

Plant variety protection: upholding breeders' rights

Plant breeders can now obtain intellectual property rights in Malaysia to protect their efforts in the breeding and development of new plant varieties.

By S.L. Tan and F.L. Soo¹

In the industrial sector, IPR or Intellectual Property Rights have been implemented for a long time, to promote innovation and invention. Various forms of IPR are available, e.g. patents, copyright and trademarks. The owners of such rights can take legal action against those who make “copycat” products illegally.

In the agricultural sector until relatively recently, no protection was available for the breeders who produce new varieties of plants including those of food, feed, horticultural and floricultural crops. The rationale was that one cannot patent a living thing. This rationale has been revised and today, we have what is called Plant Variety Protection (PVP) – equivalent to a patent – for newly bred varieties.

Plant breeding

First, we need to understand what qualifies as a new variety. Plant varieties are basically the products of plant breeding. Essentially, a plant breeder looks for or creates genetic variation in plants, from which to select individuals with desirable characteristics. These characteristics may be higher yield, better tasting fruit, striking flower colour, disease resistance, etc. which are inherited in a stable fashion. Many techniques are used in plant breeding to create the genetic variation required for selection. These include:

- the classical breeding technique of crossing two different parental types and selecting for desirable trait combinations in the subsequent generations of progeny;
- looking for naturally occurring mutations (e.g. somaclonal variants) which have agricultural/horticultural potential
- inducing mutations (e.g. by irradiation or use of mutagens such as colchicine) to generate variation in the hope of producing desirable traits
- crossing plants having a particular desirable trait with a variety that lacks that trait, e.g. resistance to a particular disease
- genetic engineering (the molecular level transfer of genes, often between unrelated species)

Plant breeding can be a long drawn-out process because many traits, such as yield and quality, are controlled by many genes, and require many generations of controlled pollination to stabilize. Also, very large numbers of plants need to be evaluated by the plant breeder over different seasons and under different growing conditions to verify the stability of performance of a new variety.

It would be very demoralizing if breeders have no legal rights to protect their varieties from

¹Plant Variety Protection Registration Office, Crop Quality Control Division, Department of Agriculture

being commercialized and marketed by others. Like a patent, PVP provides exclusivity, and encourages plant breeders to continue their efforts in developing new improved varieties.

There is another way by which new varieties can gain recognition, and that is by being discovered and developed. Discovery alone does not qualify; for example, someone who discovers a new plant species in the jungle cannot apply for PVP. However, if the person discovers a previously unknown variant (perhaps arising from spontaneous mutation, or from chance cross-pollination) in a stand of plants, and goes on to pick it out and multiply it into a distinct, uniform and stable population (i.e. develop it), he can claim PVP for this new variety.

Protection of New Plant Varieties Act 2004

The Protection of New Plant Varieties Act 2004 of Malaysia provides exclusive rights to the plant breeder to carry out the following activities in relation to a new variety:

- producing or reproducing (i.e. multiplication)
- conditioning for the purpose of propagation
- offering for sale
- selling or other marketing
- exporting
- importing
- stocking for any of the above purposes

The breeder is required to apply for registration of his variety for protection using forms which can be downloaded from the official website of the Plant Variety Protection Registration Office of the Department of Agriculture: <http://pvpbkkt.doa.gov.my/>

Criteria for a new variety

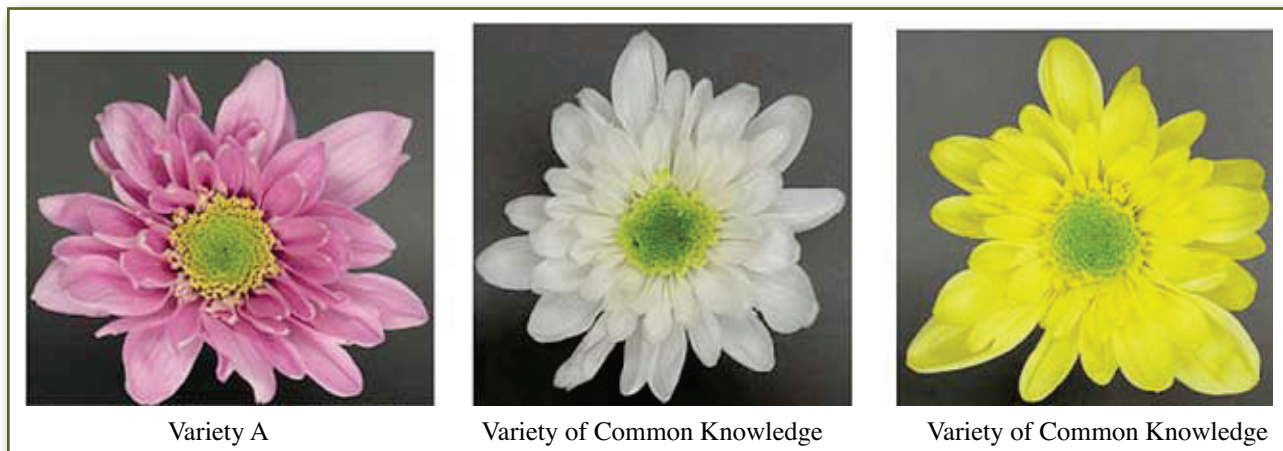
To qualify for protection, it must be proven that a variety is:

