

The Illegal Market for Agricultural Pesticides in Brazil





Datasheet

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Introductory abstract

Survey of “*Companhia Nacional de Abastecimento*” (the National Company of Supplies) – CONAB¹, released in early March, calculated the volume of the Brazilian grain harvest 2020/21 at 272.3 million tons. Comparatively, there are 15.4 million tons, which corresponds to 6% more than the harvest in the previous harvest. The survey also indicates a growth of 3.6% over the previous planted area, totaling 68.3 million cultivated hectares.

During the COVID-19 pandemic, Brazilian agribusiness presents itself as an example of resilience and productivity. According to the document “GDP of agribusiness”, produced by the Confederation of Agriculture and Livestock of Brazil (CNA) and made available on the website of the Center for Advanced Studies in Applied Economics (ESALQ/USP)², the productivity gain of crops was the main factor for the GDP of the agricultural chain to have advanced 24.3% in the last year, increasing the sector's share of the Brazilian GDP from 20.5% in 2019 to 26.6% in 2020.

Data from EMBRAPA³ demonstrate the evolution in the Brazilian field. If the last two decades are considered, the productivity jump of five of the main national crops reaches 400% for rice, 340% for corn, 300% for wheat and 200% for beans and soybeans.

INTRO DUC TORY ABS TRACT



Considering the relevance of agribusiness to the Brazilian and regional economies, the agenda related to the production, commercialization, circulation and application of agricultural pesticides becomes a priority. In this context, the IDESF constituted a methodology for observing and recording the phenomena that associate cross-border crimes with this “new commodity”.

The first version of the results obtained in this research was published in 2019, in the document entitled **“O Contrabando de Defensivos Agrícolas no Brasil”** (The smuggling of pesticides in Brazil)⁴ (IDESF, 2019), in which we highlight that the illegal entry, and the use of these substances, cause losses, either in the generation of formal jobs or taxes losses;

they also generate food security and public health problems and cause incalculable environmental damages.

The survey provided an overview of this illicit market based on the gangs' modus operandi.

In two years, the problem worsened and, even with the borders with Paraguay closed due to the pandemic last year, it gained even more impactful contours, which we are updating in this new edition.

It is in this background that IDESF presents the study **“The Illegal Market for Agricultural Pesticides in Brazil”**, with the aim of, once again, arousing the attention of the public authorities to a reality of growing scope and concern, which brings harm in all areas and for the entire Brazilian society.

Luciano Stremel Barros

1. CONAB - COMPANHIA NACIONAL DE ABASTECIMENTO. Acompanhamento da Safra Brasileira de Grãos, Brasília, DF, v. 8, safra 2020/21, n. 6, sexto levantamento, mar. 2021. Disponível em: <https://www.CONAB.gov.br/info-agro/safras/graos/boletim-da-safra-de-graos>

2. https://www.cepea.esalq.usp.br/upload/kceditor/files/Cepea_CNA_relatorio_2020.pdf

3. <https://www.embrapa.br/visao/o-futuro-da-agricultura-brasileira> e <https://ainfo.cnptia.embrapa.br/digital/bitstream/item/153552/1/Evolucao-da-producao.pdf>

4. <https://www.idesf.org.br/2019/06/24/o-contrabando-de-defensivos-agricolas-no-brasil/>

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INTRO DUCTION

1. Introduction

This work is a sequel to the study carried out by IDESF “**O Contrabando de Defensivos Agrícolas no Brasil**” (The smuggling of pesticides in Brazil) - (IDESF, 2019). The publication presented research carried out from Brazilian sources and from surrounding countries, revealing the modus operandi and the most expressive routes of the illegal market of agricultural pesticides introduced in Brazil.

The reality revealed was that of the logistical 'professionalization' of the gangs, with a marketing chain like the network established by formal commerce so that the product reaches the farmers. Among the most smuggled pesticides was Emamectin Benzoate, an insecticide used to combat caterpillars, especially in soybean crops.

The importation of the product allowed by the Paraguayan legislation was limited to the concentration of 10% of the active ingredient, in the period of the previous research. In Brazil, at the time, the substance was allowed and temporary use in six states, at a maximum concentration of 5%, until July 2019.

The security forces of the neighboring country, however, seized loads of the substance destined for Brazil at a concentration of 36%, that is, 600% higher than what is permitted by Brazilian legislation. The Emamectin Benzoate used to enter Paraguay identified at customs as a disinfectant, cleaning product and other industrial chemical components.

