

PROBLEMS OF NATIONAL PUBLIC AND PRIVATE LAW

Eddy Pranjoto W.

Wisnuwardhana University of Malang, Indonesia

THE IMPORTANCE OF PATENT PROTECTION TOWARD TRANSGENIC PLANT VARIETY IN INDONESIAN LAW

Transgenic plant varieties are one of the Indonesian commodities that could be developed as a bridge to engage actively in international trade, given that agricultural products are export raw materials that are crucially needed overseas. Therefore, Plant Varieties Protection (PVP) became one of supporting factors triggering for the development of agricultural sector. However, the existence of transgenic plant varieties is not yet one properly protected by law in Indonesia. This study aims to find out whether the Law no. 29 of 2000 on PVP has been sufficient to protect the Indonesian transgenic plants as well as the problems that can be found regarding transgenic plants based on PVP? This research uses normative juridical method that is tracing, researching and reviewing objects through the principles of law both through national legislation, namely PVP act 29 of 2000 related to Patent act No. 13 of 2016 jo.UU No. 14 of 2001 and Juridical Historical. To know the basic thinking and history of the background of patent arrangements for plant varieties was born and juridical comparative. The results of this study were PVP given to varieties of new or unique plant species, species, unique, stable, and named.

Keywords: Plant Variety, PVP Act, Transgenic, Law No. 29 of 2000, IPR Law.

INTRODUCTION

Agriculture has a central meaning in laying a solid foundation for the bright Indonesian economy. This is reflected in, among other things the development and growth of food security, Gross Domestic Products (GDP), employment opportunities, income sources, and downstream industry growth. Hence, the contribution of the food crops subsector to Indonesia's economic growth is considerable¹.

Indonesia is one of the world's most biologically diverse and often declared "Mega Biodiversity" countries. This biodiversity is the grace of God Almighty to the nation of Indonesia, which is a source of *Nuftah* plasma and can be utilized to assemble the future superior varieties that are essential to support the economic development of the agricultural sector in particular and national development in general².

Plant varieties are the factors supporting the success of the agricultural development, but many varieties of Indonesian plants do not yet have clear legal protection. It may be caused by (a) the breeding is unwilling to seek protection, (b) many who do not know about Plant Varieties Protection, or (c) Plant varieties produced by breeders have no commercial value so they are not worth protecting. As the result of the invention in the field of technology, the plant varieties should be granted patent protection. However, the current Patent Law does not provide the protection as expected by breeders, so it needs to be specifically regulated by Law No. 29 of 2000 on the Protection of Plant Varieties.

Based on Article 1.1 of Law No.29 of 2000 concerning the Protection of Plant Varieties, the Protection of Plant Varieties hereinafter abbreviated as PVP, is the Special Protection granted by the state, which in this case is represented by the Government and the implementation is carried out by the Office of Plant Variety Protection, against the varieties of plants produced by plant breeders through plant breeding activities³.

¹ Haffsah, Mohammad Jafar (2004). *Potensi, Peluang dan Strategi Pencapaian Swasembada Beras dan Kemandirian Pangan Nasional Melalui Proksi Mantap*. Makalah Disampaikan pada Seminar Padi Nasional di Sukamandi. 15 Juli, 1-2.

² Explanation of Law No.29 of 2000 on plant variety protection.

³ Article 1.1. Law No. 29 of 2000 on plant variety protection.

According to Bungaran Saragih, plant varieties are an important component in agricultural systems and seed industries so they cannot be easily ignored. If the hope of breeders and the seed industry will be the protection for the plant varieties does not materialize, it is feared will further weaken the condition of the Indonesian agricultural sector. Therefore, the protection of Intellectual Property Rights (IPR) for plant varieties is an attempt to improve seed conditions in the country¹.

Indonesian agriculture could be developed as a means point to actively engage in international trade, given the Indonesian agricultural an output is the export of raw materials that are needed in various countries. This could be realized well if all components of society have united tough within agriculture to compete with agricultural products of other countries both in terms of quality and price. Conversely, if there is no intention and desire to build a good agriculture, then Indonesia will become a market for agricultural products of other countries².

