

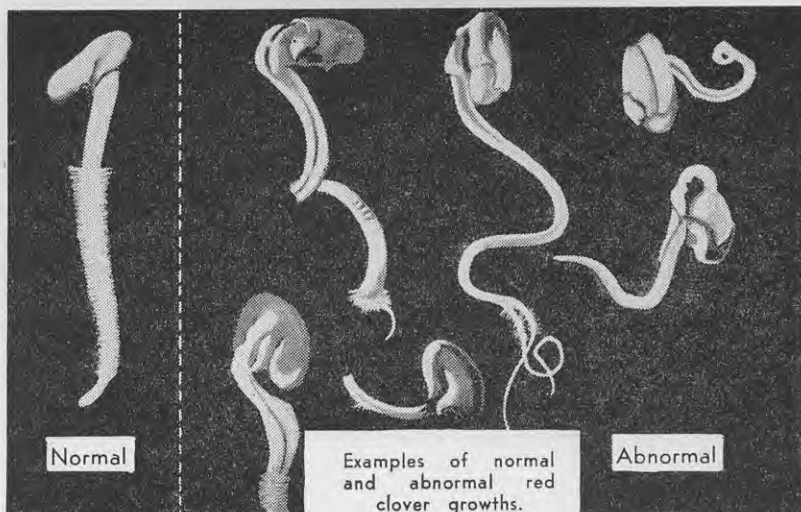
strains of ryegrass from the shorter-lived strains of ryegrass. A ryegrass sample is germinated for 10 days on blotting paper. It is then placed under the ultra-violet lamp. The shorter-lived strains of ryegrass occurring in New Zealand, including Italian ryegrass and short-rotation ryegrass, all show a high percentage of seedlings having a characteristic blue fluorescing light round the roots when placed under the lamp. The truly perennial strains give no reaction.

These tests are used almost entirely as an aid to the certification of perennial ryegrass and white clover seeds, their feature being that the result is obtained within a fortnight whereas a plot test with living plants takes many months.

### Comparing Lines of Seed

The farmer at some stage may be faced with the dilemma of choosing between two samples of seed equally attractive and of identical strain, but in one of which the purity is low and the germination is high; and in the other both figures are intermediate or reversed. How may such samples be compared?

The most useful figure for comparison is that known as the pure living seed content, which is found at the top right-hand corner of the certificate of analysis. It has been obtained by



Abnormal growths are seedlings which are found in the laboratory germination tests but which would not survive in the soil. A wise farmer examines the certificate of analysis held by his merchant to find the percentage of abnormal growths.

expressing the product of the purity and the germination as a percentage of the line and is a measure of the amount of pure seed in the line which will germinate. By dividing the cost per bushel or per pound by this figure a cost per unit of pure living seed with which to compare other lines may be obtained. For example, a line of seed at 22s. per bushel having a pure living seed content of 88 per cent. has a unit cost of 3d. A second line at 28s. per bushel with a pure living seed content of 96 per cent. would have a unit cost of 3½d. The 22s. line would be the better buy.

### Pre-harvest Tests

Pre-harvest tests are available to farmers to assist in the successful harvesting of ryegrass seed and wheat. Seeding ryegrass crops are very subject to attack by blind seed disease (*Phialea temulentia*) which kills infected seeds and lowers the germination of the line. During December and January each year a blind seed service is provided in Palmerston North and a sub-station is established at the office of the Department of Agriculture in Timaru for the pre-harvest examination of ryegrass for blind seed disease. Samples are taken by the farmer from his crop and sent in for a binocular microscope examination by trained seed analysts to establish the degree of infestation of the disease. This service spares the grower the labour and expense of harvesting crops which have been so seriously affected by the disease that they are capable of producing only seed of low germination.

In the direct heading of wheat it is very important that the moisture content of the grain is sufficiently low that it will not later heat and deteriorate. The Seed Testing Station carries out pre-harvest moisture tests of wheat samples from growers in North Island districts as a guide to whether the moisture content is low enough for harvesting to begin.

NEW ZEALAND DEPARTMENT OF AGRICULTURE				
EXTENSION DIVISION				
SEED TESTING STATION			S.T.S. No. 53/60000	
CERTIFICATE OF ANALYSIS.—GOVT. CERTIFIED SEED				
SEED: <b>White Clover:</b>		PURE SEED: <b>99.3 %</b>		
CLASS: <b>Permanent Pasture</b>		GERMINATION: <b>96+1 %</b>		
REG. No. <b>W 5432</b>		PURE LIVING SEED: <b>95 %</b>		
SACKS: <b>15</b>				
PURE SEED	PURITY ANALYSIS OTHER CROP SEED	WEED SEED	INERT MATTER	
99.3 %	0.5 %	0.2 %	trace %	
CROP SEED:		WEED SEED:		
Trifolium dubium 0.5% Medicago sativa		Chenopodium album Trifolium glomeratum Plantago lanceolata Stellaria media Rumex acetosella		
INERT MATTER: <b>Broken seed, insect parts and earth particles.</b>				
GERMINATION TEST OF PURE SEED				
INTERIM COUNT	FINAL COUNT	HARD SEED	ABNORMAL GROWTHS	REMAINDER
70 % IN 3 DAYS	96 % IN 7 DAYS	1 %	3 %	--- %
PALMERSTON NORTH 10th May, 1953.				
				<i>a.v. Pithy</i> OFFICER IN CHARGE
The examination reported above was made on a sample drawn from sealed sacks by an officer of the Department of Agriculture.				

This purity and germination certificate is held by the seed merchant for all lines of Certified seed. It should be seen before seed is bought.