Thus, it was possible to perceive that after being illegally introduced in Brazil, agrochemical smuggling circulated hidden in loads of grains and processed foods, such as flour. Amazingly, after the seizure of illegal products, these foods were destined for commercialization, disregarding the possibility of being contaminated.

The IDESF team went to the field again to investigate changes in this illegal market, which has only grown in recent years, despite the barriers set up at the borders due to the COVID-19 pandemic. In this update, it was possible to verify that the entry of smuggled agrochemicals into the Brazil has

expanded, not only in quantity, but also in the diversification of products illegally introduced into the country.

With the continuity of the diagnosis, it was possible to map the routes used by criminals to circulate pesticides in the national territory. The georeferencing of this illegal market makes part of an unprecedented project by IDESF,

through a data platform that is continuously fed with information on the actions of the security forces, from the Brazilian borders.

It is important to note that this work does not aim at academic rigor, as it does not use inherent to scientific research, which does not, however,

invalidate the informative pertinence. Furthermore, it was carried out based on a survey of the segment's production chain, from the manufacturer to the rural producer. It is, therefore, a study of empirical elements, motivated by the purpose of tracing the scenario of the illegal entry of agricultural pesticides in the country, as established in the objectives of the text.



GOALS

2. Goals

This study aims to demonstrate that the smuggling of agrochemicals has been growing substantially every year, increasing threats to health, the environment and the country's economy. For this purpose, goals were established to be observed in the development of this publication.

General:

- To show the context of the illegal entry of agricultural pesticides in Brazil.

Particular:

- To specify the meaning of the expression 'illegal pesticide market'.
- To update data on the entry of products from Paraguay.
- To map the routes most used by gangs.
- To study the proportion of the illegal market in Brazil.

3. Agricultural pesticides: what are they?

Agricultural pesticides, also called agrochemicals, pesticides or phytosanitary products are chemical or biological substances used to protect and fight with crop pests, in addition to guaranteeing food production. These products play a fundamental role in increasing productivity in the plantations.

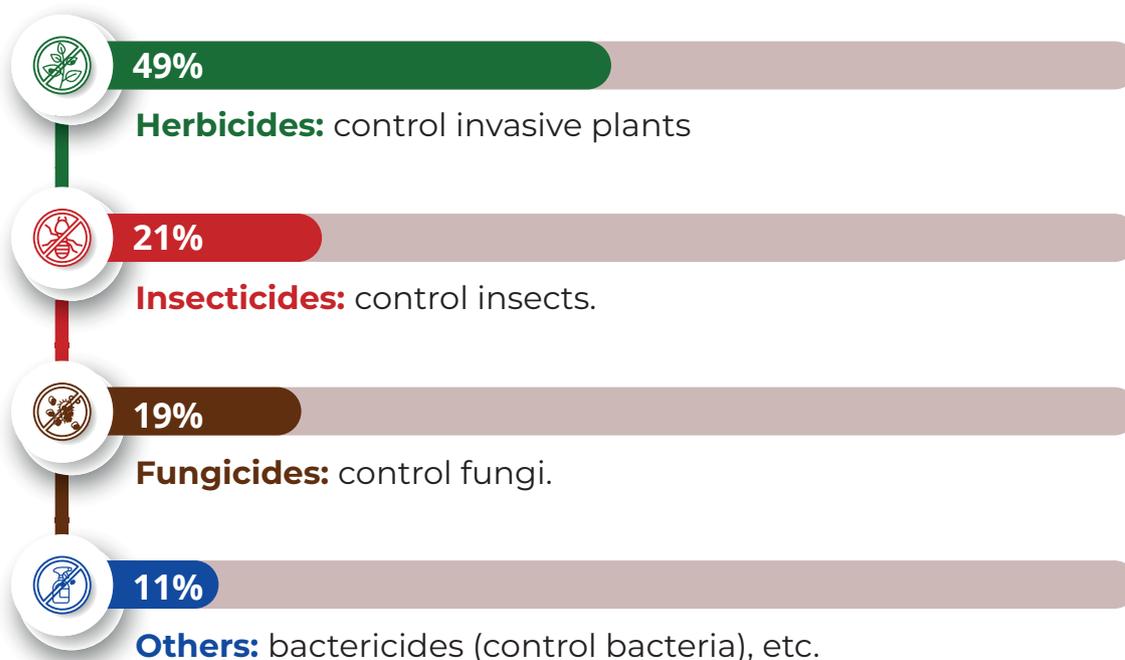
According to the National Union of Plant Defense Products Industry, “*Sindicato Nacional da Indústria de Produtos para Defesa Vegetal*” (SINDIVEG), the largest proportion of pesticides applied in Brazil, around 81%, is destined for soybean, corn, sugarcane and cotton. Considering direct consumption, these products are used to a lesser extent in human food, since they are

widely used in animal nutrition (soybean and corn), energy production (sugarcane) and fabric manufacturing (cotton).

