



History and Current Situation of Taiwan Plant Variety Right Management

I-Chun Pan¹, Pei-Jung Wen¹, Yen-Ming Chen¹

¹Department of Horticulture, National Chung Hsing University, Taiwan.

INTRODUCTION

Taiwan is located in subtropical and tropical regions of Asia. The combination of its moist climate, high temperature, and rich soil with excellent production technology results in diverse agricultural and horticultural productions. However, despite the maturity of agricultural technology, advancements in biotechnology, and abundance of talent and technological resources, Taiwan has been confronted with insufficient land resources, primarily small-scale agricultural production, high labor cost, lack of international competitiveness in terms of production scale, and a small domestic market. In response to the regulations for Trade-Related Aspects of Intellectual Property Rights (TRIPs) specified by the World Trade Organization (Dhanjee and Chazournes, 1990), the typically production technology–based production–marketing model in Taiwan agriculture has encountered serious challenges. Methods for developing a protection mechanism for agriculture intellectual property rights, commodifying plant varieties and related technology brands, and marketing production worldwide and seeking business development opportunities have become famous and critical topics in agricultural development recently.

To increase the cultivation adaptability and quality of agricultural productions as well as reducing the payment of seedlings, advanced countries such as the United States, Japan, and European countries have encouraged breeders to launch new varieties or cultivars of agricultural and horticultural crops. To ensure that a variety is commercially competitive, breeders primarily have to rely on the law to protect PVP (Plant variety Protection) rights. Following this international trend, in 1988, Taiwan referred to the International Union for the Protection of New Varieties of Plants (UPOV, 2019), which was established in 1978, to draft and implement the Plant Seed Act, which is a variety right registration system, thereby strengthening the protection measures of variety rights. On June 30, 2005, it was amended to the Plant Variety and Plant Seed Act. From the time of the announcement and implementation of the plant variety right system on December 5, 1988 to mid-2019, the number of announced and qualified plant varieties reached 192, namely 58 vegetable crops (Cucumis, vegetable sponge, watermelon, melon, wax gourd, bitter melon, oriental pickling, bottle gourd, pumpkin; squash, tomato, chili pepper, eggplant, potato, radish, Chinese cabbage, pak-choi, cabbage, cauliflower, broccoli, Chinese kale, mustard, watercress, edible rape, kohlrabi, turnip, brussels sprout, garden pea, snap bean; kidney bean, French bean, asparagus bean, lima bean, Hyacinth bean, okra, lettuce, celery, Chinese chives, amaranth, water spinach, onion, spinach, garlic, taro, asparagus, strawberry, welsh onion; bunching onion, Chinese water chestnut, Manchurian wild rice, lotus; lotus root, water chestnut, carrot, cultivated endive, common ginger, arrowhead, carland chrysanthemum, Chinese yam, bamboo, nest fern, Ceylon spinach, and Winged Bean), 73 flower crops (Dumb-cane dahlia, wweet osmanthus, sunflower, plumeria, verbena, aster, Calanthe, malabar chestnut, bougainvillea, catasetinae, torenia, cyclamen, lady's slipper orchid, African daisy, day lily, Siam tulip, canna, ramtilla, arrow-head vine, and Foftail Orchid), 37 fruit trees (Banana, Citrus, Lychee, Pineapple, Papaya, Peach, mango, wax apple, grape, pear, sugar apple, jujube, carambola, guava, mulberry, loquat, avocado, pitaya, persimmon, mandarin, sweet orange, jelly fig,

white sapote, abiu, longan, pomelo, grapefruit, lemon, lime, kumquat, mei, plum, egg-fruit, star apple, artocarpus, blueberry, and kiwifruit), 3 food crops (rice, sweet potato, and maize), 2 types of wood (taxus and odourbark cinnamon), 3 mushroom varieties (Shiitake, King oyster mushroom, and Golden mushroom), and 16 other plant types (Mung bean, tea, peanut, soybean, adzuki bean, roselle, ricin, Italian millet, pigeon pea, sesame, Job's tears, Buck wheat, mesona, red sage, sugarcane, and coffee)(Plant Variety Protection, 2019).

