E

UPOV

TGP/6.1.2 Draft 1
ORIGINAL: English
DATE: August 21, 2002

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

Associated Document
to
The General Introduction to the Examination
of Distinctness, Uniformity and Stability and the
Development of Harmonized Descriptions of New Varieties of Plants (document TG/1/3)

DOCUMENT TGP/6

"ARRANGEMENTS FOR DUS TESTNG"

Section TGP/6.1.2: Examples of Arrangements for DUS Testing

Document prepared by the Office of the Union
in cooperation with experts from France, Australia and Japan

to be considered by the

Technical Working Party for Vegetables (TWV), at its thirty-sixth session to be held in Tsukuba, Japan, from September 9 to 13, 2002

Technical Working Party for Agricultural Crops (TWA), at its thirty-first session to be held in Rio de Janeiro, from September 23 to 27, 2002

Technical Working Party for Ornamental Plants and Forest Trees (TWO), at its thirty-fifth session to be held in Quito, from November 18 to 22, 2002

Technical Working Party for Fruit Crops (TWF), at its thirty-third session to be held in San Carlos de Bariloche, Argentina, from November 25 to 29, 2002

SECTION TGP/6.1.2
EXAMPLES OF ARRANGEMENTS FOR DUS TESTING

This document presents examples of arrangements for DUS Testing such as:

1. Centralized official testing system (France),
2. Breeder-based testing system (Australia),
3. Customized testing system (Japan).

1. Centralized official testing system (France),

1.1 Background

In France, for most of the crops DUS testing can be characterized to be a centralized official testing system.

DUS testing is entrusted to an independent staff working for the Ministry of Agriculture (around 90 permanent civil servants). Most of them are employed at G.E.V.E.S. (Groupe d'études et de contrôle des variétés et des semences) which is the official agency settled by the French authorities to conduct the tests for national listing and plant breeders rights.

The Centralization of the tests is implemented in order to provide a common environmental basis for the technical examination of varieties and to facilitate the control of the interaction between varieties and environmental conditions.

1.2 French Approach

Under the centralized system, all new varieties and reference varieties are described and compared in the same environment. The DUS testing procedures under this system is highlighted below in the case of an annual species:

General DUS procedure for annual species

Reception of an application with
- Description of the variety by the breeder
(= technical questionnaire + additional characteristics)
- plant material

↓

First growing cycle: **Description + Uniformity check**

↓

Analysis of the data: comparison of descriptions of candidate varieties versus reference varieties; **for each candidate, detection of close varieties.**

↓

Second growing cycle: **Distinctness** (with the close varieties sown side by side) + **Uniformity check** + **Description**

↓

DUS Technical report with a final description in case of a positive report

The management of reference collections requires careful consideration. Reference collections are composed of varieties listed and/or protected in France and in the countries with similar environmental conditions. The reference collection is up-dated each year: for each new variety, the breeder is asked to provide a seed sample and variety description. Reference seed samples are stored in cold chamber (at 5°C and at 30% relative humidity). Currently, seed samples are stored for example:

for 1200 wheat varieties
for 2000 sunflower varieties
for 3800 maize varieties
for 300 rape seed varieties.

The new entries in the reference collection are described under the French conditions during 2 or 3 years. After this period, these varieties are included in the trials only if necessary, depending upon the characteristics of the candidate varieties. Example varieties are systematically included in the trials.

The degree of involvement of the breeder in the conduct of the trials is quite low: the test is entirely done with GEVES facilities. Nevertheless, a close contact is kept with the breeder during each step of the process in order to inform him of any problem encountered and to invite him to submit complementary information if necessary. The DUS reports are established by GEVES.

2. Breeder-based testing system (Australia)

2.1 Background

Australia has many climatic zones from alpine to tropical, from temperate to desert but does not have the infrastructure to provide testing facilities in all the necessary environments. In addition, movement of plant material to existing testing centers is made difficult, if not impossible, by internal quarantine barriers.

Australia protects a vast number of species (more than 500 species of 230 genera). With an average of one new variety each day; the first variety of the species every 10 days and the first variety of a genus every 2 weeks, collecting and maintaining national reference collections is very difficult, or more correctly, practically impossible if all international varieties, including farmers varieties are to be grown in comparative trials.

Equally it is impossible to expect examiner staff to be expert in all species and the therefore the Australian system had to find a way to access specialty knowledge held by others not directly employed in the PBR office, including experts in the private sector.

The Australian Government also decided that the system be 100% cost recovered by fees paid by applicants. Therefore there is a need to minimize costs and allow the applicant to choose the most economical way to have their variety examined.

