

The accompanying table records the acreages entered in the various crops since the inauguration of seed certification in 1927.

The large volume of detailed inspection and supervision work necessitated by the seed-certification scheme has been undertaken in the various districts by the Field staff of the Division.

Seed.	Acreages Inspected each Season.									
	1927-28.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	*1936-37.
Potatoes	821	909	1,200	1,334	1,146	1,154	1,322	1,882	2,420	2,500
Wheat	473	1,184	2,277	3,289	1,063	1,873	2,937	2,545	5,538	8,300
White clover	..	325	664	311	31	100	538	1,284	948	†
Perennial rye-grass	..	..	3,028	6,539	9,709	22,917	13,236	11,351	12,114	9,200
Brown-top	..	..	22,000	24,900	18,300	14,860	17,150	24,490	23,670	25,000
Cocksfoot	..	..	..	..	4,226	5,097	5,485	7,886	7,073	9,100
Montgomery red clover	..	..	..	..	9	71	168	392	325	550
Turnips, swedes, and rapes	..	..	..	..	..	..	128	..	31	30
Italian rye-grass	..	..	..	..	..	..	..	305	472	650
<i>Phalaris tuberosa</i>	..	..	..	..	..	..	..	..	20	85

* Approximate. † Not available due to change in method.

SEED-TESTING STATION.

(N. R. Foy, Seed Analyst.)

For the year ending December, 1936, 18,115 seed samples were received for analysis, this number representing an increase of 2,806 on the number for the previous year, and is a record for the Station. From the point of view of samples worked the New Zealand Station now ranks easily in the world's first ten, but on an average maintains a technical staff of less than half than that of any of the established stations. The standard of work, therefore, is not beyond criticism, but with the available facilities the utmost is done to provide reliable services which have, not inaptly, been termed the "backbone" of the seed trade, both export and domestic. During the past year, as the result of the introduction of necessary short-cut methods, there has been some justifiable criticism of the New Zealand official certificates. However, if the proposals now under consideration eventuate successfully, the Station will be in a position to render the services of a standard usually required of a State institution.

The total number of samples represented 28,500 tests, consisting of 10,824 single and duplicate purity analyses; 15,650 triplicate germination tests, and 2,026 (8 x 100) examinations of perennial rye-grass under ultra-violet light, an increase of 500 examinations of the number for 1935.

The bulk of the samples represented commercial lines and indicated a high standard of quality. In this respect it is true that low quality on the New Zealand retail market is, unfortunately, rarely sampled for testing and that much of it is priced in excess of value. This is particularly true of farmers' dressed lines of certified rye-grass, of which, in Hawke's Bay particularly, there exists a fairly extensive, and what may be termed "an authorized retail trade."

SPECIAL TESTS.

Of the total of 2,026 ultra-violet light examinations, 576 were made on samples of certified perennial rye-grass for the Department's own information in respect of the production areas, 128 for other official activities, 603 as a basis of qualification of machine-dressed lines as certified seed in the commercial class, and 719 on behalf of merchants, preliminary to entry of lines for commercial certification.

As indicated, 603 officially drawn samples, representing 163,124 bushels of seed, were submitted for ultra-violet examination to determine eligibility for certification. Of these, 427 lines, representing 113,979 bushels, were accepted as certified commercial perennial rye-grass.

A total of 1,297 samples of machine-dressed certified seed samples were examined for purity to determine conformity to the required standard of analytical purity. Of this number, 32, or 2.5 per cent. were rejected as having failed to attain to standard.

From the 1st January, 1937, when the certification of white clover became based entirely on the picric-acid test, to the 31st March samples representing 139 lines were tested and of which 98 were passed (177,290 lb.) and 41 rejected (44,999 lb.) as certified seed.

Approximately four hundred special analyses for the purposes of the Canadian Seeds Act have been made and certificates accordingly endorsed as authorized by the Canadian Department of Agriculture.

Exporters have also been advised, where required, as to the possible conformity of intended shipments to the Australian Federal Quarantine and State Acts, which service has enabled many exporters to enter the Australian trade with greater confidence than hitherto.

INVESTIGATIONAL.

(1) *Seed Peas*.—As a result of the decision of the New South Wales Government to administer the various Acts in respect of the importation of peas on germination tests made in soil, a very considerable amount of work has been done with peas, particularly in soil-testing and its relationship to germination tests. Co-operative tests and examinations were also conducted by the New South Wales Department and this Station, and on the complete results obtained both Departments are now in a more enlightened position as to the technique and uniformity of soil-testing and its usefulness as a measurement of field establishment.

In conjunction with this work, an investigation is in progress regarding the effect of various mercurial dusts on the germination-capacity and vigour of soil establishment of peas. Some very interesting and favourable results have been secured, but observations as to the effect of the degree of soil moisture, relative adherent properties of the various dusts, are required before reliable data can be secured.

(2) *Dormancy in Oats*.—The study of the factors influencing the rate of after-ripening of oats has been continued. Apart from the intrinsic value of the work it is considered that the findings will prove of value to the solution of germination and maturation problems in other seeds. The institution of special low temperature tests on all samples of oats received and which indicate potential germination-capacity of dormant lines has met with general approval, particularly during the past unfavourable harvesting season, when incomplete and irregular ripening was general. Work on after-ripening has demonstrated that storage at temperatures higher than normal and at a reduced moisture content results in a considerably hastened maturity during bulk storage.