

BLUEBERRY MULCHING

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Mulch plays a very important role in blueberry production in Pennsylvania. The Highbush blueberry plant is grown on upland soils in most locations of Pennsylvania. Highbush blueberry is naturally adapted to a lowland, acid soil so amendments must be made to the soil for a successful planting on upland locations. Highbush blueberry roots thrive in an open, porous soil that is high in organic matter, well drained, and supplied with adequate moisture. Blueberry roots are in the upper 18 inches of the soil. Upland soils are generally drier, higher pH and lower organic content than lowland soils. It is important to maintain constant moisture content near the surface of the soil and optimum soil acidity. One of the most successful ways to do this is using mulch.



Annual mulching has been found to reduce weed growth, lower soil temperatures in summer, help maintain uniform soil moisture and develop a better soil structure, prevent heaving and subsequent root injury, control soil erosion and reduce the costs of cultivation. The following research material is from *Blueberry Science* by Paul Eck. The favored mulching material is sawdust, preferable a well composted softwood sawdust (Moore and Pavlis, 1979). Pine bark is also excellent and compacts less than sawdust. Four to six inches of mulch are needed

initially, with annual additions of one inch of sawdust to maintain the depth. If fresh sawdust is used, an additional 50 to 100 percent N may be necessary for the first few years to compensate for increased microbial activity. Well-composted sawdust requires less supplemental nitrogen. Other organic materials that have been used, not as effective as sawdust, include corncobs, straw and leaves. Manure and stable bedding must be well composted before they are safe to use and even then are not as desirable as sawdust since they may increase soil pH.

In a long term experiment on a commercial Highbush blueberry planting in Arkansas, (Moore and Pavlis, 1979) found that plants continuously mulched with sawdust outyielded plants mulched only for the first year, first two years, or first three years after planting. They also observed that straw mulch was effective, but deteriorated more rapidly than sawdust. The incorporation of peat moss in the soil at planting also resulted in higher yields in following years. In addition to its use as mulch, composted sawdust has been found beneficial when applied in the planting hole, particularly in conjunction with the mulch (Brooks, 1972). In these studies fertilizer applications had to be increased threefold to produce vigorous growth. (Cummings, 1981) was able to overcome the harmful effects of high pH by incorporating sawdust into the soil in which Rabbiteye blueberries were grown.

Black plastic has been successfully used as a mulching material in establishing plantings (Bell and Kroon, 1979). Care must be taken when fertilizing under black plastic since fertilizer placed close to the plant crown can cause severe burning. It is probably preferable to work the required fertilizer into the soil before laying the plastic. (Mainland and Lilly, 1984) concluded that black plastic mulch offers a practical earlier age. They found that a single application of 925 Kg/ha of a

10-10- 10 fertilizer incorporated into the soil before laying the plastic provided adequate nutrition for two years, the effective life of the plastic.

The Extension agent in Southeast Pennsylvania conducted a blueberry mulch research plot over five years. The plot was replicated three times with three mulches: corn cobs, wood chips and sawdust. The plot had four cultivars: Bluejay, Bluecrop, Patriot and Spartan. After five years it was determined there was no significant yield difference. The best mulch of the three is the one you can obtain at the lowest cost. Remember sawdust or wood chips from red maple and beech should not be used. Sawdust or wood chips from those two trees may injure or retard blueberry plant growth.

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