Plant varieties are not easily born and grown, researchers in the field have spent months or even years in the laboratory to find the desired plant varieties of time, many costs were already sacrificed. All of us agree that the findings of the plant varieties are the result of the intellectual ingenuity. Hence, it was already alright if the right of the inventor is protected as an intellectual property right.

Talking about IPR issues cannot be separated from the participation of Indonesia as a member of the World Trade Organization (WTO) ratified by Law No.7 of 1994, wherein one of the agreements contained therein are provisions concerning IPR namely Trade-Related Aspect of Intellectual Property Rights TRIPs). As noted by many developing countries in the debates on the review of article 27.3 (b) of the TRIPS agreement, this agreement “does not specify criteria by which to judge whether a *sui generis* system is effective and therefore this should be left to members to decide”³. Article 27.3 (b) refers to the possible protection for plant varieties by patents or by a combination of patents and a *sui generis* system. However, neither, patent alone nor in combination with a *sui generis* system isadvisable methods of protecting plant varieties⁴.

Plant variety protection (PVP) which is a "sui generis" of patents is a protection against plant varieties produced by plant breeders containing new, unique, uniform, stable elements. In Indonesia Patent management and PVP, management is not in one hand, Patents are under the Ministry of Law and Human Rights, while PVP is managed under the Ministry of Agriculture. With the existence of Law Number 29 of 2000 on Plant Variety Protection, the breeder breeding will be protected, where breeders producing plant varieties that meet the provisions of Law No.29 of 2000 will be able to obtain PVP rights and obtain economic benefits from the results her glorification.

The global economic development situation will soon have a significant impact on the national economy, including the agricultural sector in various activities, from pre-production activities, cultivation, harvesting, post-harvest, distribution, and trade. During this and also the future of agriculture development success is determined, among others, by the Advantages of Plant Varieties used, which has the potential of certain crops in accordance with the growing environment and characteristics of the plant varieties. Efforts to increase productivity are strongly influenced by the success in improving the genetic potential of plant varieties that are strongly influenced by the interaction between the varieties of plants with the growing environment.

However, new varieties whose use contradicts enacted legislation, public order, morals, religious norms, environmental sustainability, and health will not be protected. The protection is also not intended to close opportunities for small holders to utilize new varieties for their own use, and to protect local varieties for the benefit of the wider community.

Transgenic crop varieties are biotechnological applications in plants that have been engineered in shape or quality through the insertion of genes or DNA of animals, bacteria, microbes, or viruses for a particular purpose. Transgenic organisms are organisms that get transferred genes from other organisms.

¹ Krisnawati, Andriana, Saleh, Gazalba (2004). *Perlindungan Hukum Varietas Baru Tanaman Dalam Perspektif Hak Paten*. Jakarta: RajaGrafindo Persada.

² Rohmah, Inayah (2016). *Perlindungan Varietas Tanaman dalam Penerapan Paten Bagi Inventor Asing*. <https://www.kompasiana.com/inayahrohmah/perlindungan-varietas-tanaman-dalam-penerapan-paten-bagi-inventor-asing_584e96f3749373375dc894e2>.

³ See: WTO, “review of the provisions of article 27.3 (b). Summary of issues raised and point made”, note by the secretariat, IP/C/W/369/Rev.1, March, 2006, 16.

⁴ See, e.g., Exclusions From Patentability And Exceptions and Limitations To Patentes’ Right, study coordinated by Lionel Bently, SCP/15/3 Annex. *WIPO*. <http://www.wipo.int/edocs/mdocs/scp/en/scp_16/scp_16_inf_2.pdf>.

Transferred genes can come from other species such as bacteria, virus, animal, or another plant. To create a transgenic plant, firstly make an identification or searching for a gene will result in a particular trait (desired trait). The desired gene can be taken from another plant, animal, fungi, or bacteria. Once the desired gene is obtained then multiplication of genes called cloned genes. At the stage of cloning the gene, the foreign DNA will be inserted into the cloning vector (DNA carrier agent), for example, plasmid (DNA used for gene transfer). Then, the cloning vector will be inserted into the bacteria so that DNA can be propagated along with the breeding of the bacteria. If the desired gene has been propagated in sufficient quantities then it will be transferred the foreign gene into plant cells originating from certain parts, one of which is the leaf¹.

