

# PESTICIDES: INEQUALITY, MULTIPLE TRAUMA AGENTS AND WORKER PROTECTION

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## ABSTRACT

The use of pesticides is a practice that highlights the economic and social differences in Brazilian society. Therefore, this article seeks to evaluate, on the one hand, the “benefits” that this practice brings to the increase of agricultural production in the country, but, on the other hand, to emphasize its human health toll on workers and the environmental toll. Through bibliographic research and relying on statistical data, the article seeks to describe the current normative system on human rights, both nationally and internationally, which serves to protect the human person, especially those exposed to pesticides at work. It is concluded that, despite the existence of an extensive list of legal provisions, the country’s economic reality, historically marked by social asymmetries and driven by large-scale agribusiness production, overlaps the normative force of national legislation and international conventions, so that exposure to multiple trauma agents is presented as a recurring factor in the Brazilian working condition.

**Keywords:** pesticides; human rights; protection; workers.

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## **AGROTÓXICOS: DESIGUALDADE, AGENTES POLITRAUMÁTICOS E PROTEÇÃO DO TRABALHADOR**

### **RESUMO**

*A utilização de agrotóxicos é uma prática que evidencia as divergências econômicas e sociais da sociedade brasileira. Diante disso, este artigo procura avaliar, de um lado, os “benefícios” que essa prática traz para o incremento da produção agrícola no país, mas, de outro, ressaltar o preço que se paga em termos de saúde humana do trabalhador e de impacto ao meio ambiente. Mediante pesquisa bibliográfica, bem como apoiando-se em dados estatísticos, o artigo busca descrever o sistema normativo vigente sobre direitos humanos, tanto no âmbito nacional como no internacional, que serve para proteger a pessoa humana, especialmente aquela que trabalha exposta a agrotóxicos. Conclui-se que, não obstante a existência de extenso rol de dispositivos destinados a protegê-la, a realidade econômica do país, marcada historicamente por assimetrias sociais e impulsionada pela produção em larga escala do agronegócio, sobrepõe-se à força normativa da legislação nacional e das convenções internacionais, de modo que a exposição a agentes politraumáticos se apresenta como um fator recorrente da condição laboral brasileira.*

**Palavras-chave:** *agrotóxicos; direitos humanos; proteção; trabalhadores.*

## INTRODUCTION

Considering the research discussed in this article, an indiscriminate use of pesticides is revealed in Brazil, substances known to be aggressive to life, affecting the well-being of all who are directly or indirectly affected by its production chain. Recognizing the right to life as central to the protection of human rights implies neutralizing all agents that cause damage to the planet and the beings that inhabit it, and it is imperative to guarantee their full protection. The excessive use of toxic substances generates an imbalance in nature and irreversibly affects health and, therefore, the dignity of the human person, especially those exposed to these agents at work.

From whatever sources one looks, the result always seems to be the same: death and degeneration resulting from pesticide abuse. In the present work, the condition of this chemical substance as *a multiple trauma agent* will be taken into account, due to its ability to generate trauma and damage in the most diverse types of environments simultaneously: (I) the natural environment, when it contaminates soils and rivers, for example; (II) the artificial environment, when it is dispersed by air over small towns bordering the plantations; and (III) the cultural environment, when it is used as a weapon of destruction of indigenous or quilombola ethnicities or destroys natural biomes, preventing the maintenance of ecotourism or, even, when it reaches the plate of the population that is not aware of the harmfulness of the products used for food to be produced, under prayers of gratitude. Finally, without a doubt, it also traumatizes (IV) the work environment, when it affects the health and lives of millions of workers and their families. Given this finding, it remains to be analyzed whether it is a social desire to change this reality and, if that is the choice, which tools can be used to change it.

Based on bibliographic research, as well as relying on statistical data collected from open sources, this article aims to show how pesticides are central to environmental depredation, including the work environment, to demonstrate their harmful impact on the health of workers who come into contact with them and describe the normative system available for protecting the human rights of the people who are exposed to them at work. For the analysis intended here, it is not possible to ignore Brazilian social inequality in the countryside, which will be addressed in the first part. Subsequently, the damage will be highlighted, explaining the different scenarios that are harmfully affected by pesticides. And finally, in the last topic, while

humanity does not advance in safer and more sustainable alternatives, the normative system that aims to protect the people who are currently victims will be presented.

## **1 AGRIBUSINESS AND SOCIAL INEQUALITY: THE BRAZILIAN REALITY**

Eight Brazilians are contaminated by pesticides per day. It is estimated that, for each reported case, fifty are not even known (BRASIL, 2018). This is compounded by the fact that the most used pesticide is associated with 503 child deaths per year in Brazil (DIAS; ROCHA; SOARES, 2020, p. 3). In addition to the deaths of thousands of people every year, those who have had contact with pesticides, whether by handling or ingestion, may have developed diseases such as Alzheimer's, depression, cancer, infertility, malformation problems in children, autism, neurotoxicity, Parkinson's, gluten intolerance, destruction of intestinal bacteria, anemia, sexual disorders, hypothyroidism (SAMSEL; SENEFF, 2013), irreversible brain injury, testicular atrophy, male sterility, dermatitis, liver damage, optic nerve atrophy, among many others (MASCARENHA; PERSON, 2013). If this information generates some discomfort due to the uneasiness they bring with them, then part of the objective has been achieved.

