

PBR Part 1 and Part 2 Information Document



Solan Pty Ltd - Centralized Testing Centre for potatoes: Solan Pty Ltd (SA)

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IP Australia Examiner: Staff member of IP Australia

PBR Trial work in Australia is separated into two stages.
At Solan we have structured the PBR Process as Follows.

Part 1 – Application for PBR in Australia (Facilitated by John Fennell QP)

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Part 2 – Comparative trial (Solan Pty Ltd) and Description of a Variety (John Fennell QP)

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Genetic Resource Maintenance (Solan Pty Ltd) if required

Contact Details: admin@solannursery.com.au

OBTAINING PLANT BREEDERS RIGHTS ON YOUR NEW POTATO VARIETY

Plant breeder's rights (PBR) secure the exclusive commercial rights for a registered potato variety. The rights are a form of intellectual property (IP), like patents and trademarks, and are administered in Australia under the Plant Breeder's Rights Act 1994.

If you have developed, or are in the process of developing or obtaining a new potato variety, protecting your intellectual property through plant breeder's rights should be considered an integral part of your overall business strategy.

The PBR scheme protects potato breeders for a 20 year period from the grant of rights and gives them a commercial monopoly, while encouraging plant breeding and innovation.

There are only a limited number of potato varieties bred in Australia and nowadays the majority are imported from overseas breeding companies through the Australian Quarantine Service.

Time considerations must be factored in when importing a cultivar into Australia through the Australian Quarantine Service and the costs associated with this. The origin of the material to be imported will determine the length of time the plant material will be required by quarantine for assessment. Material enters quarantine as one of two categories.

Approved sources* or *Non-approved sources.

Importation via **approved sources** reduces the length of time that material will be assessed in quarantine upon receipt in Australia. SASA (***Scottish and Advice for Scottish Agriculture in Scotland***) are such an approved source. SASA has been approved as satisfactorily completing some of the required tests for quarantine pests and diseases in Scotland prior to its entry into Australia.

Material sourced from other laboratories internationally is considered **Non-approved** and will undergo testing for all quarantine pests and diseases for *Solanum tuberosum*. The time frame to complete testing on material from non-approved sources is considerably longer and should be discussed with AQIS.

Plants imported will be held at the Post Entry Quarantine Facility to undergo testing and the address

is as follows: The Department of Agriculture & Water Resource
 Post Entry Quarantine - Plant Facility
 135 Donnybrook Road
 Mickleham
 Victoria
 AUSTRALIA 3064

Time frames and cost must also be considered when new varieties which have bred in Australia are to undergo the PBR Process and require introduction into tissue culture. AgriBio (Victorian Department of Environment and Agriculture) conducts this work and discussion on the costs and timeframe required to complete the testing required should be discussed with AgriBio.

Australian companies that secure the rights to import and use proprietary varieties can become Agents for those varieties and can secure PBR on behalf of the original breeders or assigned owners of a variety.

The PBR process once granted also protects the registered name and synonym of the variety from use in relation to other similar plants.

New potato varieties are only eligible for PBR protection in Australia if they have been sold (with the breeders consent) for less than one year in Australia or less than four years in an overseas country. In Australia it is mandatory to demonstrate the new variety characteristics in comparison to its nearest comparator in a trial. It is not possible to use previously published data to do the comparison as is the case with other crop species.

The steps for obtaining PBR in Australia are:

Part 1:

An IP Australia accredited and independent Qualified Person will work on the Applicant's behalf with the breeder to develop a Part 1 Application together with the necessary supplementary documents and photos. This work involves checking for eligibility and also determining the closest comparator variety. In many cases this will be a proprietary variety and, if so, Solan will negotiate the use of this variety in a comparative trial. The Applicant or Agent will be provided with the Part 1 information and will need to become registered with IP Australia e-services to submit it along with your application payment.

When the application is accepted by IP Australia the variety can be included in a Part 2 trial with its comparator.

When do I file Part 2 of my application?

Once an application is accepted, it is covered by provisional protection against infringement.

You then have a minimum of 12 months to further consider its commercial worth and resolve issues, such as finance and licensing before deciding whether full PBR protection is worthwhile.

Timing of submission of the Part 2 Application form is variable and is largely determined by the time it takes to complete and examine the comparative growing trial.

Examination of your PBR application

The examination process checks the formalities of your application, the eligibility of the applicant to apply and the details of the variety itself.

Examination is conducted in several steps. They are:

The Part 1 application form is examined to establish the application meets minimum standards for a valid application. If so, the application is 'accepted' and covered by provisional protection. This usually occurs within 2 months of filing your application.

