Legal Protection of Plant Varieties in International Agreements and UAE Law: An Analytical Study

Dr. Saad Ali Ramadan
Associate Professor of Civil Law, College of Law, Umm Al Quwain University, United Arab Emirates, E-mail: drsaad.ali@uaqu.ac.ae, ORCID: https://orcid.org/0000-0003-0043-6982

Abstract:

Purpose: This research investigates the legal protection of plant varieties in UAE law in light of international agreements.

Theoretical framework: The current research consists of an introduction and Protection of plant varieties in comparative law, Plant variety protection in accordance with the TRIPS Agreement, Plant variety protection in accordance with the UPOV Convention, and Protection of plant varieties in UAE law.

Design/Methodology/Approach: This study used the descriptive approach to describe, analyze, and discuss concepts related to plant varieties. The analytical method was also used to explore the jurisprudential and legislative positions based on judicial jurisprudence that are closely related to the subject. The comparative approach was also used to compare UAE law and international law.

Findings of the paper: The legal protection of plant varieties is preserving these works and their breeders from any attack or damage. Many countries have sought to establish a unified system for the protection of new plant varieties at the international level.

Research, Practical & Social implications: Adopting a legal system in the Emirates for new plant varieties, based most of its texts on the International Convention for the Protection of New Varieties of Plants (UPOV) and the Trade-Related Intellectual Property Agreement (TRIPS).

Originality/Value: The importance of including all intellectual property laws, including the law for the protection of new plant varieties, within one direction, if new plant varieties are a form of intellectual property rights.

Keywords: Plant Varieties, legal protection, Intellectual Property, United Arab Emirates.

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1. Introduction

Comparative legislation has not concerned itself with protecting innovative plant varieties until recently, as protecting new types was not a concern of developed countries until recently (Ahmad, Lilienthal, and Hodgkinson, 2018).

However, the revolution brought about by biotechnology in the field of agricultural production and the accompanying allocation of considerable investments to invent new plant varieties are characterized by unique characteristics in terms of abundant output, harvest time, drought tolerance, ability to resist pests, and other special features, in addition to the emergence of giant companies (Cullet, 2001; Aboelazm, and Afandy, 2019). Multinational countries have almost complete control over this activity (Cullet, 2001; Ahmad, Lilienthal, and Hodgkinson, 2018). All these factors led to the significant countries seeking to provide adequate protection for new plant varieties at the international level and strengthening them, demanding this in the eighth round of multilateral trade negotiations held from 1986-1993 under the umbrella of the GATT. (Uruguay Round) (C. Niranjan Rao, 2004).

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), which is one of the most important agreements (Chakraborty, 2018) that resulted from the Uruguay Round, responded to the demands of developed countries, and committed member states of the World Trade Organization to the protection of plant varieties (Cullet, 2001).

The purpose behind protecting plant varieties through national and international legislation is to encourage and promote the use of these varieties (Chakraborty, 2018; Aboelazm, 2021) that are most appropriate to the realities of agriculture on the one hand and, on the other hand, to meet the needs of consumers. In addition to the

formal conditions that the plant variety must meet, the objective conditions are represented by the benefit that the array has. It must be of agricultural and technological value if it is comparable to registered varieties, or the collection must be distinguished from the rest of the types registered in the official index by different characteristics that could be of a morphological or physiological nature. A plant variety must also be stable and homogeneous if its essential elements are sufficiently homogeneous, considering any variation that may be expected due to the unique features of its breeding process.

Legal protection for new plant varieties is considered one of the modern and essential topics of intellectual property (C. Niranjan Rao, 2004; Aboelazm, 2022a). It is also one of the most important mechanisms for achieving food security, public health, and sustainable development. Therefore, it must be protected in UAE legislation. The UAE legislator's interest in new plant varieties culminated in the issuing of Federal Law No. 17 of 2009 regarding the protection of new plant varieties. Despite the importance of this topic, it has not received attention from legal jurisprudence in a manner consistent with its importance compared to other legal systems (Cullet, 2001; Aboelazm, 2022b). Jurisprudence has not addressed this topic - as a legal system - except within very narrow limits, which led to the law library's lack of such research.

2. Research Problem

This research addresses problems with the legal protection of plant varieties in UAE law. The paper asks about the nature of plant varieties, their concept, the conditions for their safety, and the extent of the ability of UAE law to keep pace with the various forms of infringement and protection assigned to them. The paper

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will answer these questions through a balanced research approach to reach the desired result for this search.

3. Methodology and scope

Research design: This study used the descriptive approach to describe, analyze, and discuss concepts related to plant varieties. The analytical method was also used to explore the jurisprudential and legislative positions based on judicial jurisprudence that are closely related to the subject. The comparative approach was also used to compare UAE law and international law.

Data collection and analysis: This study covered many other types of research, including books, research papers, and reports issued by international organizations. It relied on sources published in international journals and indexed in databases such as Web of Science, Scopus, JSTOR, and EBSCO. He also relied on multiple sources in the Arabic language when studying the case of the Emirates and analyzing the constitutional and legal frameworks for plant varieties. Many laws and constitutions were also consulted namely the UAE Constitution, UAE legislation on the protection of plant varieties, and some international agreements on the protection of plant varieties.

4. Protection of plant varieties in comparative law

It is established that there is no unified legal system for the protection of new plant varieties at the level of comparative law, as the legislation of countries takes different positions on the protection of plant varieties (De Schutter, 2011; Aboelazm, 2023b). Most governments provide adequate protection for innovative plant varieties and consider them a form of intellectual property, although they differ in the method and level of protection. In the United States of America, plant innovations are protected with double protection through patents and through a

unique legal system for protecting plant varieties (Barton, 1982). In 1930, the American patent law was amended to protect new plants through a particular type of patent: the plant patent (Baliño, Laan, & Murphy, 2020). According to Section 161 of Part 35 of the United States Code of America (after amendment), the inventor of a new plant is granted a plant patent if the conditions for protection are met. Protection is limited to unique and distinctive plants that are reproduced other than through asexual reproduction (Damodaran, 1999; Aboelazm, 2023a). Therefore, American law does not allow granting patents to new plants propagated through sexual reproduction. In 1970, the Plant Variety Protection Act 1970 was issued and protected new plant varieties produced through sexual reproduction. It is worth noting that innovative plants invented using the science of genetic engineering are covered in the United States of America through a Letter Patent (Blakeney, 2012). Like inventions that belong to other fields of technology, if the conditions for protection are met, this is what some developed countries follow.