First of all, for many problems in Brazilian society today, the solution begins with an awareness of reality. It is evident that, despite the fact that we are living in the information age, it can be adjusted according to the conveniences and interests of those who have control over its dissemination, even generating disinformation, when convenient. Digesting this reality is not easy. As Rachel Carson (2010, p. 28) rightly pointed out, the population needs to decide if they want to continue on the current path, and they will only be able to do so when they are in full possession of the facts. In the words of Jean Rostand: the obligation to bear gives us the right to know". Secondly, the adoption of instruments of change will only be possible when the paradigms built until then are broken. Changes cannot be made without ruptures.

One of the main justifications in favor of defending the use of pesticides is related to the increase in food production. Thanks to them, crops would be more plentiful, allowing entire plantations to survive animal and plant pests". It is also said that the use of pesticides would be able to dissipate one of the main problems that plagues humanity: severe

food insecurity, also known as *hunger*. On April 24, 1968, the newspaper *O Estado de São Paulo* published a small article dealing with the food shortage at the time, in addition to the low nutritional variety<sup>3</sup>. Also at that time, poverty and hunger rates were high, as well as social inequalities, a context that has not changed until the present day. It was in that context that a movement, orchestrated by the federal government and the country's landowners, emerged, known as the "Green Revolution", through which "the Brazilian government created various policies, such as rural credit, those to encourage the implementation of the pesticide industry, tariff exemptions for pesticides, among others" (BIANCHI, 2020, p.13).

It is interesting to note that, in the same issue of the newspaper *O Estado de São Paulo* mentioned above, the report by Irma Fioravanti Lobato (1968) was also published, which, under the title "food poisoning", described the negligent way in which fungicides were handled and packaging was disposed of into the environment, poisoning humans, fish and marine animals. However, on the pretext of increasing production, given the imminent food shortage, this path was followed, neglecting the side effects and justifying the ends at any cost.

After more than 50 years, the question is: would the production currently harvested be enough to feed the entire national population? In a survey carried out by Danilo Rolim Dias de Aguiar, from the Federal University of São Carlos, the answer to this question was positive. However, factors such as social inequality and exaggerated waste contribute to Brazil's continued presence on the hunger map (COSTA; AGUIAR, 2019). The next question to be asked is: why this reality has not changed?

Historically, Brazil has always had the export of agricultural products as one of its main activities. When analyzing the transition of agricultural production in the country, from the colony to the 20th century, Claudinei Silva Pereira (2020) portrays the choice for the production of crops that are difficult to perish, since the distances and the form of storage did not support products that spoiled quickly, such as vegetables and legumes. With this, two problems are identified: nutritional insecurity and food insecurity, the latter of which will be highlighted.

<sup>3</sup> Brazil will have to multiply its current food production tenfold, or it will be forced to stop the industrialization boom for lack of foreign exchange to pay for the growing volume of food imports, according to the report presented by Brazilian delegates to the IV Latino-American Conference of food production, which took place in Buenos Aires. The diet of the Brazilian man is one of the lowest in the world and the industrialization surge in the states of the Center-South and Northeast of Brazil will only exacerbate the problem, by providing an increase in the income of the urban population and an increasing demand for foodstuffs, unless agricultural production follows this development (CASTRO, 1968).

According to the study carried out by the Brazilian Research Network on Food Sovereignty and Security, 19.1 million people were experiencing severe food insecurity in 2020 and that 116.8 million people were food insecure (MALUF, 2021). In this context, one cannot fail to add food waste. According to the United Nations Environment Program (UNEP), Brazil is on the list of the 10 countries that waste the most food in the world, added to the fact that most of its production is destined for export, and not for domestic consumption. It is estimated that 10% of its production is wasted in harvesting and 30% in transport and storage, not counting waste in supermarkets, fairs, restaurants and disposal in households (EMPRAPA, 2018).

As can be seen, the scale is unbalanced. The numbers don't add up... On the one hand, there are news<sup>4</sup> that give an account of the production records that are beaten annually by agribusiness. On the other hand, however, the number of people who go hungry has only increased, indicating that agricultural prosperity does not reach all people. The agro, it seems, is not pop. It is always important to make this parallel because, as mentioned earlier, one of the main arguments that is repeatedly used by those who defend the indiscriminate adoption of pesticides lies in the idea that only with "agricultural pesticides" can production be increased, making it possible for the poor person to have access to cheaper food. This was the argument used by Senator of the Republic Kátia Abreu (2010):

[...] So, from the moment that the Director of Anvisa, who is responsible for evaluating, approving or not the pesticides for agriculture, generic or not, makes such a statement in the press, he needs to justify himself in the Federal Senate because it is harming a national patrimony [...]; these people forget that they also eat and they want to eat cheaply. If he has a good salary at ANVISA, it is not the case of thousands and thousands of Brazilians who earn the minimum wage or who do not earn anything and who, therefore, do need to eat food with pesticides, because that is the only way to make food cheaper, unfortunately.

