**Introduction to the protection of new plant varieties in China**

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In addition to industrial intellectual property rights in the traditional sense of patents, trademarks, copyrights, etc., there is also a unique intellectual property right in the field of agricultural forestry, which is the new plant variety right (also known as Plant Breeder's Rights (PBR) or Plant Variety Rights (PVR)). This relatively small form of intellectual property protection, with the rapid development of modern agriculture, is gradually being valued by all sectors of society. In the Sino-US trade dispute, China’s counterattack against the United States on tariffs is mainly concentrated in the agricultural sector. Therefore, we would like to take this opportunity to introduce the protection of new plant varieties in China. This paper aims to briefly sort out the development of new plant variety protection in China, the latest registration and protection, the latest development trends including the jurisdiction development of filing civil infringements case against new plant variety infringers, summary of registration requirements and procedure, and proposed amendments to the law which may guide us to the direction of future protection of new plant variety.

1. **Introduction to the development of laws and regulations related to new plant varieties**

A protected plant variety is a variety that has been artificially cultivated or developed from wild plants and has novelty, distinctness, uniformity and stability and is appropriately named. The plant variety right is the exclusive right to produce, sell and use the propagating material of the plant variety.
China has established a legal system to protect new varieties of plants. On March 20, 1997, the State Council promulgated the "Regulations on the Protection of New Varieties of Plants of the People’s Republic of China" (hereinafter referred to as the "Regulations"), which was implemented on October 1 of the same year. In 1999, China officially joined the International Union for the Protection of New Varieties of Plants (UPOV) and the International Convention for the Protection of New Varieties of Plants (UPOV Convention) 1978. Since then, the agricultural and forestry sections of “Implementation Rules for the Protection of New Varieties of Plants of the People’s Republic of China” have been promulgated.

With deeper understanding of the protection of plant varieties and the desire to strengthen protection, China has revised the Regulations and related implementation rules several times, and the Supreme People’s Court (“SPC”) has issued two judicial interpretations to guide the judicial protection practices of new plant varieties. In 2016, the revision of the Seed Law incorporated the protection of new plant varieties and improved the legislative level of protection.

With the rapid development of the seed industry in China and abroad, the current plant variety protection system has encountered problems such as lack of promoting the original innovation, difficulty in defending rights and narrow protection. It has not been able to meet the challenges presented by China’s rapid liberalisation and the new requirements for the development of a modern seed industry. Therefore, Chinese officials have recognized the importance of strengthening the top-level design of plant variety protection and promote the higher level development of a modern seed industry. To stimulate original innovation and enhance protection, On February 1, 2019, the Ministry of Agriculture and Rural Affairs (“MOA”) issued an announcement to publicly solicit comments on the "Revised Draft Regulations on the Protection of New Varieties of Plants of the People’s Republic of China (Draft for Comment)" for purpose of further stimulating original innovation and enhancing protection.
2. Current status of registration and protection of new plant varieties in China

The protection of new plant varieties in China is carried out by MOA and the State Forestry Administration ("SFA"). New varieties of agricultural plants include food crops, cotton, oil crops, bast-fiber plants, sugar crops, vegetables (including melon), tobacco, mulberries, tea plants, fruit trees (except for dry fruits), ornamental plants (except ligneous plants), grasses, green manure, herbaceous medicinal plants, edible fungi, and rubber tree etc. The Office of Plant Variety Protection of MOA is responsible for review of new varieties of agricultural plants and other related matters. New varieties of forestry plants include forest trees, bamboo, xyloid vine, ornamental woody plants (including woody flowers), fruit trees (dry fruit trees only), and woody oil-bearing, beverage and condiment plants, as well as woody medicinal materials. The National Forestry and Grassland Administration Science and Technology Development Center (the Office of Plant Variety Protection of SFA) is responsible for review of new varieties of forestry plants and other related matters.

