

# NATIONAL AND RECOMMENDED LISTS AND ASSOCIATED PROCEDURES IN BRITAIN AND EUROPE

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## ABSTRACT

Generally, seed of most plant species may not be marketed within the EEC or between OECD member countries unless, it has been produced in accordance with and up to the standards of an approved seed certification scheme; has been found in official examinations to conform to minimum purity and germination standards; is in a container which has been officially sealed and which bears an official label with certain particulars on it, is of a cultivar which is distinct; has an acceptable value and is named on a National List or the EEC Common Catalogue.

Within the EEC, Member Countries must maintain National Lists of cultivars which are distinct, uniform and stable, and, except for vegetables and amenity grasses, have a satisfactory "value for cultivation and use". The Community Common Catalogue is a composite of the individual National Lists. Cultivars may be submitted for testing on payment of a fee, by supplying a sample of seed and detailed information concerning botanical characteristics and agronomic performance. All cultivars are evaluated for distinctness, uniformity and stability; and for merit, at a minimum of specific sites for a definite period of time.

Several member countries also have advisory lists of cultivars which have particular merit for cultivation and use. These are called Recommended Lists. However, they have no official status. Recommended List trials usually include, and are an extension of, National List trials.

Data from National and Recommended List trials are sent to the breeder each year for checking and comment, and for Recommended Lists the possible submission of additional data. All data are considered by broadly based committees on which generally no breeder has direct representation and the evaluating authorities play only an advisory role.

Trial data and National List decisions are published. Applicants are given notice of proposed National List rejections and decisions may be appealed against.

## INTRODUCTION

The increasing competitiveness of international trade has focussed greater attention on the need for establishing uniform standards and methods of production and marketing of commodities involved. With the development of the OECD seed schemes, internationally acceptable procedures and standards for certification, listing and marketing of plant cultivars have been drawn up. EEC requirements for seed imports from non-member countries are based on these schemes. In some cases, New Zealand procedures and standards have had to be modified to comply. In general, standards have risen and the criteria to be met have become stricter, and this trend is likely to continue. In certain aspects concerning the seed trade, e.g. National Listing, some overseas countries have more experience than we do. It is likely to be to New Zealand's advantage, not only from a trading point of view, to examine the procedures developed and adopted overseas so that at least they are understood.

## NATIONAL LISTS

New Zealand is a member of the OECD Herbage and Crop Seed Certification schemes. As a consequence, New Zealand must maintain Lists of certified cultivars, and the procedures and standards associated with the testing of cultivars and the certification and testing of seed, must comply with OECD rules and regulations, which New Zealand, as a member country, helped to formulate. This guarantees the quality and reliability of seed moving

in international trade. Within the EEC, only those cultivars which are on the Common Catalogue, a composite of the individual National Lists, may be sold, unless derogations have been registered and accepted concerning the acceptability of individual cultivars in individual countries. As most of the seed we export is of our own cultivars, and these are generally in competition with those bred overseas, New Zealand has applied to have its cultivars tested for acceptability on the lists of the more important Common Market countries.

The criteria for acceptability on the British and European National Lists are contained in EEC Directives. They must also be embodied in legislation in the member countries. Cultivars must be distinct, uniform, stable and, for most agricultural species, have a satisfactory value for cultivation and use. Any breeder or his agent may apply to have a cultivar tested. This involves the payment of a fee, submission of both a completed application form translated into the appropriate language, and a completed, detailed technical questionnaire giving information concerning botanical characteristics and agronomic performance. The latter applies particularly in the United Kingdom where its use was instituted in an effort to discourage commercial plant breeding companies from submitting pipeline material at a preliminary stage of selection and evaluation.

## RECOMMENDED LISTS

As well as the statutory National Lists which are required for trading purposes, many countries have

Recommended Lists. These are compiled for advisory purposes and consist of a selection of cultivars from the National Lists which are better than average in performance. They have been more widely and intensively evaluated and to go on the Recommended List must be as good as the best already on it for an important character and have no major weaknesses. The use of these cultivars is widely encouraged and in most countries the recommended cultivars are those most widely used.