As demonstrated earlier, the increase in biological technology in the countryside, although it increased agricultural production, did not help to eradicate hunger in the country, as the representative of the Brazilian parliament supposed. If there are data that show that agricultural production would be sufficient to meet the entire Brazilian population demand and that, contrary to the growth of agricultural production, there is the growth of the population in a state of severe food insecurity, who is benefiting

<sup>4</sup> According to the National Supply Company (CONAB, 2022), Brazilian grain production in the 2021/22 harvest is estimated at 271.2 million tons, an increase of almost 14.5 million tons as compared to the previous cycle.

from the current organization?

In this sense, a study carried out by the Brazilian Association of Collective Health in partnership with researchers from Fiocruz and the Federal Rural University of Rio de Janeiro estimates that tax exemptions for companies that manufacture and sell these toxic substances amount to R\$10 billion per year (CUNHA; SOARES, 2020). However, this privileged tax treatment did not go unnoticed. On June 29, 2016, the Socialism and Liberty Party (PSOL) filed the Direct Action of Unconstitutionality no. 5553/DF questioning, in short, the tax privilege granted to companies producing pesticides through Decree no. 7,660, of December 23, 2011<sup>5</sup>, which exempts them from the collection of tax on industrialized products (IPI). In addition to the problems that affect the environment, the complaint suggests that this tax benefit, in addition to being disproportionate, given the volume of products consumed in Brazil and considering that the main producers are foreign capital, also violates the principle of tax selectivity. It explains, in this context, that taxes such as ICMS and IPI can be adopted according to whether or not the product subject to taxation is essential. Thus, products harmful to human health and the environment should be encumbered and not exempted from taxes, especially because they generate damage to public health and social security, an inference that is extracted from arts. 153, §3, I, and 155, § 2, III, of the Federal Constitution<sup>6</sup>.

The initial pleading of ADI 5553/DF mentions that “the aim is not to punish the practice, since this is not a function of taxation, but rather to discourage consumption due to price increases” (BRASIL, 2016a). The logic, therefore, should be different. It is food produced without the use of pesticides that should be exempted from taxation, because in addition to being essential, they are produced in a sustainable way and do not generate risks to human health through food.

When manifesting itself in the aforementioned fact, the Federal Public Ministry reiterated some data that had already been announced by the petitioners, including the fact that “Brazil has become the largest consumer of pesticides in the world with 19% of the world market” and that, according to a study based on financial reports from leading companies in the commercialization of pesticides, the growth rate of the

5 It is noted that Decree 7660/2011, target of the aforementioned ADI, was replaced by Decree 8950/2016 which, in its content, remained almost unchanged regarding tax exemption.

6 Constitution of the Federative Republic of Brazil of 1988. Art. 153: § 3 The tax provided for in item IV: I – will be selective, depending on the essential nature of the product; Article 155: § 2. The tax provided for in item II shall comply with the following: III – it may be selective, depending on the essentiality of the goods and services.

Brazilian pesticide market, between 2000 and 2010, was 190% against 93% of the world market” (BRASIL, 2016b). In addition, the Attorney General of the Republic made several references to the impacts on health and the balanced and healthy environment, essential human rights for all, in addition to alluding to the polluter-pays principle as a reinforcement basis for determining the imposition of taxes on these products of high toxicity, therefore, pollutants. The Public Ministry of Labor, in turn, when manifesting itself in ADI 5553/DF, addressed the impacts of the indiscriminate use of pesticides on the life and health of workers, having answered the questions formulated by the Rapporteur, Minister Edson Fachin, confirming that there is empirical evidence demonstrating the negative effects on workers’ health, so much so that Regulatory Norm 31 of the Ministry of Labor and Employment brings measures aimed at eliminating or reducing the risks caused by these toxic agents (BRASIL, 2016c).

On 11/19/2020, the Judge-Rapporteur cast his vote to grant ADI 5553/DF and declare “the unconstitutionality of the first, items I and II, and third clauses, in relation to the aforementioned items, of Convention no. 100/1997, with ex nunc effects, and the establishment of a zero rate for pesticides indicated in the IPI Table, attached to Decree 8,950, of December 29, 2016” (BRASIL, 2016d). However, the trial has not yet ended, since it is suspended after the request for a view of the case by Minister Gilmar Mendes. For now, the fiscal policy of tax privileges for companies producing pesticides is being followed.

It is also noted that these exemptions do not affect all rural producers in Brazil indiscriminately, just as the wealth of agribusiness is not a point in common to them. In the analysis of the Brazilian rural panorama, when the socioeconomic reality in the countryside is assessed, the social inequalities are clear. According to data from 2018, from the Brazilian Agricultural Research Corporation (EMBRAPA), 8% of rural establishments in Brazil generate 85% of the value produced, and the rest (92%) generate 15% of the value produced, evidencing not only the already mentioned inequality but also income concentration. It is concluded that most rural producers in Brazil are poor or extremely poor, and in 73% of properties, the average value of gross monthly production is equivalent to 0.43 minimum wage.

Thus, what can be concluded is that the economic benefits arising from pesticide use do not reach the poorest rural producers, since they do not even have the resources for their own subsistence, let alone for



acquiring pesticides and increase production. Large producers, who rely on government subsidies, are able to purchase pesticides and, with them, increase their production and, consequently, their exports. And, in this production chain, there are the large chemical and pharmaceutical companies, which, in addition to selling their products with tax reduction or exemption, benefit from the giant Brazilian consumer market.