Regarding PVP, Transgenic varieties developed through genetic engineering can also be protected by PVP act as long as the registrant gives a full explanation of the variety, which includes: (a). Description of the molecular explanation of the relevant varieties and genetic stability of the proposed properties, (b).The oldest reproductive system, (c).The presence of its wild relatives, (d).The content of the compounds that may interfere with the environment, (e).Human health and the manner in which it is destroyed; accompanied by a letter of statement to the environment and human health of the authorized institution².

However, the PVP Act does not explicitly establish whether varieties developed using technology terminators can also be protected in PVP. It is important to note that this Act facilitates the development of modern biotechnology that produces new varieties through genetic engineering.

Throughout the overall description above, it can be drawn some PVP problem which will be revealed in this study, the problems are:

1. How the Law No. 29 The year 2000 on the Plant Variety Protection (PVP) sufficiently protect the transgenic plant varieties in Indonesia.
2. What problems can be encountered regarding transgenic plants based on PVP Law?

RESEARCH METHODS

There are two types of legal research, namely empirical legal research and normative law research. Research is a fundamental tool in the development of science. Research has the goal of expressing the truth systematically, methodologically and consistently, including legal research. As science sui generis, meaning law of science is a science of its own type, the science of law has a character that is typical of its normative nature³.

This research uses a normative juridical method which is done by:

1. Normative juridical, ie tracking, researching and reviewing objects through the principles of law both through national legislation is the Plant Variety Protection Act No. 29 of 2000, which is related to Patent Law No. 13 of 2016 jo. UU no. 14 of 2001.
2. Juridical Historical/legal history, to know the rationale and history of the background of patent arrangements for plant varieties were born.
3. Competitivejuridical/comparative law⁴.

Sources of legal materials used in this study are Primary Legal Materials, namely legal materials that are authoritative, meaning that the legal material has authority, consisting of legislation, official records or treatises related to the discussion of a law. Secondary legal materials, including all publications on PVP that are not official documents. Publications on this law include textbooks, theses, legal dissertations, legal dictionaries, comments on court decisions and legal opinions from experts published through journals, magazines or internet/websites.

RESULT AND DISCUSSION

A. Paten and Transgenic Plant Varieties

Plant varieties were developed over centuries through the exchange of seeds and the sharing of knowledge among farmer, event today this is the model of innovation and diffusion in agriculture that

¹ Febryanti, Amalyah (2013). Papers on Transgenik Plant. <http://www.academia.edu/5673871/Makalah_Tanaman_Transgenik>.

² Barizah, Nurul (2009). Perlindungan Varietas Tanaman, Sistem Budi Daya Tanaman dan Ketahanan Pangan d Indonesia. <<http://api.or.id/perlindungan-varietas-tanaman-sistem-budi-daya-tanaman-dan-ketahanan-pangan-di-indonesia/>>.

³ Hadjon, Philipus M., Tatik Sri Djatmiati (2005). *Argumentasi Hukum*. Yogyakarta, 1.

⁴ Hartono, Sunaryati (1994). *Penelitian Hukum di Indoensia Pada Akhir Abad ke -20*. Alumni, Bandung, 165.

prevails in most developing country, it is included in Indonesia as the developing country in Asia¹. The Patent act in Indonesia is also developed with the spirit of TRIPs agreement to facilitate the liberalization of world trade and to protect patent holders. For this purpose, Indonesia has amended several patent acts. The last change was in 2001 when issues related to genetic resources, and traditional knowledge emerged. But unfortunately, the latest patent law has not answered the problem.

The patent, as described above, does not provide protection to the product, in this case, the varieties in the form of seed. However, patents provide protection to the process for developing these varieties. So depending on the claim, if you want to protect a process, it can be registered to get a patent holder, but if you want to be protected is the result of the process in the form of varieties (seeds) it can be registered to get PVP.