- new or novel
- distinct
- uniform
- stable

Novelty

A variety is considered to be new or novel if, at the date of filing an application for a breeder's right, the variety has not been sold or otherwise disposed of to others, by or with the consent of the breeder, for purposes of commercializing the variety, earlier than one year before the date in Malaysia. In the case of an application from a breeder of another country, commercialization should not be earlier than four years from the date of application in that country, or any other country outside Malaysia. For varieties of trees and perennial vines, commercialization should not be earlier than six years before the said date.

Thus, varieties which were bred and commercialized before the Act came into force are no longer considered new, and cannot be given protection. Neither can the plant breeder be granted a breeder's right. These varieties can only be registered in the National Register of Plant Varieties, and become varieties of common knowledge which can be freely utilised by the public.



An example of distinctness in colour:

Distinctiveness

A variety is considered to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application. Distinctness can take the form of fruit colour, leaf shape, plant height, etc. to distinguish the variety from others.

Uniformity

A variety is considered to be uniform if, subject to the variation that may be expected from particular features of its propagation, it is sufficiently uniform in its relevant characteristics. A wider degree of variation may be expected (and accepted) from a cross-pollinated crop such as maize, compared with a self-pollinated crop such as rice.

Stability

A variety is considered to be stable if its relevant characteristics remain unchanged after repeated propagation or, in the case of a perennial crop, at the end of each production cycle.

Thus, for every application seeking protection of a variety and grant of a breeder's right,

the Registration Office for PVP will need to first establish that the variety is new or novel (comparing it to the varieties in existing databases), and then to carry out a DUS test for Distinctness, Uniformity and Stability. The personnel tasked with carrying out the DUS test are aided by set technical guidelines drawn up for different plant species. The success or failure of an application hinges entirely on these criteria.

Who can apply for PVP?

Anyone who has developed a new variety of plant or mushroom (but not microorganisms), can apply for PVP. Exceptions are varieties which may affect public order or morality (e.g. narcotics), and varieties for which the cultivation, reproduction or any other use may produce a negative impact on the environment (e.g. a noxious weed species).

The applicant should be the breeder; the employer of the breeder; the successor in title of the breeder; or any government or statutory body which carries out the functions of a breeder. The applicant can also be a farmer or group of farmers, a local community or indigenous

people, who have carried out the functions of a breeder.

In the case of a breeder from a foreign country or a group of farmers, a local registered agent is required to make the application. For a local community or indigenous people, an authority representing them can act as the agent to apply for PVP on their behalf.

Thus, even hobbyist orchid growers can protect the varieties they breed so that they can commercialize (i.e. sell) planting materials of these varieties, or prevent unauthorized parties from commercializing the fruits of their labour even if they have no intention of commercializing the varieties themselves.

Duration of a Breeder’s Right

A breeder’s right to a registered plant variety takes effect from the filing date of an application. This means that the applicant can begin selling

seed or planting material of his variety and collect royalties from the sales while waiting for the grant to be approved.

A variety which is derived by plant breeding methods (including genetic engineering) is protected for a duration of 20 years, while for a variety which results from being bred, or discovered and developed by a farmer, local community or indigenous people, protection is for 15 years. In the case of varieties of trees and perennial vines, the duration of protection is 25 years, regardless of the background of the applicant who developed them.

The grant of protection may be extended beyond the stipulated periods if it can be proven that such extension is desirable on the grounds of national needs and interests.

Fees

Table 1 lists the fees associated with the various actions related to PVP matters.