THE CONSTRUCTION AND HISTORY OF THE TAIWAN PLANT VARIETY RIGHT SYSTEM

Plant cultivar has long been the core of agriculture development and is valued and protected by each country. Although Article 2.1 of the UPOV 1961 and 1987 forbids plant varieties to be under dual protection by the variety act and patent act, this item was omitted in the 1991 version; thus, the regulation was lifted, enabling member countries to independently decide their stance on this matter. Moreover, according to Article 27.3(b) in the TRIPS, members should provide a patent, special law, or a combination of the two to protect plant varieties. Under the aforementioned TRIPS and UPOV regulations, although each country currently implements different intellectual property laws to protect new plant cultivars, most of them use patent law, special law, or both to protect the rights of breeders. The United States and Japan have no restrictions on patents for animals and plants; they do not specify the exclusion of any animal or plant species from the realm of protection. When they introduce new plant variety acts, plant varieties may be protected by both patent law and variety law.

To date, Taiwan's patent law Article 24.1 states that invention patents are not given to animals and plants. Plants can only be protected under the variety act. Related regulations are specified in the Plant Variety and Plant Seed Act. Taiwan's earliest plant variety right registration system was the Plant Seed Act established on December 5, 1988, which referenced to the UPOV in 1978. After implementation, the first batch of plant varieties qualifying for variety rights was announced on August 22, 1990. These include melons such as watermelon, muskmelon, bitter melon, loofah, pumpkin, wax gourd, oriental pickling melon, cucumber, and calabash. Subsequently, on June 19, 1992 and May 28, 1994, four species in the *Solanaceae* family (namely tomato, bell pepper, eggplant, and potato) and 12 in the *Brassicaceae* family (namely radish, cabbage, non-heading cabbage, kale, broccoli, Chinese broccoli, mustard, rapeseed, cauliflower, kohlrabi, turnip, and Brussels sprouts) were respectively announced. Poinsettia was announced as the first flower plant to qualify on January 24, 1997. Fruit trees were only included on September 17, 1999, covering citrus, lychee, and papaya trees. Flower plants became eligible for variety rights in 1997, and their application number has since increased rapidly, exceeding that of vegetable crops and accounting for the majority of applications. Since 2004, related works of plant variety protection were transferred to be conducted by the Agriculture and Food Agency, Council of Agriculture, Executive Yuan. In accordance with the implementation of the new law (i.e., Plant Variety and Plant Seed Act), it actively set seven related sub-acts. Nine review councils were established, each for a different plant variety, to expedite the application review process.

CURRENT APPLICATION PROCESS FOR TAIWAN PLANT VARIETY RIGHTS

New plant variety review regulations in Taiwan must satisfy the four criteria of novelty, distinctness, uniformity, and stability. Among them, the application criteria for novelty refers to not having been promoted or sold in Taiwan for over a year prior to the application date; xylophyta or perennial vines have not been sold abroad for more than 6 years, and other species have not been sold for more than 4 years. During the time when a case is considered and announced and before it has been registered and approved, the applicant is granted temporary rights protection. During this period, if the owner suffers from rights infringement, then the species rights owner can seek compensation from the deforciant after rights have been approved and the species has been registered. The species rights period of xylophyta or vines is 25 years, whereas that of other species is 20 years (Plant Variety Protection, 2019). The new cultivars' application process is as follows as Figure 1:

