

LEGAL PROTECTION OF NEW GENETICALLY MODIFIED PLANT VARIETIES IN ALGERIA AND INTERNATIONAL AGREEMENTS

HORIYA SOUIKI

professor of law, faculty of law Ain Temouchent university Algeria

Abstract

Genetic engineering is defined as the modern and unconventional biotechnology that is used to modify genetic material. It should be noted that modified plant varieties have emerged in order to achieve food security, diversify breeds, and intensify production. This took place after the development of several biotechnology applications that were mainly aimed at using living systems or their components in the industrial and agricultural sectors.

With this being the case, it was deemed necessary to provide the legal protection for these modified plant varieties at the national and international levels, which is the topic that the present study aims to explore.

Keywords: *Biotechnology; Genetic engineering; Plant varieties; Legal protection.*

INTRODUCTION

Biotechnology is actually viewed as a technology that is based on biology¹. It is defined as the science that investigates the applications of biology, biochemistry and genetic engineering². It should be noted that its primary material is the living matter which may come either from humans, plants, animals, or even microscopic organisms³.

Nowadays, biotechnology represents a major challenge for scientists due to the numerous variables it generally imposes on the scientific, economic, environmental and legal fields. These variables may in turn have a significant impact on the health, pharmaceutical, industrial and even agricultural sectors. Further, biotechnology is based on genetic engineering. It essentially deals with genes through the modification, transfer, and cultivation of living tissues; it also embodies the principle of benefiting from the world of living beings⁴.

It is widely admitted that genetically modified plants are one of the applications of biotechnology, because they are elaborated through the use of foreign genes in order to enhance their genetic characteristics, like creating modified plants that are resistant to herbicides and to diseases and viruses, or species that have a high nutritional value, withstand harsh environmental conditions, etc⁵.

To the best of our knowledge, the protection of genetically modified plant varieties has not been fully achieved until recently due to the failure of comparative legislation to regulate this issue because, originally, the idea was not very popular and widely accepted by people throughout the world. Nevertheless, due to the popularity of agricultural genetic engineering applications,

¹ Hamid Jabbar, Banin (2021) - Biotechnology and Medical Ethics Concepts - Frameworks and Applications - Mutoon Magazine at Moulay Taher University in Saida (Algeria) p. 84.

² Ahmed Al-Shabji, Youssef (1997) - Biotechnology, Food Materials Management - Kuwait Institute for Scientific Research, p. 03. See also Walid Abu Saleh, Majid, and Ahmed Madi Ramzi (2016) - Specificity of objective conditions for granting patents for biotechnology inventions - A comparative legal study in the Journal of Sharia and Law Studies, Volume 43, Supplement 2 - University of Jordan in the Hashemite Kingdom of Jordan.

³ Mahiaoui, Fatima (2014) - Protection of Genetically Modified Products for the Master's Thesis in the Faculty of Law at the University of Algiers 1, Benyoucef Ben Khadda, p. 03.

⁴ Belarbi, Somaya, and Farhat, Hamou (2020) - Protection of biotechnology with a patent - Journal of Comparative Legal Studies - Hassiba Ben Bouali University of Chlef (Algeria), p. 1057.

⁵ For more details, see Al-Ajouri, Rana (2019/2020), Biology 1, Theoretical Part - Faculty of Pharmacy, p. 07 at Al-Sham Private University.

enormous investments have been assigned with a view to creating new plant varieties that are characterized by unique features in terms of abundant production, harvest time, drought tolerance, ability to resist pests, etc.

Some countries in particular and the international community in general have sought to provide protection for these modified plant varieties. This initiative has been effectively materialized since the eighth Multilateral Trade Negotiations Round that was held in Uruguay, during the period from 1986 to 1993⁶.

The present study is highly important as it aims to shed light on the National Legal System as well as the Legal Protection that international agreements may ensure for genetically modified plants. Based on the above, one may therefore raise the following problematic issue:

What are the international and national legal protection forms that are provided for genetically modified plant varieties?

