



TGP/4.2 Draft 1

ORIGINAL: English

DATE: September 17, 2003

**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/4**

**“MANAGEMENT OF VARIETY COLLECTIONS”**

**Section TGP/4.2: Variety Collections for Tree and Perennial Species**

*Document prepared by the expert from New Zealand*

*to be considered by the*

*Technical Working Party for Ornamental Plants and Forest Trees (TWO) at its thirty-sixth session to be held in Niagara Falls, Canada, from September 22 to 26, 2003*  
*and*

*the Technical Working Party for Fruit Crops (TWF), at its thirty-fourth session to be held in Niagara Falls, Canada, from September 29 to October 3, 2003*

## Introduction

1. Many ornamental varieties and most fruit crops belong to genera and species that are perennial or longer lasting. The management of variety collections and DUS testing procedures need to consider carefully the necessary requirements and implications of the growing cycles and behaviour for these types of plants. When planning a growing trial it is not usually possible to design a trial with new plant material annually. This is standard practice for many annual species and seed propagated crops. The management of the collection with respect to time will become an important criterion. Many varieties in this group will not be at a suitable growth stage for testing in one year or even two years. The timing of testing and the age or maturity of the plants in the trial and the collection will need to be managed accordingly.

## The Variety Collection

2. A collection of tree or perennial varieties can exist in a number of forms. The plant collection could exist for variety protection purposes only or DUS testing could be one of a number of purposes. The testing authority may:

- own and manage its own collection.
- have access to a collection owned and managed by another.
- manage a collection owned by another
- collaborate in the management of a collection owned by another

3. Permanent variety collections can be important resources for DUS testing, however a permanent variety collection is not essential for the DUS testing of varieties. For many species, variety collections in any form do not exist. For these species, varieties of common knowledge and/or suitable reference varieties can be included in the growing trial to enable plant to plant comparisons and for the determination of distinctness and referencing to any other varieties, as necessary. A variety collection could exist as a list and the necessary plant material assembled when required, establishing a temporary collection. For this approach, the plants would need to be of similar maturity at establishment, propagated in the same manner and have a level of certainty as to individual plants being the correct variety and true to type. A temporary collection may exist for a single growing season or for a longer period as the variety may require time to reach a growth stage suitable for testing.

## Varieties in a Collection

4. The ultimate collection would include all Varieties of Common Knowledge. This is rarely achievable due to availability of plant material, possible climatic limitations, space and cost. The varieties in a collection are usually restricted and may include all or some of the following types of varieties:

- currently and formerly protected varieties
- important varieties in commerce or cultivation
- varieties used for characteristic reference and examples
- varieties of historic significance nationally or regionally
- any other varieties

## Management of Permanent Collections

5. Tree and perennial collections will require on going additions and maintenance. Over time, plants will become over mature and will need to be replaced or rejuvenated. For DUS purposes plants need to be maintained true to the variety description and representative of that variety. For each variety collection a programme of plant rotation is necessary. Depending on the type of plant, a maximum plant age should be determined which is considered limiting to that plant's usefulness for DUS testing. For a tree it might be ten years or an herbaceous perennial three or four years. When a plant reaches the limit, the plant is removed and replaced with a new plant propagated from variety material in the collection or from another known source. The majority of tree and perennial varieties are vegetatively propagated. It is advisable that key variety characters of the new plants are checked that they are the variety before the old plants are removed. For some plant species total plant replacement may not be necessary where an older plant can be rejuvenated by a cultural practice such as hard pruning. Routine cultural practices, including rootstock selection, applied to the collection should be standardised and applicable to all varieties. This ensures that if distinctness is established between a candidate and an existing variety, the distinctness has a greater probability of being variety based and not due to variables in the collection's environment or cultural practice.

## Use for DUS Testing

6. When a collection is used for testing purposes, the age of individual plants will probably be variable. This is not necessarily a problem providing that plant to plant comparisons made between the new candidate variety and existing varieties are made at appropriate and similar stages of maturity. Comparable and consistent maturity stages or growth stages are more important than, and not the same as, plant age. For most tree fruit crops, evaluation of fruit characters begin when candidate trees are in their second year of fruiting. Comparisons between trees of the candidate variety and trees of collection varieties can be made because all are at least in their second year of fruiting. It is not critical to the results that the candidate variety trees are four years from planting and other varieties are six to eight years from planting. All are at fruiting maturity. This approach of clearly defining at what growth stage or level of maturity testing in a tree or perennial species can proceed, overcomes the difficulty of using variety collections containing plants of variable ages. Varieties, which are vegetatively propagated and tested using few, if any, statistical methods, are best suited to this approach.

7. Permanent variety collections and the DUS growing trials are closely related. The DUS growing trial is practically part of the collection. The collection already exists and candidate varieties are added to it as necessary. The need for grouping and sorting similar and reference varieties for inclusion in the trial is reduced, as most, if not all the varieties needed for testing will already be present in the variety collection. The significance of grouping and the determination of which varieties to include in a trial is greater for temporary collections.

[End of document]