The subject of patent protection in Indonesia is the same or even more liberal when compared to the advanced countries, such as Europe. Although living things cannot be patented under Indonesian patent act, microorganisms can be patented. Furthermore, it remains unclear whether plant, animal, and human genes can be patented under Indonesian Patent act. This ambiguity raises different interpretations.

Due to the patenting of microorganisms brings controversy because the process of separating microorganisms from nature, or the process of isolating them, can be regarded as something new and contains inventive steps. If all such processes are protected under the patent act, then it means that the Patent act has applied a very low standard of patentability, in which the distinction between so-called discovery, and what is known in the Patent act as an invention becomes very blurred. Such blurring has the potential that what must really be in the domain of the public domain, becomes a privatized part.

However, under the patent law, essentially biological processes for the manufacture of plants and animals cannot be patented in Indonesia. In contrast, non-biological processes or microbiological processes can be patented. Understanding the essential biological processes for the manufacture of plants and animals refers to natural or conventional breeding processes, such as pollination techniques and natural crosses. While non-biological processes or microbiological processes are defined as genetically modified or transgenic processes for the manufacture of plants or animals carried out by involving chemical, physical, and microorganism processes or other forms of genetic engineering. The basis of patent protection for discoveries related to microorganisms and non-biological processes and microbiological processes is due to the advancement of biotechnological developments in the last century that are capable of generating important inventions for society.

Through the above explanation, it can be concluded that the process for producing plants and animals through modern biotechnology and microbiology, such as genetic engineering and transgenic techniques can be protected under Indonesian Patent act. However, since there is no further explanation, this means that all modern biotechnological processes for producing plants and animals can be patented in Indonesia just like the patent laws that exist in industrialized countries, as long as they are not contrary to religion, morals, and ethics. What matters is whether the process associated with the technology terminator can also be protected by Indonesian patent law? If embracing the logic of thinking that all modern biotechnology processes as above can be patented, then the process of making technology terminator can also be patented. But does this process not contradict religion, ethics, etc.?. So that cannot be patented such a process. While it is still in a big question mark.

Further on the interests of farmers, in contrast to PVP, which still provides little opportunity for farmers to use seeds from protected varieties as long as they are not for commercial use, the Patent Act does not give any room for the processes that have been developed by farmers for patent protection. This law does not provide an opportunity for farmers to use patented processes even for non-commercial purposes. Since the essential and conventional biological processes carried out and developed by farmers cannot be protected by patents, not only do not meet the requirements of patentability as a novelty, and contain inventive steps, but because under the Act, the process is excluded from patent protection. This indicates that inside Patent act, as well as the PVP act is not made to accommodate the interests of farmers, but the industry.

However, the above provision does not mean that the process for conventional varietal development by farmers cannot be developed anymore. Farmers still have the right, as before this Law to use the process

¹ Correa, Carlos M. (1991). *Plant variety protection in developing countries: A tool for designing a sui generis plant variety protection system*. Germany: APBEBES.

they used for the development of varieties. However, farmers should not infringe on patents or mimic the process of making plants and animals owned by the seed industry that has been patented for the process.

In other sides, various attempts were made to extend patent protection to plant in Europe since the beginning of the 20th century. This possibility, raised concerns among the breeders and legal experts, given the incremental type of innovation that characterizes plant breeding and the difficulty in meeting the patentability, as well as fears regarding possible distortions of the patent system¹.

B. Law Enforcement of Transgenic Plant Variety Protection

The current era of global economic openness encourages Indonesia to prepare itself in all sectors, including the tidying up the legal tools that can be used as a basis for creating something new. The creation of something new in the agricultural sector is closely related to the discovery of new varieties that are better than the previous one. The discovery of new varieties will have a major impact on the progress of the agricultural sector from upstream to downstream. Starting from seeding, cultivation techniques, post-harvest, processing, distribution, and trade.