Given the various harms caused by pesticide use, the ideal to be sought is the complete elimination of substances harmful to human beings, either through investment in technology for organic production, or through serious public policies that consolidate human rights, with a special focus on the eradication of poverty and social inequalities and on offering full health and a dignified life for all. Until this objective is reached, it is necessary to analyze the protection mechanisms currently available, urgent and necessary to prevent more deaths and more contamination from occurring, especially in the work environment. Henceforth, the present analysis will permeate the impact of pesticide use on the health and lives of working people and the existing legal protection tools.

## 2 PESTICIDE: MULTIPLE TRAUMA AGENT

Law no. 7,802/1989, still in force in the country, brings the concept of what a pesticide is<sup>7</sup>, and it is possible to say that it is a product or substance whose action is intended to increase agricultural production or keep it free from possible “pests” intervening in the environment. According to their purpose, the most common pesticides are herbicides, fungicides and insecticides and, just to illustrate, glyphosate is the most used herbicide in the country. In 2015, the International Agency for Research on Cancer–IARC), a member of the World Health Organization (WHO), concluded that it is a probable carcinogen.

It is true that the use of this substance is not exclusive to Brazil. Much of the world relies on products such as glyphosate. In research carried out by the Laboratory of Agrarian Geography at USP, conducted by Larissa Mies Bombardi (2017), a comparison was made between Brazil and the European Union on the amount of pesticide residues allowed in food and

<sup>7</sup> Law no. 7,802/1989. Art. 2. [...] The products and agents of physical, chemical or biological processes, intended for use in the production sectors, in the storage and improvement of agricultural products, in pastures, in the protection of native or implanted forests, and other ecosystems and also urban, water and industrial environments, whose purpose is to change the flora or fauna composition, in order to preserve them from the harmful action of living beings considered harmful and, also, the substances and products used as defoliantes, desiccants, growth stimulators and inhibitors.

water. For soybean cultivation, just to illustrate, it was identified that, in the European Union, the maximum residue limit allowed is 0.05 mg/kg, while in Brazil it is 10.00 mg/kg, equivalent to 200 times more than the limit established in the former. When analyzing the residual limit in drinking water, in the European Union this ceiling is 0.1 UG/L, while in Brazil there is a tolerance of up to 500 UG/L, that is, 5,000 times greater. Such data raise the question of why tolerance levels in Brazil are so elastic. Is there no danger for everyone? According to data from the Ministry of Health, in a survey carried out between 2014 and 2017, in 2,639 Brazilian municipalities, pesticides were identified in drinking water in 86.3% of them (BRASIL, 2018).

In the midst of the coronavirus global pandemic, the most discussed and talked about subjects in the news included its form of contamination and the prevention means. It is known, so far, that the virus spreads through the air and by contact, especially through the airways and also through the nasal and oral mucosa. It was also learned that hygiene habits, use of gel alcohol, masks and social distancing are elements that can reduce the chances of contracting this lethal disease. Given this example, what we want to show is that minimal questions should be asked when diseases are identified. How was it contracted? By contagion or by predisposition? Is it possible to prevent this disease? Is it curable?

In the case of pesticides, there are numerous evidences of the harm caused by their use. As a rule, intoxication can occur, basically, in three ways: food, occupational and environmental. Food poisoning results from the consumption of substances, food or water, for example, that contain pesticide residues in amounts harmful to health. Occupational intoxication occurs with direct handling with the toxic product at work. And also, there is environmental intoxication, which occurs when the intoxicated person is in the same environment where the substance is dispersed, even though he/she does not work directly with it or does not ingest it through food. A current hypothesis of environmental intoxication occurs when there is aerial dispersion of pesticides without observing a safe distance from cities and towns, or even from places of habitation on farms. In this case, therefore, the intoxicated person does not work directly with the toxic substance, but is environmentally subjected to the risk of contamination.

In the occupational way, there are many stages of the production chain that can generate this contamination. Long before reaching the farmers, there is the manufacture of chemical products and the subjection of employees

exposed to a high degree of insalubrity. On the farms, however, the products need to be mixed, which, in practice, is known as “broth preparation”. A worker receives the components and, depending on the crop and weather conditions, mixes these components in order to prepare the pesticide broth that will be dispersed over the plantations. When making this mixture, the employees need information about the products being handled, training on how to handle them, and also on how to proceed in case of first aid for intoxication. In addition, they must use personal protective equipment that is often not able to eliminate the risk, in addition to adopting other procedures, such as separation and detoxification of their own clothes, so that toxic waste is not taken to their residences, contaminating their families and the people who had contact with them.

Dispersal, in turn, also implies a high risk of contamination. As a rule, it can be done manually, with a tank fitted to the worker’s back, which pumps the poison at the place where it should be applied, known as a knapsack pump. Another form, already mechanized, corresponds to dispersal by agricultural machines, and it is possible for the worker to stay inside a closed cabin while operating the machine. However, to optimize work and reduce damage to crops, many large agricultural companies use aerial application by agricultural aircraft. This modality not only exposes the agricultural pilot to contamination, but also ends up reaching populations in cities and communities bordering these areas. In this type of dispersal, according to a technical note from Fiocruz, 70% of the pesticide does not reach the target, which is called “spray drift” (MENEZES, 2019). This happens because the pilots of these aircraft, however low they try to fly, have a safety limitation, and the wind, by not finding barriers in the plains with large plantations, ends up taking these substances that are suspended in the air to places other than the desired target.

