

The (in) efficacy of agrochemical legislation in São Francisco Valley

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Abstract— *The present study aims to demonstrate the reality of the ineffectiveness of the act N. 7.802 / 89 (The Agrochemical Legislation), especially in São Francisco Valley, more specifically in Petrolina / Juazeiro cities, whose main economic activity is the irrigated agriculture and reach, currently, one of the highest rates of export of fruits in the country. Moreover, it aims to demonstrate, through data, the direct and indirect consequences of the misuse of pesticides on the health of its citizens and on the environment, appealing for greater professional training in this area, as well as social changes as ways of tackling the problem.*

Keywords— *Pesticides; Green Revolution; Ineffectiveness; São Francisco Valley; Petrolina; Juazeiro.*

I. INTRODUCTION

In the decade of the 40s, a program called “Green Revolution” changed some of the agricultural production methods in the whole world. The production model was defined by the use of genetically modified seeds (particularly hybrid seeds), industrial inputs (like fertilizers and pesticides), mechanization, mass production of homogenous products and reduced handling costs.

Financed by the Rockefeller's, the program had its aims to put an end and solve the problem of the world hunger by making a several changes in the agricultural sectors of underdeveloped countries and increasing the production of food. The main idea was in adopting equal models of agriculture in every place the project arrived.

There was an international pressure to adopt a new way of production to solve the problem of hunger on a global scale. In this context, the Green Revolution arrived in Brazil followed by great multinationals (such as Bayer, Down Química, Rhodia) that started to produce agrochemicals for domestic and export uses.

The Federal Act n°7. 802/1989 (BRASIL, 1989) explains that agrochemicals are products and agents of physical process, biological or chemicals, destined to be used on production sectors, in the storage and processing

of agricultural products, in pastures, in the protection of forests (native or planted), and other ecosystems. Its purpose is to change the composition of fauna and flora, in order to preserve them from the harmful actions of living beings considered harmful, as well as the substances and products used as defoliants, desiccants, stimulators and growth inhibitors.

The use of agrochemicals, in practice, is different from its definition and its method of application does not comply with its exact rules. The enactment of the Federal Act n°7 802/1989, Brazil finally seemed to take a step forward in order to organize itself with the quality requirements for agricultural products. However, what happens is the performance of the large agricultural industries acting in an increasingly independent way. Some of them ignore the regulations and precautions necessities provided by the referred act.

If the agrochemicals are not disposed correctly (either in praxis or on legislative scope), the products can reach aquatic environments, through rain and leaching in the areas where applications have occurred (BEDOR, C.N.G, 2008, p. 19). Is worth mentioning that the agroindustry, due to the abusive and disordered use of pesticides, ranks second as the biggest polluter of water resources. It only loses to the sewage in the cities, which released directly

into the water network without necessary treatments, unbalancing the whole ecosystem (CAÍRES; CASTRO, 2002). The targets of chemicals can also be several other living organisms, including humans, and the effects can be unwanted and irreversible.

To address this issue, the present article it's structured as follows: in addition to the present introduction, there is a section in which the theme is explained based on theoretical supports that shows the main consequences the inappropriate use of pesticides. In the following sections, it will be explained the consequences of mechanization of agribusiness in São Francisco Valley, so as the demonstration of the ineffectiveness of the Federal Act nº7 802/1989, which regulates the general use of agrochemicals, followed by finalization conclusions.

II. AGROCHEMICALS AND THE NECESSITY OF A RESPONSIBLE USE

Researchers from the José Alencar Gomes da Silva National Cancer Institute (INCA), a public entity related to the Brazilian Health Ministry, points that there are 2 (two) types of proven intoxication caused by agrochemicals : the acute ones, which comes from the direct contact with the chemical product, causing skin and eyes irritation, itching, vomiting, diarrhea, spasms, convulsions and even death. And the chronic ones, that happen with prolonged contamination and can affect any anyone: infertility, impotence, abortion, malformations, hormonal deregulation, effects on the immune and central nervous systems, in addition to cancer.

