

Mechanisms for Mitigating the Risks of Agricultural Pesticides in Algerian Legislation

آليات التخفيف من أخطار المبيدات ذات الاستخدام الزراعي في التشريع الجزائري

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Abstract:

It is known that it is not possible to dispense with the use of agricultural pesticides at the present time in order to obtain a good yield free of diseases.

However the improper and irrational use of these toxic substances poses a threat to human and animal health and to the environment in general.

Countries are spending huge sums of money to treat diseases caused by these pesticides. In order to mitigate these damages the Algerian legislator issued a set of legal texts aimed at regulating the use of agricultural pesticides on the national territory.

It included the registration of pesticides their importation their manufacture their use and the prohibition of use cases.

Keywords: Pesticides; Agricultural Products; Plant Health Materials; Authority Responsible for Plant Health.

ملخص:

من المعروف انه لا يمكن الاستغناء عن استعمال المبيدات الزراعية في الوقت الراهن من أجل الحصول على مردود جيد وخالي من الأمراض.

إلا أن الاستخدام غير السليم والغير عقلاني لهذه المواد السامة، أصبح يشكل خطرا على صحة الإنسان والحيوان وبالبيئة بصفة عامة، ما جعل الدول تصرف مبالغ مالية طائلة لمعالجة الأمراض التي تسببها هذه المبيدات.

ومن اجل التخفيف من هذه الأضرار أصدر المشرع الجزائري مجموعة من النصوص القانونية الغرض منها تنظيم استعمال المبيدات الزراعية على التراب الوطني، تضمنت تسجيل المبيدات، استيرادها، تصنيعها، استعمالها كما نظم حالات منع الاستعمال.

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Introduction:

Generally speaking, plant health chemicals and more specifically agricultural pesticides have become absolutely necessary for farmers to raise output and get the greatest quality. Natural pesticides have been mostly replaced, however, given their great advantages, they are rather costly, complicated to manufacture, and apply. Unlike natural pesticides, which are often ineffective against newly emerging diseases, this prompted a move toward using synthetic pesticides because of their lower cost, simplicity of use, and efficacy in treating particular pest diseases.

Though they have advantages, agricultural pesticides have negative consequences that cannot be ignored. They greatly affect plants and alter leaf colour, lower output, and interfere with the photosynthesis process. They also influence crops and fruits,¹ so transferring these damages to consumers—both human and animal—by means of inhalation or eye contact. Pesticide particles can enter the body as gases carried by the air, or through consumption or skin contact, so entering the digestive system and bloodstream. Eating fruits and vegetables that still contain remnants of these pollutants can cause this, which can result in major diseases including liver diseases, renal failure, cancer, compromised immunity, and even previously unknown disorders.

The effect of pesticides on water is also impossible to ignore since their remnants dissolve in the soil and run into the water via rain. Furthermore, because of their influence on soil fertility, the loss of beneficial species, and air pollution, pesticides are regarded as one of the key environmental contaminants.

Algeria signed the international convention on plant protection in 1985² since agricultural pesticides in all their forms pose risks and their use is unavoidable. The first legal document controlling the legal protection of plant health was Law No. 87-17,³ based on this. The first article of this law states that the goals are to track plants, plant products, and other materials possibly carrying harmful agents across the national territory. The law also intends to track the importation of plants, plant products, and other materials that could cause the spread of plant pests as well as their export and transit. It controls the battle against plant pests and agricultural products and monitors the application of plant health materials in controlling plant pests.

Later legal texts were published to control their risks and to keep in line with worldwide legislative progress in this area.⁴ These texts sought to control the registration, importation, manufacture, marketing, and use of agricultural pesticides as well as ban the use of particular dangerous chemicals and withdrawal from the national market. Moreover, the use of particular plant health materials was made subject to legal processes meant to lower the hazards connected with these substances.

This asks the question:

To what degree has the Algerian legislator been able to create a good legal framework to offset the effects of agricultural pesticides?

The first part was spent discussing the idea of agricultural pesticides in order to answer this issue and cover the subject of the study, which is agricultural pesticides. The particular rules on handling agricultural pesticides were covered in the second part.