Recognizing the overwhelming advantages of being part of UPOV, Australia needed to establish a system that could start small but grow with their requirements. And finally, a key of examination is to produce comparable and harmonized results

2.2 Australian Approach

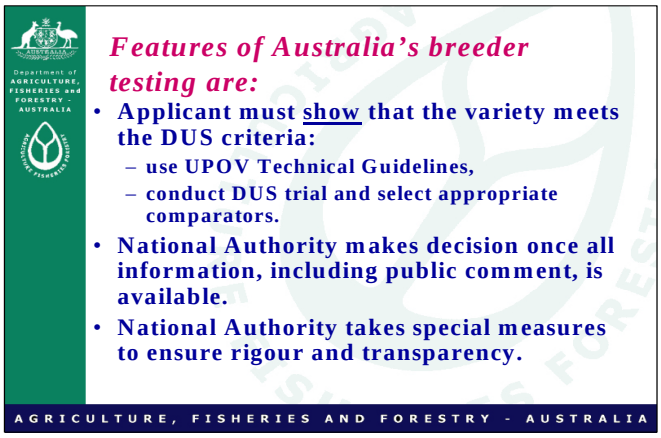
The UPOV Convention leaves it open for contracting parties to decide how to examine varieties and what sort of systematic method to adopt to determine DUS. Specifically Article 12 of the 1991 Act of the UPOV Convention provides options for an authority to gain information about a variety, namely, the authority may:

(1) grow the variety or carry out other necessary tests,
(2) cause the growing of the variety or the carrying out of other necessary tests, or
(3) take into account the results of growing tests or other trials which have already been carried out.

In Australia a combination of options 2 and 3 is used to complete an effective, transparent and legally strong examination process.

In this context of breeder testing, the term breeder more accurately refers to the applicant for PBR, noting however that in most cases the applicant is also the breeder of the variety under test. In the Australian system (Illustration 2), the onus of proof is on the applicant who has to show that the variety meets the DUS criteria. This is achieved by the applicant either conducting a comparative trial themselves, or by employing a third party adviser to do the trial on their behalf.

Illustration 1



The comparative trial must conform to the usual scientific standards and use UPOV Test Guidelines where they are available. The applicant or their adviser designs the trial, including the selection of comparator varieties, collects and analyses the data, documents in words and photographs the distinguishing features of the variety and rebuts any comments or objections. All the costs of conducting the trial are borne by the applicant and therefore the Australian PBR office does not have special facilities nor do they have to incur the time and expense of propagating or maintaining the trial.

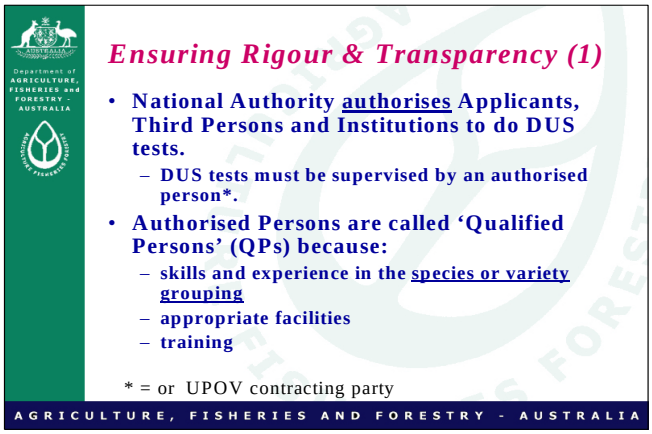
This process is entirely consistent with other IP regimes where the applicant is solely responsible for defending their rights, including the validity of the grant, if an infringement action was heard in the courts. However, some people worry that public confidence in the scheme may be undermined if somebody other than the national authority does the testing implying that there is a possibility the results may be manipulated. Accordingly Australia has a series of special measures to ensure rigor and transparency.

2.3 Ensuring Rigor and Transparency

If the applicant is to complete the testing and description of their variety they have to be trained. In the same way that patent attorneys are trained in the requirements of patents so the Australian PBR office spends considerable amounts of time training applicants (and other interested parties) on the specific requirements of PBR. These requirements maybe different (but not always) from normal agronomic work (see Illustration 3). Without training it will be very difficult for an applicant to present information about their variety that meet the formal and DUS requirements.