The upgrading of agriculture from upstream to downstream will obviously increase the competitiveness of national products in the face of world market openness. One of the stages in pushing toward that noble goal is through the seed sector. As matter of fact, a good seed will produce high quality and competitive products. Therefore, the activities of creating new varieties need to be supported and reinforced with adequate legal tools. The legal instrument provides assurance, the creator of the variety gets its due to the success of producing new, unique, uniform and stable varieties that can provide greater value to the users. The basic principle that seems to have arisen Law 29 of 2000. The law provides for the right of Plant Variety Protection (PVP).

PVP must be used in Indonesia for its added value can be enjoyed by the people of the nation. Although in certain cases, the right for PVP is likely to be used overseas. Another gap for the new improved varieties can continuously have advantage is through freedom of use, not only by the inventors but for all societies.

In order not to harm the creator, the use of new varieties used not by the inventor, it was made kind of hedge rule: the creator still obtains economic benefits, although the one who executes it others. This is guaranteed by Law 29 of 2000. The granting of rights to use of new varieties is reinforced by licenses. If both parties (the inventor and the user of the variety) do not agree, the other party may appeal to the district court to be granted a compulsory license. A number of conditions are established by law before a compulsory license is issued.

The right of PVP is a material right. Therefore PVP is guaranteed to be transferred or transferred to another party. The consideration of the transfer to others is that the discovery of the new variety provides economic benefits and the use of PVP rights can be optimized. The right for PVP shall be transferred through grants, testaments, agreements in the form of a notarial deed, or any other reason justified by law.

In addition, in the framework of the policy of procurement of food and medicine, under certain conditions, the Government may also use varieties which are given PVP without neglecting the rights. The use of a variety that is protected by the government should not be carried out arbitrarily, but the government must provide reasonable compensation to the relevant PVP rights holder.

As a national product relating to the livelihood of the people, the protection of plant varieties (PVP) contains rights that are protected by law. This is in accordance with the definition of PVP, which is the right granted to the breeder and / or the PVP rights holder to use his or her own breeds of varieties or consent to other persons or legal entities to use them for a certain period of time (Article 1 paragraph (2) of Law Number 29 of 2000 on Plant Variety Protection). This protection is given to the plant varieties produced by plant breeders through plant breeding activities.

PVP is given to new, unique, same, stable, and named plant species. A variety is considered new when upon receipt of a PVP rights application, the propagation material or the yield of the variety has never been traded in Indonesia. It may also have been traded, provided no more than a year. If traded abroad, then it should not be more than four years for seasonal plants and six years for annual plants. While the various criteria are considered unique if the variety can be clearly distinguished from other varieties whose presence is generally known upon receipt of the PVP rights application.

¹ AIPPI (2003). Opposed the Patenting of plant varieties 'on the grounds that doing so would stretch basic patent law concepts like inventiveness to the point of undermining the credibility of the patent system'. *Intellectual property rights and the life science industries*. Ashgate, 186.

The varieties which can be given PVP shall be named which shall be the name of the respective varieties, provided that:

1. The name of the variety may continue to be used even if its protection period has been exhausted.
2. The naming should not confuse the properties of varieties.
3. The naming shall be carried out by the applicant of PVP rights and registered at the PVP Office.
4. If the naming is not in accordance with the provisions of point b, then the PVP Office shall be entitled to refuse the naming and to request a new naming.
5. If the name of the variety has been used for another variety, then the applicant shall rename the varieties.
6. The name of the proposed variety may also be submitted as a trademark in accordance with applicable laws and regulations.

As matter of fact, Plant breeding activities in Indonesia are open to individuals, government agencies, and the private sector. Opening opportunities for private parties in the activities of plant breeding considering the need for varieties of plants from various commodities is very high but cannot be fulfilled as expected. Varieties of plants that have been formed more generated by breeders from government agencies and universities so that the number is still limited. While the private seed industry is generally more interested in producing commercial varieties such as corn hybrids, vegetables, and fruits, there is even a seed industry that only propagates varieties that already exist¹.

Furthermore, Article 7 of PVP act states that local varieties owned by the community are controlled by the State. State control is exercised by the Government and further regulated by Government Regulation. Unlike other IPR regimes whose applications are filed with the Directorate General of IPR of the Department of Justice and Human Rights, PVP rights are requested for protection through registration to the Ministry of Agriculture.