On this subject, by the way, there is conflict over the rules that regulate distances and the possibility of aerial application in Brazil. Normative Instruction no. 02/2008 of the Ministry of Agriculture, Livestock and Supply defines, in its art. 10, that “the aerial application of pesticides is not allowed in areas located at a minimum distance of: a) five hundred meters from villages, cities, towns, neighborhoods, water sources to supply the population; b) two hundred and fifty meters from water sources, isolated dwellings and animal groups”. However, art. 24 of the Constitution of the Federative Republic of Brazil (CRFB), of 1988, defined that it is up to the Federal Government, States and Federal District to legislate

concurrently on the environment, among other topics. Therefore, the State of Ceará published State Law no. 16.820/2019, which, in its art. 28-b, prohibits aerial application of pesticides in that federation unit; however, the Confederation of Agriculture and Livestock of Brazil proposed ADI 6137/CE to the Federal Supreme Court, questioning the competence of that state to legislate on this matter. The CRFB was clear in ensuring that this competence was concurrent, with no formal obstacle to the regulations in force in Ceará. And it is possible to go further. Considering that a balanced environment is a right of every person who lives in Brazil, a right that is enshrined as a constitutional guarantee and that there can be no distinction of any kind, it is concluded that the integral protection of the health of a citizen in Ceará should be the same as a citizen in Mato Grosso or Rio Grande do Sul, for example. Moreover, when considering the progressive character of human rights, here encompassing the rights to health and a dignified life, and the application of the most favorable norm, a basic principle of the Law of People, when considering the *pro persona* principle in dialogue with the principle of protection, in Labor Law, it is concluded that the protection given to Ceará citizens should be extended to the entire national territory.

Having made this aside, returning to the possible means of contamination, in addition to those described above, it is important to illustrate that a recurring problem in Brazil is related to the inadequate treatment of empty packaging after the use of toxic products, which are discarded irregularly, contaminating rivers and springs, as well as exposing workers to increased risk (BERNARDI; HERMES; BOFF, 2018).

As can be seen, the risk of intoxication is very high and, therefore, there must be protective measures for the human person. From a judicial point of view, there are legal mechanisms for reparation or compensation for damages already caused, as well as protective, prohibitory injunctions, in order to prevent injuries from occurring. From a political point of view, it is imperative to implement public policies aimed at the realization of human rights, which involves an agenda that seeks to eliminate, and not just reduce, the risk of intoxication by pesticides and, at the same time, through the adoption of technology to replace them with healthier alternatives for the entire population. While the practice of indiscriminate use of pesticides persists, it remains, then, to examine the normative system of protection for the person who works in contact with them.

### 3 REGULATORY SYSTEM FOR PROTECTING THE PERSON WHO WORKS WITH PESTICIDES

Focusing on the protective system of the regulations currently in force, the theory of double verticality control is taken as a starting point (MAZZUOLI, 2018). In short, it means that every norm in force in the national territory needs to pass through the sieve of this double control. The first, best known, is done from the point of view of constitutionality; the second is conventionality control, whereby domestic rules must be compatible with international treaties to which Brazil is bound.

From this perspective, it is important to remember that treaties dealing with human rights may be equivalent to constitutional amendments when approved by the quorum of art. 5, § 3, of the Federal Constitution. However, when not approved with this quorum, they continue to be human rights treaties and, according to the current interpretation of the Federal Supreme Court (in the judgment of HC no. 87.585/TO and RE no. 466.343/SP), have a supralegal character. Furthermore, it is worth remembering that human rights guaranteeing norms are immediately applicable (art. 5, § 1, of the CRFB) and the rights defined in international treaties must dialogue with the constitutional norms (art. 5, § 2, of the CRFB). In fact, the challenge today is to give concreteness, that is, to take the most elementary human rights off paper, guaranteeing to all people the right to a dignified existence. This is the central point of the present analysis.

Art. 1 of the Constitution of the Federative Republic of Brazil says that the dignity of the human person (III) and the social value of work (IV) constitute its foundations. As Sarmiento points out, the problem is not lack of legislation that places dignity as an object to be achieved, but the risk of its trivialization:

[...] (It is) in the process of universalization that the most pathological aspect of the process of affirming human dignity in Brazil can be glimpsed. There are strong hierarchical traits in our social relations, which are manifested in the asymmetry between people in terms of access to rights and submission to the duties imposed by the legal order. There have undoubtedly been advances in this area since the advent of the 88 Constitution, but our patterns of inequality remain perverse and unacceptable. [...] Finally, the main deficit in the effectiveness of human dignity in Brazil does not derive from a purely legal or even economic reason. Its origin is in a very rooted culture, which does not conceive all people as equally worthy. In this scenario, human dignity paradoxically risks becoming its inverse: an additional vehicle for

reproducing and reinforcing the *status quo* of hierarchies and asymmetries, which enshrines privileges for some at the expense of the undignified treatment of others (SARMENTO, 2019, p. 60/67).

