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

1998 – 2008

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Statewide Small Farm Program

University of California 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
2000 Wholesale Fresh Blueberry Prices
L.A. Terminal Market

Imported Fruit

$ Per Flat

CD - 12 / 1 pt
2000 Wholesale Fresh Blueberry Prices
L.A. Terminal Market

Domestic Sources

FL CA GA OR
3-year Average Wholesale Prices for Fresh Blueberries

$ per Flat

Target Market Window
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

<table>
<thead>
<tr>
<th>Sharpblue</th>
<th>Biloxi</th>
<th>Santa Fe</th>
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</thead>
<tbody>
<tr>
<td>Southmoon</td>
<td>Saphire</td>
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<td>Pearl River</td>
<td>Jubilee</td>
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California Fresh Blueberry Market Windows

The chart illustrates the pricing trends for California fresh blueberries, specifically highlighting different regions and market windows.

- **Price**: General market price trends over time.
- **S. Luis Obispo**: Pricing data for S. Luis Obispo region.
- **KAC1**: Specific pricing data for KAC1.
- **San Diego Co**: Pricing data for San Diego County.

The graph shows a peak in prices around May, with notable regional fluctuations. The data is plotted against time, from January to July, highlighting the seasonal variations in pricing.
Weekly Yield of Selected SHB Blueberry Varieties
Carpinteria, CA - 2003

Planted 2001
Weekly Fruit Size of Selected SHB Blueberry Varieties
Carpinteria, CA - 2003 season

<table>
<thead>
<tr>
<th>Month / Day</th>
<th>Weight / fruit (grams)</th>
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<tbody>
<tr>
<td>2/28</td>
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<td>3/30</td>
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<tr>
<td>5/29</td>
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<td>6/28</td>
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Emerald
Gulf Coast
Jewell
Misty
Sharpblue
Southmoon
Star
Sunshineblue

Other varieties?
Millenia, Windsor
Weekly Fresh Blueberry Yield
Whitney Ranch - Carpinteria, CA 2004

Saphire planted 2003
Fruit size rating among varieties similar across dates and years.
Weekly Fresh Blueberry Yield
Carpinteria, CA - 2005

Marketable Yield (gram/plant) vs. Date

- Sharpblue
- Misty
- Blue Crisp
- Biloxi
- Millenia2/04
- Winsor 2/04
- Jewell
- Emerald
- Saphire

Planted 2001
Weekly Yield of Selected Blueberry Cultivars - SLO 2005

Planted 02/03

Date
1-Apr 6-Apr 11-Apr 16-Apr 21-Apr 26-Apr 1-May 6-May 11-May

Grams / plant
0 50 100 150 200 250 300 350 400

Sharpblue Misty Blue Crisp Jewell So Belle Biloxi Star Emerald Saphire

Legend:
- Yellow: Sharpblue
- White: Misty
- Orange: Blue Crisp
- Red: Jewell
- Black: So Belle
- Purple: Biloxi
- Green: Star
- Blue: Emerald
- Green: Saphire
Weekly Average Fruit Weight
Selected SHB Blueberries - SLO, 2005

Date
Southmoon
Blue Crisp
Millenia
Windsor
Jewell
So. Belle
Star
Emerald
Saphire
Gram per Fruit
Weekly Wholesale Fresh Blueberry Prices
Los Angeles Terminal Market 2005

Month / Week

$ / flat (12-4.4oz)

Chile
New Zealand
Florida
California
<table>
<thead>
<tr>
<th>Variety</th>
<th>San Luis Obispo</th>
<th>Carpinteria</th>
<th>Variety</th>
<th>San Luis Obispo</th>
<th>Carpinteria</th>
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<tr>
<td>Biloxi</td>
<td>NT</td>
<td>? promising</td>
<td>Millenia</td>
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<tr>
<td>Blue Crisp</td>
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<td>promising</td>
<td>Misty</td>
<td>?</td>
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<tr>
<td>Blue Ridge</td>
<td>Late, high chill</td>
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<td>O’Neal</td>
<td>mid, low</td>
<td>?</td>
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<tr>
<td>Cape Fear</td>
<td>mid, average</td>
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<td>Ozarkblue</td>
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<td>Cooper</td>
<td>late, high chill</td>
<td>late, high chill</td>
<td>Revelle</td>
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<tr>
<td>Emerald</td>
<td>Outstanding</td>
<td>Outstanding</td>
<td>Santa Fe</td>
<td>? low</td>
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<tr>
<td>Georgia Gem</td>
<td>mid, low</td>
<td>mid, low</td>
<td>Sharpblue</td>
<td>Early, high</td>
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<td>Magnolia</td>
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<td>Wannabe</td>
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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

Berry Yield (g/plot)

Variety / Rows
Misty 1X
Misty 2X
Sharp 1X
Sharp 2X

Plant Spacing

0 200 400 600 800 1000 1200
18 24 30

18 24 30
Plant Spacing

Variety
Misty
Sharp
Plant Spacing Trials

May 4, 2004 Harvest

Berry Yield (g/plot)

Variety / Rows
- Misty 1X
- Misty 2X
- Sharp 1X
- Sharp 2X

Plant Spacing (in)
Plant Spacing Trials

![Diagram showing total fruit yield (kg/ha) for different plant spacings and cultivars (Misty and Sharpblue). The graph indicates that higher plant densities (4308, 5380) result in lower yield compared to lower densities (7173, 7173 2X, 8966 2X, 11854 2X). The Misty cultivar consistently yields higher than the Sharpblue cultivar at all densities.](image)
Costs of Production Studies

Cost studies now complete for conventional and organic blueberry production – coastal and southern California

Available at coststudies.ucdavis.edu
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