It is worth mentioning that this study seeks to examine the different international agreements that have dealt with the issue of protecting all forms of genetically modified plants, which belong to a new category of plants, without mentioning the position of the Algerian legislator on that issue.

The descriptive approach is employed in this study for the purpose of describing all related concepts and generalities. It is also utilized to examine the relevant legal texts while applying the comparative approach in order to determine the scope of protection that is provided by the comparative legislation for classified plants, and for genetically modified plants as well.

2. Genetic engineering in agriculture and genetically modified plants - Towards consolidating and establishing concepts

This study aims primarily to clarify the concepts and remove the ambiguity surrounding the expressions of *Agricultural Genetic Engineering* and *Genetically Modified Plants*, and to help the reader better understand the real meaning of genetically modified plants that are subject to legal protection. For this, it was deemed interesting to explore this topic and to detail these points according to the following:

2.1 Agricultural genetic engineering

Living organisms on Earth, including humans, animals, plants, and microbes, constitute in total more than five million species.

It has been revealed that genetic engineering technology can be used to change the nature of any living organism or to assimilate it to another organism. Today, it has become possible to integrate an animal gene into a plant, or a plant gene into a plant, or anything else that might raise some kind of confusion in our mind. This is probably due to the new techniques that geneticists have developed so far in terms of transmission or inheritance of traits.

Consequently, with the view to removing the ambiguity of this new term, it was deemed necessary to define the concept and structure of genetic engineering and to determine the foundations upon which it is based.

2.1.1 The concept of genetic engineering in agriculture

The expression *Genetic Engineering* is generally viewed as a modern scientific term. Originally, according to specialized scientists, this term meant molecular biology and all involved sciences. It involves developing genes, modifying them, or recombining DNA.

Nowadays, numerous definitions of genetic engineering are actually available. Though all of these definitions are practically similar, some scientists define genetic engineering as taking genetic traits from one living organism and transplanting them into another one to eventually get genetically hybrid plants or animals.

Furthermore, some other researchers have defined it as the action of interfering with the genetic structure of the cell nucleus through deletion, addition, rearrangement, or merging. From the same

⁶ Adly, Muhammad Abdel Karim, Wajdi, Najat (2021) - System for the protection of new plant varieties in accordance with the intellectual property system - Standard Magazine - Issue 01, Volume 12, p. 210.

perspective, some others defined it as the act of changing the natural path into a different one with the objective of modifying an undesirable reality, or achieving a description that is wanted. Probably all the above-mentioned definitions lead to the same interpretation which is the fact that scientists intervene by changing the natural genetic material of a plant, animal, or any living organism, either by deleting part of this material or by incorporating one new organism in it. The objective of the whole process is to achieve a number of desirable characteristics that would not have taken place naturally without the human intervention⁷.

It is widely known that the application of genetic engineering in the agricultural field has led to the emergence of transgenic or genetically modified animals and plants. This technique allowed for the production of plants that are resistant to pesticides, insects, drought, and climate change, as well as fruits that are resistant to damage and that can tolerate transportation and storage, etc. It also helped to create some additional distinctive genetic characteristics in animals and to improve phenotypic characteristics, such as color and shape as well⁸.

2.1.2: The basis of agricultural genetic engineering

Genetic engineering technology consists of extracting a specific gene from the genetic chain which is divided into many genes. It should also be noted that this gene is responsible for the production of a specific protein that is then transferred to another organism to be genetically modified. The purpose of all this is to produce the protein gene in the receiving organism in the same way as it was created in the organism from which it was transferred. It is worth reminding that the gene is part of the long chain called DNA, abbreviated D.N.A, which stands for deoxyribonucleic acid.

It should be highlighted that the genetic chain of DNA is highly important due to the fact that everything that takes place in a living cell or organism is generally based on the information recorded on that genetic strand. All the characteristics of living organisms are assembled in the DNA strand, regardless of their shapes, types, and sizes⁹.