The right earned by the PVP Holder is the right to use and give consent to other persons or legal entities to use varieties of seeds and plants used for propagation. This provision applies also to essentially derived varieties derived from a protected variety or registered variety and named, a variety that is indistinguishable from protected varieties, and the variety produced shall always use protected varieties.

The right to use varieties as referred to in paragraph (1) includes activities:

1. produce or increase the seeds;
2. preparing for propagation purposes;
3. advertising;
4. offering;
5. selling or trading;
6. exporting;
7. importing;
8. reserve for the purposes referred to in items a, b, c, d, e, f, and g.

Article 5 of the PVP act stipulates that if a variety is produced under an employment agreement, the party providing the work is the holder of the right for PVP unless otherwise agreed between the two parties with no prejudice to breeder rights. If a variety is produced on an order basis, the party giving the order becomes the holder of the PVP right, unless otherwise agreed between the two parties with no prejudice to breeder rights.

Basically, the most important thing for breeders in plant breeding activities is the end result which is the product of new varieties of plants, both completely new varieties and varieties derived from the development of existing varieties. Breeders are not too concerned about the technique/process of formation of varieties so as not to worry if the process used is imitated by others to produce other varieties so as to gain profit commercially (Achmad Baihaki, 1996)².

While, the duration of protection is given for 20 (twenty) years for seasonal crops and 25 (twenty-five) years for annual crops. The applicable sanction for violation of the right for PVP shall be a maximum imprisonment of 7 (seven) years and a maximum fine of Rp 2.500.000.000,00 (two billion five hundred million rupiahs).

¹ Krisnawati, A., Saleh, G. (2004). *Perlindungan Hukum Varietas Baru Tanaman Dalam Perspektif Hak Paten dan Hak Pemulia*. Rajawali Press, Jakarta, 79.

² Baiki, Achmad (1996). *Mengembangkan Peran Industri Perbenihan dalam Peningkatan Daya Saing Produk Pertanian Melalui Pembentukan Hak Pemulia (PVP), proceeding at Plant Variety Protection dan Patents Workshop*. Jakarta, 51.

Through the PVP Act, the government has an authority to control the seeds of plant varieties. Under these conditions, the government seeks to prevent abuse of local crop varieties. However, local communities that have developed these crop varieties may reject excessive government control. Based on the principle that the government has sovereign rights over resources in its territory, such control and control can be justified.

However, such provisions may also be contrary to farmer rights principles contained in the International Treaty for Plant Genetic Resources for Food and Agriculture and undertaken by the Convention on Biological Diversity and Bonn Guidelines that extend control over biological resources by local farmers and community.

Thus, although PVP is not aimed at closing the opportunity for small farmers to use new varieties for their own benefit, in practice PVP act has the potential to limit opportunities for farmers to develop new varieties.

C. Controversial of transgenic plants

Rejection of transgenic plants cultivation arises up because it is considered potentially disrupt the balance of ecosystems. One of them is the formation of super pests or weeds (stronger or resistant) in the environment. This concern is evident in the debate about Bt corn that has Bt toxins to kill Lepidoptera pests in the form of moths and certain butterflies. There is a possibility that the pest that wanted to be killed can adapt to the plant and become more resistant or resistant to Bt poison. In addition, Monarch butterflies, which are not pests of maize, are also affected by the increased deaths from eating the shrubs (*Asclepias*) that are exposed to pollen from Bt corn. On the other hand, the use of transgenic plant such as Bt corn has significantly reduced the use of pesticides, thereby reducing chemical pollution to the environment. In addition, farmers also feel the economic impact with the cost savings of purchasing pesticides.

