

GRASS AND CLOVER SEED CERTIFICATION

Italian ryegrass seed of very good type. There were large areas of browntop of pure and uniform type which were capable of producing seed ideal for incorporation in lawn grass mixtures and, at least, there was no great variation in red clover types.

It is true that even in the best lines of pasture species a considerable range of type could be seen in individual plants. Though under plot conditions these differences passed quite unnoticed, they were all too apparent when species were grown out as individuals. This weakness proved to be a blessing, as it enabled superior plant strains of all New Zealand's main pasture species to be isolated. This work led to the development of pedigree strains, which today play such an important part in New Zealand grassland farming.

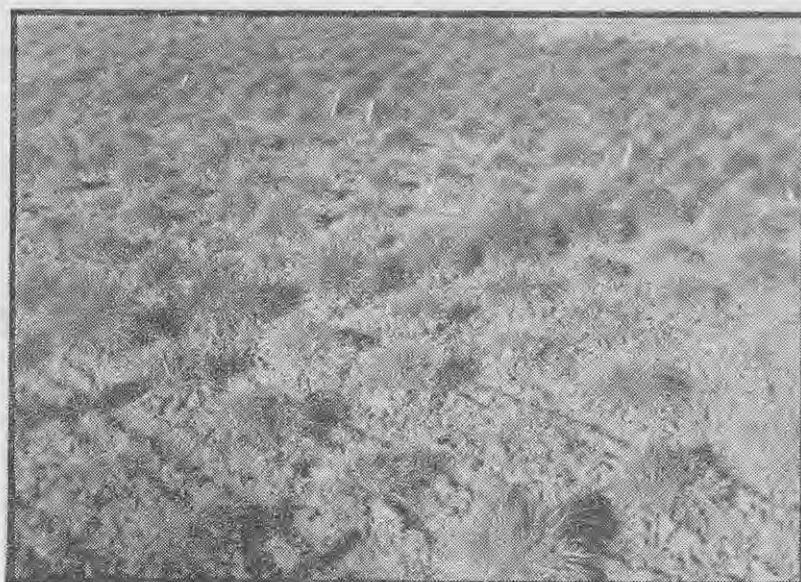
In other countries work on pasture species has been undertaken and the discoveries made have been similar to those in New Zealand, but in no other country have these discoveries been extended so far into standard farming practices as they have in New Zealand. The reason for this is undoubtedly that in New Zealand a means—seed certification—was developed which enabled the findings and results of research into pasture plants to be carried right through to the practical farmer on his own land. That is the real purpose of the scheme of seed certification, which was first introduced to meet the demand for better seed potatoes and seed wheat, but was rapidly modified to meet, first, the necessity for identifying seed of superior natural strains of pasture plants and, later, the seed of pedigree strains as these were evolved.

What is really meant by the value of seed certification is the value of the strains of seeds which are recognised under the certification scheme.

Operation of Scheme

Though the scheme of seed certification in New Zealand is operated by the Department of Agriculture as an impartial body to give the seed buyer an assurance of the strain of seed he is purchasing, its success has resulted from the close co-operation of three parties: The farmer growing the seed, the merchant who does the cleaning and marketing of it, and the officer of the Department of Agriculture responsible for the certification of it. Seed certification is not operated under any Act or Regulation; it is controlled by the Department of Agriculture, but depends for its success upon the goodwill of all co-operating parties. Experience over the 20 years the scheme has been operating proves that the present method of administering it is the most satisfactory.

The aim of any certification scheme is to give the buyer of seed an assurance regarding some point of quality which cannot be determined readily by an examination of the seed itself, and it is widely recognised that strain in pasture plants cannot be so determined. This places the purchaser at a disadvantage, as hardly ever is he in a position to observe, even less to evaluate, the plants from which the seed is saved. The certification scheme provides, in the interests of the buyer, for the strain of plant to be deter-



The variation between individual plants in natural strains of perennial ryegrass is shown in this illustration. Across the centre of the photograph is a row of plants of pedigree strain.

mined satisfactorily and for the resultant seed to be identified under seal until the time comes for it to be sown for further pasture establishment.

Stages in Certification

The scheme varies with the particular species under consideration. In general the seed-producing area is registered, the origin of the seed sown on the area is identified, and the type or strain of plant growing on the area confirmed by a field inspection at the appropriate stage of growth. After the seed crop is harvested the sacks are branded and temporarily sealed, pending machine dressing of the seed. The cleaning of the seed is carried out under supervision after which the sacks are tagged with labels bearing the identification of the seed and are again sealed. At this stage all the sacks of each line are sampled by an officer of the Department of Agriculture. Samples are examined for purity and germination and certificates relating to these factors are issued to the owner of the seed. The samples are also submitted to any plot or laboratory test which may be considered desirable to confirm the plant type of the seed certified.

White clover was the first pasture plant to be included in the certification scheme. In 1929 seed of this species was certified on the basis of the age of the producing pasture. The following season perennial ryegrass was included and at intervals cocksfoot, browntop, Italian ryegrass, Montgomery red clover, cowgrass, short-rotation ryegrass, subterranean clover, and timothy have been added to the list of Certified pasture seeds. Except in the case of short-rotation ryegrass and timothy, natural strains have formed the basic material for the production of Certified seed, and in the case of browntop and subterranean clover natural strains are still the only

ones certified. In all other species pedigree strains have been evolved and play a very important part in the production of Certified seed.

Selection and Breeding Programme

Coincident with the introduction in 1929 of a scheme of seed certification based on natural strains of grasses and clovers a programme of selection and breeding of the main species of pasture plants was started by the Grasslands Division of the Department of Scientific and Industrial Research. By the time the first selected material or "pedigree" strain was ready for release in 1935 seed certification of natural strains had become firmly established and the benefits of an independent means of evaluation of plant type were widely appreciated.

It was at this stage of the development of the New Zealand certification scheme that a very important decision had to be made. Should the certification of pedigree and natural strains be carried on along parallel lines or should the pedigree strains be superimposed on the natural strains, the former gradually replacing the latter and they in turn being replaced by later selections of pedigree strains as these became available? After the fullest deliberation, during which all aspects of the matter were reviewed, it was decided that the latter method of handling should be adopted.

This decision was an important one. It virtually decreed that pedigree strains under all conditions in New Zealand were superior to natural strains.

It simplified the procedure of seed production because different strains of the same species were not produced under a parallel certification procedure. It meant that certain natural strains, which even before the scheme