2.2 Genetically modified plants

Plants, as well as humans and animals, are living creatures which represent the elements of life on the planet Earth. These creatures are considered as an essential source of food and medicine¹⁰.

It is broadly admitted that man has selected plants since he began practicing agriculture. Indeed, farmers selected plants based on their capacities to grow and to resist to climate fluctuations and to various diseases. The plant species that were preferred by these farmers form the basis of the crops that people eat today. It is worth indicating that the hybridization of plant varieties and ecological species, which aims to obtain multiple adaptable strains, is a technique that has been practiced since ancient times¹¹.

A plant variety refers to a group of plants that belong to one single plant category. It is determined by a set of specific genetic distinctive characteristics¹². A detailed definition of the new plant variety, which includes genetically modified plants, is detailed below. This definition is formulated from the perspective of international agreements and national legislation.

⁷ Shaaban, Jaber Shaaban Hassan (2020) referred to these jurisprudential definitions in Liability arising from damages caused by agricultural genetic engineering techniques and their compensation between Islamic jurisprudence and positive law - First edition at Al-Wafa Legal Library in Alexandria (Egypt), p. 29 et seq.

⁸ Shaaban, Jaber Shaaban Hassan, Ibid., p. 34.

⁹ Ibid., p. 30 et seq.

¹⁰ Abu Al-Futouh Farid Hassan, Nasr (2007) - Protection of Intellectual Property Rights in the Pharmaceutical Industry - A Comparative Study - New University House in Alexandria (Egypt), p. 164.

¹¹ Hama Baqi Abdel Qader, Dana (2011) - Intellectual Property Rights Related to New Plant Varieties and Pharmaceutical Products - A Comparative Analytical Study - Dar Al-Kutub Al-Qanuni and Dar Al-Shatat Publishing and Software in Egypt, p. 34.

¹² Ahmed Al-Bahji, Essam (2014) - Intellectual Property Rights related to Genetically Modified Plant Varieties - Dar Al-Fikr Al-Jami'i in Alexandria (Egypt), p. 34.

2.2.1 The new plant variety from the perspective of international agreements

The International Union for the Protection of New Varieties of Plants (UPOV) was established under a treaty that was agreed upon in 1961 in a serious endeavor to coordinate the policies of different countries. This treaty body was revised and refined in 1972, 1978, and 1991. Its primary purpose is to provide the necessary protection for the intellectual property rights of breeders of new plant varieties.

In this regard, Paragraph 6 of Article 1 of the UPOV Convention, amended in 1991, defined a plant variety as a group of plants that falls into one plant classification of the lowest known rank. This plant variety, which may satisfy or not completely satisfy the conditions required for granting a plant breeder's right, is defined by characteristics resulting from a particular genetic composition or a particular combination of genetic makeup, which distinguishes it from any other plant group by at least one of the stated features. This plant variety may therefore be considered as a unit due to its capacity to reproduce without any modification¹³.

The extrapolation of this definition allows concluding that the plant variety was described without making any reference to the method or process for producing the variety, and without saying whether reliance was placed on the biological methods or genetic engineering¹⁴.

2.2.2 The new plant variety from the perspective of Law 05/03, relating to seeds, seedlings, and plant tenure or ownership

In Article 3, Paragraph 3 of Law 05/03 relating to seeds, seedlings and protection of plant ownership¹⁵, the Algerian legislator defined the plant variety as:

“Every transplant, clone, pure lineage, or original hybrid, sometimes of an original or selected nature, cultivated or susceptible to be cultivated, and showing distinct, consistent, and stable advantage.”

While Article 24 of the same law defines plant ownership or tenure as:

“Every new plant variety that was created, discovered, or developed, and which resulted from a genetic stage that is different from a special mixture of various genetic stages. This plant variety can be differentiated from all other plant groups that form an independent entity on account of its capacity to reproduce.”