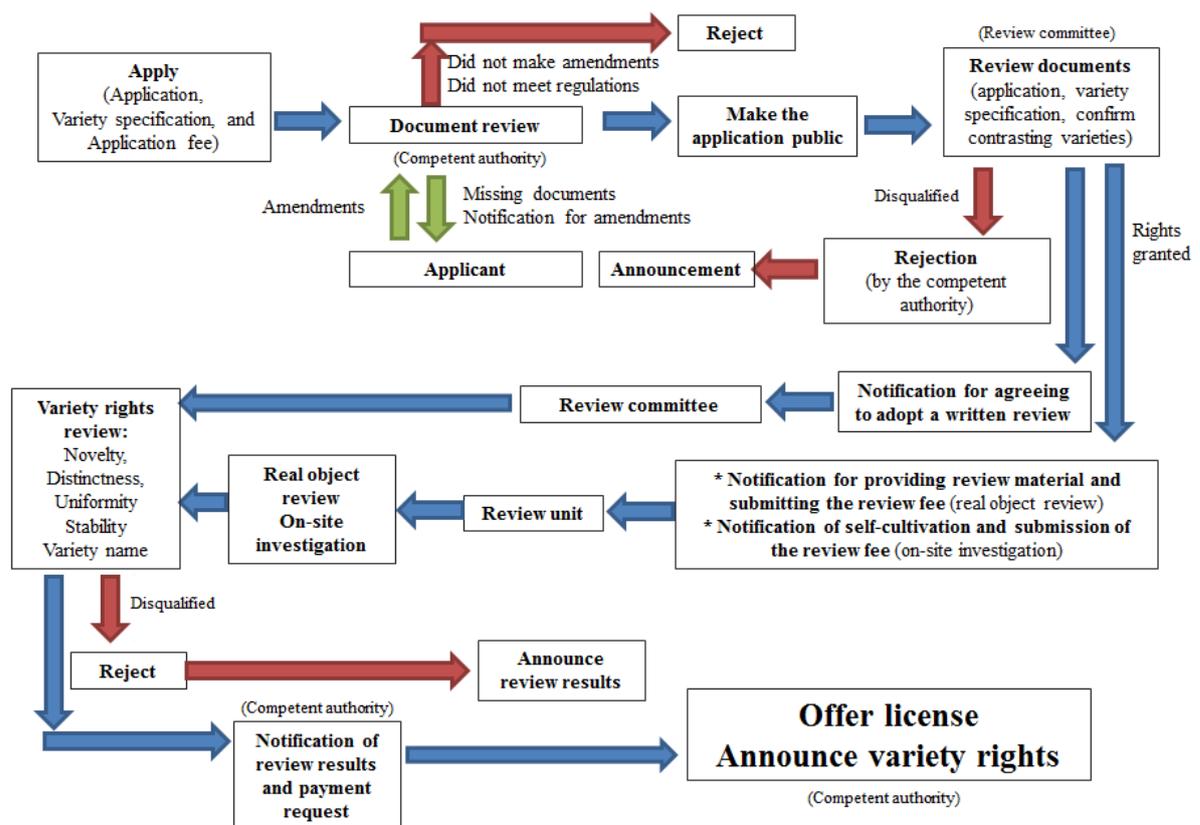


Fig. 1 Flowchart of the review process for plant variety rights applications

CONCLUSION

Plant variety rights constitute a critical component of agricultural intellectual property rights. They utilize protection and public announcements as means for promoting industry development and both protect the rights of the breeder and increase the profit of the producer. Relevant licensing cannot be considered as simple technology transfer but must employ the principles of commercial strategies. The output and add-on value of a technology should also involve global intellectual property protection factors such as market demand, patent integration, trade secrets, brands, geographical indications, and trademarks. By using industrial applications to develop new plant cultivars, smart intellectual property methods to protect technology, industrial means to improve production success, and market economy concepts to manage the production–marketing structure, we can improve agriculture competitiveness, thereby enabling Taiwan’s excellent agricultural production technology and agricultural products to be marketed worldwide.

REFERENCES

- Dhanjee, R. and LB De Chazournes. 1990. Trade-Related Aspects of Intellectual Property Rights (TRIPs): objectives, approaches and basic principles of the GATT and of intellectual property conventions. *Journal of World Trade* 24(5) 5-15.
- Plant Variety Protection. (2019, June 26th). ‘Agriculture and Food Agency, Council of Agriculture, Executive Yuan, R. O. C.’ Web. Retrieved from <https://newplant.afa.gov.tw/>.
- UPOV. (2019, June 26th). ‘International Union for the Protection of New Varieties of Plants’ Web. Retrieved from <https://www.upov.int/portal/index.html.en>.

Date submitted: June 27, 2019

Reviewed, edited and uploaded: August 15, 2019