Filling Bare Spots in Wild Blueberry Fields

Introduction

In all wild blueberry fields, there are a large number of different clones. Each clone originates from one seed,that has propagated itself over the years. The area covered by each clone is variable and is dependent on the ability of that clone to spread.

The presence of many clones in a field is desirable for a number of reasons. Among them, one of the most important reasons is to ensure good pollination and to lengthen the flowering period.

The productivity of a blueberry field is a function of many controllable factors. However, there are many other uncontrollable factors that also influence productivity. These uncontrollable factors include; spring frost, drought, winter injury and bare areas. These non-productive or bare areas are often a result of land clearing and/or leveling, the rate of spread of clones, soil conditions and also the age of the field.

Establishing New Plantings

Plant materials:

Three methods may be used to obtain plants for transplanting into existing blueberry fields.

- Blueberry sod may be dug from existing clones in the field or in forest. If you use this method of selecting clones, you should select clones that have a vigourous growth habit and good fruit production. Superior plants can be marked in the previous year and sod can be dug out in the sprouting year. A clump 15 cm in diameter can be dug with a shovel or a golf-hole cutter.
- Another method consists of planting rooted cuttings, plants grown from seed or tissue culture plantlets. This last method involves “mass production” of plants from superior clones. Although more expensive, tissue cultured plants will tend to colonize the new area more quickly than cuttings and are less variable than the plants produced from seeds.
- A number of producers also remove blueberry plants during the construction of firebreaks and transplant them into the bare areas. The blueberry sod is incorporated into the soil using a tiller with a series of teeth removed. The teeth are removed so that the rhizomes are not cut into small pieces. The area is then rolled to create good root to soil contact. This will limit drying of the soil and improve rhizome survival. Though results are variable, this technique is inexpensive and can be accomplished quickly.

Site preparation:

Site preparation is extremely important and consists of the elimination of weeds or brush which can inhibit establishment of the transplants. If the bare area contains only grasses, transplant directly

into the area without applying weed control since the young plants establish well in undisturbed grass sod.

Planting:

The planting should be done in the spring of the sprout year after pruning. It is preferable to do the planting as soon as possible, while plants are still dormant. One of the most important aspects is to keep the plants moist before and during planting. If the soil is dry, water the newly transplanted plants immediately.

Christmas tree-planters may be used to set rooted cuttings to a depth of 5 to 7 cm below the crown (see Figure 1). Planting at this depth will encourage the production of rhizomes from the buried buds and will reduce frost heaving. If planting blueberry sod, it should be placed only slightly below the depth of the existing clones and covered with a small amount of soil. After planting, ensure good root to soil contact by compressing the soil around the roots. If rooted cuttings are spaced approximately 60 cm apart in each direction, the area should take six or seven years to fill. You will require 3 plants per square meter.

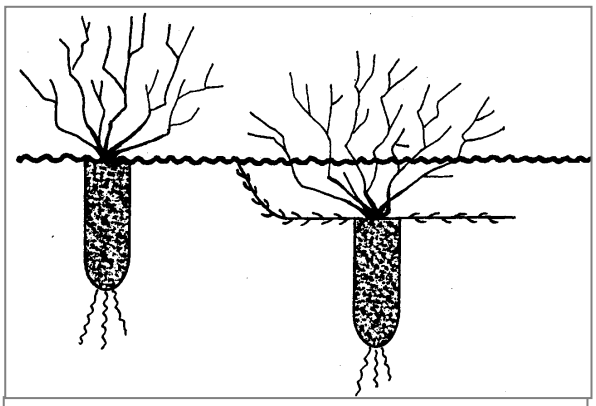

Figure 1. The plant on the left is planted too shallow and the rhizome growth will be poor. The plant on the right is planted 5 to 7 cm below the soil surface, which will result in good rhizome growth

When filling a bare area it is best if several different clones are used since this will improve cross pollination.

Fertilizer:

The use of fertilizer improves the rate of establishment of young blueberry plants. A study in Maine revealed that 1 kg per 12 square metres of slow-release fertilizer (such as Peters Slow Release 14-7-7, Osmocote 18-6-12 or similar formulations) produced the greatest seedling growth and yield. A study in New Brunswick demonstrated that urea-based nitrogen (46-0-0) applied at 60 kg/hectare ncreased stand density during early production cycles. For the planting year, fertilizer should be incorporated into the soil prior to planting and mulching. The fertilizer should be applied to the soil surface in subsequent years.

Mulch:

For the best result, it is recommended that mulch be used. It will benefit the plants by:

- minimizing frost heaving
- suppressing weed growth
- moderating soil temperatures
- reducing water loss
- reducing soil erosion
- encouraging rhizome growth

Suitable mulches include; sawdust, bark, wood chips and moist peat. Sawdust is the least stable of these. If wood chips are used, they should be small chips. If a tree planter is used, the mulch may be laid prior to planting, otherwise mulch should be applied after the planting.

Apply five to ten centimetres of mulch. A PEI study found that if mulch was applied too thick it could discourage plant growth. Use the lower rate if the site already has an organic layer of three centimetres or more. The mulch should be placed around and between plants. It is important to ensure that plants are not harmed during the application of mulch and that the stems remain exposed to light. For more information about mulching, consult the **Factsheet A.8.0.**

Maintaining transplanted areas:

As much as possible, the transplanted areas should be maintained free of weeds. It is recommended to prune by mowing instead of burning during the first few cycles. The plants should be allowed to grow for two production cycles (four years after transplanting) and if possible, avoid the transplanted area during the normal pruning operation. This delayed pruning of the transplanted area is necessary to allow the plants to develop a network of stems and rhizomes. If the transplanted areas are small and scattered throughout the field, then manage the field accordingly. It is recommended that the field should not be burned until at least the third cycle.

Reference

Filling Bare Spots in Blueberry Fields". (Tom DeGomez & Dr. Jack Smagula). Fact sheet # 221, University of Maine Cooperative Extension Service.

Effect of Sawdust Mulch on Yields of Select Clones of Lowbush Blueberry. (Kevin Sanderson & J.A. Cutcliffe). Canadian Journal of Plant Science, vol 71: 1263-1266.