It is worth noting that the Algerian legislator adopted the UPOV agreement, but he did not mention the method used for producing the variety, whether by the biological method or by using genetic engineering technology, despite the utmost importance of this technology and all the requirements it can fulfill for ensuring health care quality. This would require a high degree of accuracy and high attention to detail.

It is important to note that the new plant varieties that are achieved through biological methods are those that are engendered through biological reproduction, which takes place through the union of two basic cells, namely the egg and the pollen. Thus, a fusion occurs between these two elements to create a fertilized egg that continues to divide, grow, and develop through normal or quadruple reproduction that is maintained without any modifications.

With regard to the plant varieties that were produced by non-biological methods, they primarily resulted from the introduction of some modifications into the genetic makeup of the biological plant. This may be done through selection and hybridization, like introducing some modifications into the structure of the plant gene¹⁶.

Over the past few years, modified plant varieties have gained great popularity in the pharmaceutical industry at the international level. As a result, the so-called therapeutic or

¹³ UPOV Convention, published in: https://www.upov.int/export/sites/upov/about/ar/pdf/upov_inf_6_5.pdf, last accessed date: 04/09/2022.

¹⁴ Adly, Muhammad Abdel Karim, and Wagdi, Najat, op. cit., p. 214.

¹⁵ Law 05/03, dated February 6, 2005, related to seeds, seedlings and protection of plant ownership or tenure - Official Gazette 11, issued on February 9, 2005.

¹⁶ Abu Al-Futuh Farid Hassan, Nasr, op. cit, p. 171.

medicinal foods made their appearance. In this context, a researcher at the International Center for Genetic Engineering and Biotechnology (ICGEB) in New Delhi (India) succeeded in developing and producing tomatoes that are resistant to hepatitis C. This was achieved by implanting hepatitis C serum in tomato seeds which then became one of their basic components. It was revealed that this does not affect the size and taste of natural tomatoes. However, the production of this type of tomatoes is very expensive.

In the same context, other researchers have succeeded in producing potatoes that act as insulin by inserting the gene that encodes the GAD protein into the potato's DNA. They then produced potatoes that possess high protein levels in order to prevent the immune system from destroying the pancreatic cells¹⁷.

3. International and national protection of modified plants

A review of the different international agreements, which provided legal frameworks for the protection of new plant varieties which include genetically modified plants, is presented below. Afterwards, the position of the Algerian legislator regarding that issue is examined and discussed.

3.1 International framework for the protection of new plant varieties

This is explicitly described below.

3.1.1 Protection of new plant species in accordance with the TRIPS Agreement

Unlike developed countries, developing countries did not grant any protection for plant species before the implementation of the provisions of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement¹⁸. Indeed, the TRIPS were highly decisive in this regard as they stipulated in Paragraph 3b of Article 27 that plant species must be granted protection, either through patents or by establishing a unique regime for these species, or any combination of both.

This same Article 27 specifies that countries can exclude from protection all plants produced by biological methods. Consequently, the general principle consisted of eventually getting patents for all inventions, while the exception is that Member States can exclude some inventions from the scope of acquiring a patent¹⁹.

Nevertheless, the TRIPS Agreement showed some limitations, i.e. it does not for example specify what is implied by new species of plants, or what is intended by the special regime. Does that mean a protection regime that is based on the UPOV²⁰ agreement?

It is undeniable that the prospect of protecting new plant species by patent, as specified in the TRIPS Agreement, will certainly lead to a monopoly on food and agricultural systems. It can also result in the exclusion of Farmers' Rights over plant resources that possess genes or characteristics related to the species that was protected²¹.

3.1.2 Protection of new plant species in accordance with the UPOV Convention

It is worth emphasizing that the TRIPS Agreement allowed granting protection to new species of plants through an effective special regime, or through a system that combines a patent and a special regime.

¹⁷ Ibid., p. 192.

