Wild Blueberry
FACT SHEET
THE UNIVERSITY OF MAINE Cooperative Extension

Mulching for Improved Plant Cover

Fact Sheet No. 228, UMaine Extension No. 2239

Introduction

One of the most obvious factors affecting the yield of a blueberry field is the presence or absence of blueberry plants. Fields are established through natural seeding and "fill-in" by the slow, natural spread of underground stems called rhizomes. Recent studies suggest that not all clones spread at the same rate. This accounts for some of the difference in field cover. Other reasons for differences in cover are the age of the field, the number of seedlings present when the field was cleared of trees, and management practices employed over the years. We can't do anything about the past, but we can do something about the future! This fact sheet suggests what we can do to encourage clones to spread faster.

Research Results

University of Maine researchers Smagula and McLaughlin attempted to speed up the natural spread of blueberries. Advances in weed control management techniques have resulted in negligible weed competition at the edge of clones. Would increased nitrogen fertilization improve the lateral spread of these clones? Six years of research suggests that the major limiting factor to lateral spread is not competition for space or lack of nitrogen, but other factors. These factors may include soil temperature, soil moisture, frost heaving, herbicide activity, light intensity and pruning.

In 1965, Kender and Eggert studied the effect of several soil management practices on the growth and rhizome development of planted lowbush blueberries (rooted cuttings). Lowbush blueberry plants produced more rhizome growth when grown in undisturbed soil rather than in a mixed or homogenized soil. A surface mulch increased all phases of lowbush blueberry growth when compared to plots where the same organic material (peat or sawdust) was incorporated into a homogenized soil.

Smagula and Goltz studied the environmental factors affected by mulched and unmulched blueberry seedlings. Their research showed that mulches greatly changed the environment at the soil surface, which enables seedlings to spread rapidly. Unmulched plants rarely survived due to frost heaving, and those that did survive did not spread well. Mulches moderate soil temperature, reduce light intensity at the edge of the clone, increase available moisture, reduce frost heaving, tie up herbicides, and protect the edges of the clones from pruning devices. Each of these factors may encourage clonal spread. Smagula and Goltz's research suggests that mulch may effect mature clones similarly.

Mulching Techniques

Additional studies by Smagula show that when the edges of mature clones are mulched with bark, the rate of spread doubles. Other types of mulch also encourage rhizome development and spread. Sawdust is second to bark in doing so but it has a tendency to erode due to wind and rain. The erosion problems can be solved in part by top-dressing the sawdust with a more stable material, such as bark or wood chips.

Depth of mulch applied depends on the amount of organic matter already on the soil surface. Mulch can be applied two inches deep where surface organic matter is present, whereas areas with no organic matter or soil erosion will require up to four inches.

The best mulch for each situation depends greatly on the circumstances. Cost of the material and hauling distance will be a primary consideration. Matching the least costly mulch with the desired result is

also important. For example: If erosion control is your primary goal and rhizome growth is a secondary goal, your choice may be wood chips manufactured on-site.

Mulching bare areas will greatly improve blueberry fields. For additional information on the management of bare areas refer to *Filling Bare Spots in Blueberry Field*, Fact Sheet No. 221, this publication can be found in the *Wild Blueberry Growers Guide* or at your local county Extension office.

Materials For Mulching Bare Areas

	Increase Rhizome Spread	Reduces Soil Erosion
Hard or softwood bark	10	10
Sawdust	8	1[a]
Waste Peat	8	7
Cedar (hair) bark	7	10
Planner shavings	7[b]	5[c]
Wood chips[d] (boiler or chipboard)	5	10
Paper mill sludge[e]	3	10

* 10 indicates best suited, 1 least suited. Performance of most of these materials should improve as they decay.

[a] Sawdust's ability to reduce erosion can be greatly enhanced by top dressing with bark, wood chips or a similar material.

[b] Planner shavings studies are not final. The authors assume performance will be good.

[c] Planner shavings have a tendency to erode due to wind; top-dressing will improve performance.

[d] Smaller chips would probably perform better.

[e] In experiments after six years, soil pH has not changed to a depth of six inches below the sludge. Prior to using paper mill sludge contact the Maine Department of Environmental Protection, 17 State House Station, Augusta, Maine 04333-0017, (207) 287-7688.

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