Currently, Brazil is leadership on agrochemical uses: according to INCA the sale of this products increased from US\$ 2 billion to more than US\$7 billion, between 2001 and 2008, reaching record values of US\$ 8, 5 billion in 2011. In 2009, Brazil reached the undesirable position as the world's largest consumer of agrochemicals, exceeding the 1 million ton mark, which is equivalent to an average consumption of 5.2 kg poison per inhabitants.

Paradoxically, in the Northeast region, until the decade of the 80th, there was a culture of dry farming, and the farmers use to work the soil, the plants, so as the control of the organisms with a parsimonious use of water. The farmers also used to produce typical plants from the semiarid region or perfectly adapted to this climatological and geographic conditions (BEDOR, C.N.B 2008, p. 40).

With the beginning of new politics and irrigation projects aiming the development of the region, a new model of agriculture emerged, surrounded by technologies, which apparently seemed to be advanced, sustainable and

benefic. For the rising of this agricultural model, made a weir policy (which causes a large loss of water by evaporation) and the occupation of sub-medium of São Francisco's Valley with irrigation projects for the production of new agricultural products, like grapes, melon, and mango. (AUGUSTO et al., 2005).

High, medium, sub-medium and low São Francisco are four physiographic areas of the Valley. The region, that comprehends the cities of Petrolina-PE and Juazeiro-BA, and neighboring cities, has about 120 thousand irrigated hectares, and is one of the main areas for the exploration and export of irrigated horticulture in the country, with more than 51% of its economically active population employed in agriculture. The development of the PE-BA pole started a little over thirty years ago, and had a rapid growth, bring today one of the agricultural production regions of the country that reaches the highest export rates. (LIMA, 2005).

Despite all the profit resulted by this development, countless rural workers from the Valley's region are frequently exposed to toxic agents, with insufficient guidance on the correct management of this products. Even with the mandatory prescription, prescribed by legally qualified professionals, there was a significant number (12%) of stores in the region without complying with it. A number that must be much higher since 78% farmers says that they do not use the necessary prescription at the time of purchase.

Most of them complain of symptoms right after the application of pesticides. Most because of this lack of orientation so as the lack of education. Most of the farmers do not know how to read the product information, and end up violently intoxicated with the chemical agents.

Being one of the main areas for exploration and cultivation of genetically modified seeds, there is an increase in the amount of agrochemicals consumed in the plantations, and the effects caused by this fact do not only affect those who work directly with the product, but also the local population, who's inevitably exposed to the harmful effects of these compounds.

The main routes of penetration of agrochemicals into human body are, in ascending order: by ingestion, by breathing and by dermal absorption. Skin penetration varies according to the formula used, so as the temperature, humidity, body regions (back of hands, wrists, neck, feet, armpits and groins absorb more), contact time and the existence of wounds (GARCIA, 2001).

Therefore, it would not be surprising to say that the rates of cancer in São Francisco Valley are increasingly high. According to recent news, provided by APAMI (a

philanthropic entity that offers treatment to patients with this disease, in the city of Petrolina-PE), in the first half of 2014, the number of visits reached almost 37% in relation to the whole of 2013.

São Francisco's Valley is experiencing a phase of recognition as a model of agribusiness, which has brought a great growth to the region and an explicit acceleration on economies. However, submerged in a word of chemical products, affecting the health of the residents of this region, so as the active population inserted in agricultural work.

The current agricultural model has brought several benefits for the modernization of the Valley's cities so as for the country. However, the inappropriate use of the diverse chemical compounds, instead of favoring, ends up unbalancing the environment as a whole. Even though we are unable to see the physical and environmental degradations clearly and daily, the consequences of the silent about the agrochemical effects will appear in long term, bringing very serious and often irreversible consequences.

III. THE LEGAL INVISIBILITY

An extensive list of pesticides used in Brazilian agriculture is forbidden in the European Union (EU) so as in the United States. However, Brazil continues to buy and use such pesticides indiscriminately. Sales and application methods often circumvent the law that regulates the use of chemical compounds.

It is a problem of inefficiency, "it concerns the question of whether or not its recipients adjust their behavior, to a greater or lesser degree, to the normative prescriptions, whether or not they comply with the commands, whether they apply them or not" (DINIZ, 2014, p.426).

In this context, it is clear that the Law N. 7.802/89 fails to reach its goals. The large agricultural industries that lead the market in several regions abuse the use of chemical compounds in plantations, breaking several rules, which without its proper application have direct consequences on human and environmental health.