Reality cannot be ignored. When it comes to the world of work, from the perspective of rural workers who deal with pesticides, the asymmetry between the people involved is very evident: on the one hand, large multinational companies, with high purchasing power and political and economic influence; on the other hand, rural workers with little or almost no formal education, from whom the necessary information to be aware of the risks to their health is omitted and who need to submit to such risks as an alternative for their survival.

Also in the same article 1 of the Constitution, there is talk of the social value of work. Work is undoubtedly important and fundamental, presenting an “emancipating function, of self-realization of subjectivity and identity formation” (WANDELLI, 2012, p. 57). Social inequality, recognized by the constituent legislator (art. 3, III, of the CRFB), implies the recognition that there is concentration of income and that this does not derive from the individual merit of each one, based on equality of conditions. By being aware of this scenario, the owner of the property is expected to allocate it for the fulfillment of its social function (articles 5, XXIII, and 170, III and VI, of the CRFB), which certainly goes through the social value of work and the duty to maintain a healthy and balanced environment for current and future generations (art. 225 of the CRFB).

Furthermore, the right to life (art. 5, caput, of the CRFB) is also essential, so that when a person who works is subjected to degrading or inhumane conditions, his right to live is directly affected. As a result of all the dialogic relationship existing between human rights, it is concluded that it is not enough to live, but it is necessary to live with dignity, a path that leads us, for example, to the social right to health (article 6 of the CRFB), being the State’s duty to reduce the risks of illness and other aggravations (art. 196 of the CRFB). In fact, this duty is explicitly and repeatedly described in the Constitution, especially when it states that workers have the right to reduce the risks inherent to work, through health, hygiene and safety standards (article 7, XXII, of the CRFB).

The goal with this constitutional spectrum of guarantees is to prevent injuries from occurring. It is unreasonable for the national legislator to continue opting only for legislative resources aimed at the monetization of health, that is, dealing only with reparatory compensation for the injury

perpetrated. This is what happens, for example, when additional pecuniary remuneration ranges are stipulated for the payment of workers exposed to unhealthy agents. The ideal is not to guarantee the payment of the premium, but to prevent it from being necessary. The objective to be achieved is, therefore, the elimination of the unhealthy agent, as provided for in arts. 191 and 194 of the CLT<sup>8</sup>.

Based on international standards, it is always important to remember that those related to work, especially when dealing with health and safety, aiming to guarantee decent and non-degrading working conditions, are human rights norms. Thus, the Conventions of the International Labor Organization (ILO) that deal with such matters are international human rights norms, so that, under the terms of art. 5, §§ 1 and 2 of the Constitution, it is repeated, have immediate application within the national territory.

Firstly, ILO Convention 136 should be mentioned, which deals with protection against the risk of benzene intoxication, prohibiting minors, pregnant and lactating women from working in contact with this toxic substance. Another important standard is ILO Convention 139, which deals with the prevention and control of risks caused by carcinogens. It, unlike Convention 136, which specifies the toxic agent, does not say which are the carcinogenic agents, limiting itself to protecting the worker who has contact with harmful agents of such nature. Therefore, this norm is open, so that any substance that is eventually identified, even if belatedly, as a carcinogen, will be subsumed under it. In fact, it was for this reason that it was highlighted before that glyphosate is a probable carcinogen. In this sense, as the pesticide is a carcinogenic product, the aforementioned convention will apply to the worker.

ILO Convention 148, which deals with air contamination, noise and vibrations, should be cited in the sequence. In its art. 3, said convention states that “the expression ‘air contamination’ includes air contaminated by substances that, whatever their physical state, are harmful to health or contain any other type of danger”. As highlighted before, one of the forms

<sup>8</sup> Art. 191 – The elimination or neutralization of insalubrity will occur: I – with the adoption of measures that preserve the work environment within the limits of tolerance; II – with the use of personal protective equipment for the worker, which reduces the intensity of the aggressive agent to tolerance limits. Sole Paragraph – It will be up to the Regional Labor Offices, once the insalubrity is proven, to notify the companies, stipulating deadlines for their elimination or neutralization, in the form of this article.

[...]

Art. 194 – The employee’s right to the unhealthy or hazardous work premium will cease with the elimination of the risk to his health or physical integrity, under the terms of this Section and the rules issued by the Ministry of Labor.

of dispersion of the venom is through the air, it is safe to say, therefore, that this type of dispersion implies air contamination, deserving attention of the norm in question, which, in its art. 9, says that “as far as possible, all risk due to air contamination, noise and vibrations in the workplace must be eliminated”. It is for these reasons, in fact, that the ban on aerial dispersion of pesticides imposed by the state of Ceará is justified, since there are other means of application that generate less air contamination.

ILO Convention 155, in turn, which deals with workers’ safety and health in general, is applicable without distinction to rural workers. In it, the reference to the term “health” covers not only the absence of ailments or illnesses, but also the physical and mental elements that affect health and that are directly related to safety and hygiene at work (art. 3). In addition, the convention provides that States parties must establish a national policy that has “the objective of preventing accidents and damage to health resulting from work, related to work activity, or occurring during work, reducing to a minimum, as far as is reasonable and possible, the causes of risks inherent to the work environment” (art. 4).

