

Evolution of R&D in Support of the California Coastal Blueberry Industry

1998 – 2008

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Cooperative
Extension

1998 – Many questions

- ▶ *Reliable fruiting with available chill?*
- ▶ *Variety adaptation? Harvest season?*
- ▶ *Soil pH management? Soil? Water quality?*
- ▶ *Cultural practices?*
- ▶ *Cost vs profitability?*
- ▶ *Pest problems?*



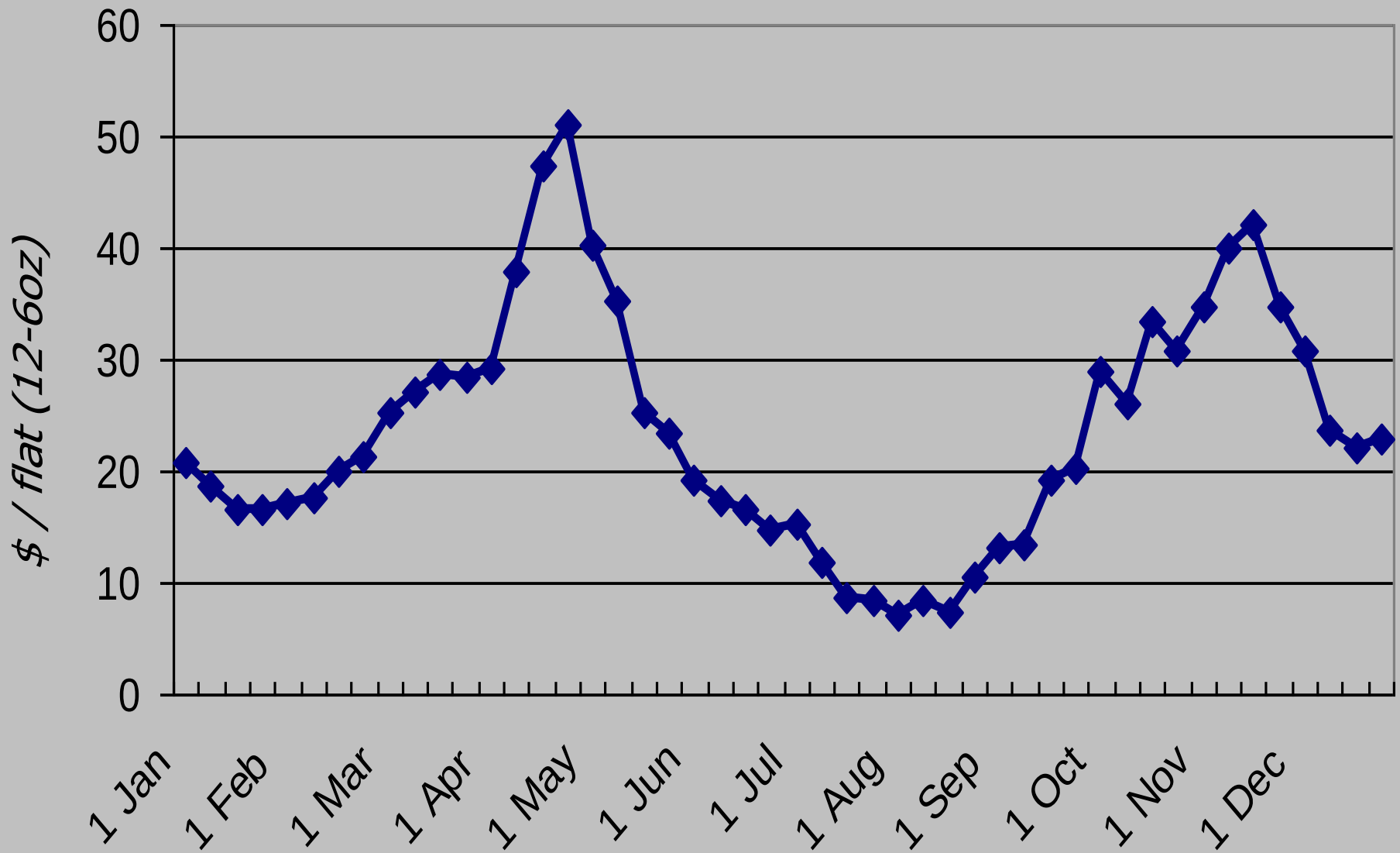
Overview

Off-season blueberry production and marketing

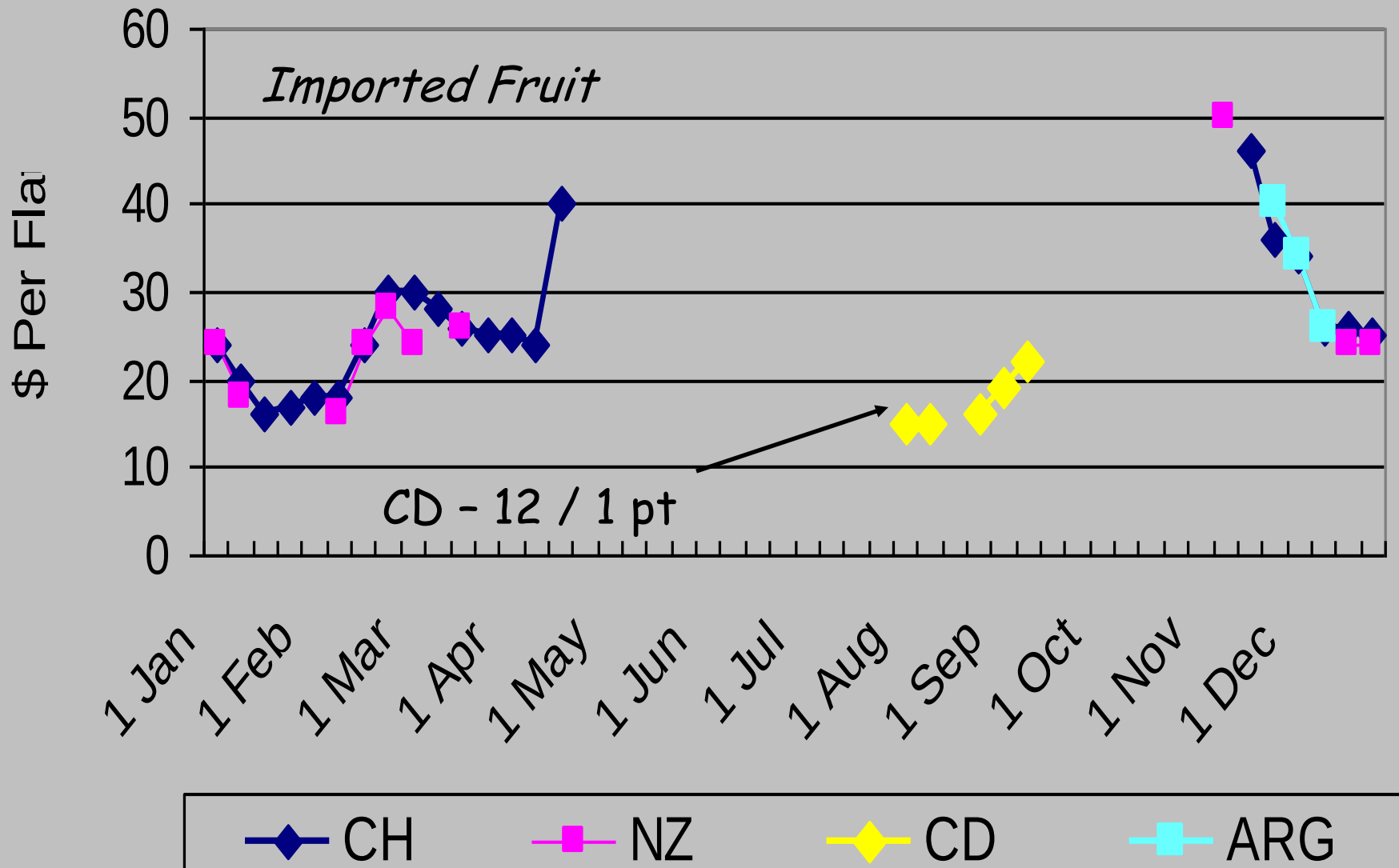
- ▶ *Market histories – price trends*
- ▶ *Sources by period - domestic vs import*
- ▶ *Target market window*
- ▶ *Characteristics and performance of SHB blueberry varieties*
- ▶ *Cultural practices*



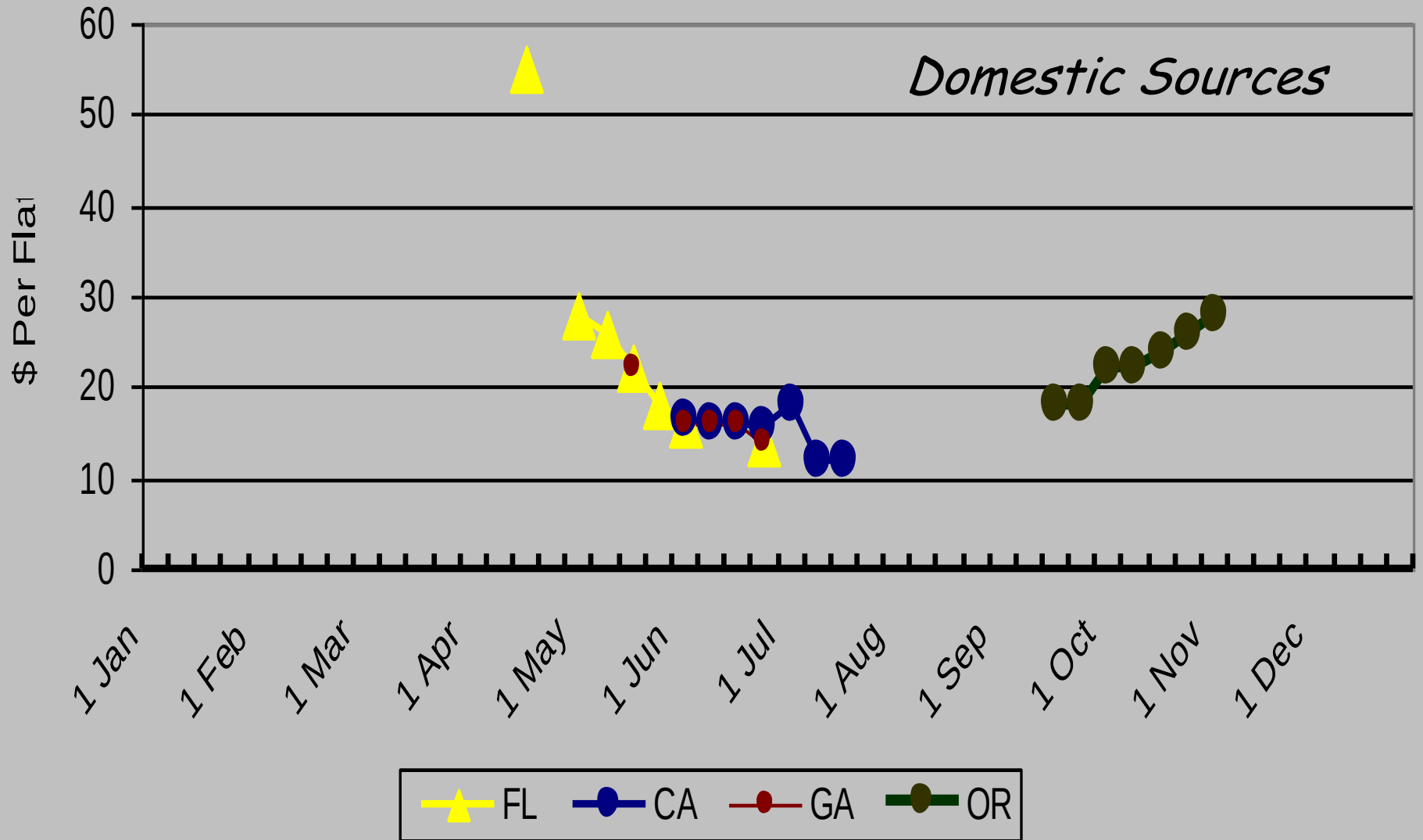
*3 Year Average Wholesale Fresh Blueberry Prices
L.A. Terminal Market 1998 - 2000*



