

Highbush Blueberry Site Suitability

Choosing the appropriate site for a crop is an important consideration that should be taken seriously. Highbush blueberry plants are long-lived and can have a life expectancy of over 40 years. With that in mind, the optimum conditions must be present to ensure a productive and economically viable operation. Temperatures, soil conditions (eg. texture, structure and pH), water factors and location to a market must all be taken into consideration when choosing a site for a highbush blueberry operation.

In general, highbush blueberries require an average of 160 growing days, combined with full sunlight and protection from winds. In Nova Scotia's modified continental climate, coastal areas with cooler summers, milder winters and longer frost-free period are preferred to more inland sites. Nova Scotia is at the northern limit for highbush blueberry production and therefore the moderating effects of coastal waters are highly desirable.

A site that already has wild blueberries or other acid loving plants growing on it will most likely have a soil type that will support cultivated blueberry growth. The appropriate soil pH level for growing highbush blueberries is between 4.5 and 5.0.

A highbush blueberry site should have good air drainage for prevention of frost and winter injury. Air drainage is defined as the movement of colder, heavier air from a higher elevation to a lower elevation. As such, sloped sites are desirable as they have improved air movement and therefore will have less frost and winter injury. Also, planting in low-lying areas ("frost pockets") should be avoided because cold air pools in these areas and can cause greater cold temperature injury.

Highbush blueberries should be planted in an area where winter minimums are not harsh enough to cause damage to the plant. Flower buds can tolerate up to -26°C in midwinter, and vegetative buds and woody tissues can tolerate up to -29°C . Plants are less hardy in early and late winter and bud and tissue injury can occur at milder temperatures at these times.

Soil factors such as texture, structure, pH and water placement are all interlinked and are important aspects to consider when choosing a highbush blueberry planting site. The ideal soil texture for highbush blueberries is a sandy loam and soils with a clay or silt content greater than 20% are generally not desired; however, if a heavy clay soil is amended with peat moss, sawdust or composted manure to raise the organic matter content, it could become a suitable soil medium for growing blueberries.

For optimum blueberry production, the organic matter content of a mineral soil should be between 3-20%. This is important because organic matter retains moisture readily so as to prevent root dehydration while at the same time provides the aeration necessary for root health. Muck soils with an organic matter content of 20-50% can be used for blueberries, providing there is an appropriate pH level and adequate drainage.

Water placement and water management must also be considered when choosing a site for highbush blueberries. Blueberry plants have a shallow root system, so the plant is susceptible to drought; however, the roots also do not tolerate standing water. Therefore, the ideal blueberry soil will be well drained, but at the same time have a water source nearby for supplemental irrigation. Satisfactory drainage in a soil is when the water table recedes below the root zone (about 20 cm below the soil surface) of the blueberries within 24 hours of a precipitation event.

One final area for consideration is the suitability of a site for a particular market. Sites close to cities are well suited to u-pick operations while more isolated rural locations are better suited to pre-picked fresh market options.

In conclusion, careful consideration of climate, soil conditions, water variables and market suitability need to be assessed in determining the suitability of a site. This is perhaps the most important prerequisite for a long and prosperous highbush blueberry plantation.

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