#### **Distinctness, Uniformity and Stability (DUS)**

During the 1960's, as a result of the number of new plant cultivars being developed, it became obvious that some sort of control and protection was required. An international convention for the protection of new plant varieties was held in 1961 and in 1964 Britain, and in 1966 Holland, passed legislation to establish Indexes and Registers respectively, of plant cultivars, each of which has been determined to be distinct from all others. The Union for the Protection of New Plant Varieties (UPOV) became effective in 1968 for the promotion of plant variety rights. The distinctness of individual cultivars as determined in official plot trials was fundamental to these. Cultivar uniformity and stability are both closely related to distinctness, and with the development of the EEC scheme these three criteria formed the basis for the National Lists along with merit testing which, until then, had been associated only with Recommended Lists.

A cultivar is considered distinct if it is clearly distinguishable by one or more important morphological, physiological, or other characteristics from any other plant cultivar whose existence is a matter of common knowledge at the time of the application. In a United Kingdom Appeals Tribunal decision gazetted in December 1975 it was upheld that to be "clearly distinguishable" the difference between cultivars must reach the 99% probability level in at least two tests out of three for at least one character. A cultivar is considered uniform if the plants derived from its seed are, apart from rare aberrations and taking into account the particular reproductive system of the plants, similar or identical with regard to their essential characteristics. Cultivars are considered stable if after successive reproductions or at the end of each cycle of reproduction, where the breeder has defined a particular cycle of reproduction, they continue to exhibit their essential characteristics.

Although the breeder may include a considerable amount of detail concerning the botanical and agronomic characteristics of his cultivar in the application or technical questionnaire, each cultivar submitted for National Listing in most countries of the EEC is officially evaluated for distinctness, uniformity and stability within that country on one or two major sites. This is partly because different breeders have different methods of description and use different standards for comparison, but also because the expression of genotype varies from place to place. In practice the DUS measurements made for National List purposes are the same as those made for Plant Variety Rights purposes. If a cultivar is also new it may qualify for Plant Variety Rights; if it has agricultural merit it may qualify for the National List.

#### **Value for Cultivation and Use (VCU)**

To qualify for a National List, cultivars intended for agricultural purposes must, in comparison with other cultivars on the National List, constitute, either generally or as far as production in a specific area is concerned, a clear improvement either as regards crop farming or the use to be made of the harvested crops or of products produced from those crops. The qualities of the cultivars shall be taken as a whole and inferiority in respect of certain characteristics may be offset by other favourable characteristics.

Trial sites are generally located in areas considered to be representative of major or distinctive environmental or farming areas. In Britain there are 13 permanent trial sites in 7 regions in England and Wales, 3 in Scotland and 1 in Northern Ireland. Cultivars selected on the basis of performance in the national trials may be further tested on additional sites including farmers' properties on sites selected by the Ministry of Agriculture's extension division (AAS), where trials are carried out in accordance with local farming practice. Major crops such as spring barley are tested on all initial trial sites while minor crops will be tested only on selected sites.

Tests for DUS and VCU, which for most crops are undertaken simultaneously, take two years for cereals for National List purposes, with the most promising cultivars continuing for a further year on these and additional sites.

In Britain, two to four control cultivars are included in the cereal trials each year with all recommended cultivars being retested about every five years. In Holland however, all listed cultivars are included in the trials every year. In Britain the number of new cultivars under test in the past two years has been 30 - 40 for winter wheat and 50 - 60 for spring barley.

The performance of cereals is assessed in terms of the yield of grain, maturity date, straw characteristics, disease resistance and grain quality characteristics. For recommended cultivars, additional characteristics may be assessed, including response to nitrogen and susceptibility to nematodes and Mn deficiency. The characters to be assessed and the procedures adopted to measure these are laid down after formal consultations by the interests concerned and are published for both national trials and recommended list trials.

In most countries full results are given to the breeder or applicant at the conclusion of each season of trials. Data from all sites and listing all cultivars, are summarised and published as interim reports as soon as the trial results for a season have been statistically analysed. Where the data from one year's trials only, are published, this is emphasized and caution is advised in their interpretation. The breeder or agent can comment on any data and make any representations concerning his cultivars for both National List and Recommended List decisions. At least two weeks notice must be given before National List decisions are made. All decisions are publicised, including the grounds for any rejections and these may be appealed against to a statutory tribunal.

