

MOSAIC DISEASE

Surveys were made of mosaic in the seedling-beds of thirty-nine growers during October and November. On the whole, little mosaic was in evidence, but the low night temperatures which prevailed during the spring of 1946 tended to retard symptom-development. There were only four cases of severe infection in the seedling-beds.

During January a survey was made of mosaic incidence in the gardens of twenty-nine growers in different parts of the district. The average percentage of mosaic infection for the whole of the tobacco-growing areas was 14 per cent., as compared with 12.4 per cent. in the previous season. The Dovedale - Stanley Brook area showed a decline in mosaic incidence, but other areas showed increases varying from 2 per cent. to 6 per cent. The field surveys again showed much higher mosaic figures for pricked-out plants compared with bed-sown plants.

Some outstanding results were obtained in an experiment to demonstrate the spread of mosaic following the handling of infected plants.

BLACK ROOT-ROT

Surveys of this disease have been made in seedling-beds of a large number of growers. Black root-rot was identified in twenty-two cases, of which twelve were severely infected. In five cases infection was so serious as to justify rejection of all seedlings for field planting. In a number of instances infection in the seedling-beds was confined to the edges of the bed, causing stunting of the seedlings. So far, the experiments established to control black root-rot in the seedling-beds by using chemicals have not proved successful. Calcium cyanamide plus urea was tried this season, but little improvement was effected.

Resistance of Tobacco Varieties to Black Root-rot.—Some twenty-eight varieties or lines of tobacco were tested to ascertain their degree of resistance to the disease. The results showed that a number of varieties were resistant, but some in the susceptible group show a much higher degree of resistance as field plants when soil and air temperatures are higher.

VERTICILLIUM WILT

(a) *Seedling-bed and Field Surveys.*—An examination was made of seedling-beds of those growers who had infection last season. No verticillium symptoms were seen.

Two field surveys were made during the season and an extension of infection was noted in three new fields surrounding initial cases of infection. Arrangements are being made by some growers to grass down infected fields for two or three years.

(b) *Resistance of Tobacco Varieties to Verticillium Wilt.*—Tests were conducted in seedling-boxes under glasshouse conditions of the resistance of twenty-eight tobacco varieties or lines to verticillium wilt. Three varieties—viz., Wills' Harrison's Special, Ambalema, and Kelly—showed good resistance.

COLLAR-ROT (SCLEROTINIA)

Experiments to control collar-rot in seedling-beds have been continued. The following chemicals in spray form were used to ascertain their value in controlling collar-rot in seedling-beds: Shirilan A.G., Fermate, Bordeaux, F.D., and Dinoc. Best results were obtained with Fermate and F.D., but these chemicals did not give complete control. Bordeaux and Shirilan were not successful when applied as sprays to the seedlings. Where the chemicals were watered on to the seedling-beds, Fermate, followed by Shirilan, gave the best results. Calcium cyanamide plus urea applied to infected soil well before the sowing of tobacco-seed appeared to give some benefit in the control of the disease.

SEED-PRODUCTION AND PLANT-BREEDING

The demand for tobacco-seed continues to increase, 50 lb. being supplied last season, compared with 42 lb. the previous year. An excellent season allowed a satisfactory reserve of seed to be built up. The present season has also been a good one for maturing seed. Five commercial varieties were grown, in addition to a number of