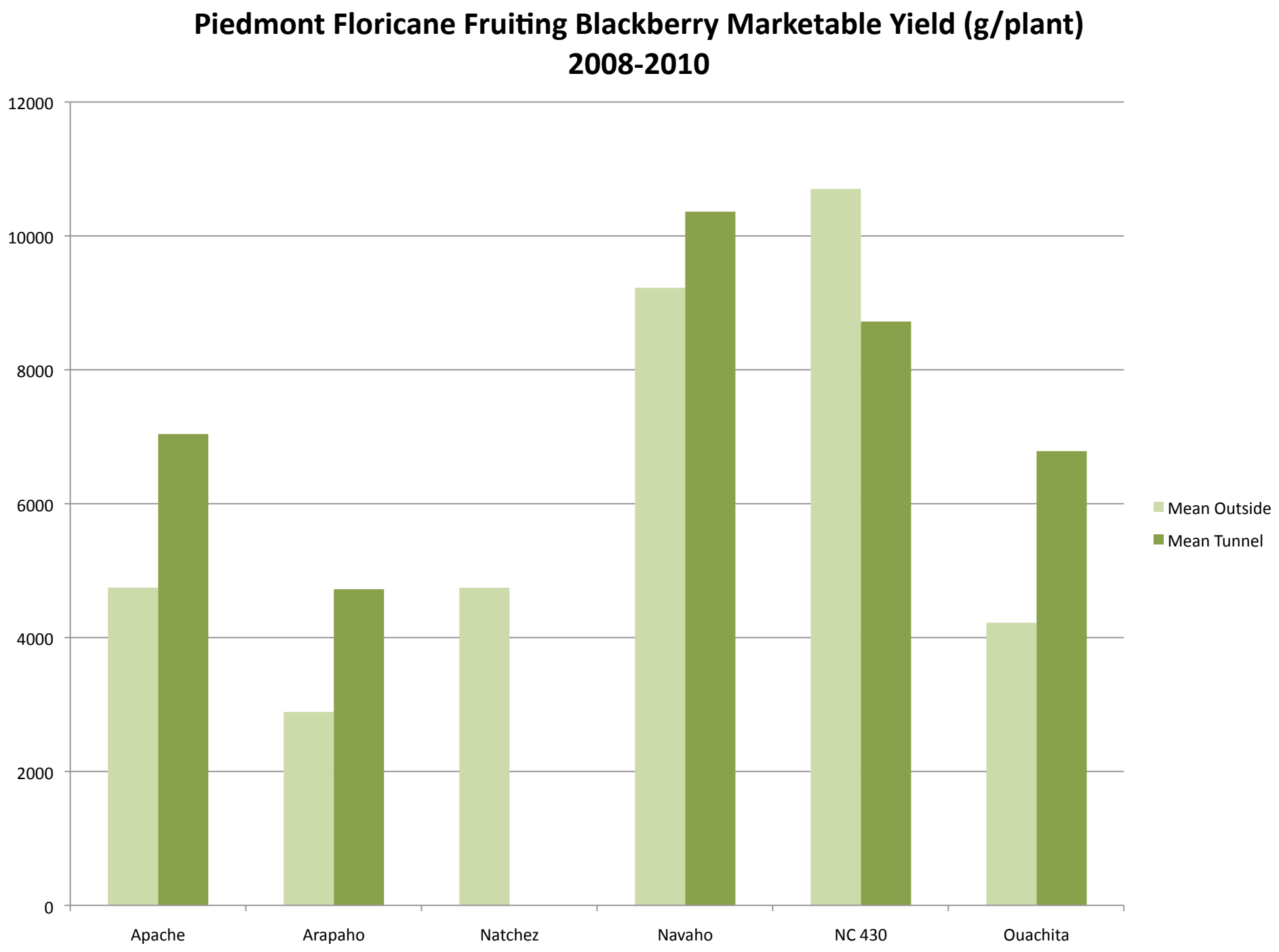
NC 430

Navaho
Ouachita
NC 430
Apache
Natchez
Arapaho

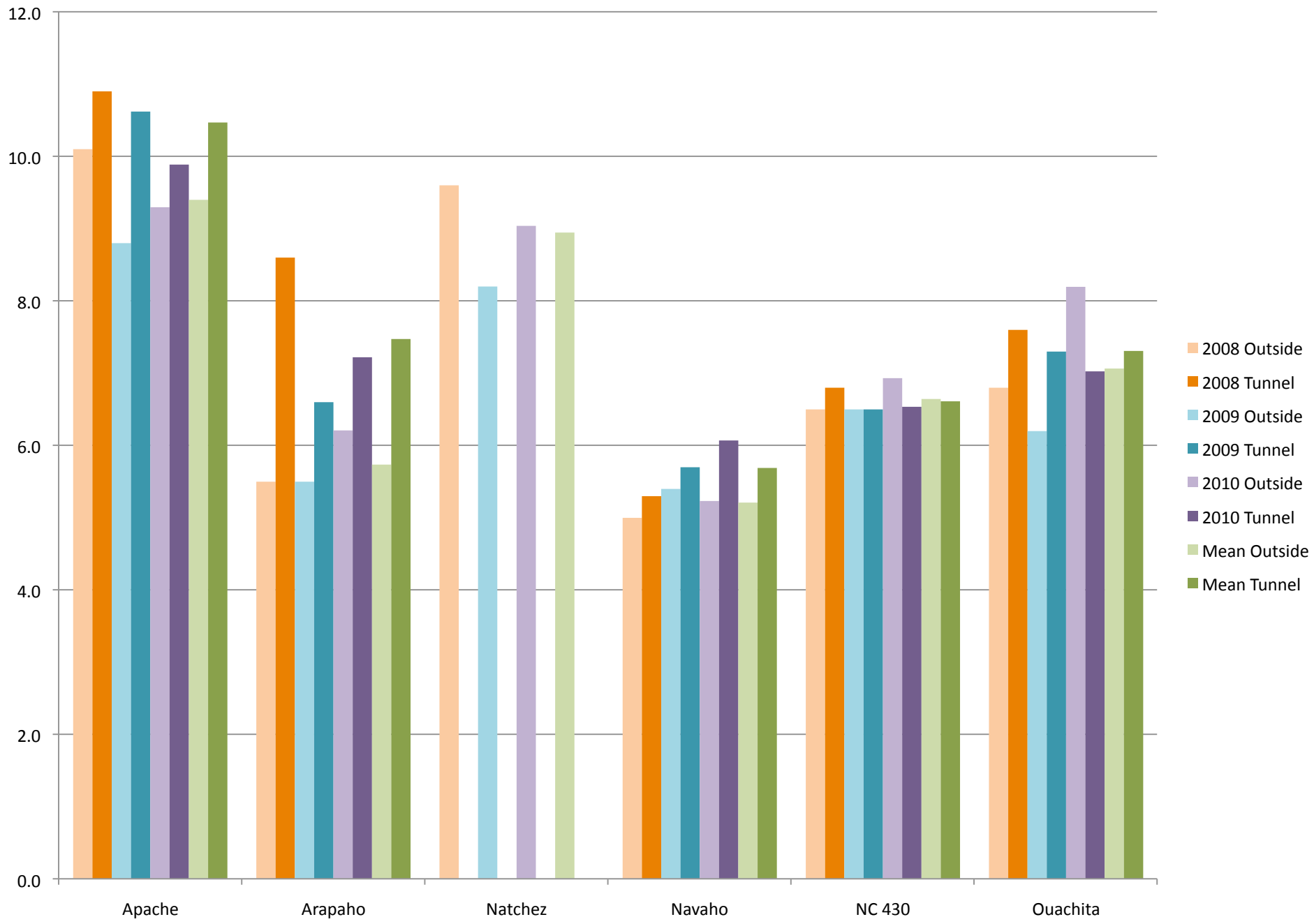
Pedigree NC 430




Piedmont Floricane Fruiting Blackberry Marketable Yield (g/plant)
2008-2010
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Apache
Arapaho
Natchez
Navaho
NC 430
Ouachita
2008 Outside
2008 Tunnel
2009 Outside
2009 Tunnel
2010 Outside
2010 Tunnel
Mean Outside
Mean Tunnel

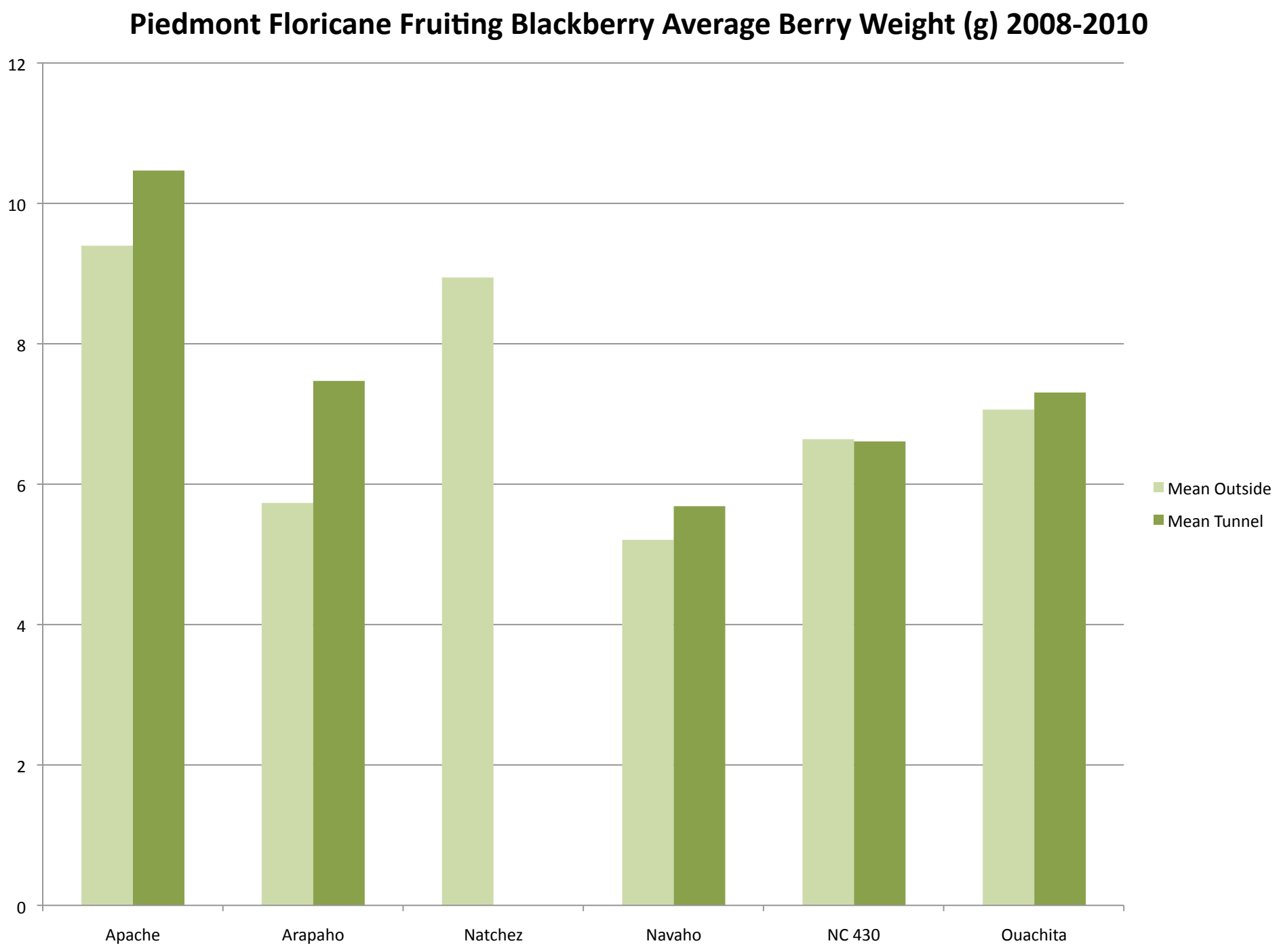

Piedmont Floricane Fruiting Blackberry Marketable Yield (g/plant)
2008-2010
12000
10000
8000
6000
4000
2000
0
Apache
Arapaho
Natchez
Navaho
NC 430
Ouachita
Mean Outside
Mean Tunnel

Piedmont Floricane Fruiting Blackberry Average Berry Weight (g) 2008-2010



NC 430

- Yield 10,704 g/plant
  - (23,000lb/acre)
- Season late
- Post Harvest – good
- Flavor- nice
- Virus tolerance unknown


Piedmont Floricane Fruiting Blackberry Average Berry Weight (g) 2008-2010
12
10
8
6
4
2
0
Apache
Arapaho
Natchez
Navaho
NC 430
Ouachita
Mean Outside
Mean Tunnel