MOA Application Data

According to the data released by the Office of Plant Variety Protection of MOA, since 1999, the number of applications and granting for variety rights in China has increased rapidly. Up to early 2019, the cumulative number of applications for new varieties of agricultural plants in China has reached 26,000, while the number of granting has reached 12,000. In 2018, the number of applications for new varieties of agricultural plants in China reached more than 4,800, which is equivalent to the total number of applications in the last 10 years. The number of applications in 2017 and 2018 before the MOA topped all peers in the world. To cope with this large number of applications and further strengthen the protection of new plant variety, MOA issued more than 250 test guide standards and established various testing centers. Specifically, a new propagating material storage center was established, and a new plant variety
testing center, 27 test sub-centers and 3 professional test stations were established in the main ecological regions of the country.

SFA Application Data

By the end of 2018, SFA had accepted 3,717 applications for new plant varieties and granted 1,763 new plant varieties. In 2018, the number of applications exceeded 900 for the first time, and the number of granted varieties reached 405, both hitting record highs. The number of foreign applications also increases yearly, reaching 186 in 2018, an increase of 73.8% over 2017. The DUS test system for new varieties of forestry plants in China has been basically established. The National Forestry and Grassland Administration has established a batch of test institutions for new varieties of forestry plants, including one test center, five regional test sub-centers, two molecular measurement laboratories and six professional test stations. The Administration has also carried out the preparation of 147 forestry testing guidelines and completed 52 projects, which are issued in accordance with national standards and industry standards.

Top Cases

In November 2018, MOA, based on more than 390 cases of new varieties of agricultural plant protection that occurred in recent years, issued ten typical cases of protection of new varieties of agricultural plants after several rounds of screening. Of the top ten cases, two have been selected as guiding cases issued by the Supreme People's Court, and four have been selected for typical IP cases in Chinese courts. This is the first time that typical cases of protection of new varieties have been released, which is a signal for MOA to further strengthen the enforcement of new varieties of plants, and to create a good environment for innovation in the seed industry. It is worth noting that, although it is possible to enforce IP rights through administrative agencies (such as local MOA / SFA agencies), there are no cases of administrative
law enforcement in the top ten cases. Objectively speaking, the enforcement of variety rights is highly specialized. Due to the lack of rapid scientific identification standards, and the lack of standards for samples etc., it is very difficult for administrative law enforcement departments to investigate and deal with variety rights violations. Hence civil litigation is currently the only clear path to enforcement.

The top ten cases regarding protection of new varieties of agricultural plants and my comments are:

1. Laizhou Jinhai Seed Co., Ltd. sued Zhangye Fukai Agricultural Science and Technology Co., Ltd. for infringement of maize “Jinhai No. 5” variety right infringement case

   The main point of the case is that the DNA fingerprinting test can be used to prove infringement even though there is no direct correspondence between and the DUS test, and the burden of proof shall be assumed by the infringed party to rebut the result of DNA fingerprinting test if the DNA test indicates that the difference between the varieties is minor (the number of different loci is less than 2).

2. Dunhuang Seed Industry Pioneer Seeds Co., Ltd. v. Xinjiang Xinteli Seedling Co., Ltd., Xinjiang Production and Construction Corps, Agricultural First Division, 4th Regiment, for infringement of maize “Xianyu 335” variety right infringement case

   The typical significance of the case is that “Xianyu 335” is a new variety right obtained by a foreign company in China. The judgment in this case reflects that the Chinese government treats all granted varieties equally, embodying the principle of national treatment. Also, evidence preservation is allowed in the new variety infringement case and the participation of technical personnel in field sampling is not a mandatory requirement in the court evidence preservation procedure. Validity of evidence preservation without inviting relevant professional and technical personnel to assist sampling shall not be denied simply based on this. In addition, the reasonable expenses for stopping the infringement may be separately awarded when calculating damages.

3. Henan Golddoctor Seed Co., Ltd. v. Beijing Doneed Seed Co., Ltd. and Henan Academy of Agricultural Sciences for infringement of maize “Zheng 58” variety rights infringement case

   In this case, the damages awarded are around RMB 50 million, about USD 8 million. It is a record-high case in terms of new variety infringement. Secondly, the permanent injunction was denied because the infringed variety “Zheng 58” is the parent variety
while the infringer was massively planting hybrid variety “Zheng Dan 58” after paying RMB 20 million royalty for the hybrid variety and issuing an injunction will cause enormous economic losses.