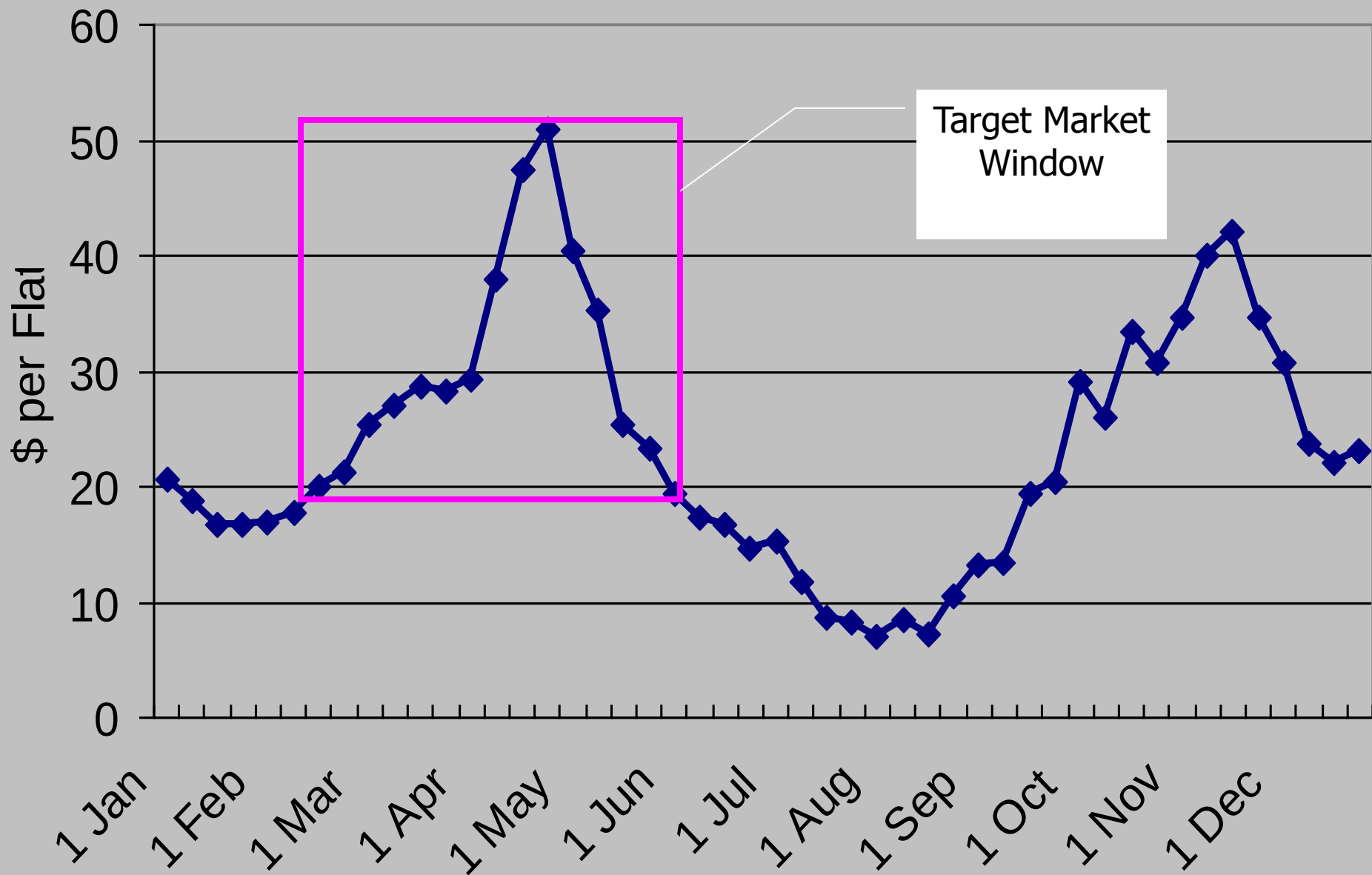
2000 Wholesale Fresh Blueberry Prices L.A. Terminal Market



2000 Wholesale Fresh Blueberry Prices L.A. Terminal Market



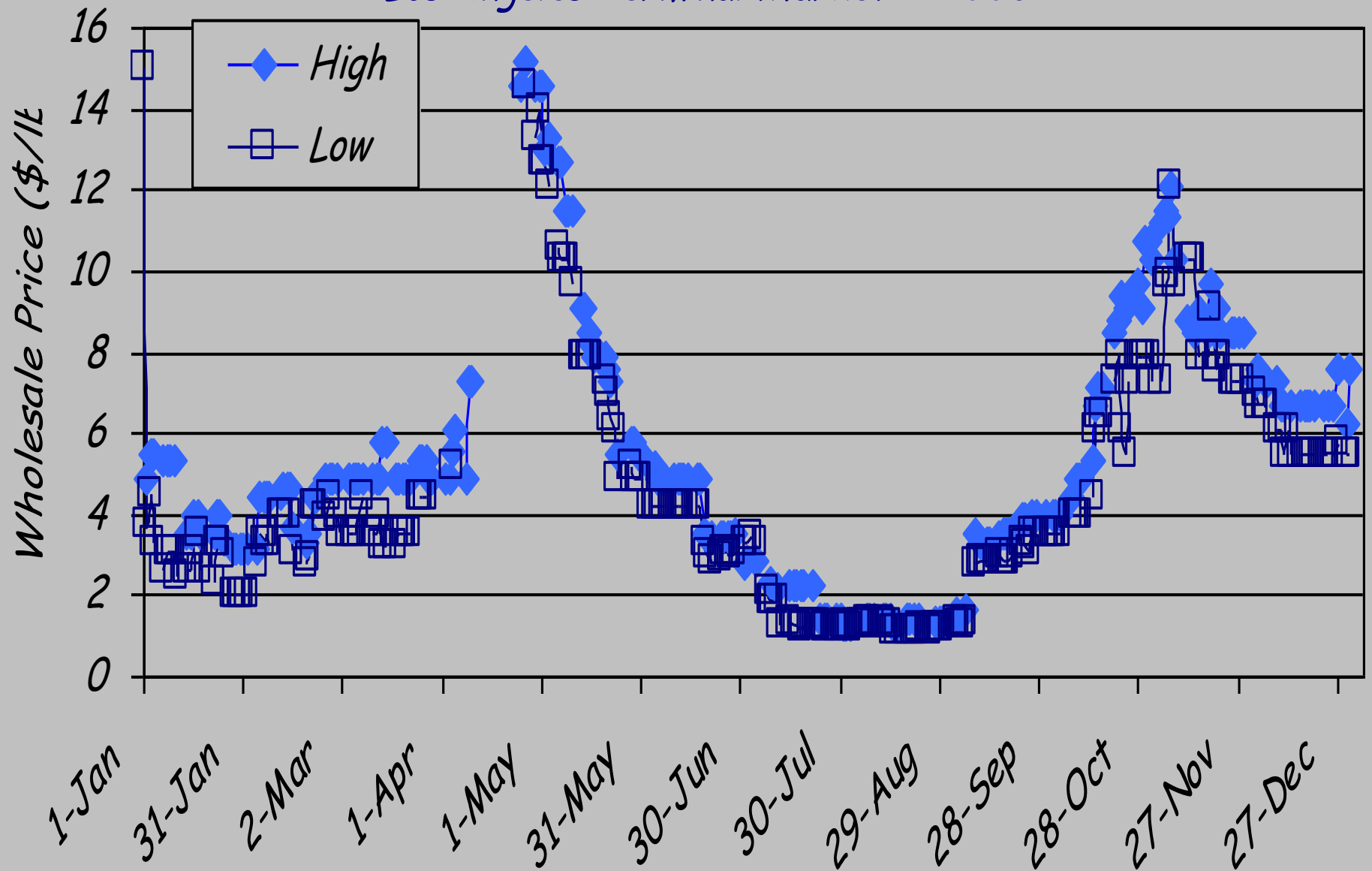
3 - year Average Wholesale Prices for Fresh Blueberries L.A. Terminal Market 1998 - 2000