Another controversy relating to ecological issues is the uncontrolled transfer of genes from transgenic plants to other plants in nature through pollination. Pollen from transgenic plants can be carried by wind and animals to pollinate other plants. As a result, new plants can be formed with unexpected properties and potentially harm the environment. As a precaution, some plants are inserted into genes to accelerate the growth and reproduction of plants, such as alfalfa (*Medicago sativa*), canola, sunflower, and rice, it is advisable to be cultivated in a closed area (isolated) or constrained by barrier areas. This is done to suppress the transfer of pollen to other plants, especially weeds. If weeds have these genes then their growth will become uncontrollable and can quickly damage the surrounding agricultural areas. Until now there has been no clue that this horizontal transfer has led to the emergence of a "superweed", despite known horizontal transfers.

Furthermore, inside the controversy cases as the statement above, PVP act toward small farmers still has no clear advance, like what the cases below;

First, the case is the feud between two legal entities that produce seeds equally. The Jember District Court sentenced one of the companies with a compensation penalty of Rp5 billion to his opponent, another seed producer. Another additional penalty is to install an apology advertisement in five major media outlets in Indonesia. The convicted person is accused of committing an offense against the cultivation system and the protection of the crop varieties. As regulated by Law No. 12/92 on plant cultivation system and Law No. 29/2000 on the protection of plant varieties. In the verdict affirmed, the violations can be attributed to copyright infringement or intellectual property rights of a research institute to obtain superior vegetable and horticultural seeds¹.

Second, One the example of the case that is the case man named Tukirin, a farmer from Nganjuk against PT. Seed Inti Subur Intan Internasional Tbk. (PT BISI) a seed company in Kediri. In this case, Tukirin is accused of having violated Article 14 paragraph (1) of the Plant Cultivation System Law regarding certification. Certification is the process of granting plant seed certificates after inspection, testing, and supervision and fulfill all requirements for distribution. From the lawsuit filed by PT BISI, Tukirin was found guilty of violating Article 61 Paragraph (1) Sub-Paragraph b jun to Article 14 Paragraph (1) of Law Number 12 of 1992 regarding Plant Cultivation System which contains².

¹ Herman, M. (1999). Tanaman Hasil Rekayasa Genetik dan Pengaturan Keamanannya di Indonesia. *Buletin AgroBio* 3 (1), 11.

² Maulana, Machfud (2016). IPR papers on PVP act No. 29/2000.

<<https://banjani.wordpress.com/2016/06/22/makalah-haki-perlindungan-paten-variates-tanaman-men-uu-29-th-2000-tent-pvt/>>.

CONCLUSION

Plant varieties are the main factors supporting the success toward Indonesian commodity development that could be developed as a bridge to engage actively in international trade, given that agricultural products are export raw materials that are crucially needed overseas. Indonesia has also started to develop genetically engineered technology especially food crops and industrial crops conducted at various research institutes in the country such as Indonesian Sciences Insititute (LIPI), Biotechnology Research, and Development Center and Research Center for Biotechnology of Food Crops (Balitbio). Transgenic plants that have been studied in Indonesia are food crops (corn, peanuts, cacao, soybeans, sugarcane, and sweet potato) and industrial plants (tobacco). Protection of crop varieties containing rights under this law shall be applied in daily life. Its application requires a common understanding of the important terms contained in the PVT law product.

The plant varieties have become factor supporting the success of the agricultural development, but many varieties of Indonesian plants are not yet clear legal protection. It may be caused by (a) the breeding does not seek protection, (b) many do not know about Plant Variety Protection, or (c) Plant varieties produced by breeders have no commercial value so they are not worth protecting. As a result of the invention in the field of technology, the crop varieties should be granted patent protection.

As a national product relating to the livelihood of the people, the protection of plant varieties (PVP) contains rights that are protected by law. This is in accordance with the definition of PVP, which is the right granted to the breeder and / or the PVP rights holder to use his or her own breeds of varieties or consent to other persons or legal entities to use them for a certain period of time (Article 1 paragraph (2) of Law Number 29 of 2000 on Plant Variety Protection). This protection is given to the plant varieties produced by plant breeders through plant breeding activities.

As matter of fact, the current Patent Law does not sufficiently cover the breeders with the expected protection. It can seem from some cases and controversy such as the Rejection of transgenic plants cultivation arises up because it is considered as a potential disruption to the balance of ecosystems. In other sides, the two cases sentenced to both farmers from Jember and Nganjuk triggered other farmers have no long confidence to hold innovation on transgenic varieties.

