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Lake Ontario Fruit Program

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Blueberry Harvest & Postharvest Handling 2012

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Blueberries are one of the toughest of the small fruit we harvest in the Northeast, so they are more forgiving in their handling. However, proper harvest and postharvest handling techniques will make for a higher quality product that has an extended storage and shelf-life. Since nearly all of the blueberry plantings in our region are harvested by hand for the fresh market, training pickers becomes extremely important. Prior to harvest, workers should undergo a Good Agricultural Practices (GAPs) training, in which they are instructed on proper hand-washing, personal hygiene, and subsequent harvest of produce with clean hands. They should only take breaks and eat lunch in designated area(s) outside the harvest area, and should not eat or smoke while in the field. Hand-washing is mandatory when returning to the fields to continue harvest. Only potable drinking water should be brought into the picking area. An operation that is strictly pick-your-own (PYO) should provide hand-washing facilities prior to entrance to the field. Signage should also be provided similar to the worker dos and don'ts above.

Workers should be instructed to only pick undamaged berries with good appearance, and harvested fruit should not be exposed to direct sunlight. Containers should be put in the shade and covered with a tarp prior to being transported out of the field to be cooled. Finger pressure can damage berries, so observe pickers and train them to pick berries carefully. Ripe berries should be rolled from the cluster into the palm of the hand with the thumb and not plucked off as is done with most other fruit. Do not pick the berries when they are wet. Pint containers are the traditional size for blueberries sold to consumers. Workers can pick directly into these or in to small picking buckets that are strapped over the shoulders. From here they are transferred into larger, more durable plastic field lugs. Lugs should not be overfilled, as this can cause bruising and poor cooling. In larger operations, field lugs are transported to be sorted at a facility by hand on a linear belt, in which immature fruit and stems and leaves/debris are plucked out. The clean, ripe fruit are then dropped by the belt into pint containers for sale.

As most blueberries produced in the Northeast are consumed quickly, these operations should harvest fruit as close to peak ripeness as possible. The theory here is that whether PYO or a small roadside stand or farm market, consumers will pick or buy the fruit, promptly refrigerate them, and consume them within 2-3 days. Thus storage life is not a serious consideration, so fruit should be harvested at or near peak ripeness and flavor. Cultivated highbush blueberry varieties do not ripen evenly in a cluster. As the season progresses, there is more even and simultaneous ripening. Allowing berries to become more fully ripe, by picking them 3-5 days after they turn blue, will allow for improved flavor and size. Unripe berries will turn blue after harvesting, but they will be smaller and have lower sugar content than bush-ripened fruit. How often harvest needs to occur is dependent on the variety, time of season, and weather. Early in the season, harvest may occur at 7-10 day intervals, but at peak it may be every 2-3 days.

If the operation plans on retailing the fruit to local or regional supermarkets, more care must be taken in harvest, postharvest handling, and stage of fruit at harvest. In this case, fruit may sit a while or suffer a break in the cold chain, reducing storage and shelf-life. Therefore, it is best to harvest fruit slightly under-ripe. These berries will be firmer and consequently hold up better in the long-term, with some sacrifice of flavor. 31-34°F is ideal. Pallets of fruit should be transported in refrigerated trucks leaving space for cold air movement along the walls, floor, and ceiling. If berries are covered with plastic, berries should be allowed to warm only when they are ready to display to customers, allowing condensation buildup on the outside of the plastic wrap.

Regardless of the final market destination, blueberries will have longer storage and shelf-life if they are harvested early in the morning and promptly cooled. Early in the day there is less heat buildup in the fruit and they will cool quicker than fruit harvested at mid-day. Retail growers may want to consider setting up an inexpensive forced-air cooling system to more rapidly remove field heat from your fruit and therefore cool them much faster than traditional passive cooling. For more information on forced-air cooling, see the article “Forced-air Cooling to Improve Berry Quality & Shelf-life” in the May 21, 2010 (Volume 10, Issue 13) article of Fruit Notes. This article is also in the New York Berry News, [June 10, 2010 page 11 \(Volume 9, Number 6\)](#) that can be found online at <http://www.fruit.cornell.edu/nybn/archives.html>. Fruit picked early in the day and rapidly cooled can expect to have a storage period up to 14 days if there is no break in the cold chain. Large growers may use relatively inexpensive modified atmosphere packaging to extend shelf-life to 4-6 weeks. Contact Craig Kahlke at 585-735-5448, or email him at cjk37@cornell.edu for more information.