

mosaic. In the other localities, only one grower had more than 20 per cent. mosaic. Owing to dry weather the detrimental effect of mosaic both on growth of plant and quality of leaf was much more pronounced than in the previous season. In general, the survey showed that the improvement in mosaic control was being maintained, but there are several gardens where high infections occur almost every year.

(b) Influence of Soil Disinfectants and Fertilizers on the Incidence of Mosaic : Experiments designed to test the value of steam and various soil disinfectants have been continued at the Tobacco Research Station. Steam, urea, chloropicrin, formalin, and D.D. treatments in the tobacco-seedling beds gave reduction in the amount of initial mosaic in the field when compared with corresponding results obtained from unsteamed soils.

The use of fertilizer for the seedling beds in amounts exceeding $\frac{1}{2}$ lb. per square yard was associated with great increases, on unsteamed soils, of mosaic in the field plantings. Further evidence was obtained concerning higher mosaic incidence with pricked-out seedlings than with bed-sown seedlings.

(c) Effect of Fertilizers on Mosaic in the Field : Counts of mosaic were again made over the more important manurial plots at the Research Station. No evidence was obtained concerning any marked effect on the incidence of mosaic resulting from the use of increased quantities of fertilizers in the manurial treatment of tobacco or from variations in the proportions of nitrogen, phosphate, and potash contained in the manure. With few exceptions, probably due to chance infection, the amount of initial mosaic on all the manurial plots was less than 5 per cent.

(2) *Black Root-rot*.—Surveys of this disease have been made both in the seedling-beds and the gardens of tobacco-growers in many different localities. In the examination of tobacco-seedling beds, ten cases of black root-rot were found, five of which were new cases where the disease had not previously been observed. On the other hand, four beds which had been attacked by the disease last year were free from obvious infection this season. In the surveys of tobacco gardens, five new cases of the disease were noted this season, distributed as follows : Riwaka, 2 ; Motueka, 1 ; Dovedale, 1 ; and Upper Motueka Valley, 1.

(3) *Damping-off Disease*.—Owing to the cold wet weather experienced in September, damping-off disease was prevalent in tobacco seedlings raised by some of the nursery-men. Greater freedom from damping-off was associated with free ventilation of the glasshouse. It is suspected, however, that inadequate steam treatment of the soils used for the tobacco seedlings is an important factor resulting in the spread of damping-off disease.

Several sprays were tested for the control of the disease, but only in the case of pin-point infection were effective results obtained. Shirilan A.G. gave the best result, but a complete control was not secured.

(4) *Angular Leaf-spot*.—In view of the rather wide distribution of this bacterial disease in tobacco gardens last season, a close watch was maintained both in the seedling tobacco beds and in the gardens of tobacco-growers. In the first half of November the seedling beds of thirty growers located in different parts of the tobacco-growing districts were examined for angular leaf-spot. In four cases heavy infection was found while nine cases of slight infection were noted.

A survey of angular leaf-spot in tobacco gardens was commenced in January, 1946, but practically no "spot" was found. Under these circumstances, the survey was postponed until early March, when it was anticipated conditions would be more favourable for the development and ready identification of the disease. Some forty-three gardens, distributed throughout the tobacco-growing districts, were included in the survey.

In contrast to last season, when the disease was rather prevalent, the present survey revealed little sign of the disease. In thirty-six of the gardens visited there was complete freedom from injury in the mature tobacco leaves. In the remaining seven cases the infection was light, being confined to small leaves at soil level. Even gardens planted with seedlings from tobacco beds known to be infected with the