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PLAN FOR PRODUCING STRAWBERRY FOUNDATION
PLANTING STOCK

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PLAN FOR PRODUCING STRAWBERRY FOUNDATION PLANTING STOCK

by

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R. Ralph Clark, Extension Horticulturist

Virus Diseases Decrease Strawberry Yields

Crinkle, stunt, and yellows, serious yield-decreasing virus diseases of the strawberry, are especially destructive to the Marshall variety, which constitutes 85 to 90 percent of the strawberries produced annually in Oregon. These virus diseases reduce the high yield per acre and fruit quality necessary, if cost of production is to be kept low enough to meet the competition from other strawberry producing sections.

Improved Planting Stock Supply Short

Certified Marshall strawberry planting stock is not available in Oregon in sufficient quantities to supply our needs. There is, in addition, a demand for certified strawberry planting stock from other states.

Red Stele

A disease of strawberry plants called **Brown Core (Red Stele)** is well distributed in Oregon. This fungus disease causes the roots to shrivel and the plants to become dwarfed or to die, usually early in the growing season. Affected plants have a reddish discoloration in the center or core of the roots. The tips of the roots may be shriveled or dead. When this disease is found, the affected plants should be destroyed and the infected land should not be replanted to strawberries. Carefully managed plantings may be kept free if one is sure his planting stock comes from fields free of this disease. For this reason fields with any Red Stele cannot be certified.

Black Roots of Strawberry Plants

Reports indicate that several distinct fungi have been found associated with certain root rots, commonly referred to as "black root", of strawberry plants. The most common in Oregon is *Rhizoctonia*. There are other causes of black roots in strawberries besides fungus infections. Some of these are faulty handling of plants after digging, poor storage conditions, or faulty planting.

Strawberry plantings which have a large number of plants affected with a black-root condition are not a satisfactory source of strawberry planting stock since the disease may be carried with the plants from the nursery to the new plantings. Remove such affected plants from the fields of planting stock and burn to destroy the disease causing the black-root condition.

It is advisable that plants be replanted as soon as possible after they are dug.

Virous-Disease Control Requires Continuous Effort

Strawberry planting stock relatively free from disease does not always remain so after it is planted in the field because of agencies which spread the degenerating virous diseases. The grower must wage a continuous fight to keep out these diseases. A high degree of control can be accomplished by constant vigilance and by roguing out the ever-recurring virous-infected plants in a strawberry nursery plot. It should be stated here that there are infection areas in Oregon where these virous diseases are so serious and spread so rapidly that the growing of planting stock is not to be recommended.

In view of the inadequate supply of certified stock, the following plan is suggested as a means through which growers can produce vigorous strawberry planting stock as good if not better than the usual certified stock. Plants grown under this plan will be known as foundation planting stock. The plan will involve the growing of strawberry plants in a separate, isolated plot where they can be closely watched and diseased plants removed. Certification will not be required for participation in this strawberry planting-stock-improvement plan.

Plan for Growing Foundation Planting Stock

- (1) Select a plot of land isolated from the main strawberry fields as well as from wild strawberries.
- (2) The site selected should be well drained, deep, fertile soil that will hold moisture during the dry season. Growing conditions should be the best.
- (3) Avoid land which has recently been in potatoes, Sweet clover, Alfalfa, Tomatoes, Eggplant, or cane fruits. (See Ore. Exp. St. Cir. Information #392).
- (4) The site should have ample air drainage. Select, if possible, locations which are in the open and away from uncultivated stumpage land or fence rows.
- (5) Plant only vigorous, healthy strawberry plants carefully selected from the best large disease-free hills that the grower has at hand. Such selections should be made during the growing season, and the individual plants marked with a stake.
- (6) Rogue out adjoining plants within a distance of 3 feet in all directions.
- (7) The runner plants from these selected hills are kept separate as "clone units," i.e., line out the plants from a single mother plant, put in a stake, and then line out the plants from another mother and put in a stake, etc.
- (8) Control Insect Pests
 - (a) Spittle Bug: One or more dustings of one-half of one percent rotenone, or other dusts are required to control spittle bug. Do not omit this control.
 - (b) Apply baits for strawberry root-weevil.

(9) Systematic examination of the nursery every two weeks should be made. All weak, off-colored, or inferior looking plants should be immediately removed from the field. If a unit is weak it should be rogued out. If disease appears in one plant of a unit, rogue out the whole unit. This method of roguing strawberry nursery plots for disease control has been effective in the hands of practical growers.

(10) Plants set in the unit system in the nursery, should be at least three feet between units. This will permit easy removal of inferior units together with their runner plants.

(11) Clean stock produced under this plan has resulted in some of the best stocks now certified in Oregon.

The Extension Service of Oregon State College will assist growers who wish to establish such strawberry nurseries. This assistance is available through the office of your county agent.

The diseases of the strawberry are described in Oregon Experiment Station Bulletin 419. This bulletin and rules for strawberry certification will be supplied by your county agent.