

is also covered with sand or emery paper. This is often not necessary but it is an insurance of success. If the soil does not contain alfalfa bacteria, then it is necessary to treat the seed with the prepared alfalfa culture that is obtainable from the Division of Botany, Central Experimental Farm, or to treat with soil from an old alfalfa field. If the prepared culture is used, it can be applied to the seed by first mixing with a small quantity of skim milk, then stirring through the seed in sufficient quantity to moisten it. Sow at once or let dry in the dark.

If soil is used in inoculating the alfalfa seed a quantity of silty soil should be secured and dried sufficiently under cover of darkness until it can be easily sifted free of coarse particles. One quart of soil is sufficient for ten pounds of seed. Mix the seed and dry soil thoroughly, then stir in just sufficient glue water to cause the soil to adhere to the alfalfa seed. The seed may be sown at once or spread out to dry in a darkened room. Remember, bright sunlight will destroy the bacteria.

SEEDING.

The sowing of alfalfa seed under the same methods as are used in securing a stand of timothy or clover has not been successful on Vancouver Island and is not advised. The seeding in rows at distances apart to permit tillage has been very successful and is recommended. At the Experimental Station for Vancouver Island various distances have been tested with the following results.

Average yearly yield of hay per acre:

Rows 12 inches apart.—Yield 8,465 pounds. Quality excellent, stems fine, erect and easy to cut.

Rows 18 inches apart.—Yield 8,694 pounds. Quality excellent, stems fine, erect and easy to cut.

Rows 24 inches apart.—Yield 9,347 pounds. Quality excellent, stems a little coarser than 12 and 18-inch planting, erect and easy to cut.

Rows 30 inches apart.—Yield 10,471 pounds. Quality excellent, recumbent in growth, difficult to cut, hay not so fine as that of the close seeding, foliage abundant.

Rows 36 inches apart.—Yield 8,155 pounds. Quality, first cut coarse, second cut excellent, difficult to cut with mower.

Mass seeding, 48-inch strips.—Yield 8,378 pounds. Quality excellent, erect, stems fine, foliage abundant.

The results of the foregoing tests indicate that the most satisfactory returns will be obtained from the 18 and 24-inch seedings. The yield was not as large as from the 30-inch seeding, but the quality of the hay was superior, and the harvesting was much easier. The distance apart for the rows are therefore recommended to be not less than eighteen inches or more than twenty-four inches. Alfalfa seed may be sown in rows by hand, using a line, or with an ordinary root seed sower. Special alfalfa seed drills are available and are advised for large areas. An ordinary grain drill can be adjusted to handle alfalfa seed in row seeding successfully. It is very important that the seed be well covered and pressed in firmly. If properly planted, germination should be well advanced and a large percentage of the plants above ground in ten days. A deep seed bed is not desirable. A firm and pulverized surface three inches deep, on a firm bottom, will germinate alfalfa seed more satisfactorily than a loose open seed bed. If the seed is not pressed in firmly, germination will be slow and uneven. On southern Vancouver Island the first week in May is the most desirable seeding period for alfalfa. Five pounds of seed is sufficient for one acre.

FIELD MANAGEMENT.

Tillage during the first season to destroy the weeds that compete with the young alfalfa plants is imperative. The young alfalfa plant is a weakling, but when once established on roots that are noted for toughness and size it will stand up under conditions better than any other fodder plant. After the alfalfa field is established on thorough cultivation each season, preferably immediately after the first crop is cut.