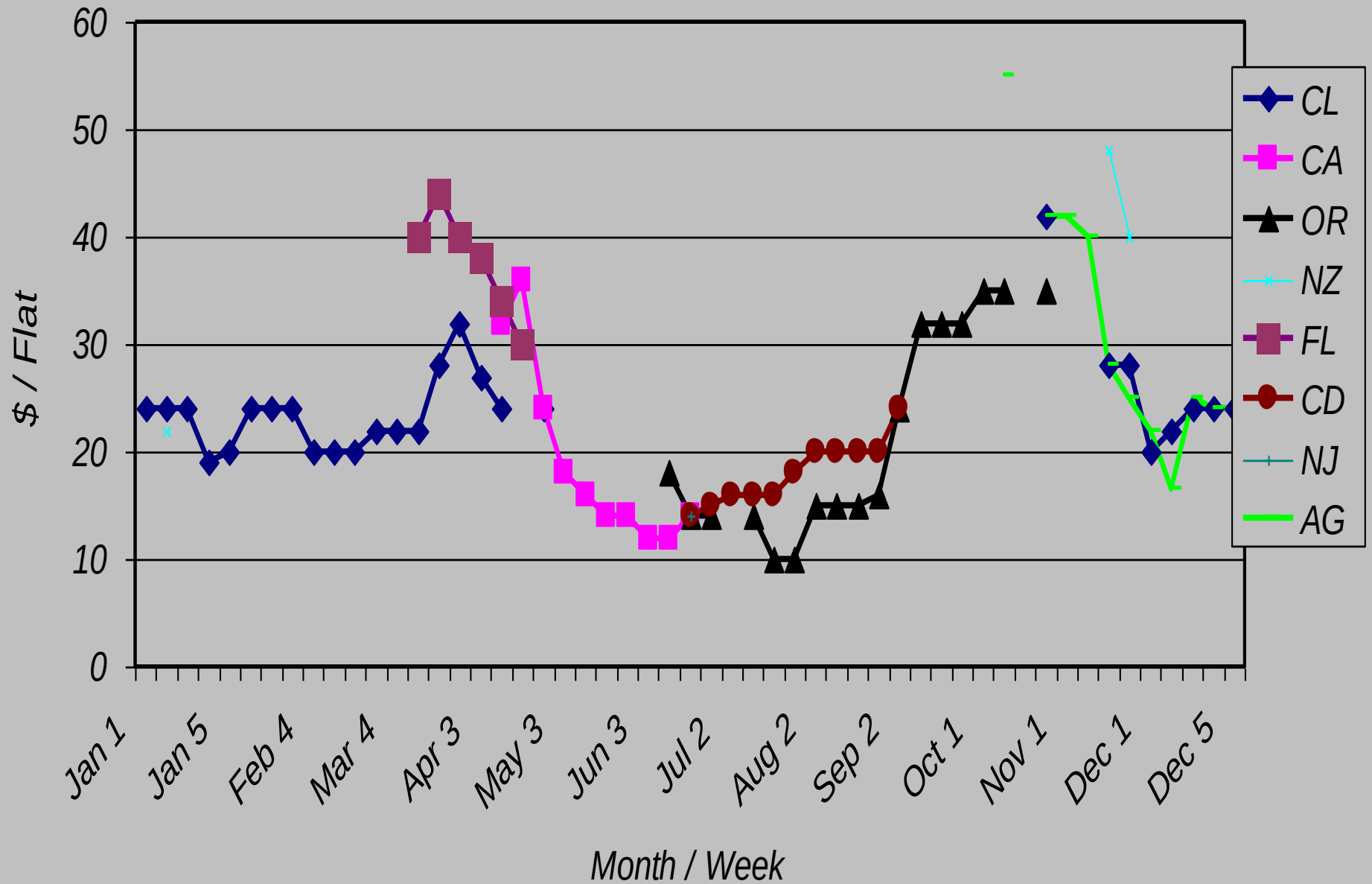


Fresh Blueberry Wholesale Prices

Los Angeles Terminal Market - 2003



Weekly Wholesale Fresh Blueberry Prices
Los Angeles Terminal Market - 2004



Overview - Blueberry Field Trials



Emphasis on off-season production

- ▶ *Overall yield*
- ▶ *Production to target market window*
 - *wholesale market – earliness is essential*
 - *direct sales – early valuable, extended?*
- ▶ *Cultural practices*
 - *acidification, spacing, protected cropping*
- ▶ *Other horticultural characteristics*
 - *size, flavor, plant vigor, shelf life*

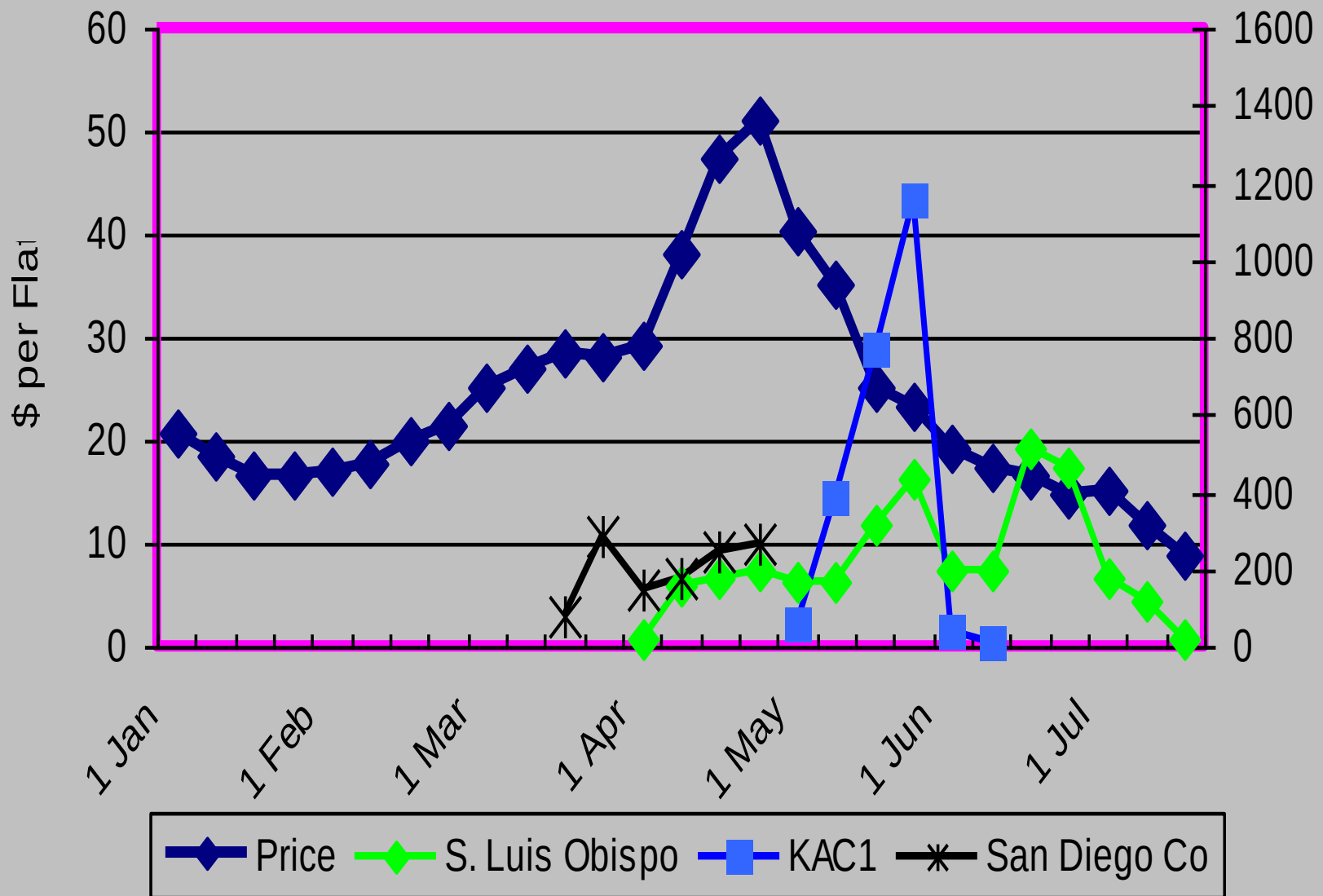
Southern High bush Blueberry Cultivars Evaluated in Coastal Field Trials 1997-2005

Sharpblue	Biloxi	Santa Fe
Southmoon	Sapphire	Southern Belle
Misty	Cooper	ONeal
Blue Crisp	Gulf Coast	Reveille
Marimba	Legacy	Georgia Gem
Millenia	Star	Cape Fear
Windsor	Duplin	Sunshine Blue
Jewell	Blue Ridge	Ozarkblue
Emerald	Bladen	Summit
Sampson	Pearl River	Jubilee

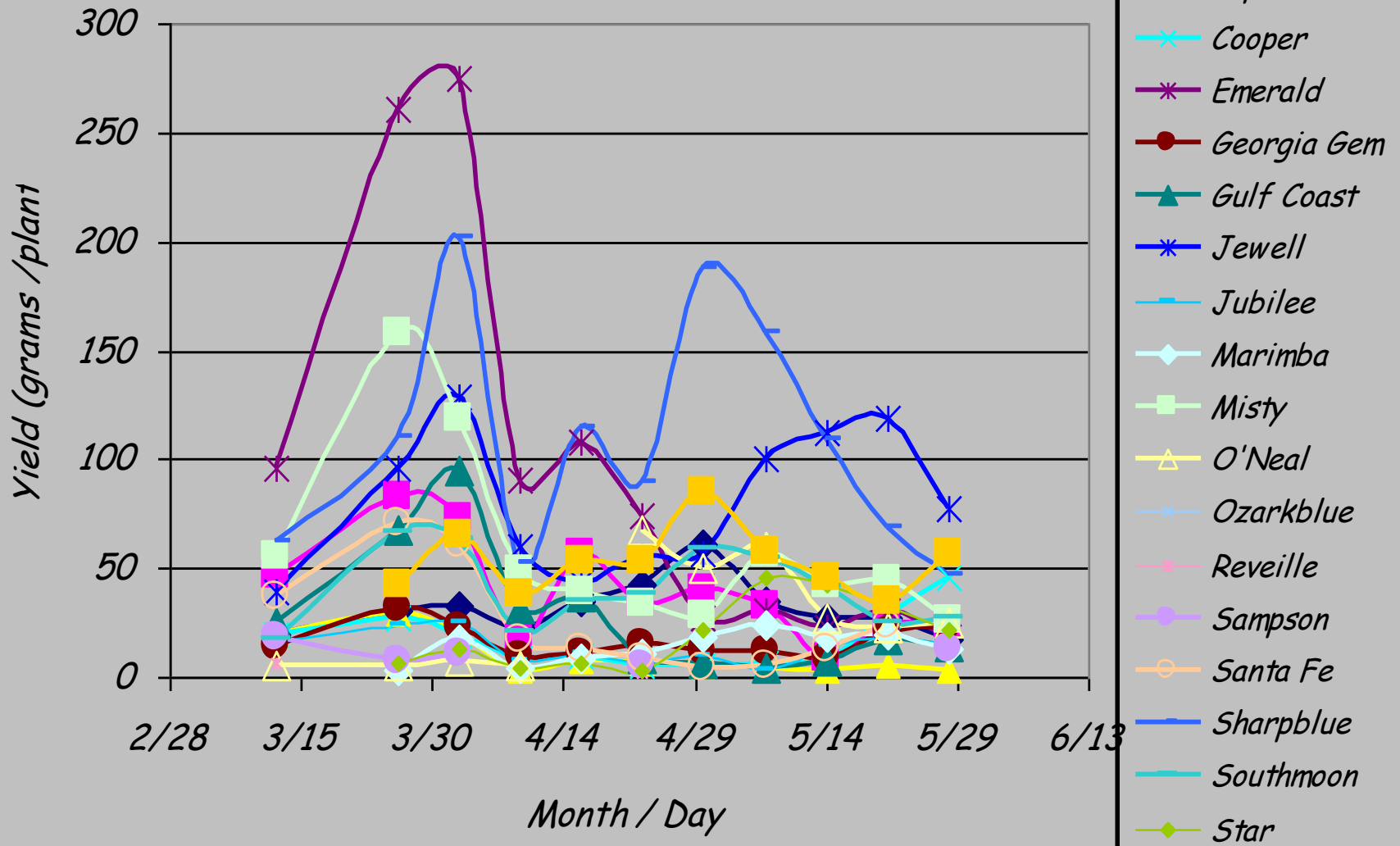
Southern Highbush Blueberry Ripening Periods - Florida

	4/12- 4/19	4/20-27	4/28-5/4	5/5-12	5/13-19	5/20-27	5/28- 6/3
Jewell	XXXX	XXXXXXXXXXXXXXXXXXXX					
Sapphire	XXX	XXXXXXXXXXXXXXXXXXXX					
Star	XXX	XXXXXXXXXXXXXXXXXXXX					
Santa Fe	XXX	XXXXXXXXXXXXXXXXXXXX					
Gulf Coast	XXX	XXXXXXXXXXXXXXXXXXXX					
Emerald		XXXXXXXXXXXXXXXXXXXX					
Sharpblue		XXXXXXXXXXXXXXXXXXXX					
Jubilee			XXXXXXXXXXXXXXXXXXXX				
Blue Crisp			XXXXXXXXXXXXXXXXXXXX				
South Moon			XXXXXXXXXXXXXXXXXXXX				
Misty			XXXXXXXXXXXXXXXXXXXX				
ONeal			XXXXXXXXXXXXXXXXXXXX				
Marimba			XXXXXXXXXXXXXXXXXXXX				
Georgia Gem				XXXXXXXXXXXXXXXXXXXX			