¹⁸ Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) emanating from the General Agreement on Tariffs and Trade (GAAT), published in: <https://www.customs.gov.jo/ar/pdf/868687.pdf>, last accessed date: 04/09/2022.

¹⁹ Abdullah Khairy, Murtada (2019) - The patent resulting from modern technology and its role in protecting microorganisms - A comparative study in the Journal of Law and Humanities, Volume 12, Issue 3, p. 57.

²⁰ Mahmoud Kawtharani, Hanan (2011) - Legal Protection of a Patent in accordance with the TRIPS Agreement Provisions - A Comparative Study - First Edition at Al-Halabi Legal Publications - Lebanon in the year 1982 and beyond.

²¹ Mahiaoui, Fatima, op. cit., p. 147.

A number of questions have been raised about whether what is meant by the special regime is the International Convention for the Protection of New Species of Plants, known as the UPOV convention, or perhaps it implicitly implied the TRIPS Agreement.

It should be noted that the purpose of the UPOV Convention is to ensure that Member States acknowledge the achievements of producers of new plant species by granting them exclusive property rights based on uniform principles and specific rules.

On the other hand, it should be mentioned that the 1991 amendment to the UPOV Convention included a definition of plant varieties according to what had previously been detailed, without stipulating the method by which the species is produced.

The convention also embodied the conditions, such as novelty, distinctiveness, homogeneity, and stability, which the new plant species must satisfy so it can be subject to protection²². This is similar to what the Algerian legislator has stipulated in the above-mentioned Law 05/03.

3.1.3 Cartagena Protocol on Biosafety to the Convention on Biological Diversity for the year 2000

Developments in the field of biotechnology have greatly helped scientists to double their capacity to genetically mutate plants, living organisms and microorganisms. As a consequence, the issue of providing the necessary safety factors in the transport, circulation, use, and disposal of genetically modified product waste has become an important and urgent matter for many countries throughout the world in order to protect human health, preserve the environment and keep it safe from risks.

This Protocol requires Member Countries to adhere to a series of measures that can help to control and limit the harmful effects that technology and genetically modified products may have on people and the environment. It should be noted that Member States ought to ensure that the approved methods are followed in order to prevent or reduce the risks of the use, circulation and release of genetically modified organisms. In addition, every party has the right to subject these organisms to a risk assessment before they can make any decisions regarding their import. Moreover, Member Countries are also entitled to express their needs regarding financial and technical assistance and competency development with regard to all genetically modified sentient organisms that are intended to be directly used as food or other thing²³.

3.1.4 International Treaty on Plant Genetic Resources for Food and Agriculture for the year 2001

The International Treaty on Plant Genetic Resources for Food and Agriculture was adopted in 2001 at the Food and Agriculture Organization (FAO) headquarters in Rome, and entered into force in 2004.

The most important foundations that were laid in this treaty were about protecting the rights of farmers and guaranteeing the right to partition the benefits resulting from the use of plant genetic resources.

Furthermore, this treaty established a number of mechanisms that can help facilitate the implementation of the adopted approach, in addition to the exchange of information and access to and transfer of technology. This ought to be done without prejudice, and under conditions that acknowledge the appropriate and effective protection of intellectual property rights.

The treaty also ensures the facilitation of access to genetic resources of the plants that are viewed as essentially important for achieving food security. It also establishes mechanisms for fair sharing of the benefits arising from these resources²⁴.

3.2 Protection of new plant varieties according to the provisions of Law 05/03 on seeds, seedlings and plant ownership or tenure

Law 05/03 regarding seeds, seedlings, and plant ownership stipulated the procedural regulations and conditions for the protection of new plant varieties in general, which makes the reader wonder

²² Article 05 of the UPOV Agreement.

²³ Hama Baqi Abdel Qader, Dana, op. cit., p. 62 et seq.

²⁴ Hama Baqi Abdel Qader, Dana, op. cit., pp. 78, 79.

about the fate of the new modified plant varieties that are removed from protection. This is better explained and specified below.