Table 1. Schedule of fees

	Action	Form	Fee (RM)
1	Filing an application	PVBT 1 or PVBT 2	100.00
2	Request for substantive examination		
	a. Documentation examination		500.00
	b. On-site inspection	PVBT 3	1,500.00
	c. Growing test		2,500.00
	d. Subsequent growing test (if necessary)		1,000.00
3	Opposition	PVBT 4	-
4	Reply by applicant	PVBT 5	-
5	Filing of documentary evidence in support	PVBT 6	-
6	Certificate of registration of new plant variety and grant of breeder’s right	PVBT 7 or PVBT 8	-
7	Request for certified copies or extracts of Register of New Plant Varieties	PVBT 9	10.00
8	Application for compulsory licence	PVBT 10	-
9	Application for assignment or transmission of breeder’s right	PVBT 11	100.00

Currently, no fees are charged for annual renewal of the grant of a breeder’s right for the duration of protection of the variety.

The average time taken for a breeder’s right to be granted from the date of filing an application is 3.8 years. This includes the time taken to carry out a preliminary examination which involves document-based checks, to grow a field trial to test for distinctness, uniformity and stability (usually over two growing cycles or two fruiting cycles), and finally for a three-

month publication in the Federal Gazette for public comments on the application. Of course, the duration varies according to the length of the growing cycle of the applied variety, availability of its planting materials for the field trial, the method of substantive examination required, and the publication procedure at the Attorney General’s Chambers.

Protected varieties

So far, 66 plant varieties have been officially recognized, as given in Table 2.

Table 2. Plant varieties officially recognised in Malaysia

No.	Crop	Variety name	Year of	
			Filing	Grant
1	Papaya	Frangi	2008	2012
2	Orchid	Dendrobium Tuanku Fauziah	2009	2012
3		Dendrobium Abdullah Badawi	2009	2012
4-22	Acacia	19 varieties: SAFODA-Koshii Acacia hybrids 1 to 19	2009	2012
23	Chrysanthemum*	Dekshepody	2009	2012
24		Mona Lisa Splendid	2009	2012
25		Mona Lisa Yellow	2009	2012
26		Deknavona	2009	2013
27		Dekprius	2009	2013
28	Rice	UKMRC-2	2009	2013
29		UKMRC-3	2009	2013
30		UKMRC-4	2009	2013
31		UKMRC-8	2009	2013
32		UKMRC-9	2009	2013
33		UKMRC-10	2009	2013
34	Chili	Semerah	2009	2015
35	Roselle	UKMR-3	2010	2015
36	Chrysanthemum*	Delirossano	2011	2015
37		Dekfrancofone	2011	2015

No.	Crop	Variety name	Year of	
			Filing	Grant
38		Dekorlina	2011	2015
39	Durian	Kim Luang	2011	2015
40	Lemon myrtle*	Qzen-Twyford 1	2011	2015
41	Chrysanthemum*	Dekamaris	2011	2015
42		Zanmubonita	2011	2015
43		Zanmulucia	2011	2015
44		Zanmugabbana	2011	2015
45	Pitaya	Pink Dragon Sunlike	2011	2015
46	Chrysanthemum*	Deliradost	2012	2015
47		Delibaltica Yellow	2012	2015
48		Zembla Brasil	2012	2015
49		Zembla Lime	2012	2015
50		Delizarita	2013	2015
51		Delidante Purple	2013	2015
52		Delidante Yellow	2013	2015
53		Delfuego Dark	2013	2015
54		Deliedessa White	2013	2015
55		Delimiquel	2013	2015
56		Anastasia Star Pink	2013	2015
57		Lettuce*	Expertise	2014
58	Excite		2014	2016
59	Duplex		2014	2016
60	Triplex		2014	2016
61		zesy 002	2010	2016
62	Kiwi fruit*	zesy 003	2010	2016
63		zesh 004	2010	2016
64	Chrysanthemum*	Dekzidane	2013	2016
65		Deliradost Yellow	2012	2016
66		Anastasia Mint	2014	2016

*Varieties introduced from abroad

Eighty-two applications for protection of new varieties and granting of breeders' rights are being processed at the time when this article was written.

Some of the newly protected varieties are illustrated in this article.



'Semerah' chilli



'Tuanku Fauziah' Dendrobium orchid



'Kim Luang' durian



'Pink Dragon Sunlike' pitaya