California Fresh Blueberry Market Windows

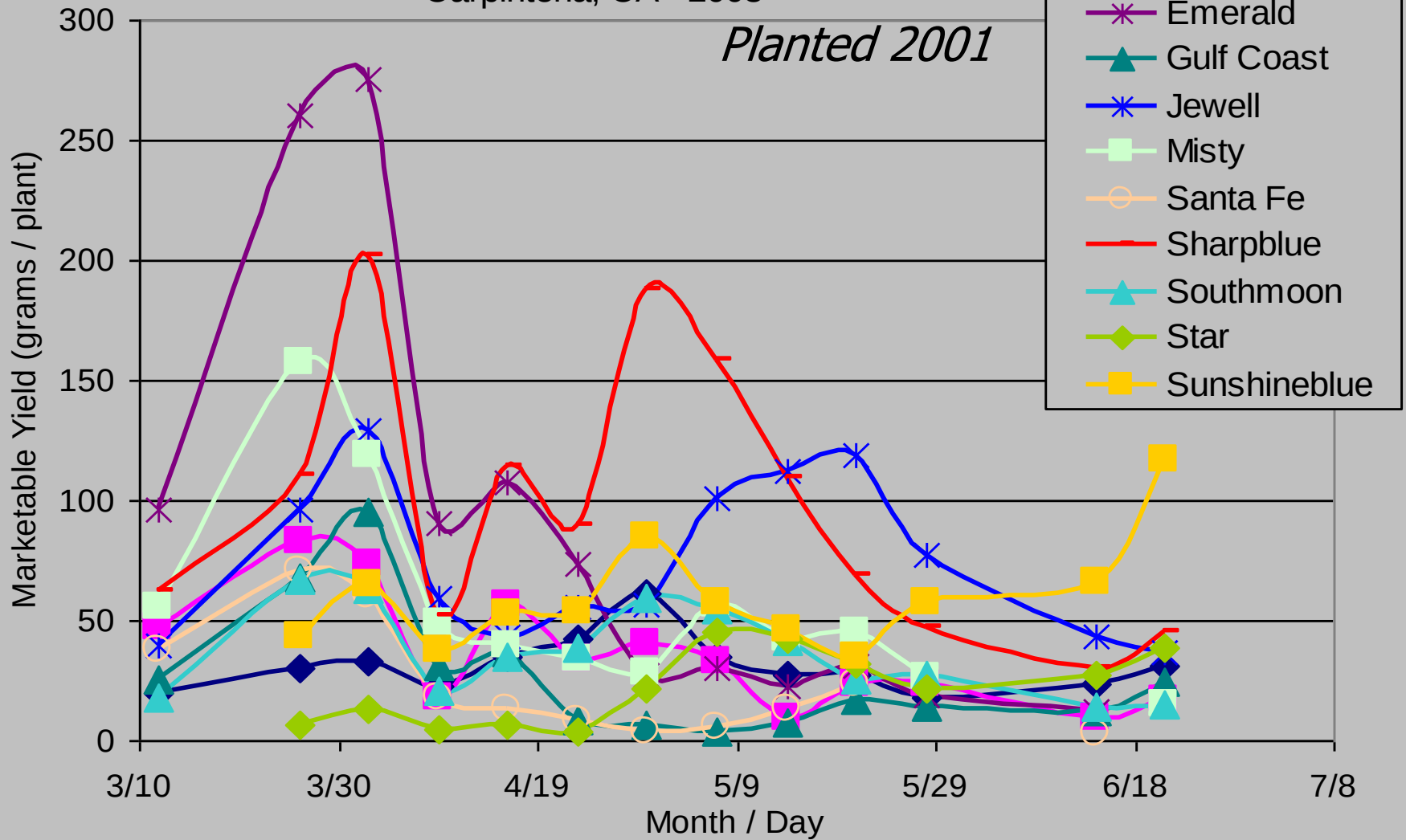


Weekly Fresh Blueberry Yield Carpinteria, CA - 2003 season

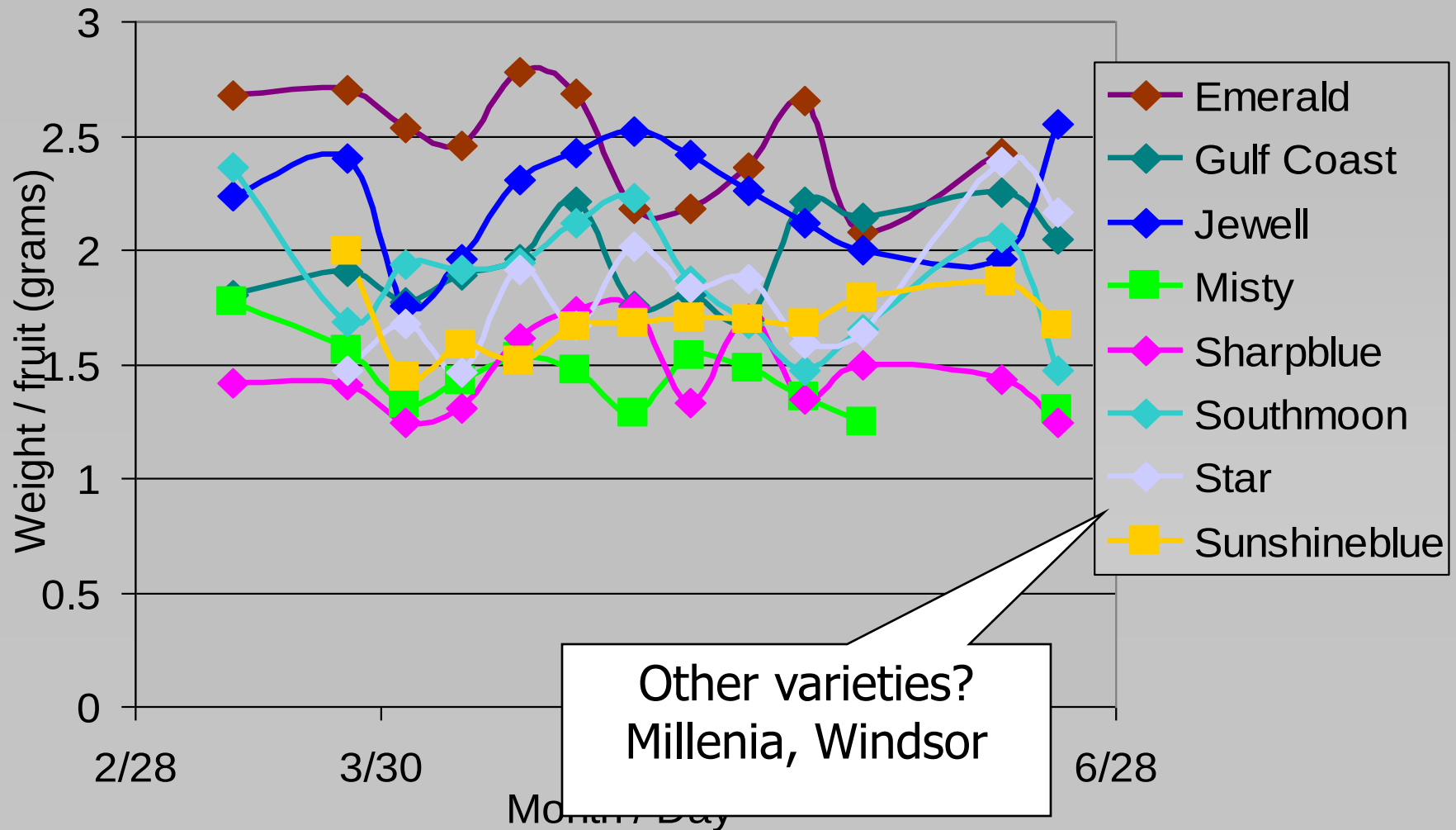


Weekly Yield of Selected SHB Blueberry Varieties
Carpinteria, CA - 2003

Planted 2001

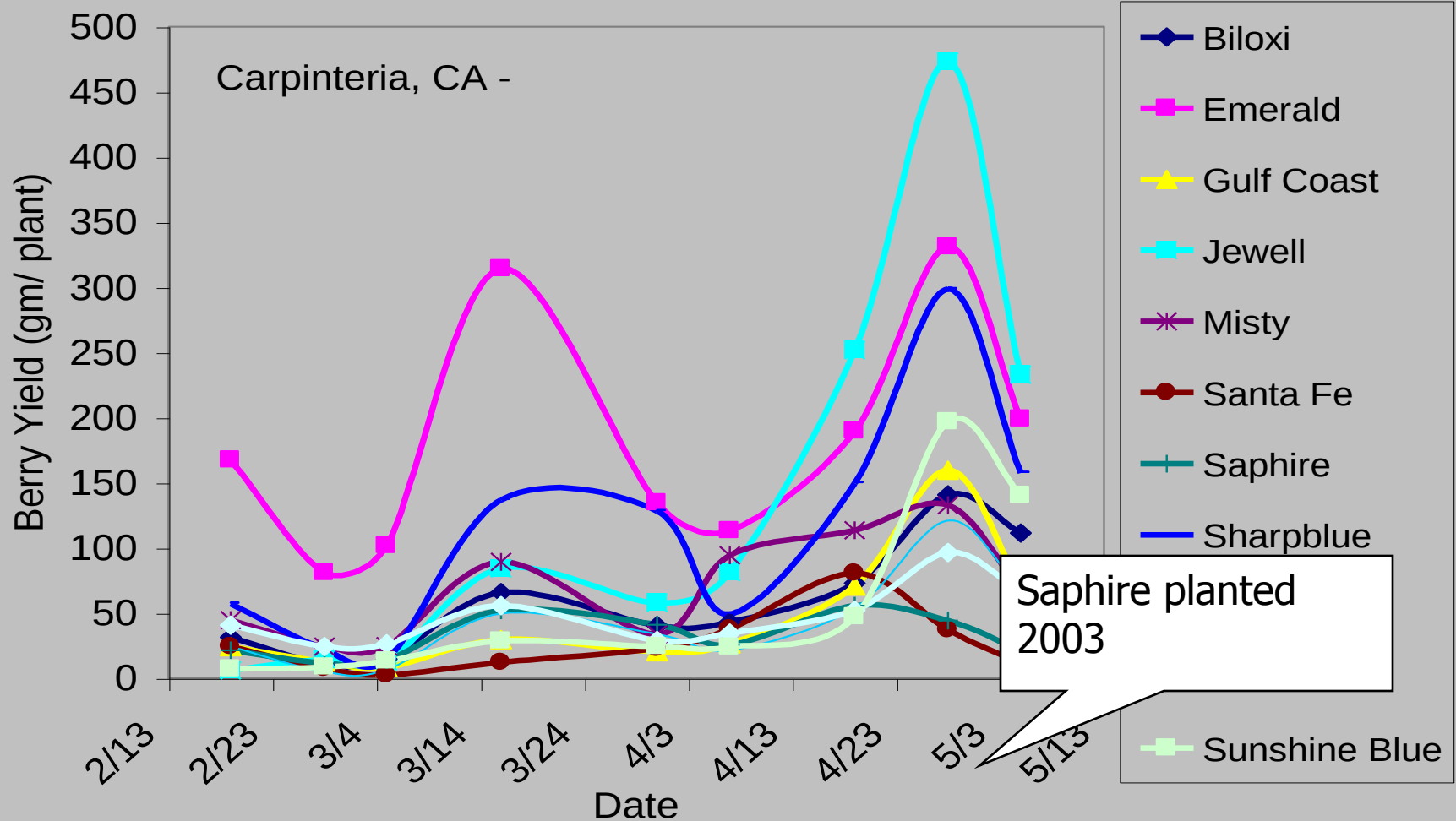


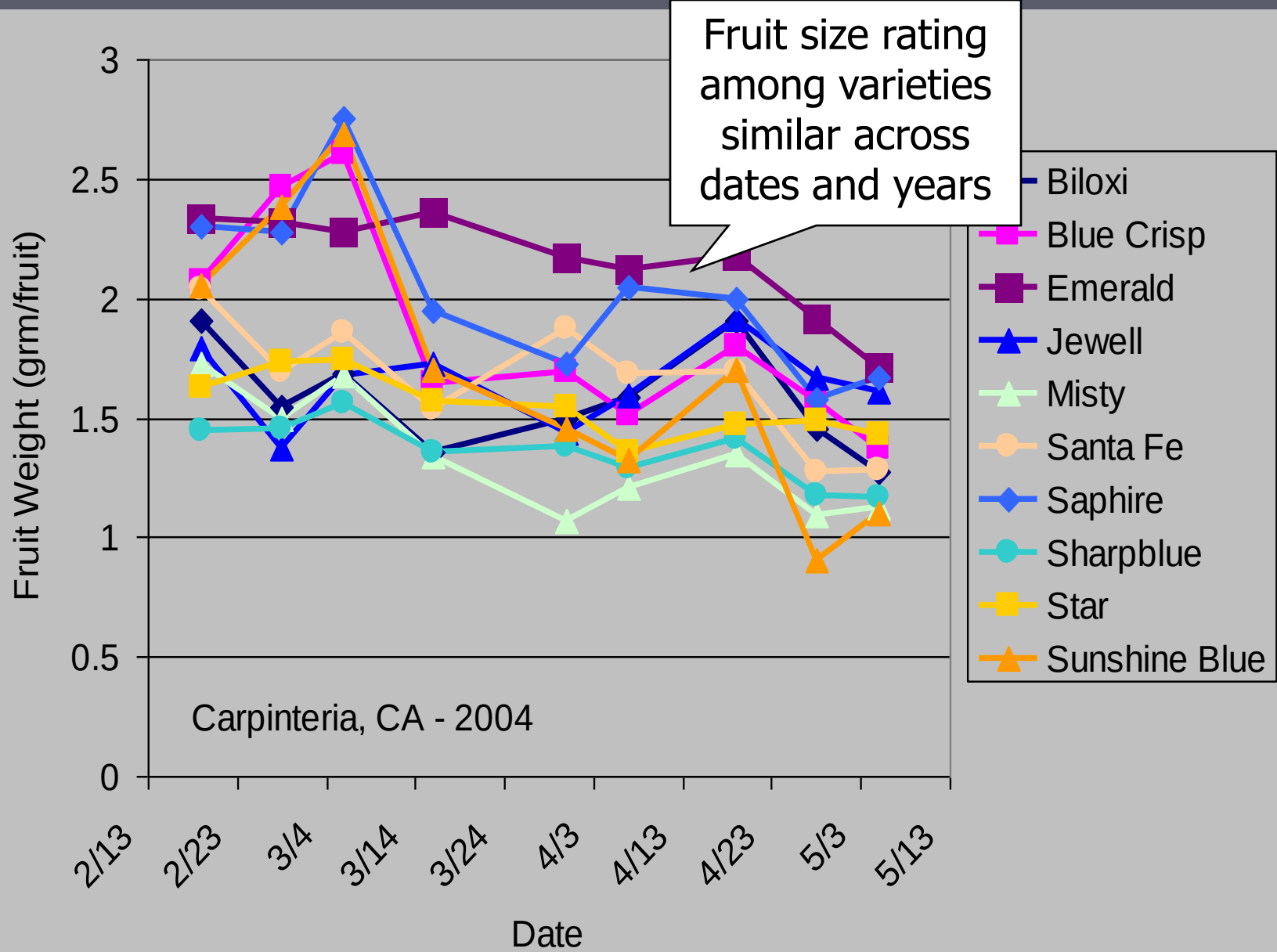
Weekly Fruit Size of Selected SHB Blueberry Varieties Carpinteria, CA - 2003 season



