

# eLearning: Pilot project for blueberry growers in BC

New growers are entering our industry every year from different cultures and backgrounds. It is evident that there is a lack of knowledge on BC blueberry production practices. The prior farming experience and knowledge may not apply to the current industry. We need to bridge this gap in an innovative and effective manner. This project aims to develop Multilanguage tools in different formats such as videos, printed material and multimedia. As a result of this pilot program, growers and industry stakeholders will be better informed, environmentally- aware, innovative and market-responsive to their industry.



Connect Learn Grow



# Connect Learn Grow

The Basics of Harvesting  
Blueberries

# Harvesting Blueberries



- Highbush blueberry plants generally reach full production within 6 to 10 years after planting, however, a partial crop may be harvested within 3 or 4 years.
- A well-managed mature blueberry plant can produce 6 to 10 pounds of fruit per year. Berries occur in cluster of 5 to 10.
- Each blueberry cultivar ripens berries over a 2 to 5 week period. Harvest begins late June with cultivars such as Duke, and may continue through mid September with Elliot, Aurora. Berries turn blue 3 to 4 days before attaining maximum sweetness and flavor.
- Blueberries must be picked several times during the harvest period. The harvest interval is usually 7 to 10 days. As the picking season progresses, the harvest interval should decrease. Late maturing varieties tends to require fewer pickings.

# Harvesting Blueberries



## Varieties

Table 1: Characteristics of some varieties planted in the Fraser Valley, BC

Variety	Season	Bush habit	Qualities: Fruit	Primary use
<b>Earliblue</b>	Early	Upright-moderately vigorous	Medium to large, light blue, small scarf	Fresh market- u-pick operations
<b>Duke</b>	Early	Stocky , upright and open	Light blue very firm, small scarf	Fresh or process markets
<b>Reka</b>	Early	Upright, very vigorous, open	Medium to large dark blue, firm and small scarf	Process May have “red back” if not fully ripe
<b>1613-A (Hardy blue)</b>	Mid	Upright, open	Medium size, medium firm, light blue	Process
<b>Draper</b>	Mid	Upright, vigorous	Light blue, crisp and sweet flavor	Process and fresh market
<b>Bluegold</b>	Mid	Compact, spreading	Sky blue, round, very firm, flavorful	Process and fresh
<b>Bluecrop</b>	Mid	Upright and open	Light blue, slightly tart. Firm	Process and fresh market
<b>Liberty</b>	Late	Upright, vigorous, slightly open	Light blue, very firm, good flavor	Process and fresh market
<b>Elliot</b>	Very late	Upright and vigorous	Medium size, light blue, firm, slightly tart flavor	Fresh market
<b>Aurora</b>	Very late	Vigorous, spreading and round	Medium blue, firm and tart	Fresh market

# Harvesting Blueberries



## Harvest options:

- Hand harvesting for fresh markets
- Machine harvesting for fresh and processed markets

Growers must consider in what portion of the market they grow and take a decision.

Table 2: Pros and cons of harvest options

Harvest options	Pros	Cons
Hand harvesting (HH)	<ul style="list-style-type: none"> <li>Ideal for fresh market</li> <li>More selective</li> <li>Better quality</li> </ul>	<ul style="list-style-type: none"> <li>More expensive</li> <li>Time consuming</li> <li>Lower yield</li> </ul>
Machine harvesting (MH)	<ul style="list-style-type: none"> <li>Less expensive</li> <li>Fast</li> <li>Higher yield</li> </ul>	<ul style="list-style-type: none"> <li>-Potential of berry bruising</li> <li>-Ground losses, berries missed by the catching pans</li> <li>-Yield losses if excessive green berry detachment occurred</li> <li>-Regular adjustment/calibration</li> <li>-Field must be designed specifically for M.H from the beginning.</li> </ul>
Concentrated ripening		

# Harvesting Blueberries



The practice of machine harvesting fruit is increasing due to the rapid expansion of blueberry acreage and production, and the loss of reliable work force . Commercial over-the-row blueberry mechanical harvesters improve labor productivity, while cutting the harvest cost.