The production and use of pesticides require specific criteria and care. In this way, the approval of the registration of these products for production or import, as well as the rules for their application in the plantations, passes through the control of three institutions:

1. Ministry of Agriculture, Livestock and Supply (MAPA).
2. Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).
3. National Health Surveillance Agency (ANVISA).

The most common crop protection products in Brazil:



Source: SINDIVEG



4. The illegalities of the

The illegal agricultural pesticide market can be defined by a set of crimes, in which gangs specialized in different types of illicit act. Among the most common practices are theft, falsification, deviation from the purpose of the use provided in the household cleaning product and smuggling, variants that are intertwined, configuring the crime of using illegal products in crops. Together, these criminal variants achieve a quarter of the legal market in the segment (see p. 48).

Robbery

The theft of pesticides is characterized by the action of gangs in the appropriation of substances produced legally. It usually occurs violently in rural properties, cooperatives, resellers and industries, as well as by the action of bandits during the transport of goods. In the case of cargo theft of these products, the action is usually punctual

and carried out by organized groups, using large-caliber weapons and violence.

Stolen substances are either re-introduced to the market through marketing or are used in counterfeiting. During the period 2018 - 2020, according to data from "CropLife Brazil", pesticide manufacturers recorded losses of BRL 214.18 million in stolen cargo in Brazil.

Falsification

Counterfeiting is a crime that is related to both the theft of cargo and smuggling. Counterfeiters mix original products, commonly from theft, with other inputs, also making use of smuggled substances. In both cases, counterfeit products are not effective in farming. Counterfeits are sold as genuine products.

The production of counterfeit pesticides

in Brazil is concentrated in the interior of São Paulo, Goiás and Minas Gerais, with branches in the states with an increase in commercial activities linked to agribusiness. Counterfeiters establish a 'production chain' that meets all the logistical and operational needs of the illegal business, such as inputs, packaging, labels, chemical analyses, transport and even invoices.



agrochemical market

Deviation from the purpose of use

Household cleaning is a term used to identify sanitizing substances, with the purpose of domestic or public use, in the cases of urban pests. Sanitizing agents are preparations intended for cleaning, disinfecting or disinfecting homes, hence the origin of the name 'household cleaner'. Examples of sanitizers are detergents and bleaches.

In the case of the illegal pesticide market, this happens when a product is diverted for another purpose. The active ingredients

are imported by means of a sanitary authorization - the household cleaning product - for the manufacture of products for domestic use, when, in fact, the substances are used in the production of agricultural pesticides.

Deviation from the intended is also used by gangs to obtain products intended for counterfeiting. According to inspection agents from the Ministry of Agriculture and Livestock (MAPA) interviewed for this study, the practice is increasing in the country.

Smuggling

This is the smuggling of prohibited goods or the entry of illegal goods into a country. The illicit is commonly confused with embezzlement. This one, however, is the introduction of permitted goods, but without the payment of the corresponding taxes.

The smuggling of pesticides in Brazil involves the entry of prohibited substances, as well as the entry of products with a concentration much higher than what

is allowed by the health authorities, which entails risks of contamination by inappropriate use.

Unlike cases of counterfeiting, the negotiation of a smuggled product does not omit to the buyer that it is an illegal product. For commercialization, gangs use fake companies and, in some cases, formal channels that, with their sales and distribution logistics, introduce illicit goods into the market, among legal products.

5. Importation into Paraguay

The resolution 564/19^s, of the “*Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas*” (SENAVE) of Paraguay, published on August 14, 2019, released the registration of products formulated with Emamectin Benzoate in all its concentrations in the neighboring country. Until then, Paraguay allowed the importation and registration of this active ingredient in the maximum concentration of 10%. The restriction, however, did not prevent the entry into Brazil of the substance in much higher concentration, as pointed out in the first study prepared by the IDESF, “*O Contrabando de Defensivos Agrícolas no Brasil*” (The smuggling of pesticides in Brazil) - (IDESF, 2019).