This was stipulated in Article 53 (b) of the 1973 Munich Convention regarding the European Patent. Most European countries' legislation has conveyed this provision. It is worth noting that European countries have their national patent legislation, and most of these countries are members of the European Patent Convention of 1973 (EPC) (De Schutter, 2011; Damodaran, 1999). This agreement has established a system for issuing a regional patent in European countries that have joined the deal. It is worth noting that innovative plants invented using the science of genetic engineering are protected in the United States of America through a Letter Patent, just like inventions that belong to other fields of technology (Aboelazm, 2023C), if the conditions for protection are

(ISSN: 2537 - 0758)

met, and this is what some developed countries follow (Aboelazm and Ramadan, 2023D). At the same time, the laws of most European countries prohibit granting patents for animal and plant species.

Some countries are enacting legislation to provide a particular type of protection for breeders of new plant varieties, which is a lower level of protection than the enhanced protection granted to patent holders. This is because exaggeration in strengthening plant variety protection may negatively affect agricultural production and the interests of farmers.

Many countries have sought to establish a unified system for the protection of new plant varieties at the international level (Lanoszka, 2003), and efforts have resulted in the conclusion of the first international agreement in this field on December 2, 1961, which is the International Convention for the Protection of New Varieties of Plants. The agreement established an international union that includes the states parties to the agreement, called the Union Pour la Protection des Obtention Végétales in French. This Union is known as UPOV, after the first letters of its name in French. It is an independent international organization with its headquarters in Geneva, Switzerland (Kothari, and Anuradha, 1997) .

Since its conclusion in 1961, several subsequent amendments have been made to the International Convention for the Protection of New Varieties of Plants (UPOV Convention) on November 10, 1972, October 23, 1978, and March 19, 1991; this last amendment entered into force on April 24, 1998 (MILLSTONE, STIRLING, & GLOVER, 2015).

On April 15, 1994, the final document containing the results of the Uruguay Round of multilateral trade negotiations was signed in

Marrakesh, Kingdom of Morocco. It consists of 28 multilateral and multilateral trade agreements, the most important of which is the Agreement on Trade-Related Aspects of Intellectual Property Fields (TRIPS Agreement).

The United Nations Convention on Biological Diversity was also concluded in 1992. Article 1 of the Convention stated that the purposes of the Convention are to preserve the survival of biological diversity, maximize the use of components of living organisms, and share fairly and equitably in the gains resulting from using genetic resources (Prasanna, Rao, Kalloo, & Singh, 2008) .

Article Three of the Convention also recognized the right of states to exploit their biological resources and considered it a sovereign right. Article 15/1 of the Convention also affirmed the right of countries to use their natural wealth. It granted national governments the right to license others to obtain and benefit from their genetic wealth by the applicable provisions of their national legislation (Verma, 1997).

On November 3, 2001, an international agreement was concluded regarding the International Treaty on Plant Genetic Resources for Food and Agriculture, under the supervision of the Food and Agriculture Organization (FAO), affiliated with the United Nations. Article 1, paragraph (1) of the agreement stated that its purposes are to preserve and maximize the use of genetic resources of plants in food and agriculture and to share fairly and equitably in the gains resulting from this use by the Convention on Biological Diversity. The agreement dealt with the rights of farmers in its third part, as Article 19/1 supported their rights by (Verma, 1997;

(ISSN: 2537 - 0758)

Van der Walt, 2007; Suresh, Tripp, & Niels, 2007; Shyama & Augustin, 2005):

- Protection of traditional knowledge related to plant genetic resources.
- Fair sharing in the gains resulting from using plant genetics resources in food and agriculture.
- Assisting governments in making national decisions related to preserving and maximizing the use of plant genetic resources.

Thus, the International Convention on the Genetic Resources of Plants for Food and Agriculture, like the Convention on Biological Diversity, affirmed the state's right to exploit its biological resources and to obtain a fair and equitable share of the gains that accrue from the use of these genetic resources by nationals of other countries (Shiva, 1997) .

The Convention also recognized in Article 19/3 the rights stipulated in national legislation for farmers related to the storage, use, exchange, and sale of seeds and plant propagation materials (including protected plants). It stressed that the text of Article 19 might not be interpreted in a way that reduces or restricts these rights (Shiva, 1996).

5. Plant variety protection in accordance with the TRIPS Agreement

Since the legislation of developing countries did not provide any protection for plant varieties before the implementation of the TRIPS Agreement - unlike the situation in developed countries - the TRIPS Agreement imposed on developing countries that are members of the World Trade Organization to establish new legal systems to protect plant varieties by the obligations it stipulated.

Article 27/3 (b) of the TRIPS Agreement required members of the World Trade Organization to protect plant varieties through a patent, an effective protection system of a particular type, or a combination of both (Shiva, 1993).

However, the TRIPS Agreement did not oblige member states to provide specific protection standards for plant varieties, unlike all seven forms of intellectual property that it addressed in the second part of it, which allows member states to set standards for the protection of plant varieties that are appropriate to their circumstances and conditions (Seshia, 2002).

Below is a review of the TRIPS Agreement's position on protecting animals and plants through patents. Then, the address of the commitment of member states in the World Trade Organization to protect plant varieties. Then, the present point of view of the best way for developing countries to preserve plant varieties as follows (Senini, 2018; Sahai, 1993; Shyama & Augustin, 2005; Suresh, Tripp, & Niels, 2007; Van der Walt, 2007):

5.1. The position of the TRIPS Convention on protecting animals and plants through patents

The TRIPS Agreement, in Article 27/1, required members of the World Trade Organization to provide the possibility of obtaining patents for all inventions, whether the invention relates to a product or an industrial process, in all fields of technology. As an exception to the principle of patentability of innovations in all areas of technology, the Convention permitted, in Articles 27/2 and 27/3, the exception of three categories of designs from patent protection (Sahai, 2001):

(ISSN: 2537 - 0758)

- Inventions whose commercial exploitation in their territories is prohibited are necessary to protect public order or good morals (Article 27/2).
- Diagnostic, treatment, and surgical methods necessary to treat humans or animals (Article 27/3-a)
- Plants and animals, other than microorganisms, and primarily biological methods for producing plants or animals, other than non-biological and microbiological methods and methods (Article 27/3-b).