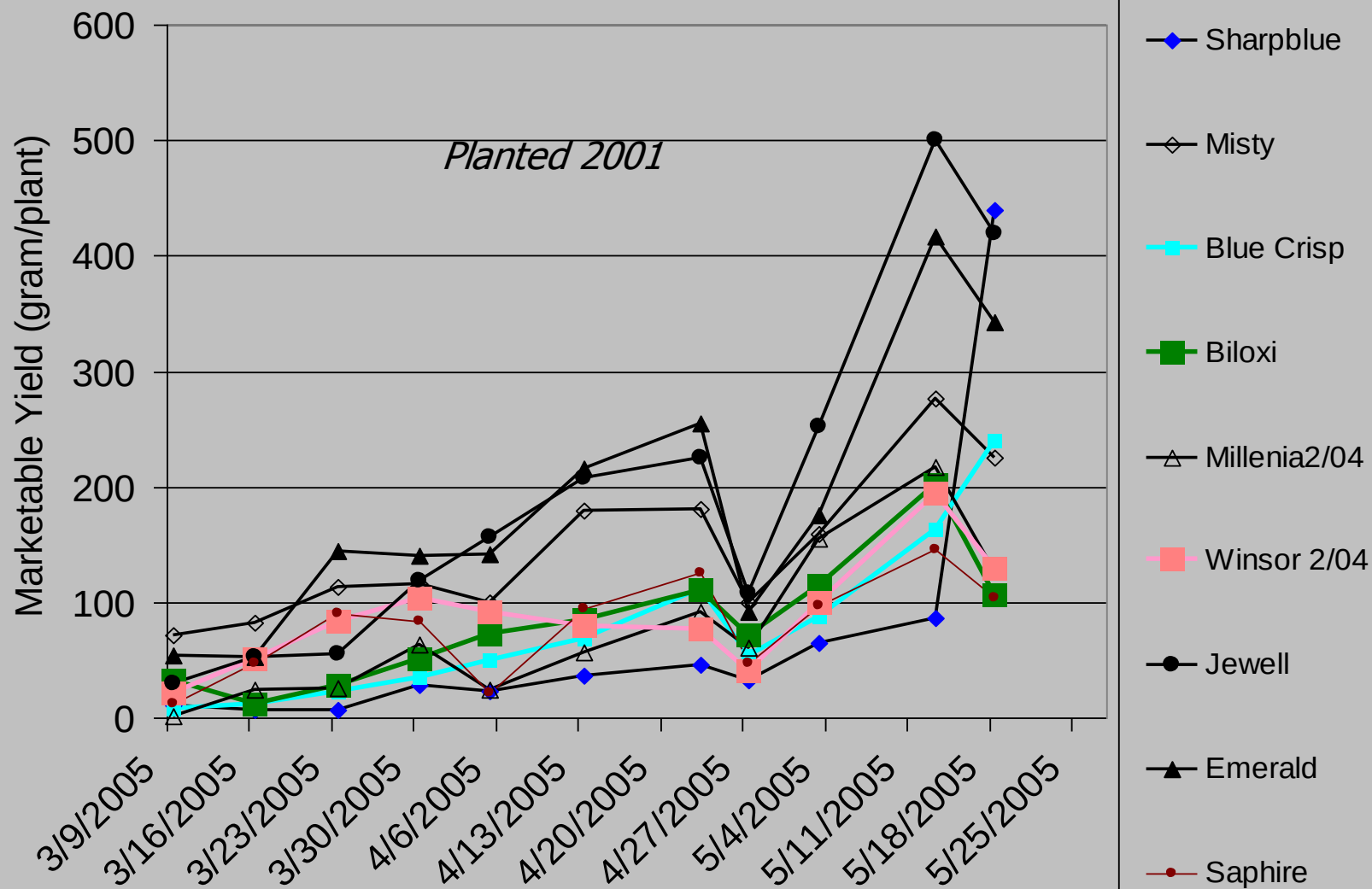
Other varieties?
Millenia, Windsor

Weekly Fresh Blueberry Yield Whitney Ranch - Carpinteria, CA 2004

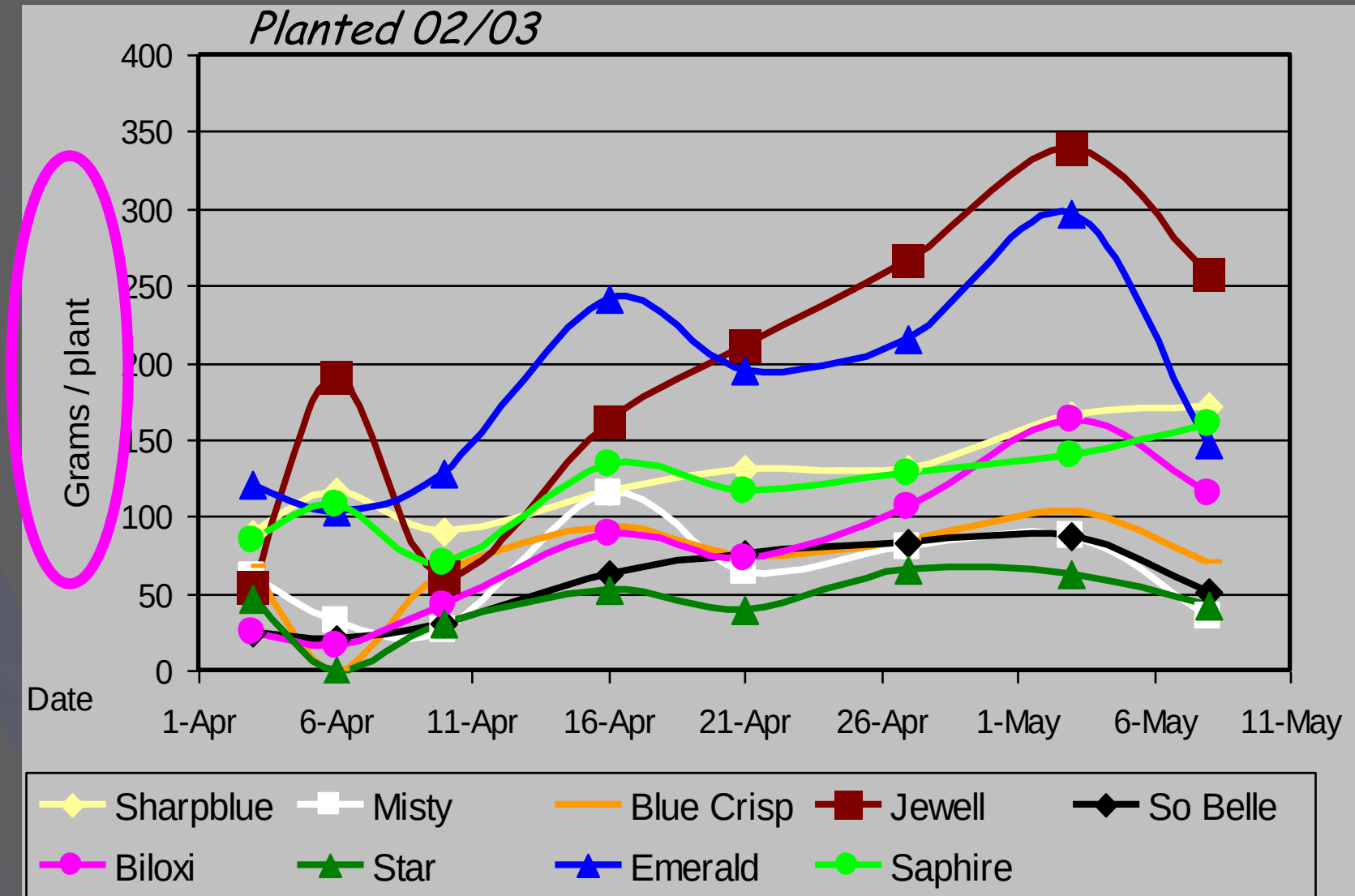




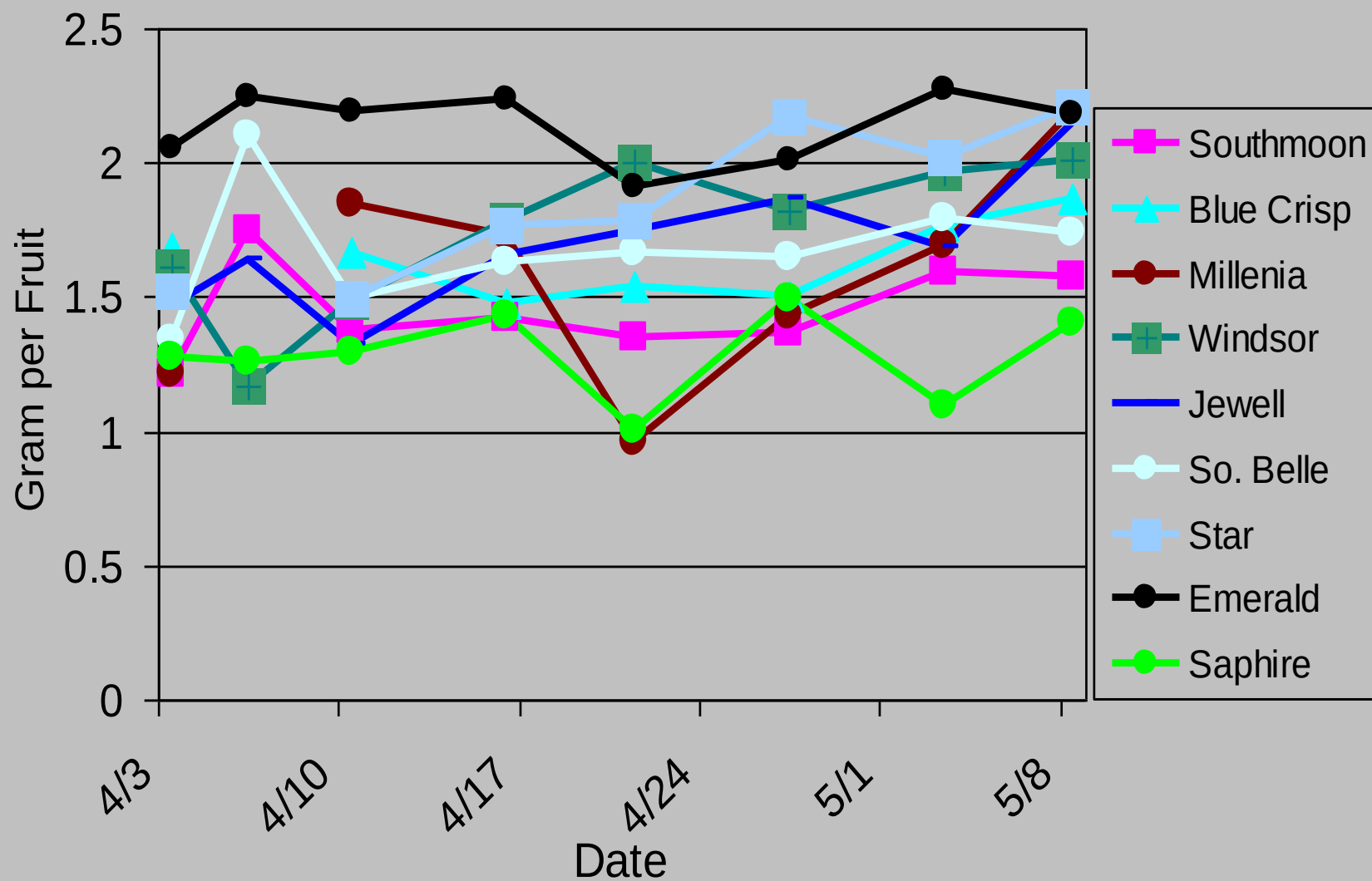