3.2.1 Objective regulations for the protection of new plant varieties

It is undeniable that the most objective requirements for preserving new plant varieties, although they are similar to the regulations required for industrial property and for getting a patent, are surrounded by specificities that are imposed by the nature of the new plant variety that is supposed to be protected. Based on Article 29 of Law 05/03, these particularities mainly include novelty, distinction, consistency and stability.

3.2.1.1 Novelty

A new plant variety can only be protected if it possesses the characteristic of novelty. It is noteworthy that novelty relates to new morphological or physiological attributes or a new composition of known characteristics²⁵. This is primarily specified in Article 28 of the above-mentioned Law 05/03 which states that an item cannot be identified as new at the date of submitting or registering the application provided that the possessor does not sell it or deliver it to others with his consent for commercial purposes or private exploitation.

- On the national territory for more than one year.
- On the foreign territory for more than four years, and for more than six years in the case of trees and vines.

At this point, it ought to be noted that the novelty condition described in Article 28 of Law 05/03, which is identical to what was stated in Article 6 of the UPOV Convention, is not about absolute novelty, as is the case in a patent, because the plant variety under consideration is mainly found in nature.

3.2.1.2 Distinction

In this regard, Article 03 of the previously mentioned Law 05/03 stipulates the following:

“The variety must be distinguished from the rest of all varieties registered in the official catalog by various morphological or physiological characteristics.”

Considering the above-mentioned article, it seems that the distinction is morphological. The morphological difference is observed in the external appearance of the variety, such as the increased number of chromosomes in the plant cell. The impact of that distinction can be seen in the external aspect of the plant in terms of length, weight, or shape. In addition, the distinction in physiological characteristics can also take place through genetic engineering, in addition to all the genetic changes that may occur within the plant²⁶.

For the sake of comparison, in addition to the necessity of satisfying the condition of distinction, the Egyptian legislator demands the requisite of continuity of the distinction condition when the new plant variety is reproduced and multiplied²⁷.

3.2.1.3 Consistency

Consistency means uniformity, which refers to the union of the plant variety attributes and its characteristics, and to the absence of variations or differences between them²⁸, while considering at the same time the expected differences in the reproductive process of that variety²⁹.

The Algerian legislator stipulated the above mentioned statement in Article 3 of Law 05/03. The condition of consistency and homogeneity must be present in all items of the plant variety, and not only in the new trait or traits which are viewed as the basis for the fulfillment of the novelty condition.

²⁵ Mowafqi, Rabah (2021) - Legal Protection of New Plant Varieties in the Algerian Legislation - Journal of Law and Human Sciences, Volume 14, Issue 02, p. 237.

²⁶ Mowafqi, Rabah, op. cit., p. 238.

²⁷ Article 192 of Law 82 (2002) regarding the Protection of Intellectual Property in the Republic of Egypt.

²⁸ Ahmed Al-Bahji, Issam, op. cit., p. 92.

²⁹ Hama Baqi Abdel Qader, Dana, op. cit., p. 88.

It is important to mention that the Algerian legislator did not specify the standard of consistency that must be fulfilled so that the new plant variety can be protected, which is in contrast with what was stipulated in the eighth article of the UPOV Convention that was amended in 1991³⁰. This means that the plant variety may be considered as homogeneous if its basic characteristics are sufficiently compatible and do not differ, while taking into account the expected differences in the basic attributes of the plant variety as a result of the reproduction process.

3.2.1.4 Stability

Stability means that the new innovative plant variety must remain unchanged in its basic characteristics following its successive reproduction, or at the end of each reproductive cycle³¹. This is explicitly specified in Article 3 of the above mentioned Law relative to seeds, seedlings, and protection of plant tenure.

3.2.2 Procedures required for new plant varieties to be protected

The Algerian legislator stipulated in the previously mentioned Law 05/03 a series of procedural conditions that must be fulfilled in order to get the necessary protection for new plant varieties. This is all described below.