This paper focuses on the exceptions in the third category, which includes plants and animals themselves, meaning that what member states may exclude from the scope of protection through patenting is not limited to varieties, genera, or types of plants and animals, but rather applies to the plants and animals themselves, regardless of their varieties, genera, and species. Hence, Member States may exclude whole animals and their parts from patent protection, irrespective of their breeding or production methods. More clearly, Member States may exclude from patent protection animals and plants whether they have been bred and produced by traditional natural means or whose genetic characteristics have been modified through genetic engineering. They may also exclude parts of animals and plants, including cells and their components, organs, and tissues, from patent protection of the path of innocence (Reichman, 1995).

The exception does not include microorganisms nor non-biological and microbiological methods of producing plants and animals (Ravishankar, and Archak, 1999) .

According to the provisions of Article 27 (3) b of the TRIPS Agreement, the exception does not include microorganisms. Microorganisms cannot be seen with the naked eye because they

are tiny, the most important of which are bacteria, viruses, fungi, algae, and single-celled organisms. Hence, member states of the World Trade Organization are obligated to provide the possibility of obtaining a patent for innovations related to these organisms if the conditions for granting protection are met, whether the invention is focused on the microorganisms themselves or the method of using them (Rao, 2020).

The advanced exception also does not extend to non-biological processes used in producing plants and animals. This means methods that do not depend on natural means of having plants and animals. This means that member states of the World Trade Organization may exclude natural methods of growing plants and animals from patent protection, such as pollination, fertilization, and hybridization. Likewise, the exception excludes microbiological processes in producing plants and animals. This means methods that depend on microorganisms in the production of plants and animals. Therefore, member states of the World Trade Organization must protect innovations related to these methods through patents (Rabitz, 2017).

Article 27 (3) b of the TRIPS Agreement does not require member states to exclude plants and animals through patenting, but it allows them to exclude them from patent protection without forcing them to do so (PRAJEESH, 2015).

5.2. The commitment of member states in the World Trade Organization to protect plant varieties

Although Article 27 (3) b of the TRIPS Agreement permitted states to exclude plants and animals from patentability, it obligated them to protect plant varieties through a patent, a particular type of

(ISSN: 2537 - 0758)

system, or a system that combines both (Olusegun, & Olubiyi, 2017).

This article allowed member states of the World Trade Organization the freedom to choose a system for protecting plant varieties from among the three advanced protection systems, as the agreement did not impose on them the protection of plant varieties through patenting (N. Lalitha, 2004).

The TRIPS Agreement does not obligate Member States to provide minimum standards or levels for the protection of plant varieties, as it did in the seven forms of intellectual property that it dealt with, nor is there any obligation on Member States to consider the provisions of the UPOV Agreement if they prefer to establish a particular system for the protection of varieties. As per the TRIPS Agreement, plants leave member states complete freedom to develop a unique design for protecting plant varieties by their interests, if it is an effective system (Koo, Nottenburg, and Pardey, 2004) .

5.3. The best way for developing countries to protect plant varieties

When preparing their legislation, developing countries must consider that the latest version of the UPOV Agreement of 1991 supports breeders' rights and reduces farmers' rights. Therefore, it is not compatible with the interests of developing countries. Consequently, it is better for it, if it wants to be guided by the texts of the UPOV Agreement, to quote the protection system from the 1978 UPOV Agreement (PRAJEESH, 2015).

It is in the interest of developing countries to agree to establish a unified system to protect new plant varieties formulated according to. To achieve this goal, a part of jurisprudence believes that any proposed plan for protecting plant varieties must consider the

following (Ravishankar, and Archak, 1999; DURKIN, MARIA, WILLMORE, & KAPCZYNSKI, 2021; Ahmad, Lilienthal, and Hodgkinson, 2018; Helfer, 2009):

- Excluding the protection of new plant varieties through patents.
- Confirming the right of farmers to reuse the propagation materials of the protected variety, the most important of which are seeds and seeds, which they obtain from cultivating the protected variety for non-commercial purposes. This is known as farmers' privilege.
- Approving the permissibility of others using protected materials to develop or improve the variety without the need to obtain a license from the holder of the right to protection and without paying any compensation. This is known as an educator privilege.
- Confirming the rights of farmers who provided valuable information in improving or developing protected plants or provided plant varieties that were later developed and protected by receiving fair compensation.
- Approval of the compulsory licensing system in plant varieties to achieve public interest.
- Allowing parallel import of seeds and seeds by the principle of international exhaustion of intellectual property rights.

6. Plant variety protection in accordance with the UPOV Convention

As previously mentioned, the International Convention for the Protection of New Varieties of Plants (UPOV Convention) was

(ISSN: 2537 - 0758)

concluded on December 2, 1961, then amended several times on November 10, 1972, October 23, 1978, and March 19, 1991 .

New plant varieties enjoy protection by the provisions of the Convention, regardless of the technological method used to arrive at the new plant variety. This means that new plant varieties are protected if the conditions for protection are met, whether they were obtained through sexual reproduction or asexual reproduction (Helfer, 2009). They are also covered. New plant varieties developed by genetic engineering. The 1991 UPOV Convention defined in Article 1 (5) the "protected variety" and stipulated that for the Convention, (Hansen, & Knudson, 1996; FORSYTH, & FARRAN, 2013) "the term variety means any group of plants that falls into one botanical classification of the lowest known rank, and that fulfills or does not fully satisfy the conditions for granting a breeder's right." Plants can:

- Identifying the characteristics resulting from a specific genetic makeup or a specific group of genetic makeup,
- And distinguishing it from any other plant group by at least one of the mentioned characteristics,
- It is considered a unit because it can reproduce without any change.

It is worth noting that dividing plant species into "classes" is not an accurate scientific division. It is essentially due to practical considerations that require dividing plants into groups, each including similar plants that share common characteristics to facilitate their identification (Echols, 2003).

Article 2 of the 1991 UPOV Convention addresses the fundamental obligations that fall on contracting states, stipulating that "each contracting party shall grant and protect rights to plant breeders."