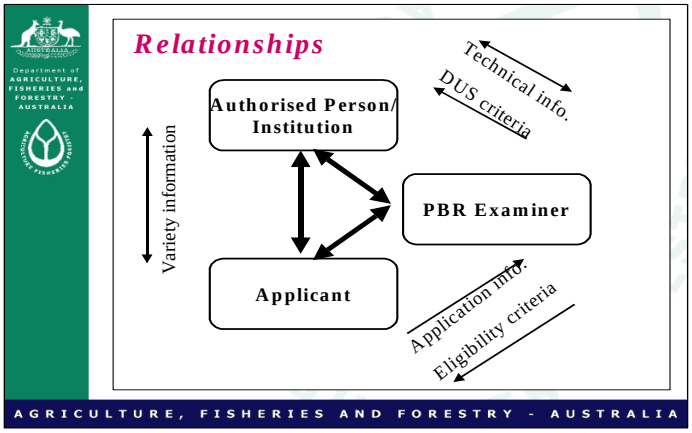
The PBR office accredits each successful trainee as a qualified person (QP) for one or more species.

Illustration 2



Most important to breeder testing is the access to expertise. If PBR has to cover all species of plants then it is unlikely that PBR staff will be expert in all of them. Accordingly, a (QP) accredited for the species in question undertakes the responsibility for all technical aspects of the work, including 'training and convincing' the PBR examiner that all aspects are correct (Illustration 4). Therefore Australia does not have to undertake extensive training of examiners prior to considering applications for varieties in new species. If accredited the applicant can act as their won QP using their own facilities. Results are published in the Plant Varieties Journal (PVJ) which is now also available on the internet, further scrutiny from the public.

Illustration 3



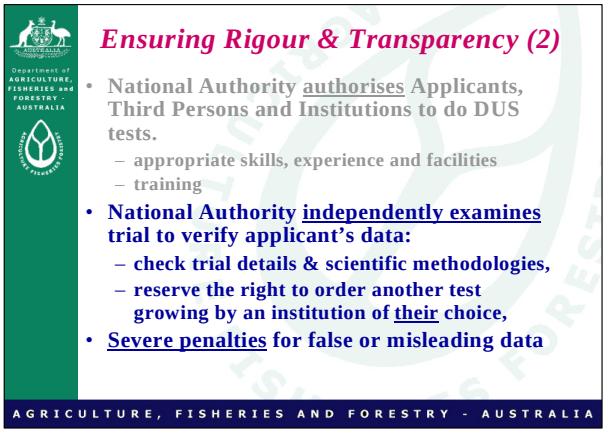
The Australian PBR office does a substantive examination (Illustration 5) of the data and then determines whether to visit the trial and verify the claims by repeating the measurements. This has two effects:

(i) The first is that the applicants take great care with the trial knowing that it is likely that an independent scientist will come to review their claims.

(ii) The second is building public confidence because the public know that the work has been scrutinised by a referee. This type of testing is more comprehensive than publishing a scientific paper where the experimental work is not physically reviewed.

In addition the description of the variety is published and objections are invited from the public for a period of 6 months. This adds another level of examination, because for some species there is a considerable additional expertise held by other members of the community. This is a peer review step which also allows competitors to comment. About 1% of applications draw comment from the public usually in the form of requests for more information.

Illustration 4

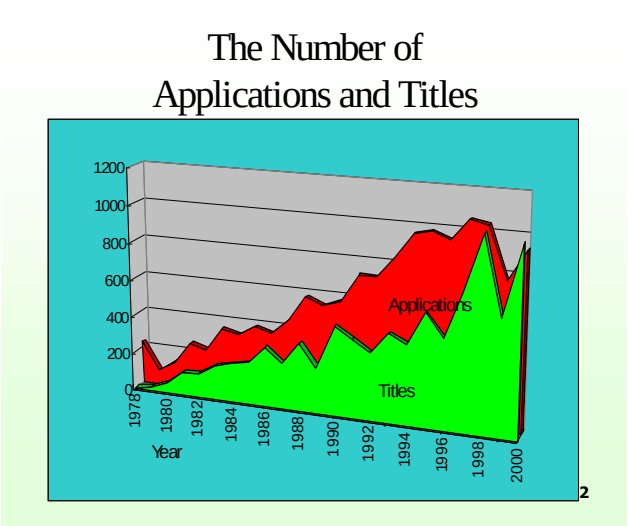


3. Arrangements in Japan

3.1 Background

The number of applications and PVP titles granted is illustrated in Illustration 6. Applications have been filed for 575 species and genera. Since the introduction of the plant variety protection system in Japan in 1979, a total of 14,531 applications have been filed. Rose (1566), Chrysanthemum (1496), Carnation (1244), Cymbidium (834) and Rice (492) are the five top crop species, representing 38.8% of the total applications

Illustration 5



3.2 Japanese Approach

All PVP applications are addressed to the Minister for Agriculture, Forestry and Fisheries. The administration of the plant variety protection is the responsibility of the Seeds and Seedlings Division of the Ministry of Agriculture, Forestry and Fisheries (MAFF). An application filed with the Seeds and Seedlings Division first undergoes a formal examination and then a technical examination known as DUS testing. An examination of the proposed variety denomination is also conducted. At this stage the application is published for public comments.