Section I: Nature of Agricultural Pesticides

Among the most important and hazardous environmental contaminants are agricultural pesticides. Used to fight pests, these poisonous chemicals alter the essential processes of many living entities. They also endanger animals and people.

Furthermore, modern agriculture cannot function without agricultural pesticides. They are absolutely essential in shielding crops from the onslaught of destructive insects harming plants and lowering output. By lowering the losses brought on by environmental pests, they also help to raise

yields, therefore enhancing agricultural output. By shielding crops from harm and insect infestation-related deformities, they also help to raise their quality and market value. Some pesticides help fight disease vectors like ticks and mosquitoes, therefore helping to protect human and animal health and so preserving the environment. Moreover, the application of agricultural pesticides improves the look and quality of the crops, therefore guaranteeing a plentiful supply that enables them to be sold in markets at reasonable prices.

We will therefore start by defining agricultural pesticide and then look at the kinds of these pesticides in.

A) Definition of Agricultural Pesticides:

Whether they are insect pests, plant pests, or harmful animals that impair agricultural production, the phrase "agricultural pesticides" describes a broad spectrum of chemicals and biological agents meant to control pests with negative consequences.⁵

Chemical substances that are injected into the biosphere to correct imbalances that have occurred and have varied degrees of environmental toxicity are another definition of it. More of these harmful substances end up in the soil than in any other environmental medium. Insects, weeds, fungi, and other soil-dwelling organisms are among the agricultural pests that are controlled with these chemicals. An ideal pesticide is one that does not build up in the food chain, breaks down readily and quickly into non-toxic substances, and only affects the pest it is meant to kill without harming its beneficial insect enemies.⁶

Regarding the Algerian legislator, Law No. 87-17 deals with the definition of plant health substances. According to Article 2 of this law, a plant health product is any material or combination of materials designed to prevent, eliminate, or manage harmful organisms in order to safeguard or enhance plant production. Biological agents, growth regulators, hybridization and deficiency terms, leaf fall agents, drying agents, dispersing agents, and chemicals applied to crops either before or after harvest to prevent deterioration or damage during storage and transportation are all included in this term.

Additionally, it is defined as "Any substance or mixture of substances whose purpose is to prevent, eliminate, or control any pest, including disease vectors for humans or animals" in the United Nations Food and Agriculture Organization's (FAO)⁷ Codex Alimentarius.

The Plant Protection Agency in the United States defines it as any chemical, including insecticides, fungicides, algicides, and others, that is anticipated to prevent, destroy, repel, or weaken any parasite.

The European definition does not include the word "pesticide." "Plant protection products" (Produits phytopharmaceutiques) is the name given to the idea instead. "Pesticide" is a relatively new word replacing words like "antiparasitic agents" and "plant protection pharmaceutical products," which lack the same connotation. "Pesticide" is more generic; it refers to a substance or group of substances able to fight undesirable species. These chemicals are classified as insecticides, herbicides, fungicides, etc. depending on the kind of the pest.

Regarding the UAE law, it specifies a pesticide as any chemical or combination of chemicals meant to prevent, eradicate, or control any pest, including disease vectors harming humans or animals, as well as unwanted plants or animals that harm or interfere in any manner during the production of food, agricultural products, wood, wooden products, or animal feed, or during their processing, storage, and marketing. This also covers any chemical administered to animals to fight insects, spiders, or other pests on their bodies. This word also covers chemicals used to control plant growth, encourage defoliation, dry trees or fruits, safeguard fruit from early falling, and any chemicals applied to crops before or after harvest to stop deterioration during transport or storage.⁸

Pesticides in Palestinian law are any substance, element, mixture, natural product, or combination of chemicals used in agriculture meant to prevent, eradicate, or control any agricultural pest. Extermination, repulsion, attraction, or population reduction can all help to achieve this. Included in this definition are all chemicals controlling plant growth and fruiting, hormones, materials employed for defoliating and flowering, and all substances safeguarding crops before or after harvest or during storage and transportation.⁹

B) Types of Pesticides:

The pest being treated, the method of treatment, and the harm to the environment are the factors that determine a pesticide's classification. Bacterial biopesticides, fungal biopesticides, and viral biopesticides are the three categories of pesticides based on the treatment method. Pesticides are divided into three categories based on the type of target: insecticides, herbicides, and fungicides. The third section will then discuss how agricultural pesticides are categorized according to how long they persist in the environment.