What is meant by plant breeders' rights, as explained in Article 1 (5) of the Convention, is the rights of plant breeders stipulated in the Convention. The text of Article 2 of the 1991 UPOV Convention is consistent with Articles 1 and 30/3 of the 1978 UPOV Convention (DURKIN, MARIA, WILLMORE, & KAPCZYNSKI, 2021).

It is worth noting that Article 2 (1) of UPOV 1978 allows Contracting States to protect breeders' rights through a plant protection system or a patent. Still, it does not permit a combination of the two types of protection. If the state's national law allows the preservation of breeders' rights through a patent, it is not permissible to combine the two kinds of security simultaneously. This means that the breeder may not combine the two types of protection for one plant variety. However, the 1991 UPOV Convention lacked a similar text. Therefore, it does not prohibit contracting states from protecting a plant variety through a patent or any other protection system in addition to the plant variety protection system stipulated in the agreement. Therefore, by the 1991 UPOV Convention, contracting states may protect the plant variety with double protection through patenting and through the protection system stipulated in the Convention at the same time, and this is what some countries do, such as the United States of America (Demeulenaere, 2012).

The 1978 UPOV Convention did not impose on member states of the Union the protection of all genera and species of plants. Instead, Article 4/3 of the Convention limited their obligation to protect five genera or species of plants as a minimum upon the Convention's entry into force in the country, provided that the concerned government is committed to increasing this number. The number of protected plant genera or species gradually reaches 24

(ISSN: 2537 - 0758)

genera and species eight years after the agreement enters into force. This means that the maximum commitment of member states in the Union is 24 gen era and species of plants (Ahmad, Lilienthal, and Hodgkinson, 2018).

The 1991 UPOV Convention expanded the scope of protected plants, as Article 3 of the Convention obligated the member states of the Union, by the 1961 formula, the 1972 formula, or the 1978 formula, which joined the 1991 formula, to protect all genera and species of plants after a maximum of five years have passed from the date of their commitment to applying Provisions of the new formula (Ravishankar, and Archak, 1999; Reichman, 1995). As for the new member states of the Union, which are the countries that joined directly to the 1991 formula and have not previously entered the Union, they are committed to protecting at least 15 plant genera or species as of the date of their commitment to implement the provisions of the agreement. They are committed to increasing this number until protection covers all plant genera and species after that, the expiry of ten years at the latest (Verma, 1997; Baliño, Laan, & Murphy, 2020).

The 1991 UPOV Convention also established the principle of national treatment in Article 4. By this principle, member countries of the Union are committed to treating citizens of other member states of the Union, natural persons residing therein, and legal persons whose headquarters are located therein with the same treatment that their laws currently or in the future grant to their citizens, provided that the conditions and formal procedures stipulated by those laws are met. This principle is consistent with what is specified in Article 3 of the 1978 UPOV Convention. However, Article 3 of the 1978 UPOV Convention allows member states to reserve the application of the principle of national treatment. Hence, applying this principle requires reciprocity in

1991, which lacked a text enabling member states to make this reservation (Shiva, 1993).

According to Article 5/1 of the UPOV Convention 1991, for the protection of plant varieties, the plant variety protected must meet four conditions:

6.1. Modernity

Article 6/1 of the Convention specifies the standard of modernity. The variety is considered new if the breeder has not previously, nor agreed to anyone else, to sell the breeding materials or plant propagation of the type or the crop of the array, and those materials or the crop have not been disposed of in any other way, to exploit the variety (Shyama & Augustin, 2005):

A - In the country where the application was filed more than one year before the filing date.

B - In the territory of any country other than the country in which the application was submitted for a period exceeding four years or six years if the protection application is directed to trees or vines.

6.2. Excellence

According to Article 7 of the Convention, a plant variety is distinguished if it can be clearly distinguished from any other plant variety whose existence is publicly known on the date of application. The presence of the different array is known publicly, mainly if the breeder uses it for its protection in any country or for its registration in the official register of plant varieties therein as of the date of applying if the application is accepted. Protection is granted, or the other plant variety is registered in the official register (Sim, 2019; Aboelazm, 2023a).

(ISSN: 2537 - 0758)

6.3. Homogeneity

Article 8 of the Convention states what is meant by homogeneity. According to this text, a variety is considered homogeneous if its essential characteristics are sufficiently compatible and not dissimilar, considering the expected differences in the critical elements in the array that characterize its reproduction process. This means that absolute uniformity is not required for the features of the variety, as the expected differences in characteristics that usually accompany the breeding process do not negate the existence of homogeneity (Seshia, 2002).

6.4. Consistency

Article 9 of the Convention states that a variety is considered stable if its essential characteristics do not change due to its successive propagation or at the end of each reproductive cycle (Koo, Nottenburg, and Pardey, 2004).

In addition to the above conditions, the agreement required the student to name the plant variety different from any name for any other sort of the same type or close to it that previously existed in the territory of any contracting state to identify it quickly (DURKIN, MARIA, WILLMORE, & KAPCZYNSKI, 2021). It also required the applicant to fulfill the formal procedures stipulated in the country's national law in which the application was filed. (Article 5/2 UPOV 1991).

The procedures for protecting new plant varieties in member states of the International Union for the Protection of Plant Varieties begin with submitting a request submitted by the concerned party to the administrative authority competent to receive applications determined by the national legislation in the country concerned (Ahmad, Lilienthal, and Hodgkinson, 2018). According to Article 10 of the 1991 UPOV Convention, the breeder has the right to

submit the first application for protection of a plant variety in any contracting country of his choice and then at a later date to request protection of the same plant variety in the country or other countries that are members of the Union, by filing the application for safety with the competent administrative authority in that country or Other countries (C. Niranjan Rao, 2004; Blakeney, 2012). The competent authority in each country to which subsequent protection applications were submitted shall decide without waiting for the breeder to be granted protection in the country where the first application for protection of the plant variety was submitted. No government may refuse to give the breeder protection or shorten its duration because security for the array itself has not been requested, rejected, or lapsed in any other country or international governmental organization (Damodaran, 1999; Cullet, 2001 ; Chakraborty, 2018).

Article 12 of the UPOV Convention of 1991 requires that applications submitted be examined to ensure that the conditions for advanced protection are met. The competent administration may plant the variety or conduct the necessary tests, assign others to plant it or conduct these tests, or take into account the results of previous tests that were shown. She may also ask the breeder to provide her with all the information, documents, and materials necessary to perform the examination (Hansen, & Knudson, 1996; FORSYTH, & FARRAN, 2013).

