

SUBTERRANEAN CLOVER

Mr. J. W. CALDER and Mr. C. E. IVERSON

The particularly dry season adversely affected the grass and clover growth in the investigations at Ashley Green.

For the twelve months ending 8th February the production of dry matter per acre was as follows :—

Treatment A (2 cwt. super. per annum) : Average of six plots, 2,299 lb.

Treatment B (5 cwt. lime per annum alternating with 1 cwt. super. per annum) : Average of six plots, 2,449 lb.

Treatment D (1 ton of lime initially and 2 cwt. of super. and $\frac{1}{2}$ cwt. of potash annually) : Plot 1, short-rotation rye-grass, phalaris, and subterranean clover, 5,660 lb. ; Plot 2, short-rotation rye-grass, lucerne, phalaris, and subterranean clover, 4,916 lb. ; Plot 3, perennial rye-grass and subterranean clover, 4,370 lb. ; Plot 4, cocksfoot, lucerne, and subterranean clover, 4,285 lb. ; Plot 5, cocksfoot and subterranean clover, 3,868 lb. ; Plot 6, various, 409 lb.

The differences between treatments A and B were non-significant this season ; D-treatment plots were higher, as was to be expected in first-year pastures. Short-rotation rye-grass had given especially high results, but cannot be expected to continue. The phalaris was smothered when sown with short-rotation rye-grass, which in future investigations will be omitted.

FARM MACHINERY

Mr. A. W. RIDDOLLS

Harvesting of Small Seeds.—The previous season's trials of harvesting white-clover seed with mower fitted with specially designed windrows, of threshing white clover, and of topping of rye-grass, were repeated. Seed-damage trials were also made on red clover, and raking in high winds was made possible by fitting a specially designed roller to the side rake. None of these investigations had been carried far enough for definite conclusions to be made.

Rotary Pasture-topping and Weed-cutting.—More development work is required on the tractor-mounted rotary topper, which appears to have definite possibilities for pasture-topping and weed-cutting.

Mechanical Ditch-cleaning.—Further trials were continued with a power-driven continuous-acting tractor-mounted ditch-cleaner of original design. Modifications were made which had given improved operation, particularly in cutting heavy growth on the far bank of the ditch. The design of the machine had yet to be finalized.

MICROBIOLOGY

Dr. I. D. BLAIR

Plant Disease Survey

Tomatoes Under Glass.—In the Christchurch area 52 glasshouses were under observation for the third season. The average infection of *Verticillium* wilt was 12 per cent. (*Verticillium dahliae*). Over all houses wilt incidence in relation to soil treatment had been distributed as : steam sterilized, 2.8 per cent. ; formalin, 50 per cent. ; and no soil treatment, 100 per cent. Very unsatisfactory control existed with formalin treatments which are still used very widely. Highly satisfactory results relating to soil disease were obtained by the very few growers using chloropicrin and D-D treatments.

Leaf mould (*Cladosporium fulvum*) was present in all glasshouses and severe in some cases—e.g., in low-gabled houses or where ventilation was restricted. The disease seemed to warrant general adoption of a spray schedule in the Christchurch area. Grey mould (*Botrytis cinerea*) caused damage to either leaf, stem, or fruit in a quarter of the houses,