Substantive examination. Once accepted, the claims made in the Part 1 application form are tested in a comparative growth trial. These can be done at Centralised Test Centres (CTC's). This usually takes 18 months from filing to complete.

A physical examination of the growth trial will be conducted by us once the trial begins displaying major differences with existing varieties. We confirm the key distinctive characteristics of the variety.

Source: IP Australia

Trial process

Solan is recognized as a Centralised Testing Centre (CTC) for Potato Varieties in Australia by IP Australia.

The site includes a Tissue Culture Laboratory, a Genetic Resource Centre, an enclosed polyhouse structure and a cool storage facility for the storage of potato tuber stocks once harvested.

Solan is accredited by Biosecurity SA and receives in-vitro plantlets direct from quarantine. Solan also receives in-vitro plantlet tissue from accredited suppliers – Toolangi Elite and Agronico. Solan produces accredited potato seed to Australian Seed Growers.

Solan Pty Ltd. has developed with IP Australia, a greenhouse-based trial protocol that utilises potted plants that are started from disease-free tissue cultures. This avoids the time needed to produce tubers for use in a field trial and speeds up the trial process. Experience has shown that the definitive varietal characteristics can be seen in the greenhouse trial. The protected environment also means that trial failure is rare which helps you to secure PBR without further delay.

Furthermore, Solan is registered as a Centralised Testing Centre for potatoes and as a result significantly lower IP Australia Examination fees are charged when a trial includes five or more candidate varieties. Although the trial will include varieties on behalf of several Agents strict confidentiality is maintained.

An IP Australia Examiner generally visits the trial at least once to inspect the work being done.

To comply with UPOV requirements the trial comprises 50 plants of the candidate variety and 50 plants of the comparator variety. To get the best expression of characteristics the trials are commenced in September/October each year and are completed by about May in the following year. Records are taken of all the recommended UPOV characteristics plus any additional characteristics that may enhance the finally registered varietal description. Having a full variety description is your safeguard to defend your variety rights should any challenge occur.

At the conclusion of the trial work the QP will generate the variety description and submit this online to IP Australia. The QP will also provide you with a number of completed documents that you will need to submit.

The QP and Solan inputs are completed at this stage. Surplus G0 minitubers of your variety that are produced in the trial will be available to you. Minitubers of any public comparator will also be available.

Public Review Period

The varietal description is published in the Plant Variety Journal and after six months, assuming that no challenge is made against the variety, the variety will be eligible for Grant of Rights.

John Fennell (QP IP Australia)

20 February 2016

PBR Part 2 Trials:

The purpose of the trial is to develop a description of a proprietary variety in comparison to the closest variety of common knowledge in Australia and to demonstrate distinctness, uniformity and stability in the variety.

Part 2 Trials are conducted annually and experience has shown that the best growth and expression of characteristics occurs when trials are started in September/October.

Both the candidate variety and a comparator variety are grown.

Selection of comparators is done at the part 1 stage and generally done on the basis of similarity with 5 basic characteristics:

- 1. *The lightsprout shape (a very stable character)***
- 2. *The flower colour (is a very noticeable trait)***
- 3. *Tuber shape***
- 4. *Skin colour***
- 5. *Flesh colour (3, 4 and 5 are desired agronomic traits and generally what varieties are selected for).***

On occasion the tubers produced of the selected comparator can be useful to the applicant (ie a public variety or a proprietary variety that they control). However this is not the aim of the process. Trial work is conducted to ensure it stands up to scrutiny in the public review period prior to grant of rights. The PBR process has to be completely separate from the commercial process.

Plantlets required for trial plots are planted to the nursery in September each year. Production of plantlets for trial purposes relies on the availability of germplasm and it reaching Solan in a timely manner for the production of plantlets to meet the September plant date in the nursery.