Article 13 of UPOV 1991 required contracting states to provide temporary protection to plant breeders during the period from the date of filing or publication of the application for safety and the date of granting the right of defense and stipulated the right of plant breeders to obtain fair compensation from any person who, during this temporary period, carried out an act of Works that

(ISSN: 2537 - 0758)

require obtaining a license from the plant breeder after granting him the right to protection, as stipulated in Article 14 of the Convention. Article 13 of the Convention allows state parties to decide that the breeder's right to temporary protection shall not apply except to persons whom the breeder has notified of filing the application for protection of the plant variety (Olusegun, & Olubiyi, 2017; Koo, Nottenburg, and Pardey, 2004).

Article 5 of the 1978 UPOV Convention prohibits third parties from producing plant propagation materials or reproducing the protected variety commercially. It is also not permissible to sell these materials and market them without a license from the breeder (Rao, 2020; Rabitz, 2017). The term reproductive material includes the entire plant. The breeder's right extends to ornamental plants or parts sold for purposes other than propagation when used commercially (C. Niranjan Rao, 2004; Prasanna, Rao, Kalloo, & Singh, 2008).

By Article 14/2 of UPOV 1991, third parties must obtain a license from the plant breeder to carry out any advanced work related to harvest materials (such as grains and fruits), including the entire plant or parts of the plant obtained through propagation materials. The protected variety is without a license unless the plant breeder has been allowed to exercise his right to breed the above materials (Baliño, Laan, & Murphy, 2020).

Article 19 of the 1991 UPOV Convention set a minimum period of protection granted by contracting states to plant varieties that meet the conditions for safety. It required that the period of protection not be less than 20 years as of giving the right of protection to the breeder of the plant variety and not less than 25 years as of the date above for trees. And grapes. The 1991 UPOV Convention supported the rights of breeders about the duration of protection, as the minimum period for preservation of plant

varieties in the 1978 UPOV Convention is 15 years, and 18 years for trees and grapes (Cullet, 2001).

It is worth noting that the period of protection mentioned in the UPOV Plant Varieties Agreement only begins from the date of granting the right to security to the breeder, not from applying for protection. Therefore, Article 7 (3) of the 1978 UPOV Convention permitted contracting states to take measures to protect breeders of a plant variety from actions that constitute an attack by third parties on the breeder during the period starting from the filing of the application until the date of granting protection. There is no obligation on Contracting States to provide such temporary protection, although they may do so (Blakeney, 2012; Sim, 2019).

As for the 1991 UPOV Convention, Article 13 requires state parties to provide temporary protection to breeders of the plant variety during the period from the date of filing or publishing the application for safety and the date of granting the right to protect the array by taking the necessary measures to ensure temporary protection of the breeder's right during this period, provided that they include (Ravishankar, and Archak, 1999) : These measures at least ensure that the breeder receives fair compensation from anyone who performs any of the work that Article 14 prohibits from doing except with a license from the breeder after granting him protection. Article 13 allows States Parties not to apply temporary protection provisions except against persons the breeder has informed of the application filing (Willnegger, 2008; Barton, 1982).

7. Protection of plant varieties in UAE law

Article 27 of the TRIPS Agreement imposed on member states of the World Trade Organization to protect plant varieties, either

(ISSN: 2537 - 0758)

through a patent or an effective system of a particular type, or a system that mixes a patent and a unique design, as new plants have begun to offer humans many advantages that were not previously available known before (Reichman, 1995; Senini, 2018). Through these new plants, it was possible to meet the most unusual requests, as it became possible for these plants to be transformed into live pharmaceutical factories that produce medicine or primary factories to produce the raw materials necessary for various industries (Suresh, Tripp, & Niels, 2007; Prasanna, Rao, Kalloo, & Singh, 2008). It has even reached the point where genetically engineered plants perform services such as guarding or lighting (Aboelazm and Ramadan, 2023D) .

Given this great importance, the TRIPS Agreement paid great attention to protecting new plant varieties, considering it one of the new types of intellectual property rights. Hence, the agreement obligated all member states of the World Trade Organization to protect these items through the patent system or a special protection system. The federal legislator of the United Arab Emirates issued his commitment to this by issuing Federal Law No. 17 of 2009 regarding the protection of new plant varieties (Aboelazm, 2023C).

7.1. New PvP Conditions

In Article 1 of Federal Law No. (17) of 2009, regarding the protection of new plant varieties, the UAE legislator defined a variety as a group of agricultural plants within a species, distinguished from other groups by a phenotypic, physiological, biochemical, genetic, or any other significant characteristic. Or agriculturally important, which, when propagated or reproduced, shows these characteristics, and this does not include wild varieties unless any development has been introduced to them.

For new plant varieties to enjoy protection in UAE law, the following conditions must be met:

7.1.1. Modernity

The newness condition means that the variety has not been previously put into circulation, whether by the breeder or another person who has obtained his approval (Barton, 1982). The plant variety does not lose the newness condition if the array has been put out and traded for a period not exceeding one year before applying if the offering or circulation has occurred. Abroad, the period must not exceed six years for trees and grapes, and the period must not exceed four years for other crops (DURKIN, MARIA, WILLMORE, & KAPCZYNSKI, 2021). The condition of newness is not lost if the right to exploit the plant variety is sold or granted with the breeder's approval to others before giving him the right of protection. The breeder can. The non-expiration of the period is proven of proof (Shyama & Augustin, 2005).

7.1.2. Excellence

The UAE legislator considers a new plant variety distinct if it can be distinguished from other known plant varieties by at least one characteristic, provided that this characteristic is apparent and continues when it is propagated and reproduced (Sim, 2019).

7.1.3. Homogeneity

The new plant variety is homogeneous as long as its essential characteristics are consistent with each other sufficiently, and the variation or difference between these characteristics does not constitute an obstacle to the fulfillment of the condition of homogeneity as long as it is within the expected limits that do not disturb its cohesion (Chakraborty, 2018; Seshia, 2002).

(ISSN: 2537 - 0758)

7.1.4. Consistency

The stability condition means that the new plant variety maintains the characteristics that distinguish it when multiplied or planted. This condition is logical because the plant variety does not achieve the distinct results expected if it loses its essential features when produced multiple times (reproduction) (Blakeney, 2012; Koo, Nottenburg, and Pardey, 2004).