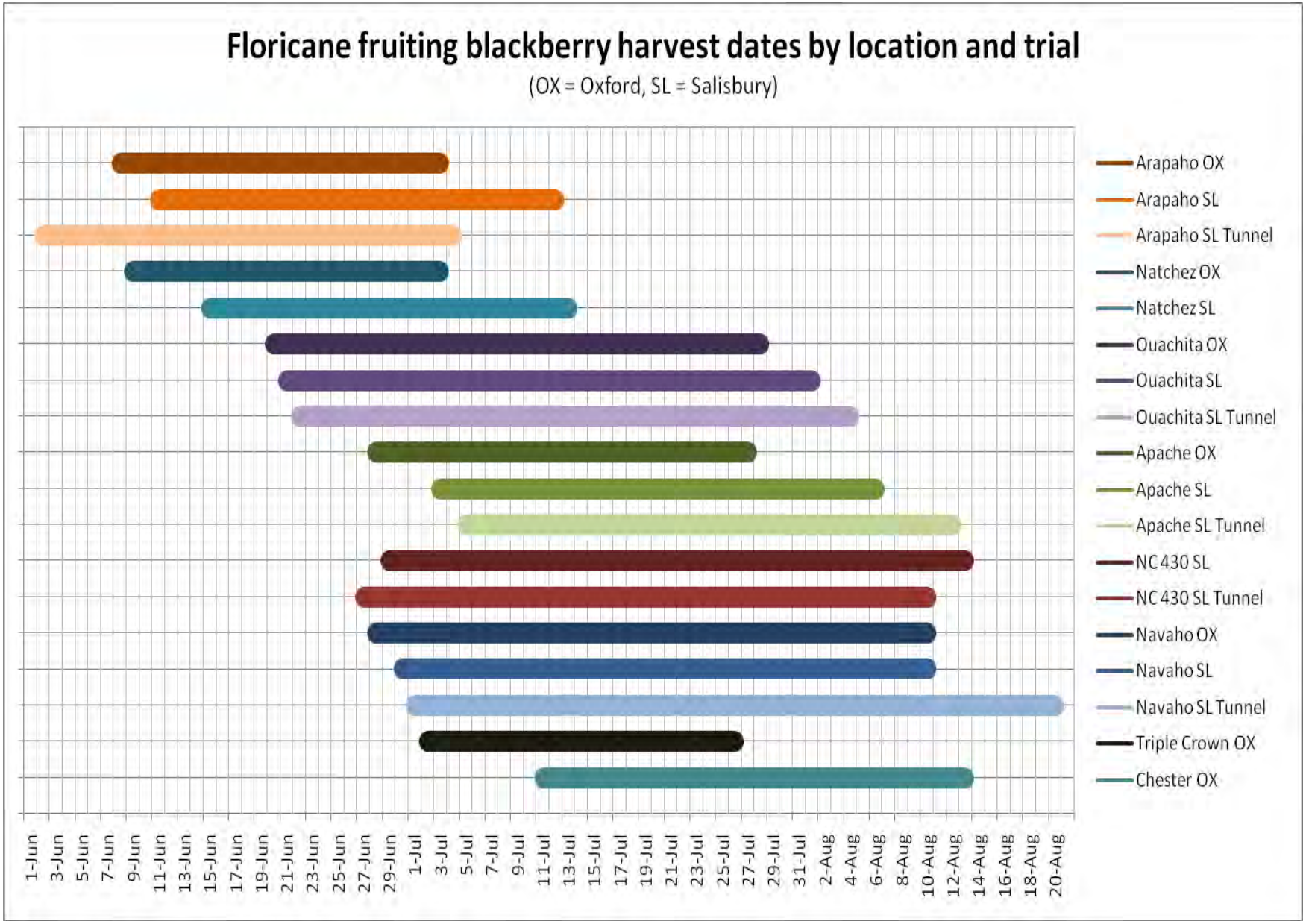
Blackberry Post Harvest

	percent berries				Rating	
Cultivar	Moldy	Leaky	Soft (4,5)	Red drupe	Overall	Marketable
Carolina	4.2	66.2	23.2	25.7	6.4	68.8
Chester Thornless	8.1	44.1	24.8	11.6	23	74.3
Apache	5.7	37.9	23.6	7.9	32.8	77.6
Black Diamond	1.9	31.3	13.4	14.5	53.4	84.5
Tupy	4.7	24.8	11.4	10.5	59	86.4
Navaho	2	13.8	15.4	5.7	68.8	89.6
NC430	3.1	12.8	12.4	12.1	71.7	90.6
Ouachita	4.1	15	7.4	7.7	73.4	91.2
Natchez	0.8	7.3	4.4	17.2	87.5	95.8
Arapaho	0.5	10	0	4.1	89.5	96.5

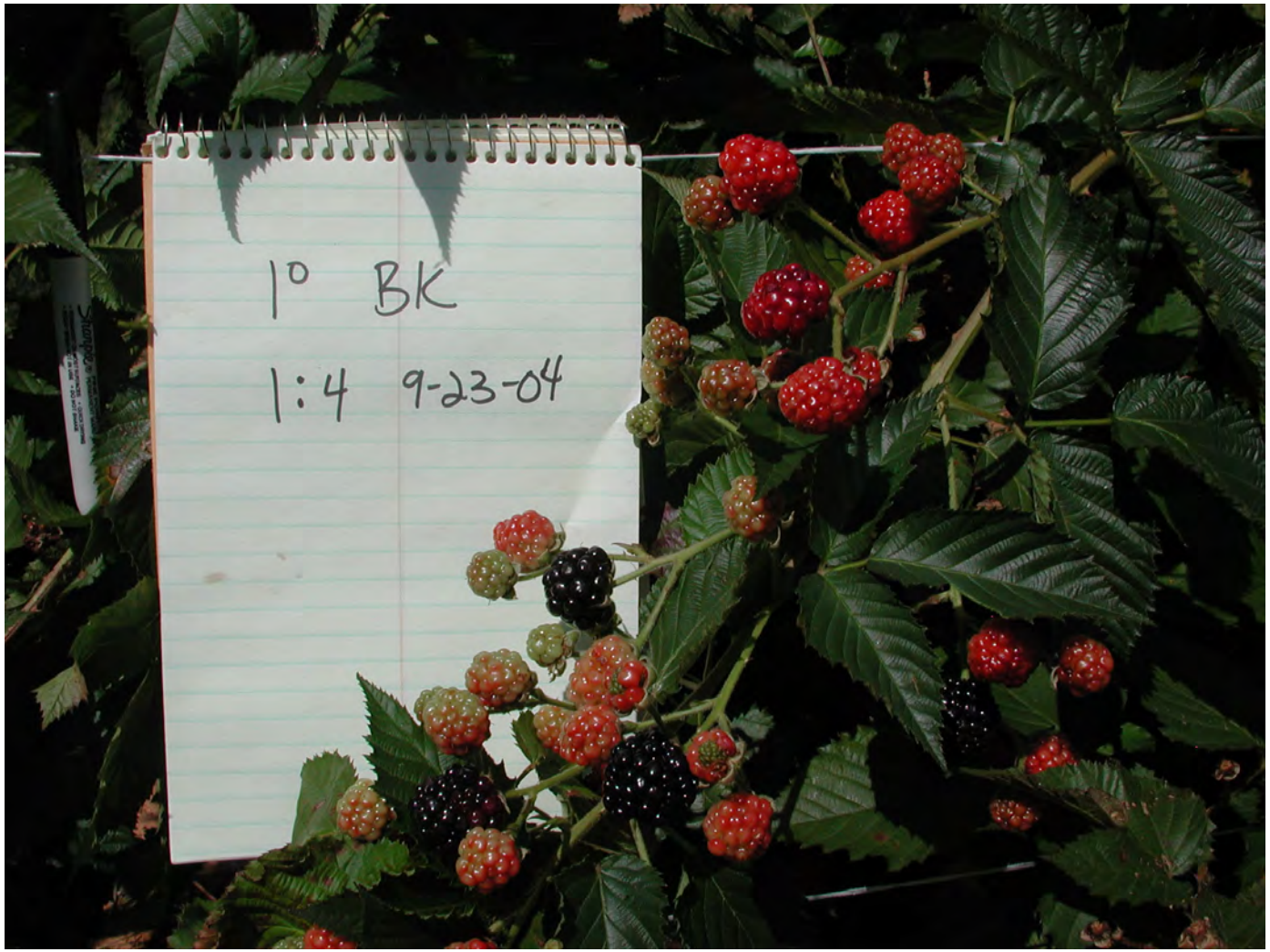
Overall rating is 100-sum(moldy+leaky+soft)