4 Tianjin Tianlong Seed Technology Co., Ltd. v. Jiangsu Xu Nong Seed Technology Co., Ltd. for infringement of rice “9 You 418” variety rights infringement case

In this case, the cooperative breeding of hybrids was carried out while there is no agreement on the exercise of subsequent rights and parental rights, it shall be deemed that both parties have the right to use the other parent to produce hybrids (only for the production and sale of cooperative varieties, it may not be used for other commercial purposes), but the profit generated by the sale of the hybrids involved shall be distributed according to the role of the paternal and maternal in the production process.

5 Gansu Dunhuang Seed Co., Ltd. v. Henan Dajingjiu Seed Co., Ltd., Wuwei Wuke Seed Technology Co., Ltd for infringement of maize “Jixiang No.1” variety rights infringement case

The main point of this case is that although the change of the recorded items is an administrative management measure, it involves the interests of the right holder and the public, and thus the transfer of the variety rights will not take effect if the transfer agreement is not recorded.

6 Anhui Taihe County Seed Company v. Shandong Shofine Seed Technology Co., Ltd. and Wen Wenling for infringement of Soybean “Zhonghuang 13” variety rights infringement case

The typical significance of this case is that compliance with the seed labeling system is a statutory obligation. In the infringement lawsuit of variety rights, if the accused infringer refuses to appraise the seed involved, the court will determine based on the content of the label and other relevant evidence. In addition, the variety right license agreement should clearly provide the license period. Otherwise, the court will make interpretation based on the characteristics and practice of the seed breeding industry.

7 Anhui Longping Gaoke Seed Industry Co., Ltd. v. Tian Xuejun for infringement of maize "L239" variety right infringement case

The main point of this case is to clearly define the scope of farmers' self-propagating seeds. Although the defendant in this case has the status of a farmer, the court determined that the defendant’s defense of “planting corn for feeding” is not reasonable based on the amount of planted infringing products, and considering that the maize seed production is relatively high in cost while low in the yield. The decision has guiding value for clarifying the scope of propagation materials for farmers’ self-propagating and self-use.

8 Beijing Honor Agricultural Development Co., Ltd. v. Beijing Fengqiao International
Seed Co., Ltd. and Lanzhou Liqin Seed Co., Ltd. for infringement of cabbage “Honor B1102” variety right infringement case

The typical significance of this case is to clarify that in the infringement lawsuit of variety rights, although the defendant can file the invalidation request with the Plant Variety Review Board, the court may not suspend the lawsuit to avoid damage to the right holder caused by the long term of the lawsuit.

9 New maize variety "Longju No. 1" invalidation case requested by Yao Yuan

It is clear that a new plant variety can only be granted one new plant variety right; two or more applicants apply for the new plant variety right for the same variety, and the new plant variety right shall be granted to the first applicant. In determining whether the relevant varieties are the same, the plant variety review board uses both DNA fingerprinting and DUS testing to ensure accurate results.

10 Shaanxi Tianchenghe Agricultural Science and Technology Co., Ltd. v. Shaanxi Dadi Seeds Co., Ltd. Xingping Branch for infringement of wheat “Xinong 979” variety right infringement case

What we can learn from this case is that the right holder should adopt a legal and effective evidence collection procedure and make the collected evidence form a complete chain of evidence, otherwise it will not be able to effectively prove infringement. This has important implications, both for claiming rights by rights holders and for effectively defending the infringement by the accused infringer.

For new varieties of forestry plants, in 2016, China has the “First Case of the Protection of New Varieties of Forestry Plants” - Hebei Academy of Forestry and Shijiazhuang Lvyuanda Garden Engineering Co., Ltd. sued Jiutai City Landscaping Management Office of Jilin Province for infringement of new plant variety “Meirenyu”. This case went through the first-instance trial, the second-instance trial, retrial to SPC, and the SPC designated Shandong High People’s Court to re-hear the case and court finally in the re-trial found infringement of Jiutai and awarded damages of RMB 200,000. The case was listed in the top ten cases of intellectual property judicial protection in Shandong Province in 2016, and has gained widespread attention.