The SENAVE resolution consolidated a change of perspective already underway in Paraguayan territory. In the period prior to the release, local enforcement tried to hamper the growing imports of illegal substances, or in concentrations above permitted levels.

Entry into the country was by road, for cargo coming from port regions in neighboring countries, such as Uruguay and Chile, and by air. At Silvio Pettrossi Airport alone, in Asunción, from 2014 to early 2017, 12 tons of emamectin benzoate were seized, valued at more than U\$S 3 million by the Paraguayan police.

ECONOMÍA

Una carga millonaria para el mercado negro

De acuerdo con datos del sector privado, el valor de los 4.600 kilos de benzoato de emamectina al 36% puede alcanzar tranquilamente los 500.000 dólares en el mercado negro, que es donde actualmente se comercializa este producto, teniendo en cuenta que en toda la región está prohibida su venta a partir de ese rango (36%).

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El benzoato de emamectina es un tipo de insecticida utilizado para eliminar algunas plagas, principalmente las conocidas como helicoverpa, un gusano que afecta todo tipo de cultivos y que tiene una capacidad destructiva importante.

En nuestro país, está permitido el uso de este insecticida, pero hasta el rango del 10%, mientras que en el Brasil, su importación está totalmente prohibida, así como su aplicación dentro de la agricultura en cualquiera de sus rangos.

Se cree que el ingreso de estas 4.600 cajas de benzoato apuntaba a una triangulación al mercado brasileño, en donde tenía que ir de contrabando, ya sea por vía terrestre o cruzando el río, desde nuestro país.

De acuerdo con los datos de la fiscalía encargada del referido caso, en la intervención realizada en el Puerto de Villeta, las cajas que contenían el producto químico no permitido ni siquiera tenían etiquetas ni descripción alguna sobre el material.

News from the Paraguayan website ABC.com.py.
Accessed on 01/04/2021

The frequency of seizures carried out at the airport, where greater control of cargo is assumed than on the highways and ports, demonstrates the constant flow of illegals in the country at the time, since the detentions are usually samples of the irregular products in circulation.

The action of Paraguayan security agencies, such as the National Police and the “*Dirección Nacional de Aduanas*” (DNA), as of 2018, influenced the illegal circulation of products within the country, stopping seizures such as those found in Emamectin Benzoate in high concentrations shipped to Brazil.

In the following year, the import of the active ingredient was released in all concentrations. From this period onwards, Emamectin Benzoate began to freely enter Paraguay, being in the condition of smuggling only after crossing Brazilian borders.

With the release, it is convenient for the gangs to collect the taxes fixed by the Paraguayan government so that the product arrives regularly in the country. With the substances entering legally, smugglers eliminate the risk of apprehension in Paraguayan territory.

The information on active ingredients and on the importation of agricultural pesticides from Paraguay, used in this study, comes from two sources: from records of entries of phytosanitary products in Paraguay and from the information contained in the reports of the “**Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas**” (SENAVE), on the evolution of agricultural imports and exports in the country. The customs records for 2018, 2019 and 2020 were consulted, as well as the SENAVE yearbooks for the years 2017 and 2019.

5. http://web.senave.gov.py:8081/docs/resoluciones/senave/web/39240501065_baf296bfa82e6bc7759be.pdf



Emamectin Benzoate

Emamectin Benzoate is recognized in agriculture and in security forces as one of the most smuggled agrochemicals in Brazil. It has been illegally crossed on Brazilian borders for some time, from Paraguay, Uruguay, Bolivia and other contiguous countries in Brazil, as pointed out in the first study about that carried out by IDESF.

Currently, only one company has permission to produce and market products with Emamectin Benzoate in Brazil, at a rate of 5%. It is a controlled active ingredient, which requires a specific agronomic recipe, indicated for use in soybean, corn, beans and cotton. The use in improper proportion generates residual effects and risks of contamination to the environment.

The illegality of the entry of Emamectin Benzoate into Brazil, from Paraguay, occurs both in the condition of embezzlement, in the entry into the country of a product of permitted use, without the due payment of tax, and – mainly – in the case of smuggling, due to the sharp differences in concentration in relation to that allowed for application in Brazilian crops.

As already mentioned, the maximum percentage of use allowed by the health regulations in force in Brazil is 5%. This is one of the most worrying factors in this reality of illegality.

