

VARIETIES

In a trial of varieties, Harrison's Special 215 maintained its position as a high yielding variety. It was equalled in yield by an introduction from the United States of America, Special 400, which, in addition, produced a higher proportion of bright leaf. Another American variety, Special 401, in its first year of trial gave promising results. Delray, a Canadian variety, produced a good-quality leaf, but was disappointing in yield. On land infected with the black root-rot disease, Harrison's Special, Special 400, and Special 401 appeared to have a fair degree of resistance.

The results of the 1946-47 experiments will not be available until after the leaf is graded, but the following observations were made on the crop in the field. Once again a dry summer was experienced and little fertilizer was lost through leaching. Results were very similar to those of previous years. In a new cover-crop experiment the tobacco following ryecorn appeared to be the most satisfactory crop. Cover crops of legumes produced rank green leaf. Where different heights of topping were tried out, low topping resulted in earlier maturity. A trial of varieties confirmed the results of last season, a new American variety, Special 402, also being promising.

SEEDLING-BED EXPERIMENTS

Steam once again proved the most satisfactory for the control of weeds and the growth of plants in the seedling beds. A calcium cyanamide-urea mixture closely approached steam for the control of weeds and was greatly superior to other chemicals. Formalin, Chloropierin, and D.D. gave insufficient control of weeds. Several proprietary weed-killers destroyed the tobacco along with the weeds.

CHEMICAL COMPOSITION OF TOBACCO WITH DIFFERENT FERTILIZER TREATMENT

Chemical analyses of the cured leaf from the 1944-45 season has been completed. In this season the amount and distribution of the rainfall were satisfactory, so that no irrigation of the tobacco was required. The nitrogen contents are much higher and the sugar contents appreciably lower than in the previous season, which was much drier.

INTAKE OF PLANT NUTRIENTS

A comparison of the intake of plant nutrients in the case of tobacco grown on a sand (Tobacco Research Station) and a light-phase silt loam (Rivaka) has been made over three seasons. During the past season the tobacco on the heavier soil type was slow in the early growth stages and maturity of the leaf was much delayed.

AGEING EXPERIMENTS

Moisture tests have been carried out at periodical intervals on tobacco stored in both Wellington and Motueka. The tobacco is held in cases under commercial conditions of leaf storage. The tests were made on the tobacco at different positions in the cases.

SOIL ANALYSES

Nitrate and ammonia nitrogen were determined in representative samples of soil, taken from different locations at the Research Station, on the 11th and 22nd of February. One of the interesting features of the results obtained was the higher nitrogen contents of the plot where lupins had been ploughed in during the spring. This high nitrate figure is in keeping with the dark-green colour of the tobacco on the lupin plot during February.

DISEASE INVESTIGATIONS

This work has comprised surveys of tobacco-seedling beds and gardens in different parts of the district for mosaic, verticillium wilt, black root-rot, and angular leaf-spot. In addition, experiments have been continued concerning the control of mosaic, black root-rot, and sclerotinia in seedling-bed experiments, and a wide range of tobacco varieties has been tested for resistance to black root-rot and verticillium wilt.