7.1.5. Naming the plant variety

The name is considered the distinguishing element of every work and variety. For the new plant variety not to be mixed with other plant varieties, the breeder must name his type with a specific name linked to it and inseparable from it (DURKIN, MARIA, WILLMORE, & KAPCZYNSKI, 2021).

The UAE legislator dealt with the naming of plant varieties in more detail, as he clarified the procedures for naming the plant variety and their controls and then proposed canceling the naming of registered plant varieties (N. Lalitha, 2004).

7.1.6. Do no harm

It must not harm health or the environment and must not violate Islamic law or any applicable law in the country (Prasanna, Rao, Kalloo, & Singh, 2008) .

7.2. Exceptions to the rights of plant breeders (Article (19) of Federal Law No. (17) of 2009 regarding the protection of new plant varieties)

7.2.1. There are several exceptions to the right of plant breeders, which are:

- Non-commercial activities and use for personal gain.

- Activities related to experiments and scientific research purposes.
- Breeding and hybridization to develop new varieties.
- Activities related to education and training purposes.
- Commercial use and exploitation of the crop and its raw materials.
- Duration of further plant variety protection.
- If the new plant variety belongs to the family of trees and grapes, its protection period is twenty-five years.
- However, if the new plant variety is other than trees and grapes, the protection period is twenty years from the date of granting protection.

7.2.2. *The holder* of the right to register the variety shall be (Article (10) of Federal Law No. (17) of 2009 regarding the protection of new plant varieties):

- The plant breeder or the person to whom the rights to the type are transferred.
- All people involved in its creation, if the variety is the result of their joint effort, if it is registered as a partnership equally among them unless they agree otherwise.
- The plant breeder is the first to apply for registering the variety if more than one person bred the variety and each was independent.

(ISSN: 2537 - 0758)

- The employer, when devised by his employee based on an employment contract under which he was obligated to complete this type unless the contract stipulates otherwise.

7.2.3. *Considering the provisions of Articles (16) and (17) of this law, an authorization must be obtained from the plant breeder right holder when performing any of the following actions* (Article (15) of Federal Law No. (17) of 2009 regarding the protection of new plant varieties)*:*

- Production, propagation, or reproduction.
- Preparation for propagation or reproduction.
- Offer for sale.
- Selling or other marketing activities.
- Export.
- Import.
- Storing, for any of the purposes referred to in the items stipulated in this Article, the propagation or propagation material of the relevant variety or the harvested material, including plants, obtained through unauthorized use.
- The protection period for the protected variety is twenty years for crops and twenty-five years for grapes and trees.
- The calculation of the protection period begins from the date of issuance of the decision granting the plant breeder right.

7.2.4. *Any person may object to the granting of a plant breeder right in the following cases* (Article (33) of Federal Law No. (17) of 2009 regarding the protection of new plant varieties)*:*

- If the right to breed plants is granted to a person who is not a plant breeder unless the ownership is transferred to him.
- If the variety was not new or distinct on the filing or priority date.
- If the variety is not homogeneous or stable.

Whoever violates the provisions of Articles 15 or 17 of this law or illegally obtains the right to plant breeders shall be punished by imprisonment for not less than two months and a fine of not less than ten thousand dirhams and not exceeding two hundred and fifty thousand dirhams or one of these two penalties.

Anyone who violates any other provision of this law shall be punished with a fine of not less than ten thousand dirhams and not more than two hundred and fifty thousand dirhams.

The court may order the confiscation of the materials that are the subject of the case and order their destruction at the expense of the convict or refer them to public entities that may deal with or benefit from them. Suppose the crime is committed in the name or on the account of a legal person or a commercial or professional establishment. In that case, it may order their closure for a period not exceeding six months, and it shall be published. A summary of the conviction ruling in one or more daily newspapers at the expense of the convict.

A judicial appeal may be made against administrative decisions issued under this law within sixty days of publication in the Official Gazette or announcement by the concerned party.

(ISSN: 2537 - 0758)

8. Conclusion

New plant varieties are among the critical innovations in the modern era, making them one of the most essential industrial property topics. This is an importance that prompted thinking about how to give legal protection to these varieties so that their creators' efforts are not in vain. New plant varieties enjoy legal protection at the national level through Federal Law No. (17) of 2009 regarding the protection of new plant varieties at the international level through several international agreements, the most important of which are the UPOV Agreement and the TRIPS Agreement.

Comparative legislation has not concerned itself with providing legal protection for new plant varieties until recently, as such protection was not of concern to countries of the world in general and developed countries in particular until recently. However, the tremendous scientific progress in biotechnology in the field of agricultural production in developed countries and the allocation of budgets and investments, Huge efforts by giant entities and companies to create new plant varieties characterized by the ability to face new climatic challenges, changing agricultural conditions, abundant production, harvest time, and other unique characteristics, made them almost wholly control this activity, which prompted the significant countries to strive to provide adequate protection. This diligent effort resulted in the signing of the International Convention for the Protection of New Varieties of Plants. The agreement established an international union that includes the states parties to it, called the Union Pour la Protection des Obtention Végétales in French, and is known for short as UPOV (Union Pour la Protection des Obtention Végétales). UPOV and the Convention on Trade-related Aspects of Intellectual Property Rights (TRIPS), based on which comparative national legislation was formulated in all countries to achieve this

protection. The UAE legislator regulated Federal Law No. (17) of 2009 in The Protection of New Plant Varieties for the first time provides a unique legal system to protect intellectual property rights in the field of new plant varieties.

Every beginning has an end, and a lot of our research is the results we have reached, which is the problem of the legal protection of plant varieties and the concepts and data that emerge from it that are relevant to the environmental reality in which plant works revolve around.

8.1. Results

- The legal protection of plant varieties is preserving these works and their breeders from any attack or damage.
- Many countries have sought to establish a unified system for the protection of new plant varieties at the international level, and efforts have resulted in the conclusion of the first international agreement in this field on December 2, 1961, which is the International Convention for the Protection of New Varieties of Plants. The agreement established an international union that includes the states parties to the agreement, called the Union Pour la Protection des Obtention Végétales in French. This Union is known as UPOV, after the first letters of its name in French. It is an independent international organization with its headquarters in Geneva, Switzerland.
- Since its conclusion in 1961, several subsequent amendments have been made to the International Convention for the Protection of New Varieties of Plants (UPOV Convention) on November 10, 1972, October 23,

(ISSN: 2537 - 0758)

1978, and March 19, 1991. This last amendment entered into force on April 24, 1998.