1- Classification of Pesticides Based on the Method of Treatment Used

- First: Bacterial Biopesticides: These constitute the largest group of biopesticides employed in pest management. With *Bacillus thuringiensis* among the most significant species, the most often used kinds are those containing spores. Known for its simple manufacture, great insect efficacy, low influence on beneficial species, and no impact on mammals, this pesticide
- Second: Fungal Biopesticides: Used in high humidity areas, these promote the germination of fungal spores by supporting elevated humidity. The product obtained from *Beauveria bassiana* is among the most often used fungal biopesticides for pest control. For spraying, it is applied in liquid, granulated, or powder form.
- Third: Viral Biopesticides: Biopesticides employ viruses as a rather efficient way to control pests. Among the most important viruses harming insects are Granulosis virus and Polyhedrosis virus.

2- Classification of Pesticides Based on the Nature of the Target

- First: Fungicides: The group of fungicides includes several chemicals that are active on viruses and bacteria as well as effective against fungi. They are applied to agricultural crops, soil, seeds, and plants.
- Second: Herbicides: Used to kill or stop the growth of undesired weeds, herbicides can be selective and either contact or root absorption of certain kinds of weeds determines their efficacy. The herbicides now in use are either mineral origin or organic in nature. Modern fertilization mostly calls for synthetic organic chemicals or pesticides. Every herbicide has unique qualities depending on its composition, absorption technique, effect on the undesirable weed, and progressive breakdown.

3- Insecticides

Contact, mouth consumption, or inhalation¹⁰ all cause insects to be killed by insecticides. Chlorinated organic pesticides, organophosphate pesticides, carbamate pesticides, and pyrethroid pesticides are the most significant chemical families exhibiting activity as insecticides and occasionally as acaricides (pesticides against mites) as well as nematicides.

C) Based on Their Persistence in the Environment:

Based on their environmental persistence, agricultural pesticides are classified as follows:

- First: Non-persistent Pesticides: These are pesticides whose effects or presence last from a few days to four weeks.

- Second: Moderately Persistent Pesticides: These pesticides stay in the environment for one month to eighteen months.
- Third: Long-lasting Pesticides: These pesticides can remain in the environment for several months up to twenty years.
- Fourth: Permanently Persistent Pesticides: These are pesticides that stay in the soil for an unspecified time.¹¹

Section II: Legal Provisions Regarding the Use of Agricultural Pesticides:

Worldwide use of agricultural pesticides has become common, therefore lessening the harm done by different pests. On the other hand, this has also created major difficulties in safeguarding people, animals, and the environment from the hazards of these toxins.

National laws, including Algerian law, have thus been more toward regulating every facet of pesticide management because of their controlling influence. On the one hand, this is done to guarantee environmental sustainability and to preserve biodiversity in all its aspects; on the other hand, this is done to guarantee the best use of these pesticides to fight different environmental pests and, therefore, boost agricultural output.

We will therefore cover the legal clauses on the importation of agricultural pesticides in, then discuss in the provisions governing the manufacturing of pesticides for agricultural use and their national application.

A) Legal Provisions Related to the Import of Agricultural Pesticides:

Article 34 of Law 87-17 on plant health has allowed the Algerian legislator to control the importation of agricultural pesticides. This article cites the particular importation requirements to the rules established in Executive Decree No. 95-405, which addresses the control of plant health substances for agricultural use,¹² as modified by Executive Decree No. 99-156.¹³ This decree specifies the powers, composition, and operations of the Plant Health Materials Committee as well as the criteria governing the certification of the homogeneity of plant health substances and their use.

Thus, we will first discuss the legal criteria to be satisfied before importing plant health materials and then look at the criteria to be satisfied following importation.