Mention should also be made of ILO Convention 161, which deals with occupational health and safety services. According to her, in addition to the employer’s inherent responsibility for the health and safety of workers who are subordinate to him, it is important that specialized occupational health and safety services are hired in order to ensure that the work environment is healthy, that assignments are performed safely, that equipment and machines are continually reviewed, that the proper use of protective equipment is inspected, among many other attributions. This convention is also relevant because it includes the duty of information, through which the company must inform all its employees of the health risks inherent in their work (art. 13).

It is considered opportune to mention ILO Convention 169, which deals with the protection of indigenous peoples’ environment. At first glance, in a hastier reading, it could be said that there is no relation between it and the theme under analysis. However, its importance is highlighted in two aspects. The first is explicit in its art. 20, *b*, when determining that measures should be adopted so that “workers belonging to these peoples are not subjected to working conditions that are dangerous to their health, in particular as a result of their exposure to pesticides or other toxic substances”. As can be seen, there is an express prohibition to prevent workers, who are indigenous, from having direct contact with toxic substances. The second



aspect is related to the indigenous community's environmental protection, considering both the natural environment, from which they derive their livelihood, and the cultural environment, since they see the places where they live, their villages, being threatened by aerial applications, even compromising the maintenance of their customs (PEARSHOUSE, 2018).

Finally, ILO Convention 170 stands out, which deals with safety in the use of chemical products at work, being perfectly applicable to people who work in contact with pesticides. In this norm there is also an express provision in its art. 13 that employers should choose chemical products that eliminate or minimize the degree of risk" (subitem *a*), choose technology that eliminates or reduces the degree of risk to a minimum" (subitem *b*) and adopt systems and working methods that eliminate or minimize the degree of risk" (subitem *c*). Actually, Art. 14 indicates that protection is not restricted to worker health, but also covers the environment. And, in an innovative way, the standard brings, in its art. 17, the precept that the duty to adopt measures in order to eliminate or reduce risks is not only the employer's, but also the worker's, from which their right of resistance is inferred, and they can refuse to submit to the risk situation, without this being considered a serious fault for insubordination, for example.

As can be seen, there are sufficient normative elements, both from the constitutional and international perspectives, aimed at protecting the person who works from the risks caused by pesticides. Any infra-constitutional legislative process that promotes legislation that reduces or relaxes the currently existing restrictions will inevitably be defective in its formation, due to unconstitutionality or unconventionality (paralyzing effect of human rights norms), since it will be increasing health risks and putting workers' possibility of a dignified existence at stake, while at the same time expanding present and future generations' possibilities of damage to the environment, which is an obstacle due to the prohibition of retrogression (LEAL; RODRIGUES, 2019).

Further scrutinizing the normative protection system, in addition to ordinary legislation (arts. 157, I, 191, 194, 200, 405 of the CLT and Law no. 8,080/1990), we highlight Regulatory Norm no. 31 of the Ministry of Labor and Employment, which deals with safety procedures to be used in the work environment of those exposed to harmful agents. Going through all these normative layers, one arrives at the illustration of a concrete case, having as reference the judgment of the Direct Action of Unconstitutionality 4066, judged by the Federal Supreme Court on 08/24/2017, by the

rapporteur of Minister Rosa Weber. In this action, the constitutionality of Law no. 9,055/95, which regulated the extraction, industrialization, use, commercialization and transport of asbestos and products that contain it, notably because it was known to be harmful to health, given the evidence of its carcinogenic character, like many pesticides.

It is important to note that, due to the lack of a quorum (there were 5 votes in favor of the ADI's validity and 4 votes against it), this judgment did not pronounce the unconstitutionality of art. 2 of Law 9,055/1995, so that it is not binding. However, the reasons set out in it certainly serve as an interpretive vector to be considered, when it states, for example, that “the most efficient way to eliminate mineral-related diseases is to eliminate the use of all types of asbestos” (BRASIL, 2008). The progressive elimination of the substance was based not only on the risk to workers, but also on everyone who, directly or indirectly, in the production chain, would have contact with the product or consume it in its final state.

The parallel with pesticides is inevitable, since such multiple trauma agents put at risk both the people who work in the production chain and those who live with them, through their clothing, for example. People who ingest products with toxic residues, food and water, every day, are also at risk and are not linked to the production chain.

Among other grounds inserted in the judgment of ADI 4066/DF, the prevention and precaution principles were highlighted, insofar as the objective is to avoid damage to the environment, especially when, in many cases of contamination, the injury is difficult to repair or irreversible. It is important to note that, technically, the prevention principle is based on confirmation, that is, on the certainty of harmfulness of the use of a substance or conduct, while precaution is based on the probability of injury, signaling that the existence of evidence about the harmful potential of a toxic product would be enough to curb a conduct or action threatening the environment and health.

And, in the case of possible injuries caused by working with pesticides, Ordinance no. 2,309, published on August 28, 2020, from the Ministry of Health, updated the Work-Related Illness List (LDRT), which is revised every five years. From it, diseases with a probable causal link related to the work performed by workers in contact with pesticides are extracted, demonstrating the probability of injury.

