

## Why have Growing Trials for Plant Variety Rights?

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The purpose of a Plant Variety Rights (PVR) growing trial is to establish whether or not a candidate variety meets the technical criteria of distinctness, uniformity, and stability (DUS) under local climatic conditions. The PVR Office must test these criteria and be satisfied that the variety is DUS before a grant of rights can be made. The growing trial may involve not only the candidate variety but also additional varieties for comparison and reference purposes. All plants are grown under the same cultural and environmental conditions. A growing trial may last from a few months to several years depending on the kind of plant. Growing trials are located in various sites around New Zealand depending on the species under test.

### INTRODUCTION

Protected varieties feature prominently in present day commercial horticulture. It is noticeable that a high percentage of recent new variety releases are subject to a grant of PVR or under test for PVR. It is this term “under test”, or the technical part of protecting varieties that is not understood. I would go further and suggest that many people in the nursery industry and the wider community have poor knowledge of how a variety becomes protected and the process involved. I stress the word process, because the general understanding of PVR has improved significantly in recent years.

### DETERMINATION OF DISTINCTNESS, UNIFORMITY, AND STABILITY

The three technical criteria that must be determined before any owner can be granted a PVR for a variety are distinctness, uniformity, and stability. This is abbreviated to DUS. The PVR Office (PVRO) must satisfy itself that a variety is actually distinct from all other known varieties or what we term varieties of common knowledge. A variety of common knowledge is one that is commercially available or described in literature, journals, magazines, or in the public domain such as on display in a botanic garden. We also consider unnamed selected forms of a species maintained as clones in commerce. For PVR purposes these are considered as varieties. Many will be familiar with the widely advertised and promoted lavender ‘Monet’. This was refused PVR because it could not be distinguished from an unnamed dark-flowered form of *Lavandula dentata* propagated vegetatively and commercially available in the South Island.

We first try to identify varieties of the genus or species in New Zealand. This information is available from published literature, nursery catalogues, trade magazines, plant collections, individuals with particular species, and variety knowledge and from existing protected varieties in that genus. In theory, we should take a global view and search for varieties of common knowledge internationally. With today’s ease of communication and our networks through the International Union for the Protection of New Varieties of Plants (UPOV), keeping track of

varieties in say Europe is not that difficult. However, the problem arises when we actually find one and no plant material is in this country. Whether or not we actually include this variety in a New Zealand trial is another question. This decision is made case by case.

Once the varieties of common knowledge have been identified, we can single out the variety or varieties, if any, that are most similar to the candidate and include them in the growing trial.

A variety must also be uniform and stable. Uniformity is determined by looking at plants of the variety and checking for any sign of mutation, reversion, or other nontrueness-to-type characters. Stability is not tested. It can only be properly assessed over a period longer than that for a PVR trial. If a variety becomes unstable after PVR is granted then the right can be cancelled.

The cancellation of a right after PVR is granted can also occur if a candidate variety is later found to be indistinct from a similar variety which was not considered during testing. Similar varieties can be over looked or missed for a number of reasons. This situation happened recently for a variegated jasmine. Several years after PVR had been granted for this variety an apparently identical variety in Southland was brought to our attention. At the time of testing, the PVRO and others consulted had been completely unaware of this variety. The variety was trialed again and found to be indistinct from the Southland variety. As a result , Rights were cancelled.

## **GROWING TRIALS**

Every variety is tested for DUS in a growing trial. Most varieties will require testing in New Zealand growing trials in order to establish whether or not they are DUS under local climatic conditions. A PVR growing trial is set up on a single site. The trial is exclusively for PVR purposes and cannot be combined with any other function. The trial could be used further for other purposes after PVR testing has concluded.

A PVR trial includes a set number of plants of the candidate variety or varieties plus plants of any other variety or varieties necessary for comparison or reference purposes. Every possible attempt to reduce variation between plants and varieties is made. If differences between varieties are observed, then we can say with greater certainty that the differences are genetically based and not caused by cultural practice or the environment. We minimise variation due to growing conditions and cultural practice by: all plants being propagated by the same method; all plants on the same site; all plants in the same pots, media, or area of ground; all plants managed the same way according to set trial requirements. When plants in the trial are sufficiently mature or have reached the appropriate growth stage the evaluation will begin. It may be years between the time a trial is established and when it is suitable for evaluation, depending on the species. The evaluation involves preparing a detailed morphological description of the candidate variety, written and photographic recording of differences between trial varieties, and the assessment of uniformity.

Many applications for PVR are for imported varieties, possibly already protected in several countries. You may ask why testing using a growing trial in this country is necessary when the variety has already been tested and approved overseas. Local testing is necessary because of several reasons. Experience has shown that a distinct variety overseas is not necessarily distinct in this country. There may be similar

varieties in this country not tested overseas. We cannot assume that the distinguishing character(s) will be expressed here or that the variety will be uniform. New Zealand has a unique climate and environment with the resulting effects on plants. A rose breeder from Meilland, the largest rose breeding company in the world, noted that some of his varieties growing in New Zealand had a higher petal number than the same variety grown in France. It is well known that some plant characters such as petal colour, plant height, and habit are strongly effected by environment and you would expect to see differences between countries. Petal number is not known to be influenced by growing conditions and is usually very consistent between countries.

**Location of Growing Trials.** Growing trials are located throughout the country, depending on the kind of plant. Pip and stonefruit are tested at the National Cultivar Centre. Roses are tested in a central trial in Palmerston North, lavender on a site near Lincoln, and marguerite daisies at the Auckland Regional Botanic Gardens. The majority of ornamental varieties are tested using growing trials on the applicant's property. The applicant is required to establish and maintain the trial as requested and according to our "Guidelines for Plant Variety Rights Growing Trials". All evaluation and testing work is carried out by myself or one of our regional describers.

### **OVERSEAS TEST REPORTS**

In the case of imported varieties used for indoor use, grown as greenhouse crops, and a few other special cases we will use test reports from trials outside New Zealand. We would be more likely to accept overseas test results from countries using official testing according to UPOV protocols. UPOV testing protocols or guidelines are developed at an international level for each genus or species. These protocols set out in detail how varieties in a particular genus or species are tested. This includes a list of morphological characters required for the description. A UPOV guideline exists for roses. The way roses are tested here is essentially the same as testing in other UPOV member states where the rose guideline is followed.

A relatively large number of PVR applications are for varieties imported from Australia. We have a lot in common with Australia, and it could be argued that Australian test results would be suitable and applicable here. There appear to be some climatic and environmental similarities between New Zealand and parts of Australia. This can be misleading. The PVRO has experience with at least one Australian-bred variety that when described here did not match the Australian description. It was not clear why the descriptions differed when you would perhaps expect them to be very alike. It is for this reason that we exercise great caution in using overseas test results, even those from our nearest neighbour.