3.2.2.1 Submission of an application form along with the necessary documents and a specimen of the new plant variety

The plant variety protection procedure is a highly essential step for getting the ownership of the new plant variety from the competent authority. The application must be submitted by any natural or legal person who enjoys the Algerian nationality in accordance with Article 26 of Law 05/03. Nevertheless, it should be emphasized that this right is not granted to foreigners living in Algeria unless the principle of reciprocity is implemented. This is in opposition to what is actually being done regarding patents.

With reference to the articles of the above-mentioned law, there are no legal texts that explain or describe the application form and the attached documents. Consequently, the application can be formulated in accordance with the desired purpose, together with information about the person requesting protection and the plant variety subject to protection³².

It is important to know that the designation or labeling is an essential document that is attached to the application for protection. In this regard, Article 27 of Law 05/03 states that the plant variety must have a sexual designation so it can easily be identified. This designation consists of numbers only; it should not lead to error or confusion regarding the characteristics, category, or species. This is contrary to what was stipulated in the principles of the UPOV Agreement, since it was found that Article 20 of this agreement does not limit the designation to numbers only.

It is worth emphasizing that the articles in Law 05/03 did not explicitly exclude genetically modified plants from protection. However, by referring to Article 07 of the Executive Decree 06/247³³, amended by the Executive Decree 11/05³⁴, it is found that this article does clearly exclude genetically modified plant varieties from protection, and therefore they cannot be registered in the official catalog so that their cultivar character can be clearly recognized. This represents a legislative vacuum that encompasses the seed, seedling and plant ownership law system, especially in view of the circulation of such plants. This requires a double protection for

³⁰ Mowafqi, Rabah, op. cit., p. 239.

³¹ This is stipulated in Article 9 of the UPOV Agreement. For more details, see also Mahmoud Kawtharani, Hanan, op. cit., p. 98.

³² Mowafqi, Rabah, op. cit., p. 242.

³³ Executive Decree 06/247, dated July 9, 2006, stipulating the Technical Characteristics of the Official Catalog of Types and Varieties of Seeds and Seedlings, along with the conditions for seizing and publishing it as well as the methods and procedures for registering these characteristics in the catalog - Official Gazette 46, issued on 07/16/2006.

³⁴ Executive Decree 11/05 dated January 10, 2011, amending and supplementing the Executive Decree 06/247 - Official Gazette 02, issued on January 12, 2011. Note that Article 7, paragraph 3, stipulates that: "*Genetically modified varieties cannot be registered in the official registry.*"

these plants and for the consumer as well. It should be noted that the consumer must be well informed about these new plant species.

With regard to the plant variety sample, the legislator requires that the applicant submit his application to the National Technical Authority for Plants together with a sample of that plant variety in order to verify that it belongs to him and that it falls into the authorized plant classification, and that this plant variety has been subjected to the required experiments and examinations³⁵. The legislator is expected to state that this must be regulated by laws, and that it has not been released until today.

Furthermore, Article 39 of the same Law 05/03 explicitly suggests that a royalty or fee must be paid. The nature and procedure of its collection is determined in accordance with the financial laws. This procedure is adopted for the sake of protecting the plant variety.

3.2.2.2: The national technical authority responsible for the adjudication of protection requests for plants

Based on Article 04 of Law 05/03 referred to before, only the National Technical Authority for Plants is authorized to examine applications for the protection of new plant varieties. It operates under the supervision of the Minister of Agriculture. According to Article 05 of Executive Decree 06/246³⁶, this authority involves inspectors, technicians, and technical committees. It includes:

- The Technical Committee responsible for the protection of plant ownership or tenure, i.e. new plant varieties.
- The National Committee responsible for delivering the Plant Variety Certificate.
- The Technical Committee responsible for granting credits for the production and sale of seeds and seedlings.