The Pesticides Act in question, on its article number 8, establishes that the commercial advertising of pesticides, in any way of communication, will necessarily contain a clear warning about the risks of the product to the health of humans, animals and environment. In addition, it encourages the buyers and users to read the label and the brochure, of to ask someone to read, in case the person cannot read.

Only in São Francisco Valley, about 23% of rural workers do not have guidance of purchasing pesticides or do not seek for information from agricultural products store (BEDOR, C.N.G, 2008, p. 63). Another problem is that the sellers are not properly prepared to guide them, since 21% of the products are wrongly indicated by these sellers, while 22% have their right indication, and 54% are not specified (Id.)

According to the Health Surveillance Secretariat of Petrolina-PE, from 2001 to 2006, 59 cases of pesticide poisoning were registered. On those cases, in first place there was suicidal attempt, on second, there was accidental contamination at work so as ingestion of contaminated food. (BEDOR, C.N.G, 2008, p.64).

About the disposal of the toxic packaging products, they should obey the following process:

§ 2o Users of pesticides and its components must return the empty packaging of products to the commercial establishments which they were purchased, according to the instructions provided for in the respective package inserts, within a period of one year, counted from the date of purchase or longer, if authorized by the registering agency, and the return can be intermediated by collection points of centers, as long as authorized and supervised by the competent agency. (Included by the law nº 9.974, de 2000)

However, what happens in reality is that 7% of the empty packaging is burned as final solution; 15% is retained on their property and 80% is returned to São Francisco Agricultural Valley (ACAVASF), an association maintained by pesticide dealers that aim to return the packaging (ROCHA, et al., 2004). However, it was observed that since 2005 to 2008 (date of the research), ACAVASF did not make the packaging removal, leaving agrochemical refuses without the correct discard, ending up recording soil, air and water contamination (BEDOR, C.N.G, 2008, p.65).

Health and an ecologically balanced environment is a right expressly provided in the Constitution of Brazilian Federative Republic of 1988. The non-compliance of Brazilian agribusiness with the Act N. 7.802/89 only demonstrates the frequent inattention to the constitutional principles that supports the legal order of the country and guarantee the quality of life in society.

IV. CONCLUSION

Even facing such a technological revolution on Brazilian agribusiness, one should not deny the fact that the priority is, above all, economic prosperity in detriment of health and environmental balance. The region on focus, as the sources claims, has its environment and people's health vulnerable due to the misuse of agrochemicals and the lack of information

São Francisco Valley is exposed to the risks caused by unregularly use of agrochemicals, and the emptiness of an effective politician of inspection and control of the use of pesticides only reflect the real interest of the big companies with the producing in mass: profits.

It is essential that managers, legislators and health professionals pay attention to the magnitude of the problem, considering the ease access to buy agrochemicals. Therefore, greater professional training in this area is necessary, as well as the promotion of information and debates about the direct risks that the improper use of such chemical agents bring to the whole environment.

Even if there is a legislation about the use of these substances, the researchers has shown that is being ineffective due to the spread of the various consequences of the misuse of pesticides. Not only have the farmers suffered from the consequences caused by the abuse of agrochemicals, but also society as a whole, as pesticides are present on the meals of all individuals on a daily basis.

Government bodies and qualified professionals are extremely required, as well as the health surveillance in the regulation of the distribution and application of pesticides in modern agriculture, in order to promote health and environmental protection, transforming the actual alibi legislation into an act that actually works: bringing effectiveness and strong restrictive measures. Likewise, it is necessary to carry out periodic studies on the subject in order, to analyze the increase or not of the real problem: the health of the population and the environment of São Francisco's Valley.

It is unacceptable that large agro-exportation industries allows restricted parameters surveillance to their final products, without considering its consequences for society and its environmental imbalance. The main debate it is about an indisputable and indispensable right: life.

The consequences caused by such an attitude is taken in long term, and the heavy part will be taken by the next generations, if only this generation will not take the necessary cares with the environment, understanding that there is not separation between man and nature. Evolution is not what is achieve by immediate results, but what

brings positive and healthy results for the next ones to come to the world.

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