1- Conditions to Be Followed Before Importing Plant Health Materials

According to Article 3 of Executive Decree No. 95-405, as amended, the import, possession, marketing, and use of agricultural plant health materials must comply with the following conditions.

1.1- Certification by the Authority Responsible for Plant Health¹⁴

The authority responsible for plant health has the sole authority to certify plant health materials before their import, manufacture, or marketing.¹⁵ Certification is granted for materials that prove their effectiveness and do not exceed the allowable toxicity limit.¹⁶ The validity of the certification is set for ten years and ends on December 31 of the tenth year, with the possibility of extending the certification until the last year of its validity.

The plant health authority must decide on each certification request within two years, with the possibility of extending this period by one year in exceptional cases.

In the event of a refusal to grant or a withdrawal of certification for a plant health material, immediate cessation of marketing and withdrawal from the market must occur within thirty days from the notification of the refusal or withdrawal decision. Certification may be refused or withdrawn if new information emerges that indicates the material's harm or casts doubt on its effectiveness. The recipient of the certification is obligated to notify the Plant Health Materials Committee of any changes in the name or legal status of the material.

The holder of the certification has to provide all information on the new effects of the certified substance on people, animals, and the environment.

This request goes to the Plant Protection Committee, whose powers are as follows:

Examine requests for prior authorization to produce plant protection products for agricultural use and requests for approval of plant protection products for agricultural use.

Suggest to the plant protection authority the measures to be followed for every request for approval and prior manufacturing authorization after analysis of the findings of toxicity studies and biological assessments.

- Set its internal rules.
- The Committee on Agricultural Plant Protection Products is made up of:
 - The chairperson is a representative from the authority in charge of plant protection.
 - The Minister of Health's delegate.
 - The Minister of Environment's representative.
 - A Minister of Commerce representative.
 - A Minister of Labor representative.
 - A Minister of Research delegate.
 - The Minister of Industry's representative.
 - The Biological Evaluation Committee's rapporteur.¹⁷
 - The Toxicity Assessment Committee's rapporteur.¹⁸

The committee might seek advice from any qualified individual to help it carry out its responsibilities.

1.2- Submission of the request to the committee

Requests for approval of plant protection products are sent to the technical secretariat of the Agricultural Plant Protection Products Committee, following the procedures outlined by the Minister of Agriculture in a decree.¹⁹

Within two years, the plant protection authority must choose what to do about every certification application. In exceptional circumstances, this time may be extended by one year.

Executive Decree No. 10-69 also specifies the following:

- The importer of plant health materials for agricultural use has to obtain them from manufacturers and/or assembly companies authorized by the relevant authorities in their country of origin.
- Plant health materials for agricultural use cannot be imported if they are not certified in the country of origin.
- Every batch of imported plant health materials for agricultural use must be supported by an analytical certificate demonstrating the material's conformity with the criteria that qualified it in Algeria. An accredited laboratory in the country of origin must issue this certificate.
- Materials on plant health for agricultural use meant for export are inspected for compliance by the Plant Health Inspection Authority.

2- Conditions to Be Met After Importation

The certification acquired for a plant health material meant for import is not permanent; the legislator has set its validity to ten years, expiring on December 31 of the tenth year. It can, however, be renewed upon request from the beneficiary, no later than the last year of its validity.²⁰

The holder of the certification for a plant health material for agricultural use must provide all information on any new effects of the certified material on people, animals, or the environment. The

technical office of the Committee on Plant Health Materials for Agricultural Use keeps a register of these materials, which it updates and maintains continuously.

The technical office of the Committee on Plant Health Materials has to be informed and given the pertinent papers linked to this change should the name or legal character of the certification beneficiary change.

If they are mentioned in the list of simple agricultural materials used against diseases and fatal damages, some plant health materials may not need certification. A joint ministerial decision from the ministers in charge of agriculture, industry, health, and trade sets this list.