The Trial Process for Part 2

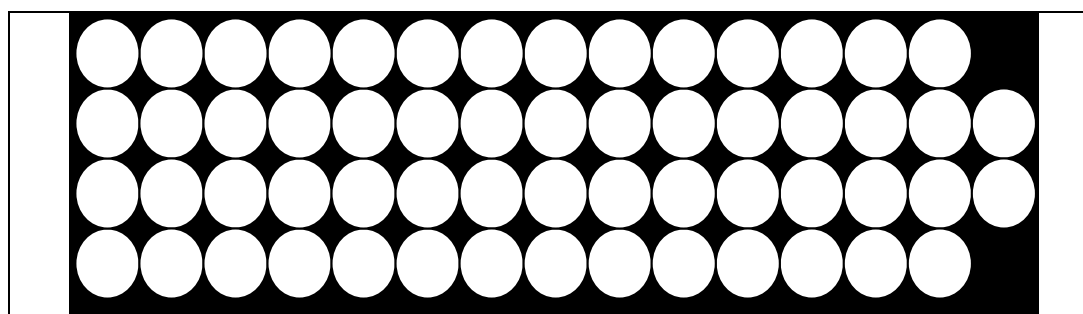
Varieties required for the trial may or may not be held in the Solan Genetic Resource Centre (GRC). In cases where the required varieties are not held in the Solan collection, permission will be sought from the owner of the variety (if privately owned or held under licence) for use in the trial and authorization provided to the facility holding that cultivar. Solan works in conjunction with QP's, Applicants and other 3rd party's during this process.

Plant material must be received by Solan no later than July of each year. This allows sufficient time for production of the required number of plantlets for trial purposes.

Once the invitro material is received by Solan, the plants are sub-cultured in Solan's tissue culture laboratory. There are a number of replications of plantlet stock carried out to ensure plants are healthy and suitable for planting to trial plots. All plants are subcultured to be ready for planting on the same day to the polyhouse.

75 plants are issued to the nursery for planting to seedling trays from tissue culture. Of these 75 seedlings, 60 of the strongest are selected for planting to the trial pots in the nursery with one plant per pot. Pots sit on raised steel framed racks with irrigation supplied via overhead sprinklers.

Plots are arranged to allow comparator and candidate to grow side by side. Each variety in each plot is separated by a plastic divider, a numerical number is allocated per plot. Pots also contain a tag with a code name for confidentiality.



Trial Plot Layout

Trial plots are monitored throughout the growing cycle for health, pest and diseases. Once flowering commences a QP along with an IP Examiner visit the Solan site for the recording of DUS characteristics. Details are recorded and plants photographed.

At maturation of the plants, tubers are harvested, graded and counted.

The QP selects tubers from each trial plot to conduct recording of the tuber characteristics. A selection of tubers are then stored under illuminated conditions for the development of lightsprout characteristics. This recording completes the DUS recordings for the Part 2 Trial.

Lightsprout Process

8 Tubers are selected per variety (Candidate/Comparator) and placed on wooden laths with pins. Tubers are placed with the basal end down and the apical bud pointing up. The laths then sit in a growth chamber under controlled conditions with a light source. The light spectrum the tubers are exposed to, along with the light intensity are two very important factors to obtain good expression of characteristics. The temperature range the tubers should be kept to is 17°-23° C and the light source to emit an intensity of 5-10 lux.

As tubers start to sprout any sprouts are to be removed with the exception of the apical bud. Observations are usually carried out 10 to 12 weeks after the start of the test. See image below



Source: Naktuinbouw Calibration Book, *Solanum tuberosum* L. 2012

The technical guidelines which are used to perform DUS recordings are UPOV TG/23 and these can be obtained from the following link.

<http://www.upov.int/edocs/tgdocs/en/tg023.pdf>

Trial data is submitted to IP Australia by the QP using their online Interactive Variety Data System (IVDS), usually in May (9 months from start of trial). The QP works with the Examiner in the development of a variety description that is published for public review in the Plant Varieties Journal. The public review period is 6 months after which Grant of Rights can occur if no successful challenges are made against the variety.

Remnant tubers

The balance of tubers remaining at Solan after the QP has selected tubers to complete the lightsprout data recording will remain in the coolroom at Solan until instructions are received from the owner of the tubers.

The trial tubers are supplied to associated owners, alternately the owner may instruct Solan to dispose of any trial tubers after the successful completion of the trial. Tubers which have been used in a PBR trial as a comparator and are not owned by the Applicant of the trial and are not a freely accessible public variety are referred to the owner of the variety for instruction.

Likewise, germplasm which may have been brought into the GRC at Solan for the trial will also require instruction as to its future, post trial. There is the option to continue to maintain the germplasm at Solan for an annual fee. If maintenance of the germplasm is not deemed required by the owner, the owner must then instruct Solan to dispose of the in-vitro tissue in writing.

Indicative Time Line -> Part 2 Trial Work

Month	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
Final Germplasm Receipt																	
Process Germplasm																	
TC Plantlets to Trays and Pots																	
DUS Recording																	
Harvest of Tubers																	
DUS Recording Lightsprouts																	
Storage of Tubers																	