Marketable rating is 100-(sum(moldy+leaky+soft)/3)

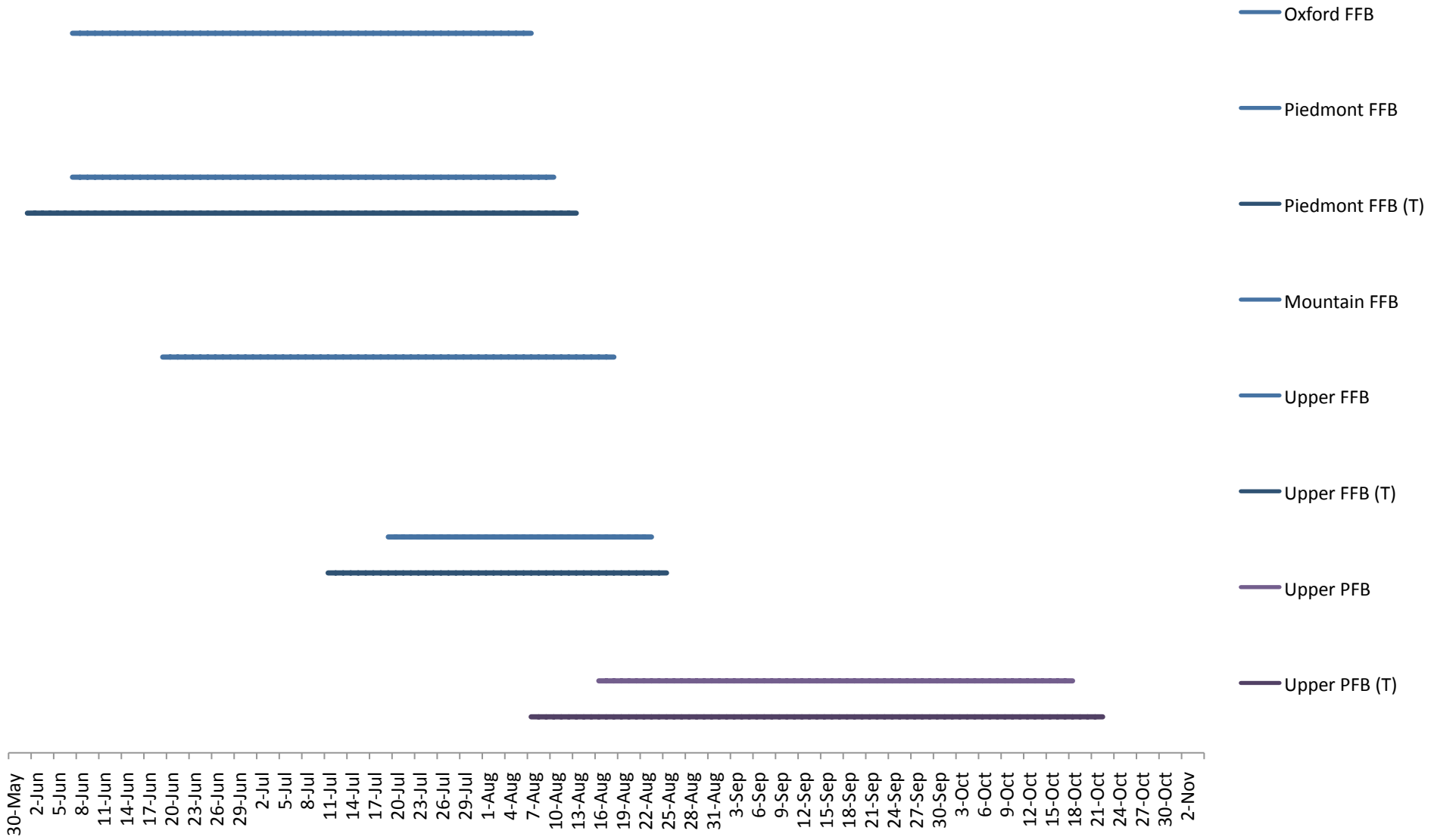
Courtesy Dr. Penny Perkins-Veazie


Floricane fruiting blackberry harvest dates by location and trial
(OX = Oxford, SL = Salisbury)
Arapaho OX
Arapaho SL
Arapaho SL Tunnel
Natchez OX
Natchez SL
Ouachita OX
Ouachita SL
Ouachita SL Tunnel
Apache OX
Apache SL
Apache SL Tunnel
NC 430 SL
NC 430 SL Tunnel
Navaho OX
Navaho SL
Navaho SL Tunnel
Triple Crown OX
Chester OX
1-Jun
3-Jun
5-Jun
7-Jun
9-Jun
11-Jun
13-Jun
15-Jun
17-Jun
19-Jun
21-Jun
23-Jun
25-Jun
27-Jun
29-Jun
1-Jul
3-Jul
5-Jul
7-Jul
9-Jul
11-Jul
13-Jul
15-Jul
17-Jul
19-Jul
21-Jul
23-Jul
25-Jul
27-Jul
29-Jul
31-Jul
2-Aug
4-Aug
6-Aug
8-Aug
10-Aug
12-Aug
14-Aug
16-Aug
18-Aug
20-Aug