B) Provisions Related to the Manufacture and Use of Plant Health Products for Agricultural Use²¹:

The Algerian government clearly works nonstop to safeguard public health and, more generally, to conserve biodiversity from all the dangers it confronts, including the phenomenon of excessive and illogical use of agricultural pesticides. This is meant to promote real sustainable growth.

The Algerian legislator has therefore made sure that all legal issues concerning agricultural pesticides are handled whether in terms of their manufacture or their national level application. The many legislative texts and executive orders published in this respect make this clear.

1- Provisions Related to the Manufacture of Agricultural Pesticides

Engaging in the manufacture of plant health products for agricultural use has been made illegal by the Algerian legislator unless one obtains a particular license. The applicant must first satisfy a set of legal criteria before this license will be granted.

1.1- Obligation to Obtain a License

A license from the appropriate authority in charge of plant health must be obtained following committee approval for plant health products for agricultural use, much as with the importation of plant health products.

Whether a natural or legal entity, the applicant must file with the technical office of the plant health products committee in order to get the license.²²

1.2- Conditions for the Applicant

- The candidate has to be an agricultural engineer focusing on plant protection or have a university degree in chemistry.
- Legal entities must show that the holder of the aforementioned certificate works full-time inside their organization.
- The applicant has to have premises that satisfy health criteria and are furnished with suitable tools and facilities.

1.3- Obligations of the Applicant

Any modifications connected to the manufacturing activity—especially concerning the relocation of facilities, expansion, or personnel changes—the applicant must notify the technical office of the Plant Health Materials Committee in writing within two months.

Employees exposed to pesticide hazards must undergo a medical examination without regard to the laws and rules governing occupational health.

The plant health authority has 120 days from the date of receipt to decide on the submitted file. In unusual circumstances, this time may be lengthened by another 90 days; the applicant has to be informed before it expires.

Section III: Specific Provisions Regarding the Use of Agricultural Pesticides at the National Level

Examples of pesticide usage include the following: marketing of plant health products for agricultural use; marketing for third parties (Second); and pesticide application.

A) Marketing of Plant Health Materials for Agricultural Use²³:

In cases where the plant health material is packed in several containers, Article 17 of the executive decree specifies that every container—including the outer packaging if relevant—must have labels and information placed on it. The decision dated March 13, 2000,²⁴ also specifies certain conditions:

1- Packaging Conditions

Article 2 of the decision states that agricultural plant health materials must be put in durable packaging to avoid tearing and early spoilage. To prevent consumer confusion or the danger of poisoning from direct contact with or inhalation of these materials, Article 5 of the same decree specifies that the packaging for plant health materials must be separate from packaging for other materials, particularly those meant for food products.

Important given the possibility of packaging damage over a short period or the unsuitability of the packaging for the substances included, the decree did not identify the material from which the packaging for plant protection products should be made for liquid pesticides and dry pesticides.²⁵

1.1- Conditions for the information to be written on the labels

Article 2 specifies that the packaging of plant protection products should bear the following labels and information in Arabic,²⁶ along with a supplement in another foreign language:

- The name of the manufacturer and their address will help to identify responsibility in case the product causes damage or if it fails to meet the requirements.
- The commercial name of the material together with the certification number for the substance in Algeria.
- Global standards define the chemical composition and percentage of active substances or the biological potency of biological materials.
- The approved uses for the substance in Algeria, the dosage, method of use, and any possible contraindications.
- The product's manufacturing date and expiry date.
- The product's batch number.
- Particular safety and storage guidelines.
- If any, antidotes for poisoning and first aid actions.
- The last use date for the plants to be protected and the waiting time before harvest.
- Especially hazardous plant protection chemicals must be labelled to show the kind of related hazards and extra required precautions.
- Particularly with respect to the commercial name, active ingredient concentration, method of use, list of target pests, manufacturing date, and expiration date, these labels should not confuse the user.²⁷
- The information and labels could be printed straight on the packaging or on firmly fastened labels.²⁸

This data omits, as noted, safety measures, first aid instructions, antidotes for poisoning, pesticide classification depending on World Health Organization categorization, knowledge of the pesticide's hazards, empty container disposal techniques,²⁹ the pesticide's soil degradation period, and its persistence.