Weekly Fresh Blueberry Yield Carpinteria, CA - 2005



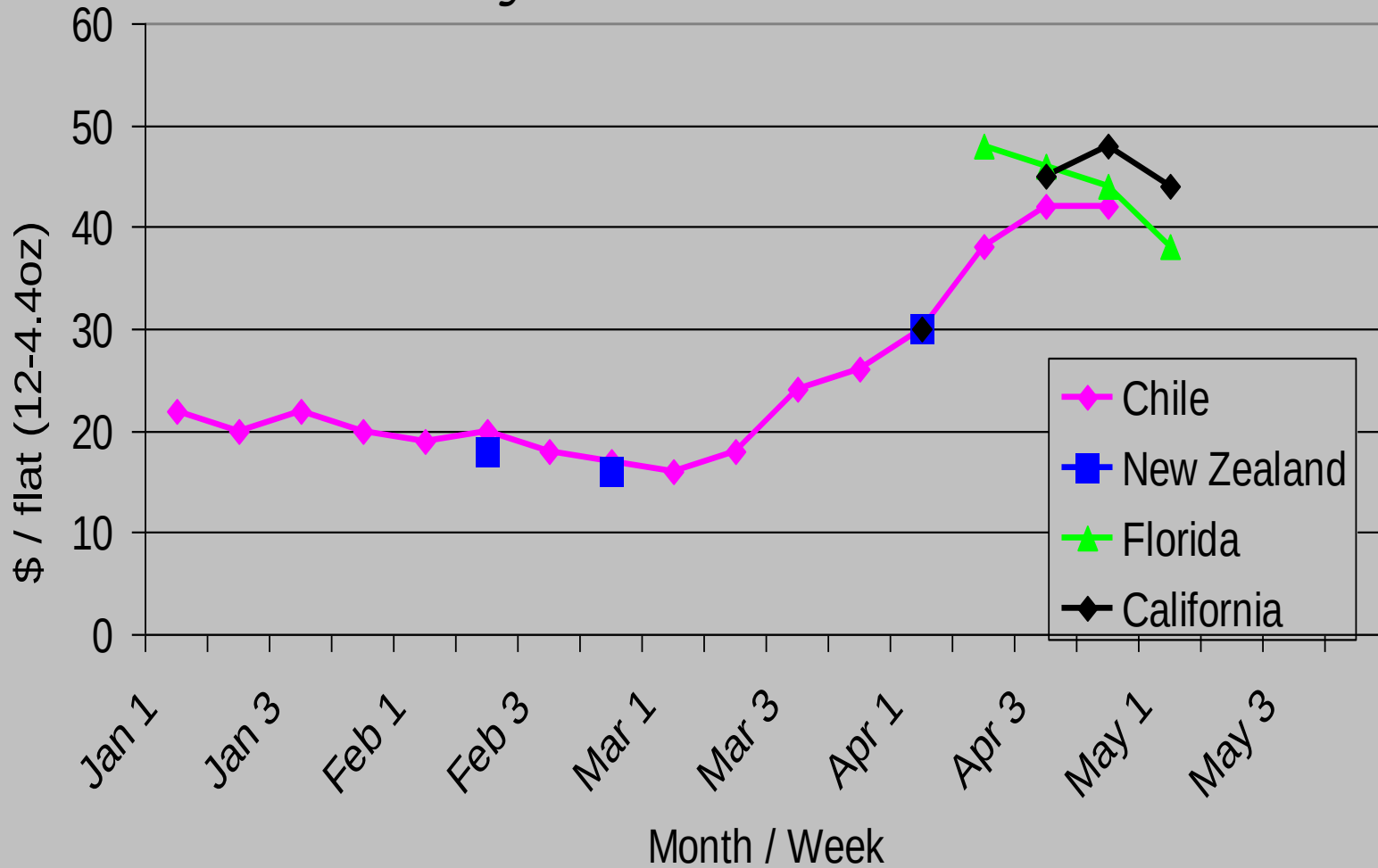
Weekly Yield of Selected Blueberry Cultivars - SLO 2005



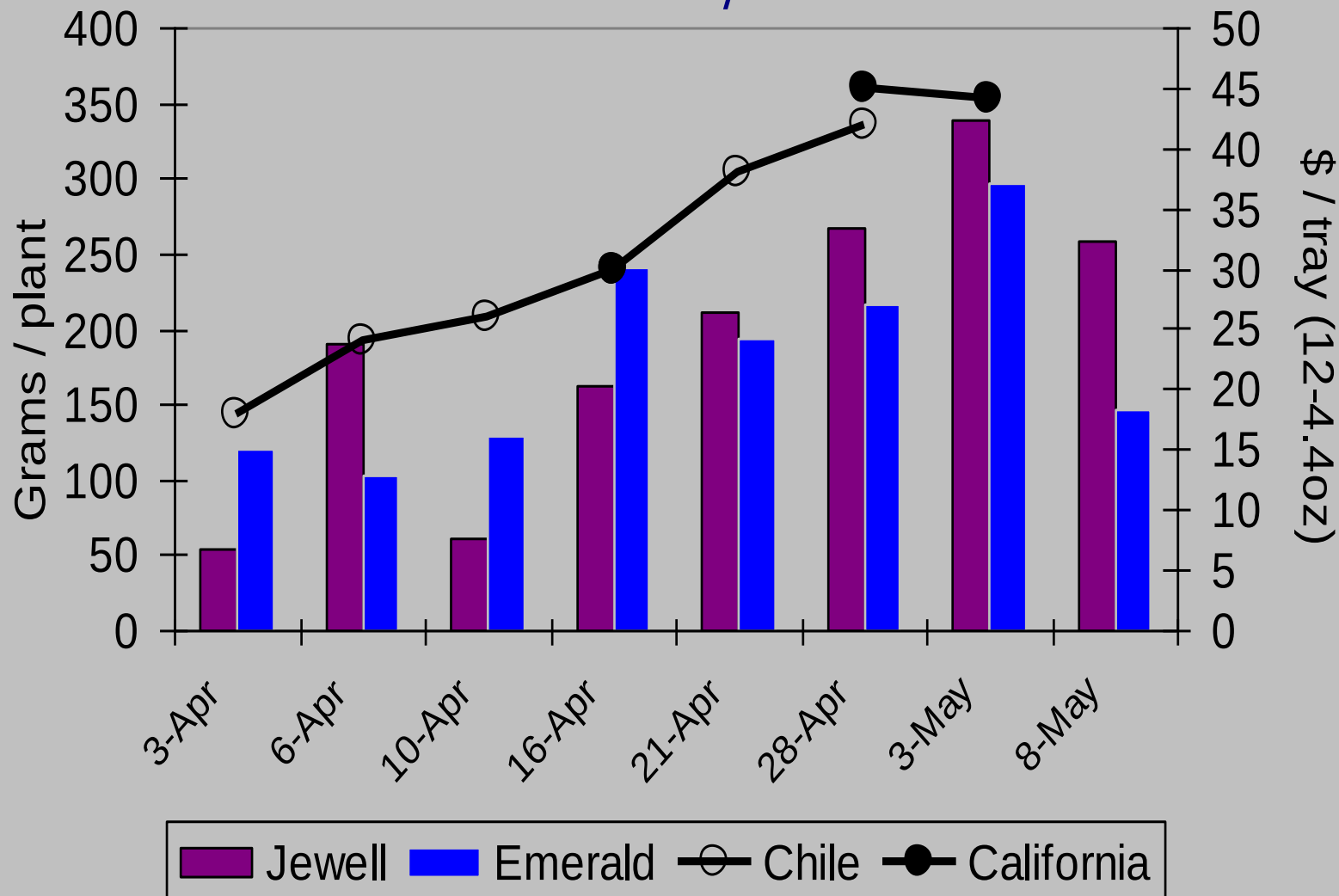
Weekly Average Fruit Weight Selected SHB Blueberries - SLO, 2005