In the records of imports of Emamectin Benzoate from Paraguay, there are loads of the product landing in the country in a concentration diversity that varies between 30%, 40%, 70%, 90% and up to 95% of concentration of the active ingredient. With this substance purity index, if the percentage allowed in Brazil is observed, it would be possible to multiply the application of the product in the plantation by up to 19 times.

Benzoate of emamectin import in Paraguay

Year	Concent.	Amount
2018	70%	350 k
	99%	31.42 tons
2019	30%	4.5 tons
	95%	14.5 tons
2020	25%	8 tons
	30%	73.6 tons
	40%	4 tons
	95%	7 tons

Source: Customs Paraguay

Considering that the smuggled substances do not bring identification of the concentration, there is the possible application of Emamectin Benzoate in plantations in proportions above the allowed, at immeasurable levels.

Thus, one of the factors that favor smuggling becomes evident, precisely the effectiveness in pest control claimed by rural producers, since more concentrated, the product has a greater and more prolonged effect on pests. It is, however, an efficiency that brings unacceptable risks to human beings and to the environment.

In the records of agrochemical imports from Paraguay, the difference in amounts paid for the product, with the same origin - in this case China - received with a difference of a short period of time, draws attention. Regarding emamectin benzoate, for example, there are loads of 4 tons, with 95% concentration, coming from China, landed on 01.30.2018 and 02.06.2018.

The first cost US\$ 896 thousand, while the second cost US\$ 672.7 thousand, a difference of US\$ 224 thousand.

Emamectin Benzoate can be used in Brazil at a maximum concentration of 5%.

Imports of the active ingredient in Paraguay varies between 30% and 95%

Another example is the shipment of 4 tons of the same active ingredient at a concentration of 10%, received on 02/23/2018, in which the amount of US\$ 174.6 thousand was recorded. Three days later, on 02.26.2018, another shipment with 17 tons of Emamectin Benzoate of the same concentration arrived in Paraguay, with a declared value of US\$ 384,800. Even considering that the importers are different, in the first operation, each ton would cost US\$ 43,650, while in the second, US\$ 22,600.

Tiamethoxam

Tiamethoxam is recognized by technicians in the rural sector as one of the substances that began to enter Brazil illegally in recent years. The active ingredient has high added value, being a component of several products used in national agriculture.

The active ingredient Tiamethoxam has been identified in seizures by security and inspection forces, such as the Federal Revenue Service of Foz do Iguaçu. Additionally, it presents considerable differences in values in Paraguay's import records. A cargo of 9 tons of Tiamethoxam, imported on 03.22.2018, has a registered value of US\$ 213,300. On 02.24.20, almost two years later, even with all the exchange variation raising the price of the American currency, cargo with the same amount was registered entering Paraguay for US\$ 134 thousand.

Based on the above condition, it is important to consider that the lack of rigor in customs control is a factor that favors the negotiation of importers with sources of these products, which may be illegal in their condition as an international supplier. In the customs sphere of any country, improving pricing criteria means greater tax collection and an improvement in the internal business environment.





Paraquat

The smuggling of pesticides favors insecticides not only because of their high added value, but also because of the characteristics of these products, which are sold solid, in powder form. Herbicides, in addition to having lower added value, are liquid, which makes transport difficult. Even so, this category of agrochemicals also appears in the smuggling seizures registered in Brazil.

Among them, there is Paraquat, one of the active principles, traditionally, most used in the country, in the formulation of agrochemicals for the control of weeds and the management of no-till. Paraquat was banned from marketing and use in Brazil in September 2020.

Although the product is restricted, the National Health Surveillance Agency (ANVISA) authorized Brazilian farmers to use stocks in the 2020/2021 harvest in soybean, corn and cotton crops. The maximum period is until July 2021, according to a calendar stipulated by plantation and region.

Unlike Brazil, the herbicide remains permitted in Paraguay, Uruguay and Argentina. This reinforces the need for regulatory homogenization among Mercosur countries, as a primary measure to contain smuggling between countries in the bloc.

With regular and large-scale importation in the neighboring country, the ban on the use of this product in Brazil and the flow of illegal phytosanitary products on Brazilian borders, a favorable context is constituted for the increase of illegal entry of this product in the country.