1.2- Storage Conditions

Without compromising the regulatory requirements regarding the storage of chemical materials, plant health materials for agricultural use and application devices must be kept in a suitable, well-ventilated area, equipped with appropriate safety tools and locked. Unauthorized people are not allowed access to these storage sites.³⁰

Especially for the wholesale or retail marketing or storage of food materials meant for human or animal consumption, these premises set aside for storing and wholesale or retail marketing of plant health materials cannot be used for any other use.³¹

Transporting these materials can only occur after they have been recorded in a numbered, signed register maintained by the plant health authority. Qualified people under the plant health authority regularly inspect the materials. Any inspections by the competent authorities should be based on this register, which must be maintained for ten years. Should commercial operations cease, the register has to be sent to the plant health authority together with an acknowledgment receipt.³²

1.3- Conditions for the Applicant

The plant health authority must grant a license to any person or organization that markets plant health products for use in agriculture. The regionally competent plant health authority must receive the application; they have two months from the date of application filing to make a decision. A technical file must be submitted before the license can be issued.³³

Without a license granted by the plant health authority upon formal request, it is illegal to market extremely hazardous plant health materials for use in agriculture or for other purposes.³⁴

B) Marketing on Behalf of Others:

Article 28 of Executive Decree No. 95-405 specifies that natural or legal persons trading in plant health products on behalf of others must get permission from the authority in charge of plant health. After informing the applicant, the appropriate regional plant health authority will decide within three months from the date the file is submitted.³⁵

1- Conditions for Pesticide Application

The Algerian legislator has not particularly controlled the circumstances for treating plants with agricultural pesticides in normal situations, such as when non-hazardous pesticides are used, aerial spraying, or limitations on use at particular times. Rather, the labels on the pesticides decide these circumstances. Especially given that most nations control such use to guarantee that non-hazardous pesticides are not overused or misapplied, this is a problem that should have been handled.

The cases controlled by the Algerian legislator are as follows:

1.1- Use of Banned Pesticides Labeled as Hazardous Materials:

Article 30 specifies that, should the treatment be confined to the area, the minister in charge of agriculture will issue a decision authorizing plant health treatment using materials classified as hazardous based on a report from the regional plant health authority. Should the treatment cross regional borders, the governor will decide using the same report.

Authorized operators under Article 29 who use these materials must notify the pertinent plant health authority of the treatment site at least seven days prior to starting the treatment.³⁶

1.2- In the case of aerial treatment

Users of plant health materials and treatment institutions, especially those specialized in aerial spraying, shall follow Article 49 of Law No. 87-17:

- During application, follow the recommended usage criteria, techniques, and required precautions.
- Stay away from bringing materials into any area where their presence could be undesirable or harmful.
- Before every aerial treatment operation, declare the length of the application, the intervention area, the kind of material to be used, and the amount.
- Provide appropriate safety equipment depending on the kind of treatment to help protect workers.

Article 33 of Executive Decree No. 95-405 states that a license from the plant health authority must be obtained depending on a request submitted at least ten days prior to the treatment beginning. The license comes with recommendations and limitations on the protection of nearby populations, crops, and animals.

1.3- Temporary Ban on Use:

This concerns insecticides and locusts in all crops or forest areas frequented by bees or pollinating insects during flowering. Materials used during this phase are limited to those permitted.³⁷

By decision, the Minister of Agriculture may restrict the use of particular plant health materials³⁸ to legally qualified institutions or ban their use altogether.

Like the actions of the French legislator, it was up to the Algerian legislator to ban the use of pesticides in public green areas as well as in places accessible to children.³⁹ Furthermore, only those with scientific credentials should use these materials since they would be able to reduce the particular damage these pesticides create.

Conclusion

Considering the risks linked to the illogical use of agricultural pesticides in particular, and plant protection products in general, on human health, animal health, and the environment, the Algerian legislator has tried to identify legislative remedies meant to lower these hazards. Regulating the process of licensing agricultural pesticides, their importation, domestic manufacturing, trade, and use helps to achieve this. It has also stated situations when particular highly dangerous pesticides may only be used following particular procedures. Still, considering the major developments in plant protection product manufacturing and the legal changes in this sector, these actions are inadequate since they make Algerian-produced fruits and vegetables unfit for export and therefore a cause of hard currency loss.