Some growers prefer hand harvest for the first two pickings to avoid green berries collected by MH that can ripen into marketable fruit.

Most of the growers in the Lower mainland currently used mechanical harvesters for the processing market. However, the blueberry industry will expand the use of over-the row mechanical harvesters for picking blueberries for fresh market with the right varieties and careful operation, machine picked fruit can be sold for fresh markets.

Varieties suitable for machine harvest must have some of these attributes:

- Concentrated ripening;
- Berries that release at ripe stage (not green);
- Firm berries; and
- Berries with thicker skin

# Harvesting Blueberries

## Machine harvesters

Some models of self propelled over the row machine harvesters used in blueberries

### Littau harvester

<http://www.littauhvester.com/>



### OXBO/Korvan harvester

<http://oxbocorp.com/Products/Berries/BlueberryHarvesters.aspx>



### BEI international

<http://www.beintl.com/>



**For more information visit the websites above**

# Harvesting Blueberries



## Machine harvesters

Some considerations for machine harvesters

- Inspect your machine regularly and make the necessary adjustments such as:
  - ✓ Beater frequency, beater spacing
  - ✓ Fan speed
  - ✓ Machine height
  - ✓ Slope of catch plates
  - ✓ Belt speeds, ground speed, etc.
- Harvest during cool periods of the day
- Minimize distance of drop from harvester to field containers
- Do not fill field containers to a maximum
- Minimize the drop from the inspection belt to the shipping container
- Maintain machine clean and serviced at the end of each day (greasing, disinfecting, checking oil, cup belt lubricants, etc.)
- Train your workers (driving-worker safety-food safety)



# Harvesting Blueberries



## Hand harvesting

### Manual harvest considerations

- Ripe berries should be rolled from the cluster into the palm of the hand with the thumb.
- Proper instruction and careful supervision of the picking crew is essential to the success of any harvesting operation.
- Have a responsible person supervise hand pickers at all times.
- Clean and sanitize totes daily. Harvest containers used repeatedly during harvest should be cleaned after each load is delivered.
- Cool berries quickly. Blueberries should never be allowed to remain in the sun because the dark berries absorb heat readily, which may cause spoilage during storage.
- Teach workers about proper hand washing. All workers should be reminded that they should wash their hands properly before handling blueberries

**Hand harvesting of blueberries maintains the highest quality and minimizes fruit damage, but proper Food Safety practices are crucial.**

# Harvesting Blueberries



## Rules for Hand Pickers:

- Pickers should WASH their hands prior to handling any fruit product.
- Wash hands WHENEVER they come in contact with body fluids, including saliva and runny noses. Wash hands after smoking, snacking or eating.
- DO NOT pick fruit that has bird droppings on it.
- DO NOT harvest fruit that has fallen on the ground.
- DO NOT pick wet berries.
- Harvest only well-ripened fruit.
- Place hands under the clusters to avoid dropping the berries. 18
- Avoid overfilling your hands; do not squeeze or roll the blueberries.
- NO trash or culled blueberries into harvesting containers.
- NO smoking while harvesting.

*The quality of fruit reaching the market is dependent on the quality of the fruit harvested from the field, as well as how is handled during and after harvest.*

*The quality of blueberry cannot be improved following harvest; therefore it is important to harvest fruit when quality is optimum for handling and consumption.*



*Funding provided by:*





## **For more information**

-*The Basics of harvesting blueberries* (video) 2013, Episode 3.

May be viewed or downloaded from the web. Visit our website and look for the eLearning program: <http://www.bcblueberry.com/>

Copies of our publications and videos are also available in our office. Contact us by fax (604-864-2197); e mail: ([research@bcblueberry.com](mailto:research@bcblueberry.com)), or phone (604-864-2117)

-*Berry production guide*. BCAGRI. <http://productionguide.agrifoodbc.ca/guides/14>

Disclaimer:

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