Photo: Seized Agrochemicals / ADAPAR Publicity

6. Products and active ingredients smuggled in Brazil

In this study, we will focus on the analysis of two main phytosanitary products smuggled in Brazil. However, the records of security forces and enforcement agents show that the list of formulations that cross the border illegally is varied. Among the products found in inspections in the states of Mato Grosso do Sul and Paraná are the following:

- Action Plus; Acetamiprid; Avermectin; Emamectin Benzoate, Benzofort; Carbendazim; Chloryl; clethodym; Clodinafop; Chlorimuron; Chlorpyrifos; Dimet; Endosulfan; Fipronil; Folicur 80 WP; Galecur 80 WP; glyphosate; Imazethapyr; Imidachlorid; Imidacloprid 700 WP; Lambda Cyhalothrin; Methyl 60 WP; Metnova WG; Methoxy 60; Metsulfuron; Meturon 60 WP; mortar; Nicosulfuron; Nimax 75 WG; Nitroguanidine; Quazar 80 WP; Tebuconazole 80% WG; Thiamex; Thiamethoxan, Thiodicarb; Trigal 60 WP; Trimethyl 60 WP.

Sources: Department of Border Operations (DOF/PM/MS), Agricultural Defense Agency of Paraná (Adapar/PR) and Federal Superintendence of Agriculture (SFA/Mapa/PR)

7. Paraguay's official data

In order to analyze the illegal entry of smuggled agrochemicals into Brazil, we consider it important to bring official data on Paraguayan imports in the segment. The Statistical Yearbook of the “*Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas*”⁶ (SENAVE) provides information on the annual movement of agrochemicals in Paraguay, quantifying import and export flows.



Photos: SENAVE Statistical Yearbook 2017 and 2019

6. <http://web.senave.gov.py:8081/docs/informes/ANUARIO%20ESTADISTICO%20SENAVE%202018.pdf>

Official agrochemicals import from Paraguay

In 2019, the agency declares the import of 58,500 tons of pesticides, 6,440 or 11% more compared to the 52,060 tons imported in 2017.

Years	Amount
2017	52.06 k tons
2019	58.5 k tons

Source: SENAVE

Productos Fitosanitarios

Cuadro 40: Importación de Productos Fitosanitarios en toneladas.

Productos Fitosanitarios	Toneladas
Acaricida	10,5
Adherente	241,1
Bactericida	16,8
Coadyuvante	1.136,1
Fitoregulador	70,9
Fungicida	9.953,1
Herbicida	32.774,5
Insecticida	7.830,8
Molusquicida	10,5
Protector de semillas	12,6
Regulador de crecimiento	7,1
Regulador de PH	3,0
Total general	52.067,0

Fuente: Ventanilla Única del Importador (VUI)

Source: SENAVE Statistical Yearbook, 2017

Productos Fitosanitarios

Cuadro 38: Importación de Productos Fitosanitarios en toneladas.

Productos Fitosanitarios	Toneladas
Acaricida	26
Adherente	9
Bactericida	50
Coadyuvante	857
Fitoregulador	29
Fungicida	12.245
Herbicida	36.416
Insecticida	8.881
Molusquicida	5
Nematicida	14
Regulador de crecimiento	25
Regulador de pH	3
Repelente	3
Rodenticida	5
Total general	58.568

Fuente: Ventanilla Única del Importador (VUI)

Source: SENAVE Statistical Yearbook, 2019

In terms of exports, SENAVE recorded foreign sales of 2.6 thousand tons of agrochemical products in 2017, including fungicides, herbicides, insecticides and auxiliaries. Of this total, approximately 1.8 thousand tons, or 54%, were exported to Brazil. Two years later, in 2019, Paraguay declares exports of 4,700 tons of pesticides, with the majority, 2,800 tons or 58%, sent to Brazil, according to official data from SENAVE. In comparison with total exports between the two periods, there was an increase of 2.1 thousand tons, or 44%, according to a SENAVE report.

Exportación de Productos Agroquímicos

Cuadro 35: Exportación de Productos Agroquímicos en toneladas.

Tipo	Toneladas
Coadyuvante	963,6
Fertilizante	506,7
Fungicida	285,6
Herbicida	923,6
Insecticida	496,5
Total general	3.176,0

Fuente: Ventanilla Única de Exportación (VUE)

Source: SENAVE Statistical Yearbook, 2017

Exportación de Productos Agroquímicos

Cuadro 33: Exportación de Productos Agroquímicos en toneladas.