Under the British Act a record of all cultivars on the National List must be maintained with brief details of each cultivar, its performance and National Listing period. This record is available for inspection.

by anyone upon payment of a fee. A file for each cultivar on the National List is also maintained which includes a description of the cultivar and a summary of the facts which formed the basis for its inclusion on the List. This file is available for inspection by any person who is able to satisfy the Agricultural Ministers that it should be shown to him after payment of the prescribed fee.

### COMMITTEES

National Lists are administered by the statutory Designated Authorities, the Ministry of Agriculture or its equivalent. The U.K. List is administered jointly by the three Agriculture departments of Scotland, Ireland, England and Wales. All technical personnel involved with the DUS and VCU assessments, together with representatives from the Agriculture departments including statisticians make recommendations concerning the different cultivars to the National List committee which consists of senior technical officers who are not in the original group. This committee makes recommendations to the U.K. Seeds Executive. This consists of technical specialists, farmers, advisors and Ministry representatives and makes the final recommendation to the Agriculture Ministers. Although all tests and trials start simultaneously, no Recommended List decisions are made until after the official National List decisions have been made. Each year a statement of the previous years' results with all the cultivars named is sent to each applicant and each of the 5000 Fellows of the National Institute of Agricultural Botany (NIAB). This is an independent, originally farmer-financed organisation which is responsible for the Recommended List and associated trials in the U.K. and also carries out, under contract to the Ministry of Agriculture, the National List trials. When a cultivar is ready for Recommended List consideration, the applicant is notified two months in advance of a meeting of the appropriate NIAB Crop Advisory Committee. Each Advisory Committee has an independent chairman and the Cereal Advisory Committee has 23 members including farmers, seed merchants, millers, maltsters, technical specialists and advisory officers, i.e. all interested parties except those having a direct financial interest in the cultivars under trial. At the meeting the Officer-in-Charge of the trials presents the NIAB trial data and his Director presents any additional data or comments submitted by any breeder. Recommendations are made to the NIAB Council for confirmation.

The NIAB Advisory Committees may also set up working parties to investigate any problems which may arise in the assessment of varietal performance. Reports from these working parties are generally published and openly discussed. Although weaknesses in the system may be acknowledged, changes are not made unless there is general agreement that the change is warranted and that the technique to be adopted is both reliable and will produce better information than that being superseded.

### CONCLUSIONS

In Britain and Europe the basis and considerable detail for the National Lists is written into legislation.

The criteria for acceptability include distinctness, uniformity, stability, and value for cultivation and use. Trials to determine individual cultivar performance are undertaken in the individual countries. These are carried out on a limited number of fixed sites selected to give a good coverage of the major farming districts. Trials are for a fixed period and there is a well publicised calendar concerning the decision making processes. Trial data are referred annually to applicants for checking and comment and all information is considered by broadly based committees who, in the first instance, comprise the technical staff carrying out the trials. Although the Designated Authorities are the Ministries of Agriculture, recommendations pass through committees which represent all the interests involved in the crop other than the plant breeders or others who may have a financial involvement in the cultivars concerned. Both the data and decisions are published and negative decisions may be appealed against to a Judiciary Tribunal.

Recommended Lists may also be compiled for advisory purposes. Trials to determine cultivar performance generally include those undertaken for National List purposes but are both more extensive and intensive. The data are considered by a much wider range of people than is the case for National List trial data and there is greater opportunity for discussion between the breeder or the applicant, and the evaluating authority.

National Lists are forming an increasing part of the basis for the international trade in plant material. The agreed criteria on which the lists are based and the procedures involved are becoming increasingly widely accepted. There are some major differences between the procedures and criteria in use overseas and those in use in New Zealand. If New Zealand's export earnings from seed are to continue to adequately reflect our expertise in plant breeding and seed production, it is important that we understand these differences and possibly modify our procedures to strengthen our position in international trading circles.