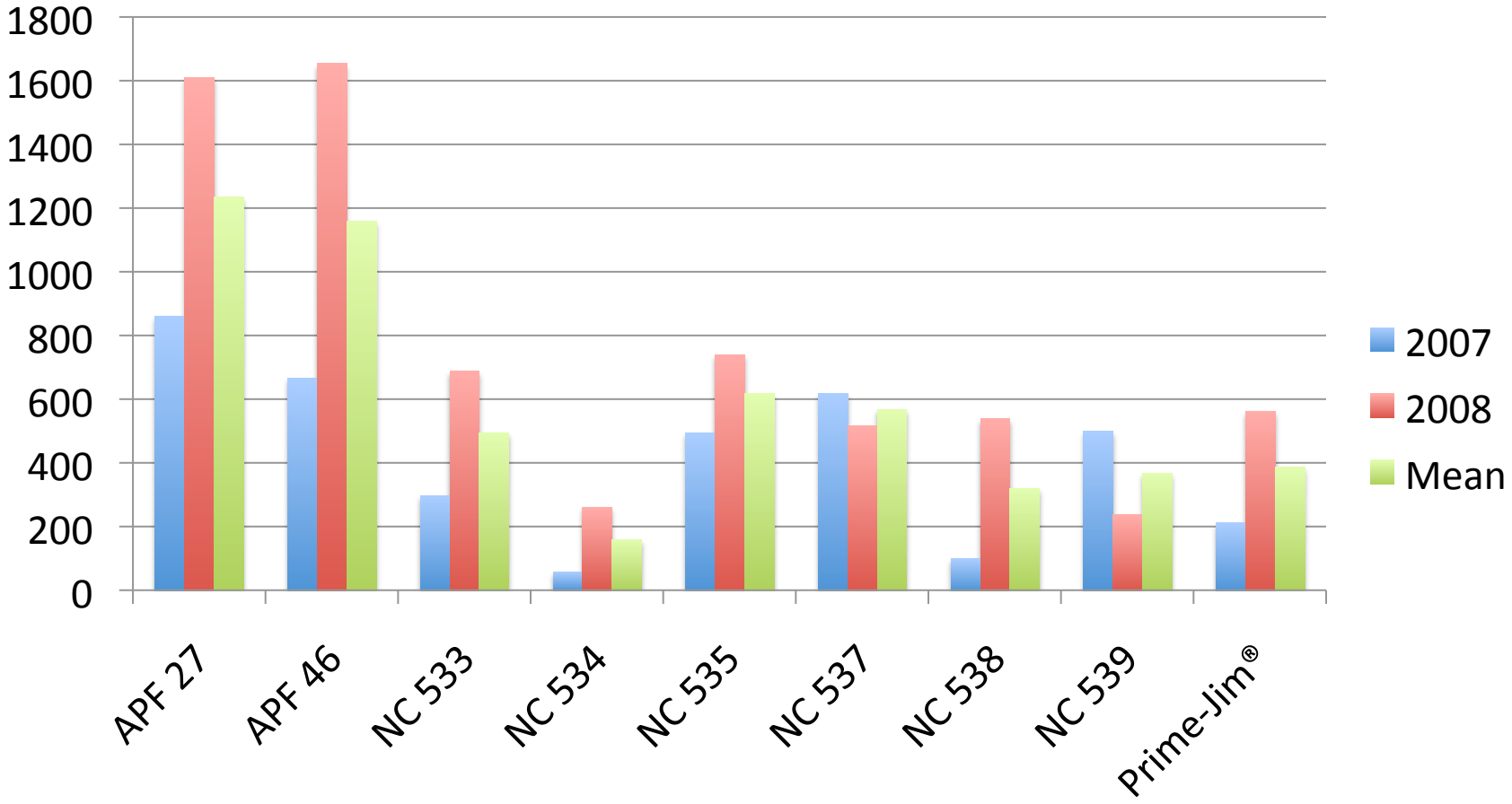
Primocane Fruiting Blackberries



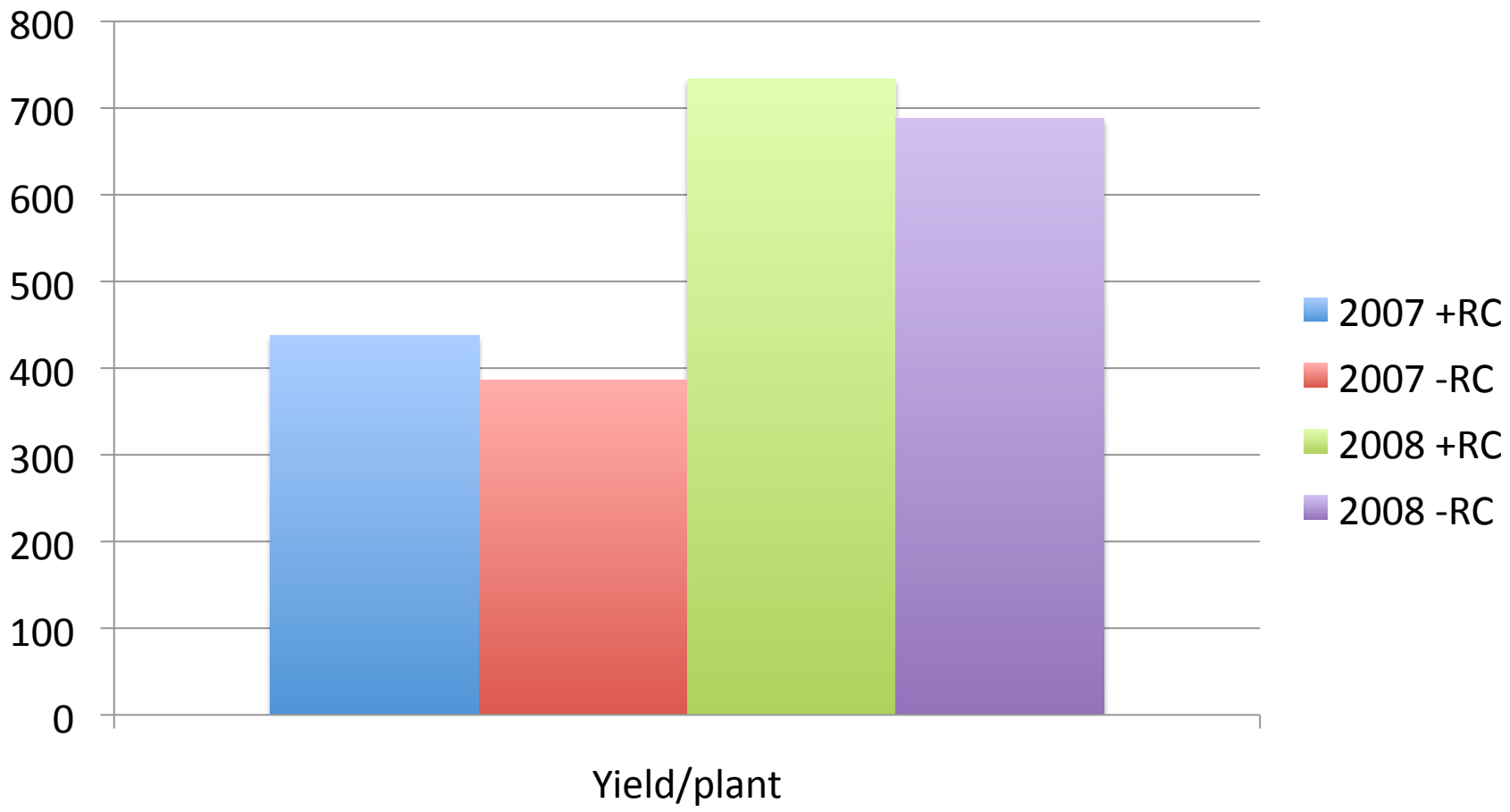
Harvest Season at four NC Research Stations (T=High Tunnel)
Blackberry only



