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SMALL SEEDS PRODUCTION UNDER CERTIFICATION

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All of the improved strains of pasture species now in use are the result of breeding and selection at the plant breeding stations, and are distributed by the Department of Agriculture, as nucleus seed, to approved growers, for multiplication under contract. Nucleus perennial rye is grown only in the North Island.

Areas sown in nucleus seed produce Government stock seed which is grown on contract to the Department of Agriculture. Farmers desirous of obtaining Government stock seed must make application through a seed merchant before the 30th June each year. As the dressing and blending of stock lines takes some time the seed is not available for distribution until the late spring. The demand is greater than the supply for most species and only a small proportion of the applications can be granted.

Government stock seed produces pedigree which in turn produces mother seed. Mother seed produces permanent pasture or standard as the case may be. Thus it is obvious that the seed drops in grade every time it is sown and later harvested. But a stand sown in say Government stock, will produce pedigree until the Department of Agriculture determines otherwise.

FIELD INSPECTIONS:—

Field inspections are carried out by the departmental field officers at a time when differences can be clearly seen. They are required for the higher grades of certification. If an area reaches the required standard for the particular grade, i.e., has passed field inspection, it is not finally certified until the seed is machine dressed and a satisfactory standard of purity attained. Requirements differ slightly with different species. Thus:—

(1) Italian ryegrass, short rotation ryegrass, cocksfoot, Montgomery red and broad red clover require field inspection for Government stock, pedigree and mother grades. (Stock broad red is available for the first time in 1946). Montgomery red and broad red must also undergo plot test.

(2) Perennial rye requires field inspection for Government stock and pedigree only. Areas sown with mother and P.P. seed are certified on the ultra violet light, type test of machine dressed seed.

(3) White clover requires field inspection for Government stock areas only and this produces mother seed (pedigree strain) until the seed is plot tested. In order to provide a sample of seed for plot testing of stock sown white clover, it is advisable to harvest some white clover with the first season's harvest of ryegrass.

(4) Broad red clover, Mt. Barker and Tallarook strains of subterranean clover, Phalaris tuberosa (of Australian certified origin) and Timothy (Aberystwyth strain S-48). These strains and species have not been developed by the plant breeding station but a modified certification system is in operation for these varieties based on known origin and plot test. There are no grades as in the other species, but the seed is sealed and tagged as certified seed. Field inspections may be required.

ENTRY FOR CERTIFICATION:—

An insert slip is enclosed in the sealed bag of all lines of seed that are eligible for re-entry into certification. When the field is sown

this slip must be retained by the grower and later produced for the Department of Agriculture when the paddock is entered for certification. The insert slip is regarded as proof that the field was sown in the grade of seed specified and with other details supplied on the entry form, begins the story of the certification of the particular paddock.

CLOSING DATES FOR ENTRIES:

The Department of Agriculture always advertises the particular dates for grasses and clovers. The Seed Merchants' Association frequently does the same. In spite of this, some farmers are late and have to pay a late entry fee of 10/- in order to get the fields certified. The department reserves the right to refuse a late entry.

PREPARATION OF THE LAND FOR CERTIFIED SEEDS:—

(1) Perennial Ryegrass:

Few farmers realise how difficult it is to be sure that a particular paddock is suitable for a high grade of certified seed. A common belief is that one or more cereal crops is sufficient to get rid of, say, Italian. A little consideration will show that a cereal crop will enable the grass to grow and drop its seed before the cereal is taken off the paddock. At least two green feed crops and a fallow are necessary to ensure that all Italian has been struck and killed and that the paddock will be free from contamination. The use of green feed is ideal as, in addition to providing valuable feed, it helps to raise the fertility of the paddock and so give the seed crop a good start. Oats are frequently used for this purpose and care must be taken to see that the seed is machine dressed and therefore free from any weed grasses.

Thorough preparation of a paddock has often been spoilt by the inclusion of a small amount of oats to provide a quick bite of feed with the new sown grass. The oats contained Italian and the paddock was later rejected at the field inspection. Other sources of contamination are a dirty drill or broadcaster when sowing the paddock and feeding out grass hay in the winter or early spring.

Italian ryegrass heads show up clearly above perennial and are immediately obvious at the field inspection. The percentage of contamination permissible in stock and pedigree sown perennial is very small indeed and it does not take much to have the field rejected. Rogueing may be practicable.

TYPE TESTING:—

If contamination should occur the farmer should still harvest the crop but thresh it lightly to leave the awns on the Italian to assist in removal at machine dressing. The seed is carefully cleaned and most of the Italian will be dressed out. An official sample is then submitted for type testing, and in all probability will pass as permanent pasture.