*Weekly Wholesale Fresh Blueberry Prices
Los Angeles Terminal Market 2005*



Weekly Wholesale Price LA VS Weekly Yield San Luis Obispo - 2005



<i>Variety</i>	<i>San Luis Obispo</i>	<i>Carpinteria</i>	<i>Variety</i>	<i>San Luis Obispo</i>	<i>Carpinteria</i>
<i>Biloxi</i>	<i>NT</i>	<i>? promising</i>	<i>Millenia</i>	<i>?</i>	<i>?</i>
<i>Blue Crisp</i>	<i>?</i>	<i>promising</i>	<i>Misty</i>	<i>?</i>	<i>promising</i>
<i>Blue Ridge</i>	<i>Late, high chill</i>		<i>O'Neal</i>	<i>mid, low</i>	<i>?</i>
<i>Cape Fear</i>	<i>mid, average</i>		<i>Ozarkblue</i>	<i>late / high chill</i>	<i>Late, high chill</i>
<i>Cooper</i>	<i>late, high chill</i>	<i>late, high chill</i>	<i>Reveille</i>	<i>late, high chill</i>	<i>Late, high chil</i>
<i>Duplin</i>	<i>late, high chill</i>	<i>late, high chill</i>	<i>Sampson</i>	<i>late, high chill</i>	<i>late, high chill</i>
<i>Emerald</i>	<i>Outstanding</i>	<i>Outstanding</i>	<i>Santa Fe</i>	<i>? low</i>	
<i>Georgia Gem</i>	<i>mid, low</i>	<i>mid, low</i>	<i>Sharpblue</i>	<i>Early, high</i>	<i>Early, high</i>
<i>Gulf Coast</i>	<i>mid, average</i>	<i>mid, average</i>	<i>Southmoon</i>	<i>promising</i>	<i>promising</i>
<i>Jewell</i>	<i>Outstanding</i>	<i>Outstanding</i>	<i>Star</i>	<i>Early, high</i>	<i>Early, high</i>
<i>Jubilee</i>		<i>? mid, low</i>	<i>Sunshine Blue</i>	<i>low ?</i>	<i>Promising</i>
<i>Magnolia</i>			<i>Wannabe</i>	<i>low ?</i>	
<i>Marimba</i>		<i>mid, low</i>	<i>Windsor</i>	<i>?</i>	

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Jewell	Blue Ridge	Ozarkblue
Emerald	Bladen	Summit
Sampson	Pearl River	Jubilee



Emerald



Star

Promising SHB blueberries for coastal California

- ▶ *Emerald*
- ▶ *Jewell*
- ▶ *Star*
- ▶ *Sharpblue ??*
- ▶ *Misty*
- ▶ *Millenia*
- ▶ *Windsor*
- ▶ *Others?*

pH Management

- ▶ *Generally < 5.0*
- ▶ *Total bicarbonates < 1.0 meq.?*
- ▶ *Sulfuric acid is fastest*
- ▶ *Finer the grind of S, the better*
- ▶ *Sphagnum peat moss critical for early establishment*



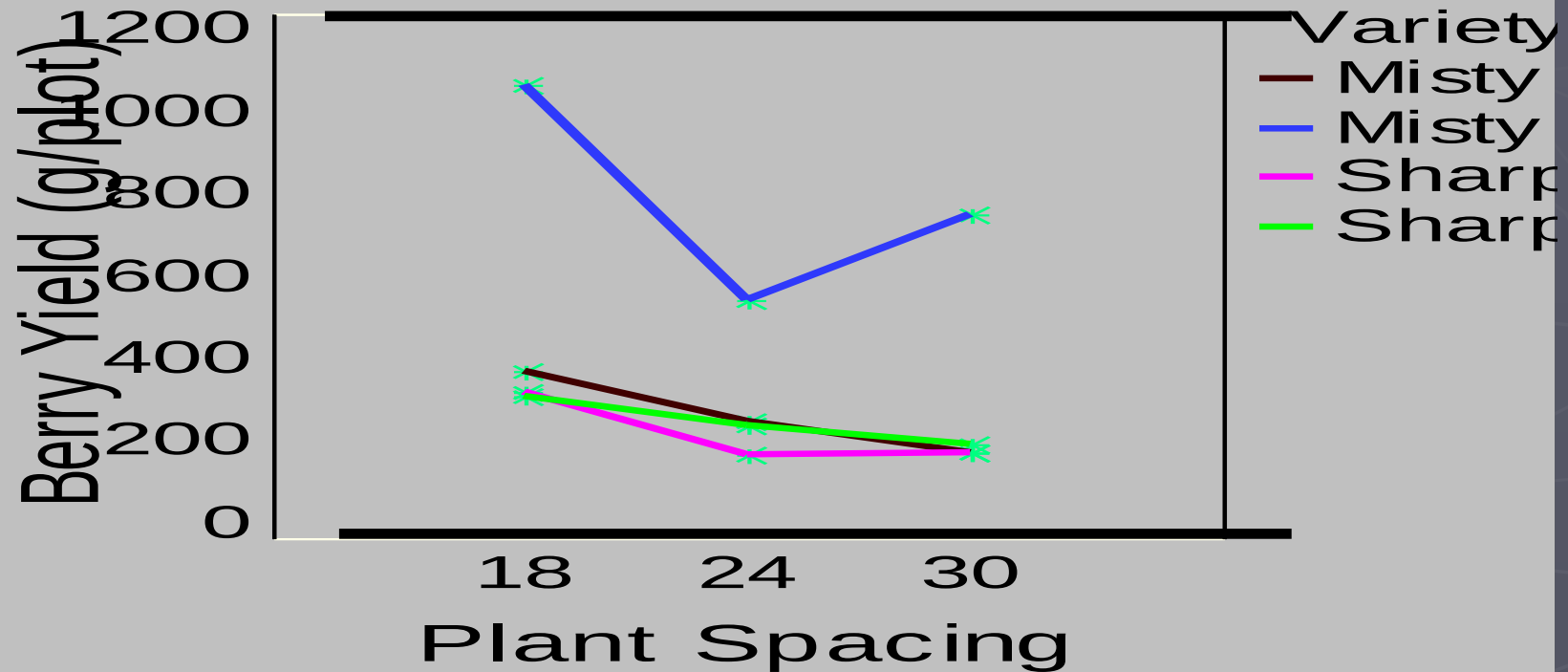
pH Management (cont'd)

- ▶ *Sulfuric acid or N-phuric injection*
- ▶ *Some fields producing well with pH mid 5.x ?
- as long as regular sulfuric acid or N phuric*
- ▶ *Role for iron chelate?*
- ▶ *Citric acid or acetic acid (vineger) for organic production + chelates*