The National Committee is mainly concerned with:

- Supervising and coordinating seed and seedling production and supply programs.
- Examining all technical and/or economic regulatory measures that would help develop and improve the national production of seeds and seedlings and their marketing.
- Studying technical systems projects for the production and marketing of seeds and seedlings.
- Examining the applications for the protection of plant tenure.
- Examining the applications for granting accreditation for the production and sale of seeds and seedlings³⁷.

There is no doubt that the establishment of this Committee by the Algerian legislator puts it in line with what was stipulated in the UPOV agreement concerning the attribution of applications for the protection of new plant varieties to specialized bodies in the agricultural field so that these institutions can check and ensure the conditions of novelty, distinction, homogeneity and stability. However, this Committee is supposed to explicitly stipulate that genetically modified plants are excluded from protection.

4. Conclusion

Genetically modified plant varieties are the result of biotechnology applications which enable the production of new plant varieties. Several International Conventions and Agreements have been concerned with the protection of new plant varieties. In this regard, one can cite the TRIPS Agreement which granted the authority to Member States to protect these plant varieties either with a patent or based on a special and effective legal regime, or a hybrid system that combines the two. Likewise, the UPOV Convention also gave significant importance to the protection of new plant varieties.

There is no doubt that the Algerian legislator was influenced by the UPOV agreement. This is clearly seen through the legal texts of Law 05/03 that regulate seeds, seedlings and plant ownership. The position of the Algerian legislator is quite clear regarding the TRIPS Agreement,

³⁵ Article 29 of Law 05/03, previously mentioned.

³⁶ Executive Decree 06/246, dated July 9, 2006, stipulating the powers, composition and activity of the National Committee for Seeds and Seedlings in the Official Gazette 46, issued on 07/16/2006.

³⁷ Executive Decree 06/246, previously mentioned.

which is about protecting these plant varieties with a special regime without subjecting them to a patent. It should also be noted that, in doing so, the legislator is right because granting a patent in this domain does not achieve the interests of all farmers. For the sake of comparison, one may mention for example the case of Lebanon which adopted the patent system³⁸.

Consequently, the findings of the study allow drawing the following conclusions:

- The Algerian legislator has guaranteed the protection of plant varieties under Law 05/03. He has also stipulated numerous regulatory texts that clearly explain the composition, tasks and powers of the National Technical Committee for Plants, as well as the technical characteristics of the official catalog regarding the types and varieties of seeds and seedlings. He also stipulated the conditions for its seizure and publication, as well as the methods and procedures for its registration.
- The Algerian legislator was clearly influenced, in drafting the texts of the above mentioned Law 05/03, by the principles of the UPOV Agreement.
- Like the UPOV agreement, the Algerian legislator did not specify the methods for producing new plant varieties, which makes genetically modified plants fall within this category.
- While stipulating the condition of distinction as a basis for requesting protection for new plant varieties in Article 03 of Law 05/03 mentioned above, the Algerian legislator stressed on the fact that the variety must be distinguished from the rest of the varieties registered in the official catalog by different traits which can be of morphological or physiological nature. This may be achieved through genetic engineering. However, Article 7 of Executive Decree 06/247, amended and supplemented, clearly stipulates the exception for genetically modified plant varieties. One may therefore ask the following question: *To what extent are these plant varieties entitled to protection?*

Based on the above, the following recommendations may be suggested:

- The Algerian legislator ought to reconsider the exception regarding the classification of genetically modified plant varieties in the official registry in order to get the necessary protection and to ensure the rights of consumers in the case of the actual production of such plants.
- A Committee must be created within the National Technical Authority for Plants. This Committee should include specialists in botany, medicine and law, for the purpose of keeping pace with development and establishing the necessary policies and guidelines for using plant genetic engineering in a way that guarantees biosafety.
- It is highly recommended to set up and establish specialized centers that would encourage the development of research into genetically modified plant varieties and their use in therapeutic techniques.

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