Summary of Jurisdiction
Since the end of 2014, China established three IP courts in Beijing, Shanghai and Guangzhou. In addition to the IP courts, so far China has established 20 IP tribunals (Nanjing, Suzhou, Wuhan, Chengdu, Hangzhou, Ningbo, Hefei, Fuzhou, Jinan, Qingdao, Shenzhen, Tianjin, Zhengzhou, Changsha, Xi’an, Nanchang, Lanzhou, Changchun, Urumqi, Haikou) across 17 provinces. These IP courts and tribunals have cross-regional jurisdiction and exclusive jurisdiction over certain IP disputes (generally including disputes involving patents, trade secrets involving technology, software, integrated circuit designs and new plant varieties, recognition of well-known trademarks) in the first instance. On January 1, 2019, the Supreme People’s Court established its new IP tribunal to hear all appeal cases of the above IP disputes.

The centralized system of IP courts and IP tribunals is expected to improve the expertise of judges adjudicating IP cases and harmonize the interpretation and application of IP law throughout China.

To summarize, with the improvement of relevant testing facilities in China’s agriculture and forestry departments and the improvement of laws, regulations and the established of centralized IP courts, it is believed that the judicial protection of new varieties will be further improved in the future.

3. Registration requirements and procedure of new plant variety

New plant variety rights are territorial and you must register your new plant variety in order to enforce it in China. As mentioned in the last section, there are two government authorities respectively responsible for the registration of new variety rights for agricultural plants and forestry plants. China has the national lists of protected plant genera and species under which the application can be filed, unlike many other systems which cover all the species. One reason for having such a limited list is lack of proper test facilities and standards for species
outside of the lists. So far, eleven installments of agricultural plants covering 191 genera (species) have been published by MOA and six installments of forestry plants covering 206 genera (species) have been published by SFA. When applying for a new plant variety right, the applicant will have to go through the list and make sure that the applied one is within the list.

As mentioned in the first section, new plant varieties shall have novelty, distinctness, uniformity and stability and shall be appropriately named.

Novelty means that the propagating material of the new plant variety in respect of which variety rights are applied for has not been sold prior to the filing date of the application, or has not been for sale, with the consent of the breeder, for more than one year within the territory of China; the propagating material of vines, forest trees, fruit trees and ornamental plants must not have been for sale for more than six years, or the propagating material of other plant varieties for more than four years, in a foreign territory.

Distinctness means that the plant variety in respect of which variety rights are applied for must noticeably distinguish it from any other plant variety known prior to the filing of the application.

Uniformity means that the plant variety in respect of which variety rights are applied for is uniform, subject to the variation that may be expected, in its relevant features or characteristics after propagation.

Stability means that the plant variety in respect of which variety rights are applied for keeps its relevant features or characteristics unchanged after repeated propagation or at the end of a particular cycle of propagation.

Lastly, you should give an appropriate name to the new variety. Any plant variety in respect of which variety rights are granted shall have an adequate denomination, which shall be
distinguishable from that for any other known plant variety of the same or similar botanical
genus or species. The denomination, after its registration, shall be the generic designation of
the new plant variety in question. The following shall be avoided in the selection of a
denomination for a new variety: (a) those consisting of only numbers; (b) those violating social
morals; (c) those that are liable to mislead as to the features or characteristics of the new plant
variety, or the identity of the breeder.

All application materials should be submitted in Chinese: (two printed and one electronic
version) and must include the following documents:

- Application form
- Specification of the variety
- Photograph(s) of the variety

There will be a substantive examination after the preliminary examination and payment of
examination fee, and the substantive examination will involve a DUS test which is time-
consuming. For that purpose, certain amount of the propagating material of the new plant
variety needs to be imported (for foreign applicants) and submitted with the examination office.
Some tests done in reputable foreign test facilities might also be admitted here through proper
proceeding, but more frequently the DUS test needs to be done here in China.