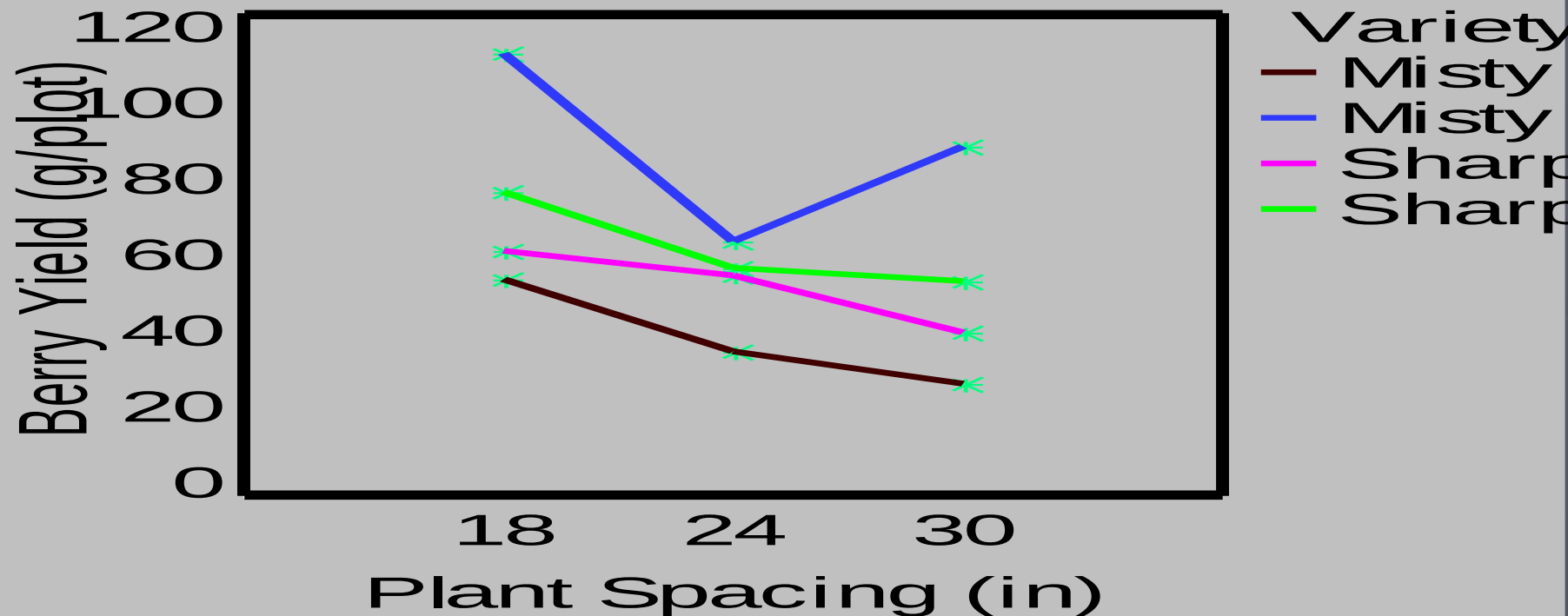
Plant Spacing Trials

April 16, 2004 Harvest

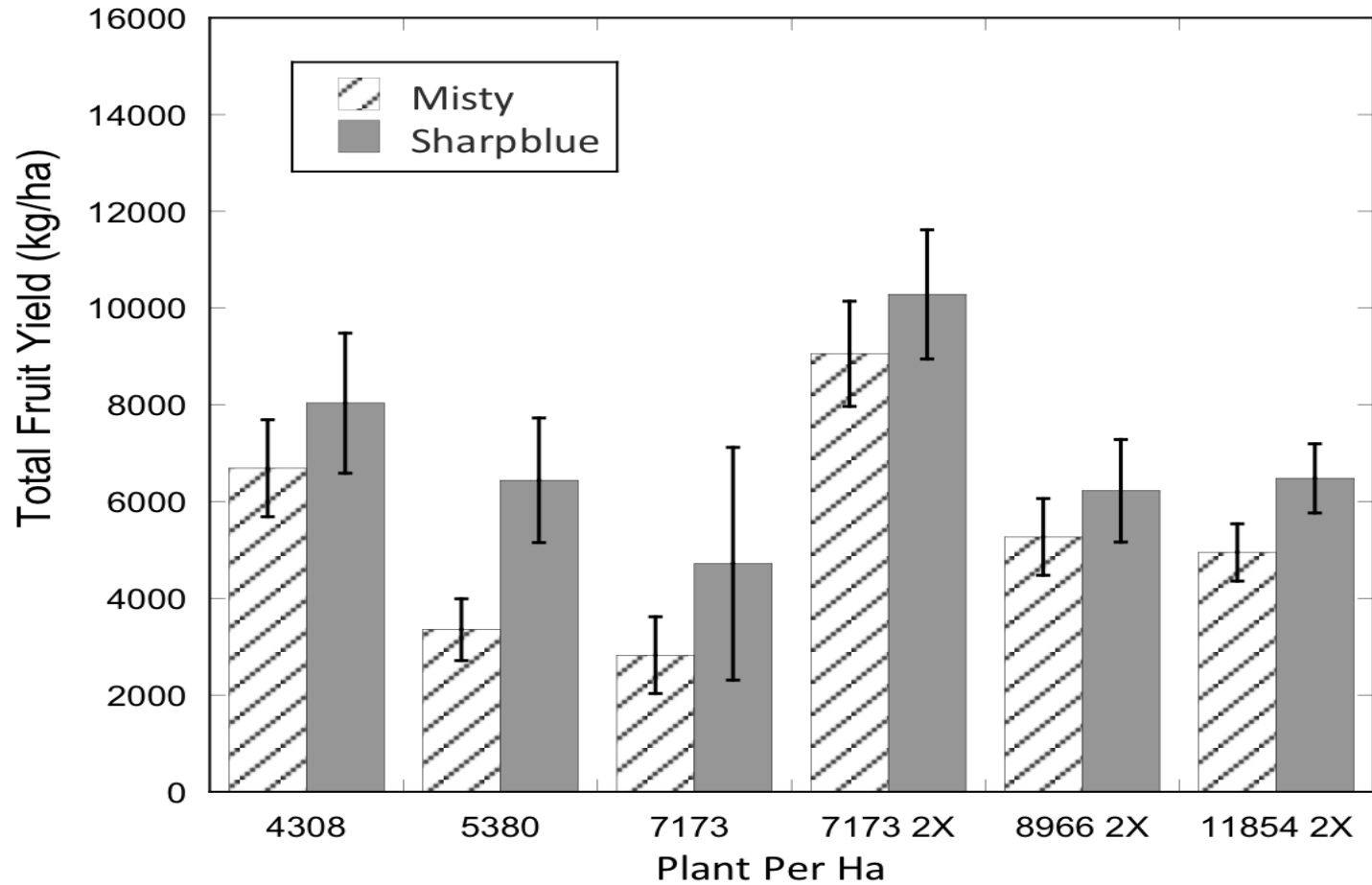


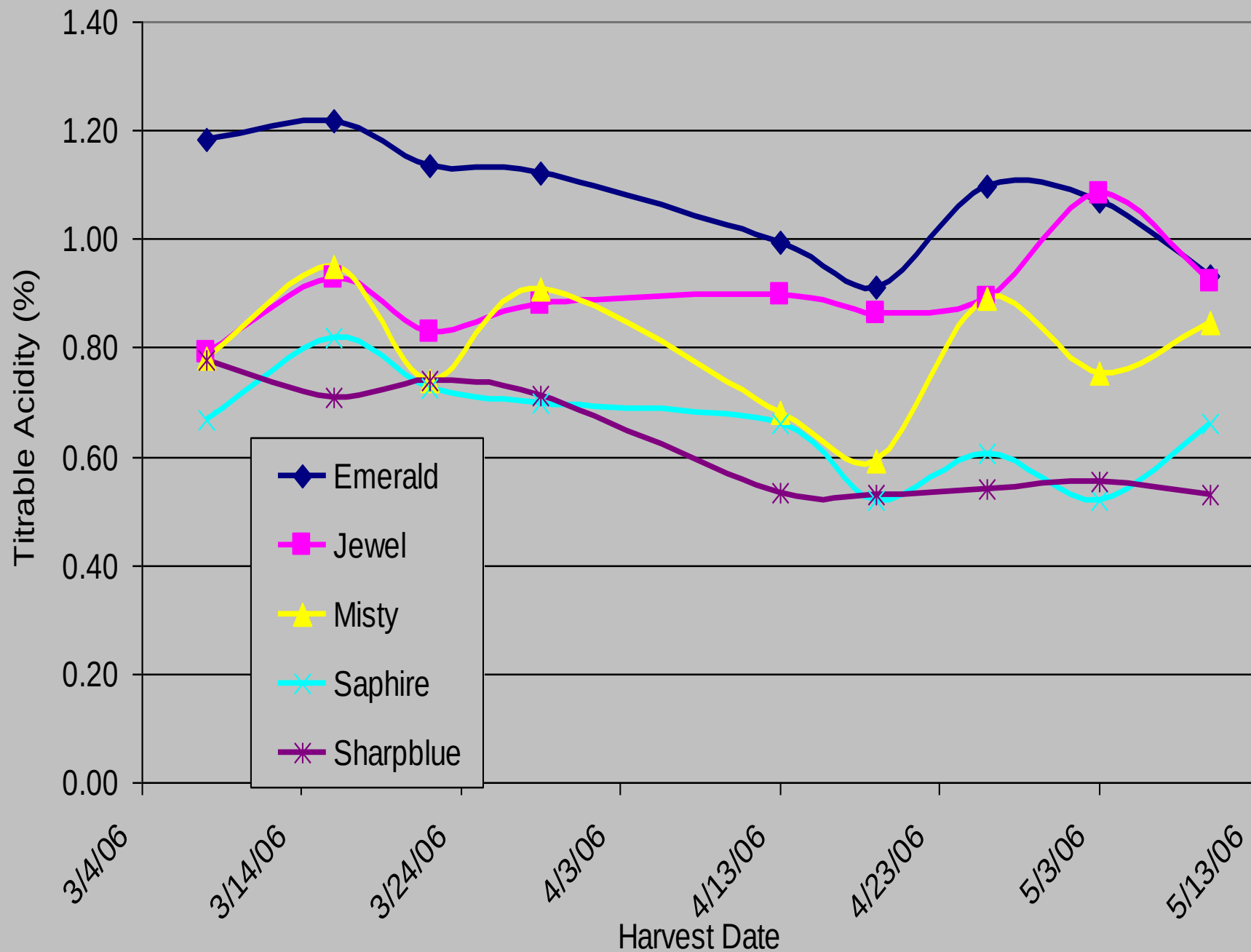
Plant Spacing Trials

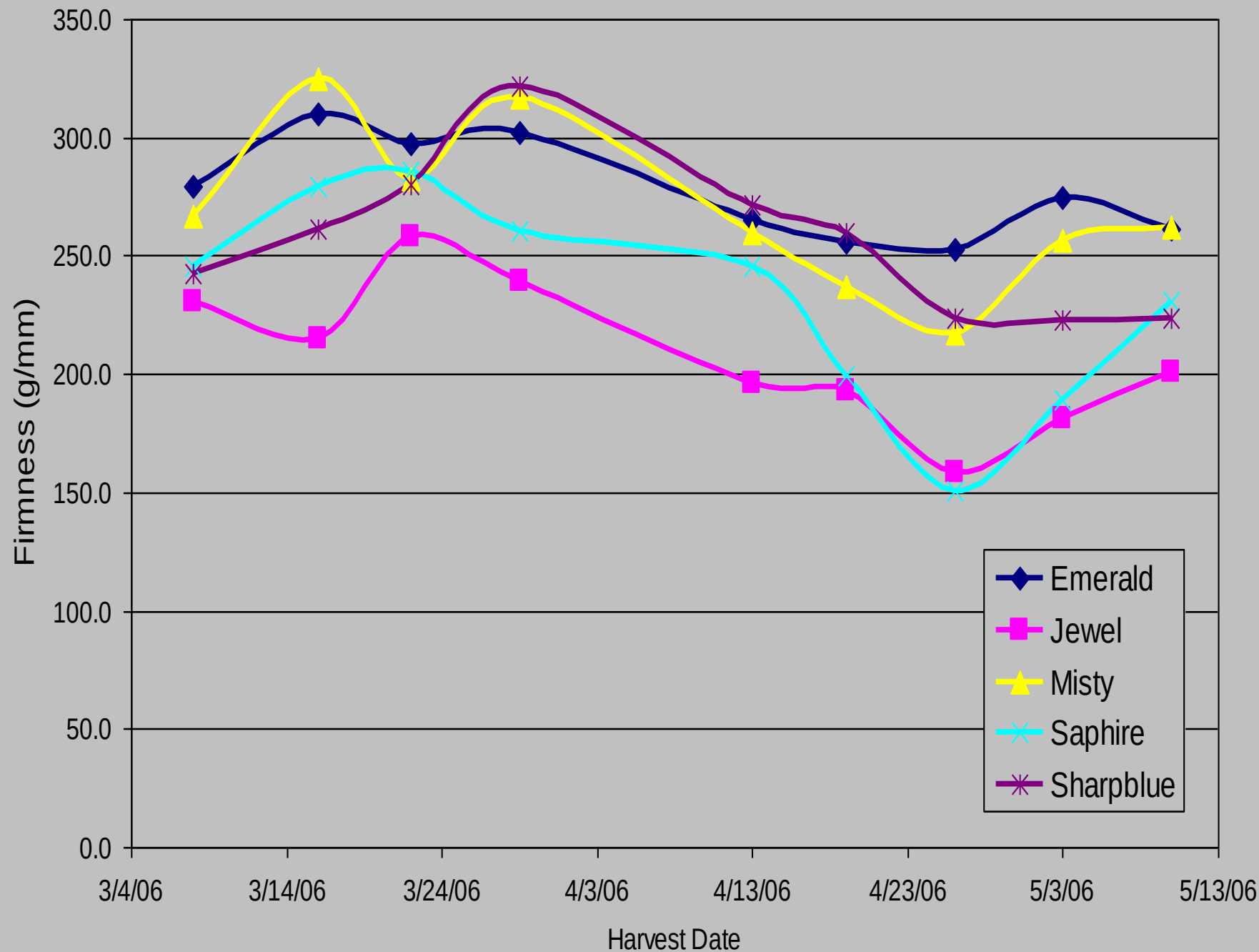
May 4, 2004 Harvest



Plant Spacing Trials







Costs of Production Studies

- ▶ *Costs studies now complete for conventional and organic blueberry production – coastal and southern California*
- ▶ *Available at coststudies.ucdavis.edu*





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