

or anything which tends to weaken or check the growth of the plant apparently lessens its resistance to the disease and the degree of infection is increased.

In controlling the disease it is necessary to produce absolutely healthy plants and transplant them to undiseased fields. The plant beds must be thoroughly sterilized before seeding, and the same soil should not be used too long for growing plants. No plants should be transplanted from a diseased bed, as the use of diseased plants will serve to spread the disease over the entire field very quickly. If the fields become diseased a good 4 or 5-year rotation should be practised. Since many legumes, especially red clover and alfalfa, are host plants of the *Thielavia basicola* they should be left out of the rotation.

Bed rot or Damping-off fungi.—The rotting or damping-off of the young seedlings in the plant bed is caused by fungi which spread very rapidly. The plants attacked by this disease usually begin to rot near the surface of the ground, though the infection may spread on up the stalk and even the leaves may become decayed. Infected plants generally bend over, wilt, and die; though some may recover, giving evidence of the attack by a brownish, deadened area on the stalk near the root. Such plants should be discarded as they seldom prove satisfactory if transplanted. This disease is most prevalent in thickly seeded beds which are very moist and lack ventilation.

Sterilization of the bed and seeding thinly are the most effective methods for preventing the disease. After it occurs it may sometimes be checked by throwing out the infected plants, lowering the temperature by ventilating the bed well, and allowing the bed to dry out for a while. In warm, rainy weather it is very difficult to check it and at all times the best method of control is preventive.

GROWING TOBACCO SEED.

That the tobacco plant is one of the most susceptible of all plants to changes in the soil and climatic conditions has been conclusively proven by experiments and in actual field practice. Varieties which were practically ideal for the production of a certain type of leaf in one section of the country have, upon being taken to another section, where the soil and climatic conditions were different, become so changed in their characteristics such as length, breadth, and thickness of leaf, elasticity, yield, and quality, as to be practically worthless for the production of that same type of leaf. Even when this was not the result it has been clearly demonstrated by experiments that good home-grown seed germinates more quickly and produces plants ready for transplanting earlier than foreign-grown seed; and, in the field, plants produced from home-grown seed ripen more uniformly and from four to seven days earlier than those grown from unacclimated seed. Moreover, the individual characteristics of the tobacco plant are, to a large extent, inherited from the parent and may be improved or allowed to deteriorate, depending upon the care and judgment exercised in selecting the seed plants. The old theory that tobacco seed runs out or deteriorates has been disproven when careful selection is practised.

In view of these facts, and the history of the development of valuable types of tobacco by seed selection, the importance of each grower producing his own tobacco seed is clearly seen.

Selecting the seed plants.—In selecting seed plants, the grower should go over the whole field several days before topping and, with a fixed idea as to the type of plant best suited to his soil and climate and most desirable for his market, select about twice as many plants as he requires; marking them so they will not be topped. In making this selection, he should take into consideration the general character of growth of the plant, the number, shape, size, and uniformity of the leaves, the length of the internode or distance between the leaves on the stalk, the time and uniformity of ripening.