If, in this scenario, there is an unequivocal knowledge of the harm that pesticides can cause to the health and life of the people who work and those

who interact with them, affecting the whole of society, there is no other way out than to protect the subject's human rights, progressively eliminating the risks. In this sense, Sebastião Geraldo de Oliveira (2010) considers the setting of tolerance limits to be troublesome, when the possibility of total elimination of risk is not envisaged:

The first purpose is maximum reduction, that is, elimination of the harmful agent. However, when this is technically unfeasible, the employer will have to, at least, reduce the intensity of the harmful agent for the territory of tolerable aggressions. [...] The border where health ends and disease begins is quite elusive or unclear, as it depends on scientific knowledge, investment in research, high-precision equipment and even the legislator's will. Studies are often demonstrating that tolerance limits, hitherto believed to be reliable, cause long-term harm.

And here is certainly one of the big problems. Under the pretext of making some economic activities unfeasible, the use of toxic substances is admitted. However, the tolerance of these substances may be at an unreliable level. In this aspect, it is worth remembering, as previously mentioned, that the tolerance limits for toxic waste admitted in Brazil are commonly higher than those of other countries, without any reason for distinction that justifies these flexibilities. And, in addition, it is known that many diseases are chronically developed, that is, they will only show their signs many years after contact with toxic substances.

From any angle of analysis, the protection of the worker's health must be observed. Furthermore, the pesticide, a multiple trauma agent, affects all those who are close to the production chain, even if they do not work directly with the substance, since families, cities and towns can be affected by aerial application, by soil and rivers contamination, for example. What's more, even those who are far from the countryside, in urban centers<sup>9</sup>, can suffer injuries, since the foodstuffs consumed and the water that arrive at their homes can be equally contaminated.

It is therefore necessary to change this interpretative axis, since when adopting the practice of *increasing remuneration to compensate for the injury to health*, what is not being sought is to reduce or eliminate the risk, that is, as long as there is a stimulus to this "original labor deception" (CESÁRIO, 2006), there will be no advances, because one stops prioritizing

<sup>9</sup> According to data published by the National Water Quality Surveillance Program for Human Consumption (VIGIAGUA) of the Ministry of Health, the Water Map was published, identifying the cities where there is water contamination by chemical substances above the limit considered tolerated. In Mato Grosso, between 2018 and 2020, at least 19 municipalities presented this diagnosis, including the capital, Cuiabá, which presented several of these substances in the samples, but above the limit, only nitrate, considered carcinogenic (SPIDER; FREITAS; CABETTE, 2021).

life to prioritize profit. There is, therefore, a legal duty to progressively seek to eradicate any form of contamination of working people's health and, as long as public policies are not sufficient to correct inequalities and protect people and the environment, judicial protection will continue to be imperative as a measure to try to minimize and curb the harmful effects of the indiscriminate use of pesticides in Brazil.

## CONCLUSION

In the historical repetition of oppressions, it is evident that the social structure of Brazil opens wide inequalities between people and the way in which these asymmetrical relations of political or economic power affect society's form of organization, perpetuating privileges and unjustified benefits of some to the detriment of death and injury to the health of others, notably workers.

It is regrettable to observe that, contrary to everyone's duty to seek to eliminate toxic, unhealthy and dangerous agents that cause severe diseases and kill thousands of people, inflamed opinions still arise that this is a price to pay. It's a price to pay in exchange for what? And who is paying the price?

Indeed, the inadequate land and income distribution opens up the social inequality and poverty that, progressively, marginalize millions of people in the country, in total paradox with the records that are surpassed annually in agricultural production, which, however, is not reflected at the table of the great mass of Brazilian people. What is noticeable, therefore, is that a very small portion of the population benefits from agribusiness, increasing their wealth exponentially, at the price of the health of millions of people who give their lives to be undermined in contact with pesticides that poison society, for any route of ingestion that is observed.

In fact, the country is chemically dependent on pesticides, in a terminal stage, as its prosperity has largely relied on the indiscriminate use of these substances. Like an addict, while enjoying ecstasy and pleasure, it ignores the harmful consequences of the chemical used. There is no human conscience capable of sustaining that the ends justify the means or that, in other words, it is the price to pay.

That is why the duty to care for others and their health was assigned as a mandatory conduct, imposed by law, either through the Constitution and other Brazilian norms, or through international norms on human rights

aimed at protecting health and guaranteeing a dignified life for workers. The responsibility for the other that the law demands reaches not only those who own the means of production and must, therefore, fulfill the social function of their properties, respecting the social value of work and the dignity of human existence, but also reaches the State, through its representatives, in any of its spheres, who cannot evade the mission to which they are committed, especially when the legislation mentioned here determines the progressive elimination of toxic agents, with unquestionable priority to life.

Carolina Maria de Jesus, in her *Quarto de despejo*, in the 1950s, even before the Green Revolution was translated into the agricultural wealth of a small Brazil, said: “As I couldn’t store for living, I decided to store patience” (JESUS, 2014). How much patience must be stored in order for the planet to be recognized as a common habitat, enjoyed by all on equal terms and in a sustainable way? How many deaths will still need to be patiently seen to until life is prioritized? If humanity still remains, the country must urgently be rehabilitated. To kill hunger, one does not need pesticides; what is required is food, and wholesome food.

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