Tipo	Toneladas
Coadyuvante	894
Fertilizante	425
Fungicida	361
Herbicida	2.864
Insecticida	636
Total general	5.179

Fuente: Ventanilla Única de Exportación (VUE)

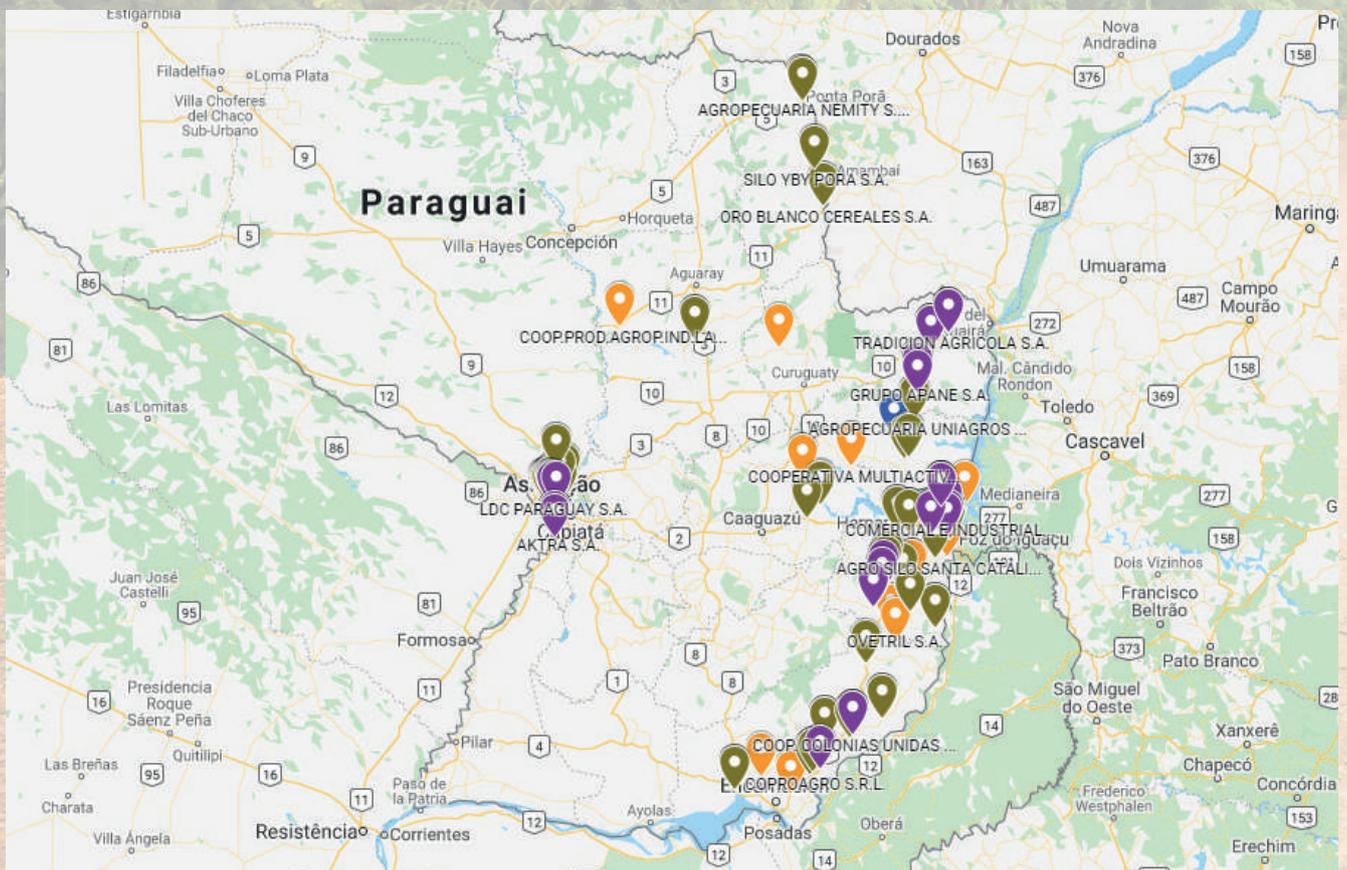


Source: SENAVE Statistical Yearbook, 2019

The phytosanitary trade seems to be a good business in the neighboring country, since Paraguay has 932 companies authorized to import agrochemicals. These companies serve a market made up of 3.6 million hectares of soybean cultivation, according to estimates by the “Asociación Paraguaya de Obtentores Vegetales (PARPOV)”, for the 2020-2021 harvest.