- The legislation of developing countries does not provide any protection for plant varieties before the application of the TRIPS Agreement - unlike the situation in developed countries - the TRIPS Agreement imposed on developing countries that are members of the World Trade Organization to establish new legal systems to protect plant varieties by the obligations it stipulated. Article 27/3 (b) of the TRIPS Agreement obligated member states in the World Trade Organization to protect plant varieties through a patent, an effective protection system of a particular type, or a combination of both. However, the TRIPS Agreement did not oblige member states to provide standards. Unlike all seven forms of intellectual property I dealt with in the second part, specific protection for plant varieties allows member states to set standards for the safety of plant varieties that are appropriate to their circumstances and situations.

- The UAE legislator dealt with the naming of plant varieties in more detail, as he clarified the procedures for naming the plant variety and its controls and then proposed canceling the naming of registered plant varieties.

8.2. Recommendations

- Adopting a legal system in the Emirates for new plant varieties, based most of its texts on the International Convention for the Protection of New Varieties of Plants (UPOV) and the Trade-Related Intellectual Property Agreement (TRIPS).

- The importance of including all intellectual property laws, including the law for the protection of new plant varieties, within one direction, if new plant varieties are a form of intellectual property rights.
- The importance of holding conferences in universities and specialized scientific centers to study and analyze means of protecting plant varieties, develop solutions to the violations they entail, and appeal to law colleges in the UAE to introduce the intellectual property course as a fixed course in postgraduate programs.

9. References

Ahmad, N., Lilienthal, G., & Hodgkinson, P. (2018). Corporate Plant Breeders and Indigenous Farmers' Rights: Linnaeus Overrides the F.A.O. European Food and Feed Law Review, 13(5), 437–451.

Alimbudiono, R. S., Kamallan, M. P., Sawitri, N. M., Titalia, V., & Dewi, G. C. (2023). Volunteer or Forced: A Portrait of Sustainability Report in Indonesia . Journal of Law and Sustainable Development, 11(7), e1326. https://doi.org/10.55908/sdgs.v11i7.1326

Aboelazm, K.S. & Afandy, A. (2019) Centralization and Decentralization of Public Procurement: Analysis for the Role of General Authority for Governmental Services (GAGS) in Egypt. Journal of Advances in Management Research. 16(3), 262-276. https://doi.org/10.1108/JAMR-05-2018-0049

Aboelazm, K.S. (2021) The Constitutional Framework for Public Policy in the Middle East and North Africa (MENA)

(ISSN: 2537 - 0758)

Countries. International Journal of Public Law and Policy. 7(3), 187-203. https://doi.org/10.1504/IJPLAP.2021.118325

Aboelazm, K.S. (2022)a E-procurement in the international experience: an approach to reduce corruption in administrative contracts in Egypt. International Journal of Procurement Management. 15(3), 340–364. https://doi.org/10.1504/IJPM.2022.122570

Aboelazm, K.S. (2022)b The Role of Digital Transformation in Improving the Judicial System in the Egyptian Council of State: An Applied Study from a Comparative Perspective. Journal of Law and Emerging Technologies. 2(1), 11–50. https://doi.org/10.54873/jolets.v2i1.41

Aboelazm, K.S. (2023)a Policies and legal framework of involving small and medium enterprises in administrative contracts in Egypt: dynamics and influences. International Journal of Public Law and Policy. 9(1), 61–74. https://doi.org/10.1504/IJPLAP.2023.127316

Aboelazm, K.S. (2023)b The legal framework and policies for sustainable administrative contracts in Egypt: reality and challenges. International Journal of Public Law and Policy. 9(2), 111–129. https://doi.org/10.1504/IJPLAP.2023.130011

Aboelazm, K.S. (2023)C Using E-Tenders in the United Arab Emirates to Enhance Transparency and Integrity, Kurdish Studies, Vol. 11, No, 2.

Aboelazm, K.S. and Ramadan, S. (2023)D Transformation to E-Public Procurement in the United Arab Emirates in the light of UNCITRAL Model Law, Journal of Law and Sustainable Development., Vol. 11, No, 8. https://doi.org/10.55908/sdgs.v11i8.1499

Aboelazm, K (2023)E The Debatable Issues in the Rule of Law in British Constitutional History and the influence in the Egyptian Constitutions, International Journal of Doctrine, Judiciary and Legislation, 4(2), 521-568. https://doi.org/10.21608/ijdjl.2023.177439.1185

Baliño, S., Laan, T., & Murphy, S. (2020). Multilateral Regulatory Regimes and Plant Breeding. International Institute for Sustainable Development (IISD).

Barton, J. H. (1982). The International Breeder's Rights System and Crop Plant Innovation. Science, 216(4550), 1071–1075.

Blakeney, M. (2012). Patenting of plant varieties and plant breeding methods. Journal of Experimental Botany, 63(3), 1069–1074.

C. Niranjan Rao. (2004). Indian Seed System and Plant Variety Protection. Economic and Political Weekly, 39(8), 845–852.

Chakraborty, S. K. (2018). CONTESTATION OVER THE OWNERSHIP, USE AND CONTROL OF PLANT GENETIC RESOURCES: RETHINKING PLANT INTELLECTUAL PROPERTY RIGHTS FROM INDIAN PERSPECTIVE. Journal of the Indian Law Institute, 60(4), 369–388.

Cullet, P. (2001). Plant Variety Protection in Africa: Towards Compliance with the Trips Agreement. Journal of African Law, 45(1), 97–122.

Damodaran. (1999). Regulating Transgenic Plants in India: Biosafety, Plant Variety Protection and Beyond. Economic and Political Weekly, 34(13), A34–A42.

De Schutter, O. (2011). The Right of Everyone to Enjoy the Benefits of Scientific Progress and the Right to Food: From Conflict to Complementarity. Human Rights Quarterly, 33(2), 304–350.

Demeulenaere, E. (2012). Reclaiming the Seeds, Becoming "Peasants": On-Farm Agrobiodiversity Conservation and the Making of Farmers' Collective Identity. RCC Perspectives, 5, 59–66.