Drawing on this research, we provide the following suggestions:

- Creating monitoring agencies to supervise the application of agricultural pesticides guarantees that use is only permitted after acquiring a purchase and use license rather than letting farmers decide this matter.
- Banning the sale of agricultural products until laboratory tests verify their safety and lack of any danger to human health.
- Prohibition of the use of agricultural pesticides by unqualified individuals.
- Prohibition of the use of agricultural pesticides in areas close to residential complexes.
- Requirement that the packaging of plant health materials specifies the duration these materials remain in the soil.
- Issuance of a legal text regulating the field of organic farming by defining its concept and the specific conditions for classifying farming as organic.
- Prohibition of the use of pesticides in recreational areas accessible to children.
- Prohibition of the use of pesticides in areas near water sources.

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- 13- Executive Decree No. 99-156, dated July 20, 1999, amending Executive Decree No. 95-405, concerning the control of plant health materials used in agriculture.
- 14- This authority was established under Article 37 of Law 87-17, which provides that its powers, structure, and operation are determined through regulations set forth in Executive Decree No. 95-405.
- 15- Certain materials may be exempted from certification if they are included in the list of simple materials, which is determined by a joint ministerial decision between the minister responsible for agriculture, the minister responsible for industry, the minister responsible for health, and the minister responsible for trade.
- 16- According to Article 6, these materials are recorded in a register maintained and continuously monitored by the technical writing committee for plant health materials used in agriculture.
- 17- Article 38/1: "This committee is responsible for preparing an annual program to test plant health materials proposed for approval. It also evaluates the results of biological trials and prepares a report containing reasoned opinions on the actions to be taken regarding each material for approval."
- 18- Article 38/2: "This committee examines the risks of direct or indirect poisoning to humans and animals, as well as the risks that may arise from the spread of plant health materials proposed for approval in the

environment. It suggests a ranking of accepted plant health materials based on their toxicity and determines the conditions for their use, taking into account the potential risks. The committee also conducts testing and prepares a report containing reasoned opinions on the actions to be taken regarding each material proposed for approval."

19- The application for approval must include the following:

- An application form for approval.
- A descriptive card for the plant health material.
- A file related to the toxicity of the plant health material.
- An analytical file for the plant health material.
- A reference sample of 250 grams or 250 milliliters in a sealed and closed bottle.
- A sample of one gram of the technical biological material designated for analytical residue and compliance tests.
- A certificate of manufacture for the plant health material issued by the official authorities in the country of origin.

Each file must be submitted in five copies and applies only to a single material.

20- In the case of refusal to certify a plant health material or its certification being revoked, the manufacturer or trademark owner must immediately cease any activity related to marketing the said material and withdraw it from the market within thirty days from the date of the refusal or revocation decision. In the latter case, this applies when a new element emerges that indicates harm or casts doubt on its effectiveness.

21- Article 2/1 defines manufacturing as: "The total activities associated with the production, formulation, assembly, and packaging of plant health materials for agricultural use."

22- It includes the following:

- The manufacturing application, which specifies the applicant's name, surname, address, and status (whether a natural or legal person).
- A copy of the commercial register.
- A certificate of compliance for the buildings, equipment, and materials related to public health and safety, issued by the relevant authorized services.
- A list of the materials proposed for manufacturing, detailing the nature of the elements used in the production of the materials and their physical and chemical characteristics. This list must be endorsed by the environmental authorities.
- A list of employees and their qualifications.

23- Article 2/2 defines marketing as: "The total activities related to the promotion, distribution, and sale of plant health materials for agricultural use."

24- Decision dated March 13, 2000, regarding the content of labels and information on the packaging of plant health materials used in agriculture, specifying the data and information that must be included on the outer packaging of plant health materials. Official Journal of the Algerian Republic, Issue 28, published on May 14, 2000.