Where the new variety rights application is found to be in conformity with the provisions of
these regulations on substantive examination, the new variety right will be granted. From the
granting date, forest trees, fruit trees and ornamental plants will enjoy a 20-year long protection
while other plants have 15 years.
4. Revision of the New Plant Variety Protection Regulations

Over the past 20 years, the "Regulations" have effectively protected the rights of plant breeders and promoted the innovation of varieties. With the rapid development of seed industry domestically and abroad, the current plant variety protection system has problems such as lack of promoting the original innovation, and difficulty in enforcing rights. It cannot fully adapt to the new situation of China's comprehensive liberalisation and the new requirements for the development of modern seed industry. In order to stimulate the original innovation and enhance the protection, the revision of the "Regulations" was started in 2016, and in February 2019, the "Revised Draft Regulations on the Protection of New Varieties of Plants (Draft for Comment)" was issued.

Several major revisions are as follows:

The first is to establish a system of substantive derivative variety (EDV), restrict the commercial behavior of modified breeding, and encourage original innovation (Articles 7 and 8 of the draft for comments).

The EDV system is a common practice in the world to stimulate original innovation, to protect the rights of the original innovators of breeding by restricting the commercial development of simple modified varieties, and to encourage original innovation. At present, there is a homogenization phenomenon in China's varieties, and the original innovation enthusiasm is insufficient. In particular, the varieties of plants that are at international leading level of breeding, such as hybrid rice, need to implement the EDV system to protect the interests of innovators, guide enterprises to increase investment in research and development, and accelerate the breeding of varieties that meet the needs of agricultural modernization. After thorough research and discussion, the government intends to establish an EDV system.
The second is to fully open the protection list, and to expand the range of protected plants from the current limited species to all plant species (Article 14 of the draft for comments).

The third is to expand the scope of protection of variety rights, i.e. to extend the protection of variety rights to the harvest of propagating materials of granted varieties, and even into directly finished products; to extend the protection to the whole process involved in plant production, propagation and sales (Article 6 of the draft for comments).

The fourth is to extend the protection period. The period of protection of vines or woody plants is extended from 20 years to 25 years, and other plants are extended from 15 years to 20 years (Article 46 of the draft for comments).

The fifth is to regulate the rights of farmers. In order to prevent illegally carrying out infringements through farmers, the farmers' self-propagation and self-use behaviors are regulated (Article 13 of the draft for comments), and the "farmers" are defined (Article 64 of the draft for comments). Previously, farms' propagating activity of the protected plant varieties for their own use are generally exempt from seeking authorization from the right holder and paying the royalty fee.

In addition, there have been a lot of changes in the administration of decentralization, the improvement of the quality and efficiency of the review, the clarification of responsibilities, and the strengthening of supervision and punishment. Due to space limitations, they are not listed here.

In short, the substantial revision of the Regulations has significantly strengthened the protection of new varieties, but many of the changes are still facing considerable controversy, let us pay close attention to the latest progress.
On December 25, 2000, the Supreme People's Court issued the "Interpretation of the Supreme People's Court on Several Issues Concerning the Trial of Cases of New Plant Variety Disputes", which was implemented on February 14, 2001.

On December 25, 2006, the Supreme People's Court issued the "Several Provisions of the Supreme People's Court on the Specific Application of Law Issues in the Trial of Cases of Infringement of Plant Variety Rights," which was implemented on February 1, 2007.


On January 25, 2011, the State Forestry Administration revised the Regulations for the Implementation of the Regulations on the Protection of New Varieties of Plants of the People's Republic of China (Forestry Section).

On January 31, 2013, the State Council promulgated and implemented the Regulations on the Protection of New Varieties of Plants of the People's Republic of China (Revised Edition).

On July 29, 2014, the State Council promulgated and implemented the Regulations on the Protection of New Varieties of Plants of the People's Republic of China (Second Revision).

In 2015, the State Forestry Administration issued "Measures for the Test Management of New Varieties of Forestry Plants" and "Administrative Enforcement Measures for the Protection of New Varieties of Forestry Plants".

On November 4, 2015, the National People's Congress revised the "Seed Law" and implemented it on January 1, 2016.

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