DURKIN, A., MARIA, P. A. S., WILLMORE, B., & KAPCZYNSKI, A. (2021). Addressing the Risks That Trade Secret Protections Pose for Health and Rights. Health and Human Rights, 23(1), 129–144.

(ISSN: 2537 - 0758)

Echols, M. A. (2003). Geographical Indications for Foods, Trips and the Doha Development Agenda. Journal of African Law, 47(2), 199–220.

FORSYTH, M., & FARRAN, S. (2013). Intellectual Property and Food Security in Least Developed Countries. Third World Quarterly, 34(3), 516–533.

Hansen, L., & Knudson, M. (1996). Property Right Protection of Reproducible Genetic Material. Review of Agricultural Economics, 18(3), 403–414.

Helfer, L. R. (2009). Regime Shifting in the International Intellectual Property System. Perspectives on Politics, 7(1), 39–44.

Koo, B., Nottenburg, C., and Pardey, P. G. (2004) Plants and Intellectual Property: An International Appraisal. Science, 306(5700), 1295–1297.

Kothari, A. and Anuradha. R.V. (1997) Biodiversity, Intellectual Property Rights, and GATT Agreement: How to Address the Conflicts? Economic and Political Weekly, 32(43), 2814–2820.

Lanoszka, A. (2003). The Global Politics of Intellectual Property Rights and Pharmaceutical Drug Policies in Developing Countries. International Political Science Review / Revue Internationale de Science Politique, 24(2), 181–197.

N. Lalitha. (2004). Intellectual Property Protection for Plant Varieties: Issues in Focus. Economic and Political Weekly, 39(19), 1921–1927.

Nguyen, Q. N., & Hoang, T. H. L. (2023). Acceptance of Solar Technology by Enterprises in the Mekong Delta Region, Vietnam. Journal of Law and Sustainable Development, 11(5), e428. https://doi.org/10.55908/sdgs.v11i5.428

MILLSTONE, E., STIRLING, A., & GLOVER, D. (2015). Regulating Genetic Engineering: The Limits and Politics of Knowledge. Issues in Science and Technology, 31(4), 23–26.

Olusegun, O. O., & Olubiyi, I. A. (2017). Implications of Genetically Modified Crops and Intellectual Property Rights

on Agriculture in Developing Countries. Journal of African Law, 61(2), 253–271.

PRAJEESH, P. (2015). Farmers' Rights to Seeds: Issues in the Indian Law. Economic and Political Weekly, 50(12), 16–18.

Prasanna, B. M., Rao, S. K., Kalloo, G., & Singh, R. B. (2008). "Varieties of common knowledge" in the context of plant variety protection. Current Science, 95(11), 1522–1524.

Putra, R. B., Aima, H., & Yulasmi. (2023). The Role of Organizational Compatibility in Mediating and Moderating Knowledge-Oriented Leadership on Employee Performance. Journal of Law and Sustainable Development, 11(7), e939. https://doi.org/10.55908/sdgs.v11i7.939

Rasjidi, F. (2023). The Gratification of Sexual Services in Corruption Offenses. Journal of Law and Sustainable Development, 11(8), e1431. https://doi.org/10.55908/sdgs.v11i8.1431

Rabitz, F. (2017). Access without benefit-sharing: design, effectiveness and reform of the FAO seed treaty. International Journal of the Commons, 11(2), 621–640.

Rao, C. N. (2020). Public R&D and the Patent System. Social Scientist, 48(9/10 (568-569)), 87–90.

Ravishankar, A. and Archak, S. (1999) Searching for Policy Options: Is CoFaB a Suitable Alternative to UPOV? Economic and Political Weekly, 34(52), 3661–3667.

Reichman, J. H. (1995). Universal Minimum Standards of Intellectual Property Protection under the TRIPS Component of the WTO Agreement. The International Lawyer, 29(2), 345–388.

Sahai, S. (2001). Plant Variety Protection and Farmers' Rights Law. Economic and Political Weekly, 36(35), 3338–3342.

Sahai, S. (1993). The "Sui Generis" System. Economic and Political Weekly, 28(50), 2702–2703.

Senini, E. (2018). Farm Saved Seeds: A Right to Use or a Right Abused? European Food and Feed Law Review, 13(2), 116–124.

(ISSN: 2537 - 0758)

Seshia, S. (2002). Plant Variety Protection and Farmers' Rights: Law-Making and Cultivation of Varietal Control. Economic and Political Weekly, 37(27), 2741–2747.

Shiva, V. (1993). Farmers' Rights, Biodiversity and International Treaties. Economic and Political Weekly, 28(14), 555–560.

Shiva, V. (1996). Agricultural Biodiversity, Intellectual Property Rights and Farmers' Rights. Economic and Political Weekly, 31(25), 1621–1631.

Shiva, V. (1997). Biodiversity Totalitarianism: IPRs as Seed Monopolies. Economic and Political Weekly, 32(41), 2582–2585.

Shyama V. Ramani, & Augustin Maria. (2005). TRIPS: Its Possible Impact on Biotech Segment of the Indian Pharmaceutical Industry. Economic and Political Weekly, 40(7), 675–683.

Sim, C. (2019). International Law in Asia: A Bibliographic Survey – 2017. In C. Sim, S. Lee, & H. E. Lee (Eds.), Asian Yearbook of International Law, Volume 23 (2017) (pp. 305–322). Brill.

Suresh Pal, Tripp, R., & Niels P. Louwaars. (2007). Intellectual Property Rights in Plant Breeding and Biotechnology: Assessing Impact on the Indian Seed Industry. Economic and Political Weekly, 42(3), 231–240.

Van der Walt, W. J. (2007) Status of Plant Variety Protection (PVP) in the SADC Region: THE NEED TO EXPEDITE PLANT VARIETY PROTECTION IN SADC COUNTRIES. Food, Agriculture, and Natural Resources Policy Analysis Network (FANRPAN).

Verma, S. K. (1997). BIODIVERSITY AND INTELLECTUAL PROPERTY RIGHTS. Journal of the Indian Law Institute, 39(2/4), 203–215.

Willnegger, E. (2008). Intellectual property situation of today's food sector. In Patents in the Food Sector: A Retrospective with Special Emphasis on the TRIPs Agreement (1st ed., pp. 115–165). Nomos Verlagsgesellschaft mbH.