25- Article 12 of Ministerial Decision No. (235) of 2004, amending Ministerial Decision No. (257) of 2003, concerning the executive regulations of Federal Law No. (41) of 1992 on agricultural pest control, stipulates the following:

Regarding liquid pesticides:

- The container must be made of a material that is not affected by acids, alkalis, or solvents. It can be made of aluminum or any other metal coated internally with a material that prevents rust, corrosion, and reaction. Glass containers are prohibited.
- The container must be securely sealed with two lids, one of which is sealed and the other is openable and closable. It must be able to withstand all transportation and handling conditions.
- Each container must have a label affixed with the required information as specified in the previous article.
- The contents of the chemical pesticide container must not exceed 5 liters. However, the ministry may approve the importation of containers larger than 5 liters in cases deemed necessary.

Regarding dry pesticides:

- The containers must be made of reinforced aluminum foil, plastic coated with cardboard, or reinforced plastic. Paper containers are not permitted.

- The containers must be able to withstand all transportation and handling conditions and must be securely sealed.
 - The weight of the contents of the container must not exceed 5 kilograms. However, the ministry may approve the importation of containers larger than 5 kilograms in cases deemed necessary.
- 26- This is to facilitate the reading of these data by users, who are farmers presumed to be proficient only in Arabic.
- 27- Article 3 of the Executive Decree No. 95-405.
- 28- Article 4 of the Executive Decree No. 95-405.
- 29- See Article 13 of the executive regulations of the Pesticide System Law of the State of Kuwait, issued by Law No. 21 of 2009. Official Journal of the Algerian Republic, Issue 49.
- 30- Article 19 of Executive Decree No. 95-405.
- 31- Ibid., Article 20.
- 32 Ibid., Article 21.
- 33- These materials were specified in Article 20, amended by Executive Decree No. 99-156, dated July 1999:
- Methyl bromide, aluminum phosphide, strychnine salts, magnesium phosphide.
- 34- These materials are specified in Article 20, amended by Executive Decree No. 99-156, dated July 1999:
- Methyl bromide
 - Aluminum phosphide
 - Strychnine salts
 - Magnesium phosphide
- 35- In order to obtain accreditation, Article 29 outlines the conditions for obtaining accreditation, which are as follows:
- An application indicating the applicant's name, surname, and address.
 - A copy of the commercial register.
 - A copy of the certificate of an agricultural engineer specializing in plant protection for natural persons.
 - Proof of the full-time contribution of the certificate holder for legal entities.
 - A list of employees and their qualifications.
- Additionally, the applicant must prove that they have the following:
- Premises that meet the specific conditions for storing highly dangerous materials.
 - Safety equipment and devices that allow the handling of materials under optimal conditions.
 - An insurance contract covering potential risks in case of accidents.
- 36- Ibid., Article 31.
- 37- Ibid., Article 32.

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C- Journal Articles

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38- The Ministry of Agriculture and Rural Development has established a specific list of plant health materials prohibited for use on national territory. These materials include:

- Acephate
- Amitraz
- Arsenic compounds
- Bromoxynil
- Cadmium and its compounds

- Carbofuran
- Carbosulfan
- Dicofol
- DNOC (dinitro-ortho-cresol) and its salts (ammonium, potassium, sodium)
- Endosulfan
- Fenthion
- Fenvalerate
- Malathion
- Metomil
- Malic hydrazide and its salts
- Mercury compounds
- Paraquat
- Parathion-methyl (methyl parathion)
- Phosalone
- Trichlorfon
- Zineb

39- Law No. 2014-110, known as the "Labbé Law," dated February 6, 2014, aims to better regulate the use of plant protection products on national territory, amended by Article 68 of Law No. 2015-992 of August 17, 2015, related to energy transition for green growth, and in application of Article L.253-7 of the Rural and Maritime Fisheries Code.

Since January 1, 2017, it has been prohibited to use or have plant protection products used on:

- Green spaces, forests, roadways, promenades accessible or open to the public, and falling under public or private domains.
- Recreational or sports areas for children.