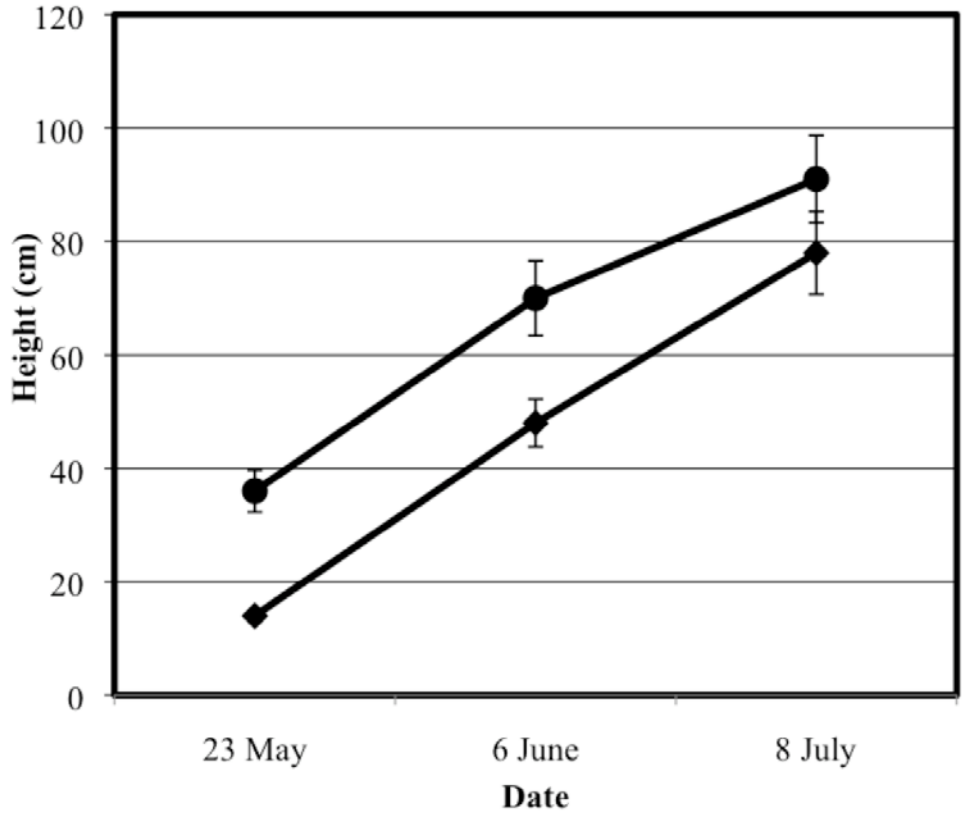
PF Blackberry Marketable Yield



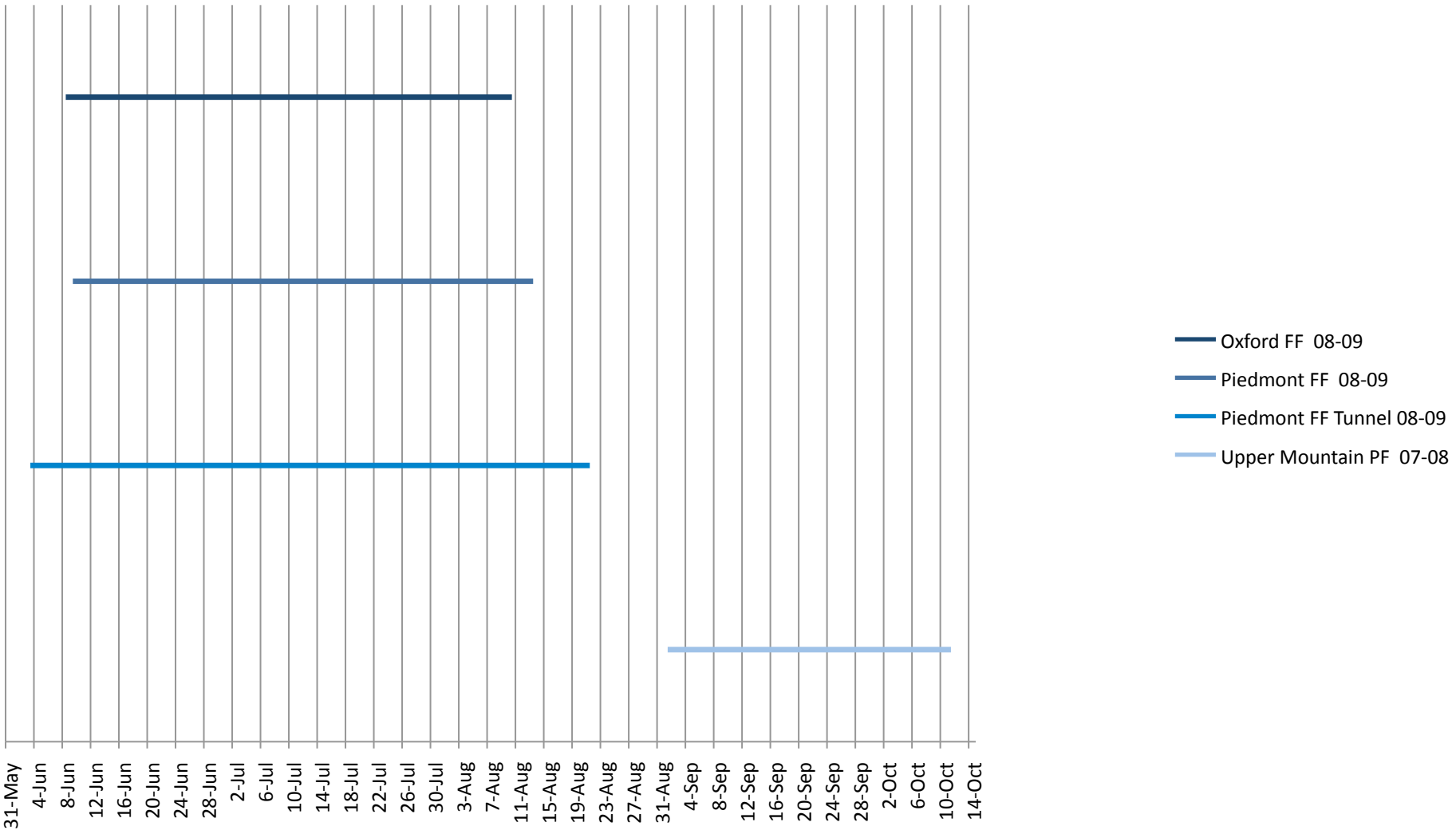
Variation in year, not due to rowcover



Tipping of canes



Blackberry Harvest Season (5% to 95% yield)



http://www.plantsciences.ucdavis.edu/plantsciences/databases/directory/news/Leaflet/spring2010leaflet.pdf
http://www.plantsciences.ucdavis.edu/plantsciences/databases/directory/news/Leaflet/spring2010leaflet.pdf
UC daviskids will eat more produce
The School S...den Project Dillard Driv...iddle School WakeGOV.com... Locations Welcome to ... Elementary Description ... raspberries What plants need to grow North Caroli...nty Centers
23 / 32 143% Find

and immune-suppressive properties. Aflatoxins have been classified as a class one human carcinogen. Experts estimate aflatoxins contaminate close to 25 percent of the global food supply each year.

