

# Blueberry Harvest and Post-harvest Management

Ideally, blueberries are picked completely blue including the “shoulders” around the stem, which are usually the last to turn. Blueberry fruit quality can continue to improve on the plant for 3 to 10 days after they turn uniform blue. They continue to gain weight, sugar content, and acidity but growers often are anxious to pick in anticipation of better market prices. If harvested fruit is too green or red for marketing, it may be stored in cold rooms for a period of time and while fruit will turn completely blue, it does not gain sugar or titratable acidity following harvest.

Machines are available for harvesting blueberries and they are capable of harvesting large amounts of fruit quickly. Most of fresh market fruit is still harvested by hand because machines are not completely efficient at determining fruit ripeness and harvest loss may be exceptionally high.



The frequency of harvesting depends on the time of year and the temperature in the fields. At the beginning of the season, harvest can be 1 or 2 times per week and up to 5 times or more per week at peak times and temperatures. The same harvest crew can be assigned to morning picking and packing during the morning and afternoon. Larger farms will need to perform picking and packing from the early morning and throughout the day. Generally, 8-10 gatherers per acre will be needed – perhaps reaching 20 at peak periods with mature plants.

For hand harvest, using the thumb, the ripe berries can be rolled from the cluster into the palm of the hand. The palm is placed below the fruit cluster to prevent the harvested fruit from falling. Fruit should be handled carefully and the minimum amount necessary to move the fruit out of the field to the cooler. Fruit that is not uniformly blue, should be left for subsequent picking.

Production can vary somewhat depending on the variety and temperature. One picker can

harvest 7-10 lb per hour depending on the variety and the stage of the season. The fruits are harvested in small buckets of 1 to 2 quarts, which is worn on a belt, and then the fruit is carried to a centralized field packing area or with larger volumes to a centralized packing shed. Then the fruit is sorted by color and size and packed into transparent plastic clamshells. The size of the clamshells can vary from 4 oz (100 grams) to 1 or more pounds depending on the time of year, price, and volume of fruit in the market. The clamshell boxes are weighed and stored or shipped in cardboard trays.

Flowers and fruits are sensitive to frost and plants should be protected if there is a risk of frost. Intense rains can bruise the fruit if they occur during the harvesting. Irregular irrigation may increase the risk of cracking and uniform moisture is critical during fruit development. Harvested fruit should be stored in the shade prior to transport to the packing area. Fruit temperature can rise very quickly in direct sunlight.

### **Post-harvest management of blueberries.**

Packaging operations for small plantings of less than 5-10 acres can generally use hand sorting and packaging operations.



There are various sizes of packaging lines for larger volumes of fruit. Packing lines includes blowers to remove waste, sorting tables to remove the unmarketable fruit and classification screens to eliminate fruit that do not reach the minimum market size. There should be only one layer of fruit on the table for inspection. Packing lines should be cleaned daily with detergent and water, and then spray with a 5% bleach solution (sodium hypochlorite).

Do not pick fruit unsuitable for sale or allow plant debris in the harvest containers, it is better to leave them in the field. Unwashed blueberries can be cooled before or after packaging. Fruit should be transported to the packing area as soon as possible and unpackaged fruits stored in a cold room until packaging. Any delay in transporting and cooling the fruit can lead to shortening of shelf-life. Fruit should be cooled to 32-33 °F. to facilitate handling and storage.



Fruit is most rapidly cooled by a system of forced-air cooling. Passive room cooling does not cool fruit rapidly enough and the inadequate cooling shortens the shelf life. Fruit should not be wetted during the packing process. For forced air-cooling, trays are stacked in two rows on both sides of a tunnel. The top and end is sealed with a cover, forcing the cooled air to pass through the fruit boxes and pass over the fruit surface. Once the fruit has reached the desired temperature, it should be removed from the airflow of the tunnel to prevent dehydration. Fruit temperatures in the interior of the carton can be monitored with specialized thermometers. A refrigeration technician can calculate the fan and refrigeration sizing from the maximum volume of fruit per hour. Blueberries should store at 32 - 33° F. and 85% to 95% relative humidity.