The DUS testing is conducted in the following three forms:

(1) Government Growing Test
(2) On-site Inspection by Government Officials
(3) Documentary Examination

For each application the examiner should decide on how the DUS test should be conducted. The National Center for Seeds and Seedlings (NCSS) has been designated to undertake Government Growing Test. (As a result of the recent reorganization of the MAFF, the NCSS has been separated from the MAFF and has received the status of an “Independent Administrative Institution.”) Government Growing Test may also be conducted by public research stations or other appropriate institutions with necessary expertise on the crop in

question, under the instruction of the examiner and in accordance to national test guidelines. The key features of the three forms are summarized below:

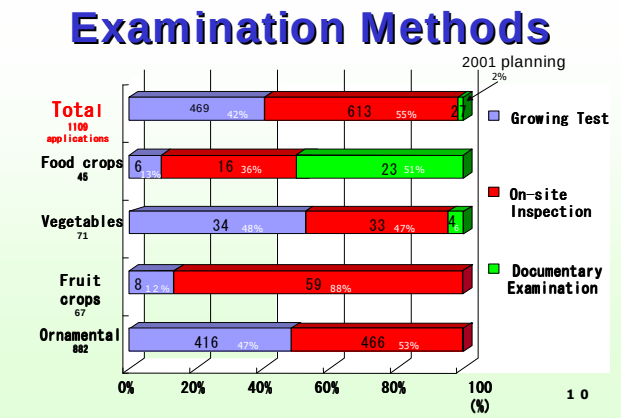
(1) Government Growing Test
- Conducted mainly by the National Center for Seeds and Seedlings (NCSS)
- Also conducted by a local government research institute (e.g. for rice)
- Used for vegetables, ornamental plants
- NCSS establishes the final DUS test report and variety description

(2) On-site Inspection by Government Officials
- Examiner to judge the qualification of the applicant for the setting of DUS testing on his own premises. National test guidelines are used to provide guidance.
- Used mainly for ornamental plants (orchids, rose) and fruit trees)
- Examiner visits the site of testing to verify the conformity of the test design with the instructions given in the National test guidelines and collect data for DUS test report
- Examiner establishes the final DUS test report and variety description

(3) Documentary Examination
- If a candidate variety has been tested by a public research institute for more than one year and the data provided can be considered to be reliable, the examiner may base his decision exclusively on the technical data prepared by that research institute
- The examiner can ask the research institute to submit additional data if thought necessary

The examiner takes a decision on the grant of a protection title on the basis of the test report. The examiner establishes a final description of the candidate variety. Unless any reason to reject the application has been found, or any objection or other relevant comment that might be influential on the fate of the application has been received from the public, the candidate variety should be granted a protection title.

Illustration 6 shows the how DUS test is arranged for different categories of crops.



3.1 Procedure of DUS Testing in Rice in Japan

Most of rice breeding activities in Japan are conducted by public breeding stations (either of the central Government or of local governments). In the formal rice breeding conducted by public breeding stations, official trials on the Value for Cultivation and Use (VCU) should be conducted before the release of any new rice varieties. Only those varieties which are officially recognized as being superior to the existing varieties will be commercialized. Normally, DUS data are also collected to ensure the reliability of the VCU trials. It is felt that in the case of rice varieties bred by Governmental breeding centers where all technical information is collected systematically with a high level of technical reliability, the PVP examiner can safely use the technical data provided by the breeders (researchers working at governmental research institutes). Technical data provided by prefectures were also thought to be as reliable, if the PVP examiner of the MAFF retains the possibility of undergoing an inspection in the field from where the DUS data have been collected.

In the case of rice varieties bred by farmers or seed companies, which are not necessarily considered to have adequate ability of conducting DUS testing and preparing a DUS test report, a mechanism is provided to complement the DUS test results prepared by the breeders through additional trials conducted under the guidance of the PVP examiner. Because of the wide range of different environmental conditions under which rice varieties are bred in Japan (certain characteristics can be expressed only under specific environmental conditions), additional DUS testing is conducted by different regional (prefectural or governmental) rice breeding stations, which are thought to be the best location for the expression of characteristics of candidate varieties.

[End of document]