"The toxins are deadly," Dandekar says. "We can tolerate certain levels, but that level is very low."

Now for the better news: Dandekar, working hard to reduce that contamination, recently made a breakthrough discovery. He and his team identified an established chemical production pathway for a compound – gallic acid – that can reduce aflatoxin contamination.

"Walnuts have very low levels of contamination," Dandekar says. "Why is that? We think it's the gallic acid in the tannins in their seed coat that makes walnuts more resistant to aflatoxin."

Where has all the flavor gone?

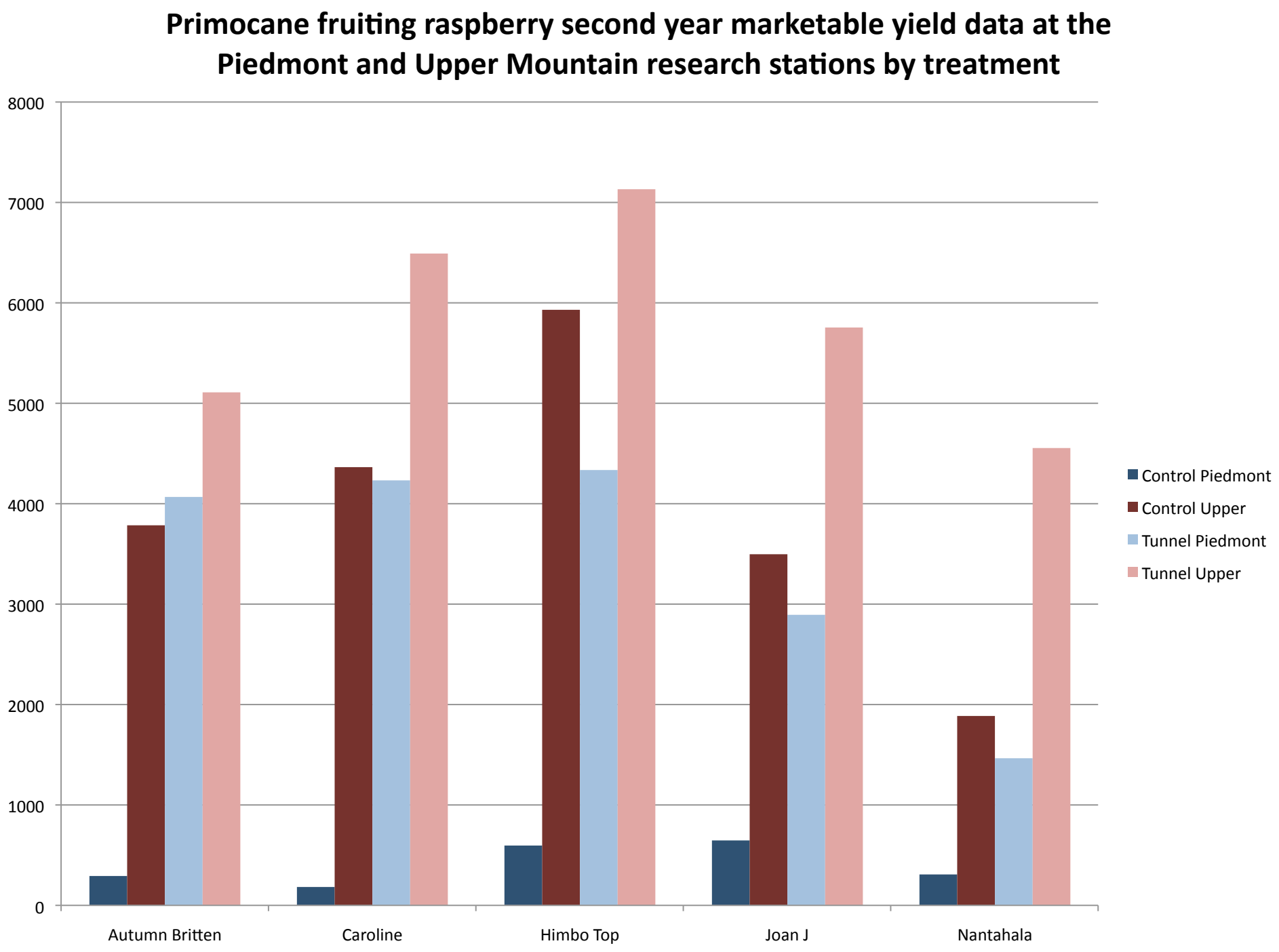
Do you remember when store-bought produce was succulent every time you took a bite? Then you're old – well, at least you're not a kid. Today's youth in America have a different experience with store-bought fruits and vegetables – sometimes they're yummy and juicy, sometimes they taste like chalk.