To be eligible for type testing perennial ryegrass must be machine dressed and stored in proper sacks in a recognised seed store. It must reach the required standard of purity and type, and application must be made by a merchant or a recognised seed cleaner.

While mother seed ryegrass is almost certain to produce permanent pasture, the seed harvested from a paddock sown with P.P. can be entered for type test and stands every chance of being certified..

(2) Italian:

Preparation of the land for Italian must be just as careful as that for perennial. In fact there is even greater need to be careful as perennial ryegrass has been the basis of our pastures and all paddocks have gone to seed at some stage.

The heads of the perennial are, of course, below the Italian and a close search is necessary during a field inspection. There is a greater degree of contamination permissible, particularly in the lower grades, but the standards set are strictly followed. The lowest grade of certified Italian is now called standard and is eligible for re-entry only if sown by the grower.

(3) Short Rotation:

Preparation of the land is essentially the same as for the other ryegrasses.

Certification of short rotation depends mainly upon the origin of the seed and the identification of the paddock, in addition to the field inspection. As the grass is of a 4 or 5 year nature it is possible that the Department of Agriculture may vary the grading and after the second harvest, drop the stand in grade. The lowest grade is called standard and it is possible that this will not be eligible for re-entry even by the grower.

(4) Cocksfoot:

The amount of ryegrass permissible in the higher grades of cocksfoot is less than 1% in the machine dressed sample. For this reason the greatest of care is necessary in the selection of the paddock and in the cultivation which is designed to clear it of ryegrass. Unless the farmer is prepared to go to the trouble to rogue the paddock, he should take longer in its preparation than he would for the other grasses.

(5) Montgomery Red Clover:

The previous history of a paddock is important in the certification of Montgomery clover. If, within recent years, broad red clover has been sown and particularly if it has been seeded, there is little chance of the Montgomery being passed for certification. There are some districts which are recognised broad red areas and the certification of Montgomery is very difficult in these localities.

(6) Broad Red Clover:

In view of the amount of Montgomery that has been grown in the past very careful consideration and preparation will have to be given to paddocks selected for broad red. It is possible that stock lines will be confined to districts that have been producing certified broad red.

SOIL TYPES:—

The **three** ryegrasses and **white clover** can be successfully grown on most soils, although yields are lower on the lighter land. The clay bottom lands of the lower foothill country will grow excellent ryegrass if fallowed and limed, and the resultant seed crops more than pay for the line.

Montgomery:

Clover grows very well on heavy land, but tends to continue growing and is by no means a reliable seeder on this country. It is well suited to clay loams where its growth is not so prolific and, in consequence, it flowers earlier and the seed crop is more certain. In addition there is not the same tendency for this crop to smother itself, as it frequently does on heavy land.

The position is somewhat similar with broad red clover, but this crop flowers earlier and is a more reliable seed producer on heavy land.

Cocksfoot:

Cocksfoot likes a rich silt or peaty soil with free drainage. While it likes a fair amount of moisture it can get too much. It will not thrive on heavy clay soils and seed production is out of the question on the wet foothill country.

FARM MANAGEMENT:

No drastic changes are necessary for a farmer wishing to go in for some small seeds. Most farmers sow down at least one paddock each year. With care a suitable paddock can be selected and prepared as indicated, for sowing in certified seeds. In this connection a farmer new to certification should seek the advice and ready co-operation of the local field officer of the Department of Agriculture.

No farmer is recommended to go into small seeds production in a big way from the start, but to make a gradual change fitting the new programme into the existing rotation. This will not entail any major alteration in the carrying capacity and unless the first field sown is very big there should be little need for reduction.

In view of the real need for more wheat many farmers are reluctant to make a change to small seeds even though there is no comparison between the net returns. On almost all classes of land the production of grass and clover seed can be fitted into a wheat rotation without affecting the quantity of wheat grown. In actual fact there is a definite increase in fertility through the proper use of the modern grasses and clovers and this will assist a farmer in maintaining his wheat returns without robbing the land. The increase in fertility mentioned may not appear to be very important on the heavy land although it does play a very big part, but the greatest value is obtained on medium and clay land and on the lower foothill country.

Land that a few years ago was incapable of growing wheat has been brought back by small seeds farming and today can produce quite profitable wheat crops. The carrying capacity has been increased and small seeds are still being raised.

Copies of this Bulletin may be obtained from the Secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.

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