References:

1. AIPPI (2003). Opposed the Patenting of plant varieties 'on the grounds that doing so would stretch basic patent law concepts like inventiveness to the point of undermining the credibility of the patent system'. *Intellectual property rights and the life science industries*. Ashgate, 186. [in English].
2. Article 1.1. Law No. 29 of 2000 on plant variety protection. [in English].
3. Baiki, Achmad (1996). *Mengembangkan Peran Industri Perbenihan dalam Peningkatan Daya Saing Produk Pertanian Melalui Pembentukan Hak Pemulia (PVP), proceeding at Plant Variety Protection dan Patents Workshop*. Jakarta, 51. [in Indonesian].
4. Barizah, Nurul (2009). *Perlindungan Varietas Tanaman, Sistem Budi Daya Tanaman dan Ketahanan Pangan di Indonesia*. <<http://api.or.id/perlindungan-varietas-tanaman-sistem-budi-daya-tanaman-dan-ketahanan-pangan-di-indonesia/>>. [in Indonesian].
5. Correa, Carlos M. (1991). *Plant variety protection in developing countries: A tool for designing a sui generis plant variety protection system*. Germany: APBEBES. [in English].
6. Exclusions From Patentability And Exeptions and Limitations To Patentes' Right, study coordinated by Lionel Bently, SCP/15/3 Annex. *WIPO*. <http://www.wipo.int/edocs/mdocs/scp/en/scp_16/scp_16_inf_2.pdf>. [in English].
7. Explanation of Law No.29 of 2000 on plant variety protection. [in English].
8. Febryanti, Amalyah (2013). *Papers on Transgenik Plant*. <http://www.academia.edu/5673871/Makalah_Tanaman_Transgenik>. [in English].
9. Hadjon, Philipus M., Tatik Sri Djatmiati (2005). *Argumentasi Hukum*. Yogyakarta, 1. [in Indonesian].
10. Haffsah, Mohammad Jafar (2004). *Potensi, Peluang dan Strategi Pencapaian Swasembada Beras dan Kemandirian Pangan Nasional Melalui Proksi Mantap*. Makalah Disampaikan pada Seminar Padi Nasional di Sukamandi. 15 Juli, 1-2. [in Indonesian].
11. Hartono, Sunaryati (1994). *Penelitian Hukum di Indoensia Pada Akhir Abad ke -20*. Alumni, Bandung, 165. [in Indonesian].
12. Herman, M. (1999). *Tanaman Hasil Rekayasa Genetik dan Pengaturan Keamanannya di Indonesia*. *Buletin AgroBio* 3 (1), 11. [in Indonesian].
13. Krisnawati, A., Saleh, G. (2004). *Perlindungan Hukum Varietas Baru Tanaman Dalam Perspektif Hak Paten dan Hak Pemulia*. Rajawali Press, Jakarta, 79. [in Indonesian].

14. Krisnawati, Andriana, Saleh, Gazalba (2004). *Perlindungan Hukum Varietas Baru Tanaman Dalam Perspektif Hak Paten*. Jakarta: RajaGrafindo Persada [in Indonesian].
15. Maulana, Machfud (2016). IPR papers on PVP act No. 29/2000. <<https://banjani.wordpress.com/2016/06/22/makalah-haki-perlindungan-paten-variates-tanaman-men-uu-29-th-2000-tent-pvt/>>. [in English].
16. Rohmah, Inayah (2016). Perlindungan Varietas Tanaman dalam Penerapan Paten Bagi Inventor Asing. <https://www.kompasiana.com/inayahrohmah/perlindungan-varietas-tanaman-dalam-penerapan-paten-bagi-inventor-asing_584e96f3749373375dc894e2>. [in Indonesian].
17. WTO, “review of the provisions of article 27.3 (b). Summary of issues raised and point made”, note by the secretariat, IP/C/W/369/Rev.1, March, 2006, 16. [in English].