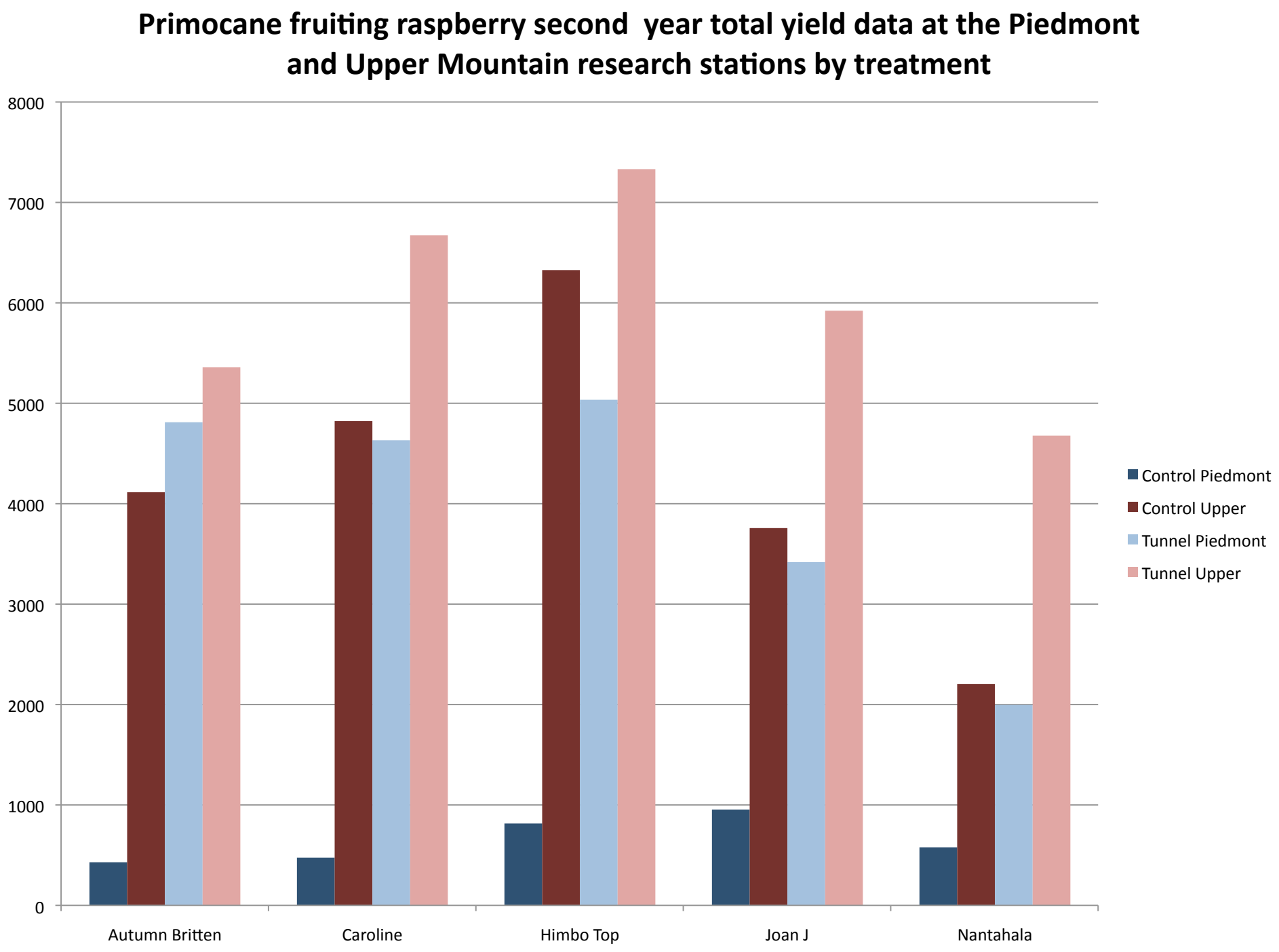
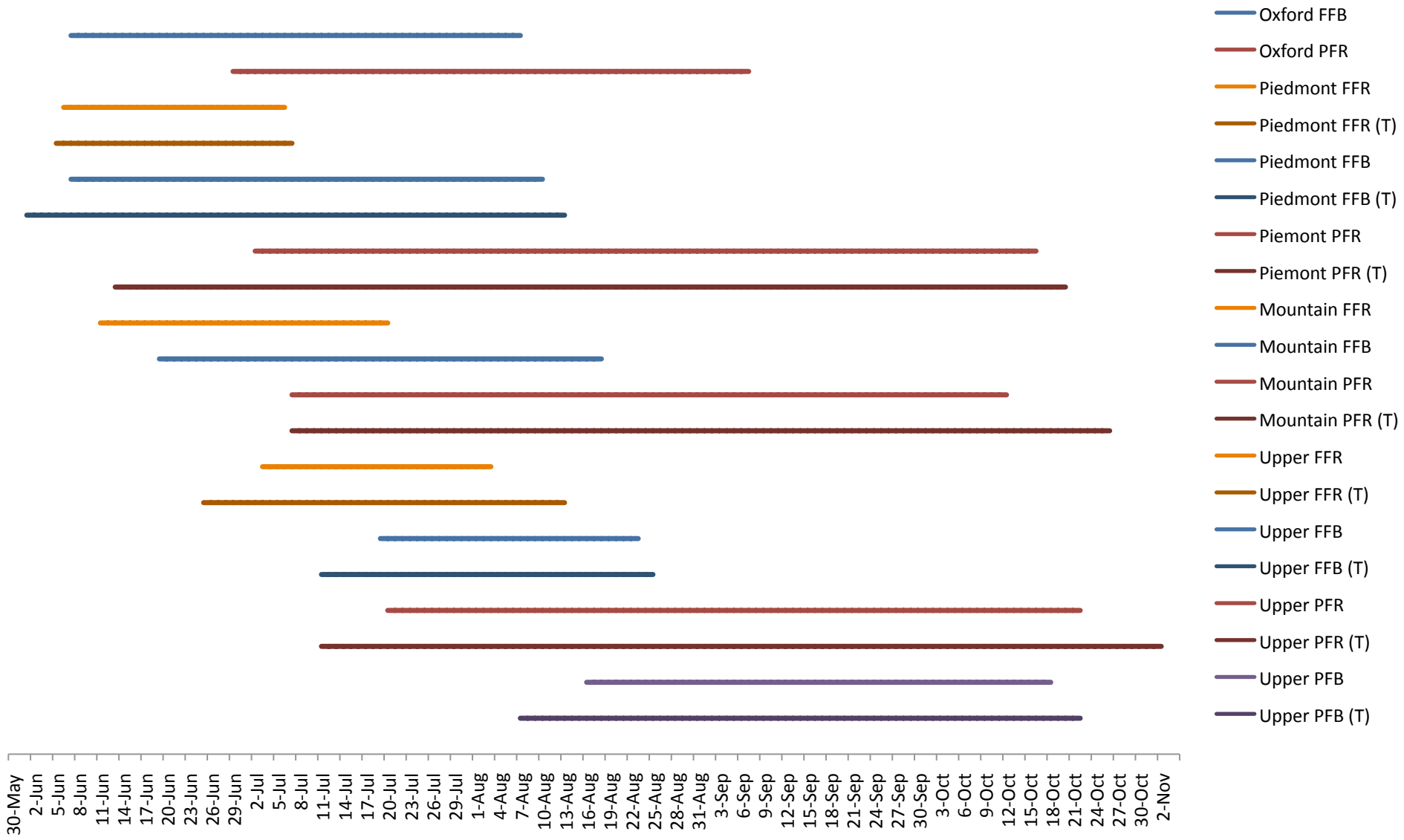
What's a mother to do?

"It's a problem, because often you have only one window of opportunity to introduce a new fruit or vegetable to your child," says Mitcham, Director of the Postharvest Technology Center and concerned mother. "And if the food doesn't taste good, they aren't going to like it."

And if they don't like it, they're not going to eat it. That's how it is for all of us, but new research by Mitcham and a broad group of experts may remedy the situation. Mitcham and her team recently received a nearly $6 million grant from the USDA for a project designed to improve the flavor quality of fruits and vegetables available to U.S. consumers and thereby increase their consumption.

Nantahala


Primocane fruiting raspberry second year marketable yield data at the Piedmont and Upper Mountain research stations by treatment
8000
7000
6000
5000
4000
3000
2000
1000
0
Autumn Britten
Caroline
Himbo Top
Joan J
Nantahala
Control Piedmont
Control Upper
Tunnel Piedmont
Tunnel Upper


Primocane fruiting raspberry second year total yield data at the Piedmont and Upper Mountain research stations by treatment
8000
7000
6000
5000
4000
3000
2000
1000
0
Autumn Britten
Caroline
Himbo Top
Joan J
Nantahala
Control Piedmont
Control Upper
Tunnel Piedmont
Tunnel Upper

Harvest Season at four NC Research Stations (T=High Tunnel)
all Raspberries and Blackberries