Paraguay has 932 companies authorized to import agrochemicals.

SENAVE demonstrates the record of irregularities with pesticides on Paraguayan soil. On the agency's georeferenced platform⁷ it is possible to access data on the seizure of agrochemicals in Paraguay, as shown in the map below.

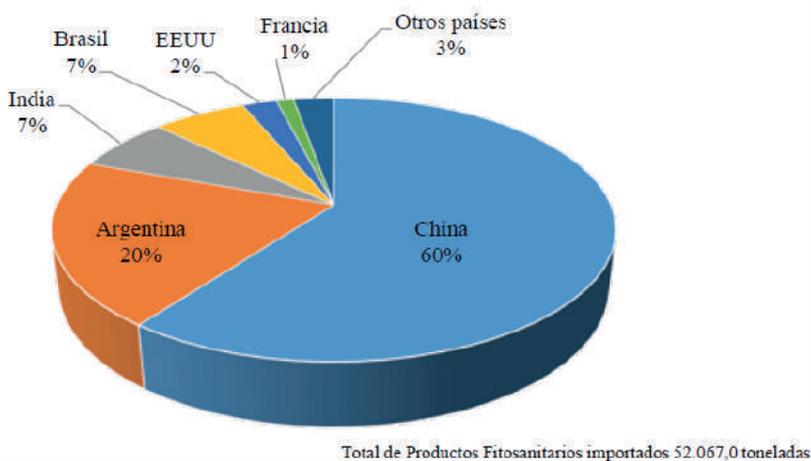


Source: SENAVE

⁷ <https://www.senave.gov.py/registros-de-agroquimicos>

According to SENAVE reports, the origin of the products, for the most part, is China, with proportions also imported from Argentina, India and Brazil. There is little variation between the years 2017 and 2019.

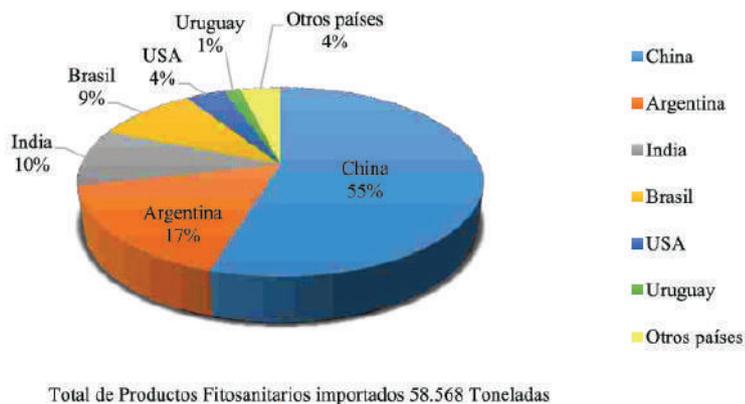
Gráfico 15: Importación de Productos Fitosanitarios por país de origen en porcentaje.



Otros países: representan un total de 16 países.
Fuente: Ventanilla Única del Importador (VUI)

Source: SENAVE Statistical Yearbook, 2017

Gráfico 43: Importación de Productos Fitosanitarios por país de origen en porcentaje.



Otros países: representan un total de 17 países.
Fuente: Ventanilla Única del Importador (VUI)

Source: SENAVE Statistical Yearbook, 2019

8. Scenery of smuggling in Brazil

The Federal Highway Police (PRF) seized 70.4 tons of illegal agrochemicals on Brazilian roads last year, 13.7% more than the 61.9 tons seized in 2019. If the comparison is with 2018, when 50.9 tons were intercepted, the increase is 38.3% in two years. In the first two months of 2021 alone, 31,500 tons were seized, an amount that is close to half that was achieved last year.

The ranking of seizures, from 2018 to the first two months of 2021, shows that Mato Grosso do Sul is in first place in the volume of agrochemicals seized, with 50.7 tons, or 23.6% of the total. Next, we see Minas Gerais, São Paulo, Paraná and Mato Grosso composing the five states with the highest volume of seizure, according to the graph. In the ranking section, Rio Grande do Sul appears. In a quick analysis, it is possible to notice that the most significant volume of seized phytosis is in the states that have one or more of the following characteristic: they are border states, with agricultural profile and have important road network in the flow of goods.

In the specific case of Minas Gerais, the position in the volume of seizures is considered due to the recent operations of the security forces, carried out in 2021.

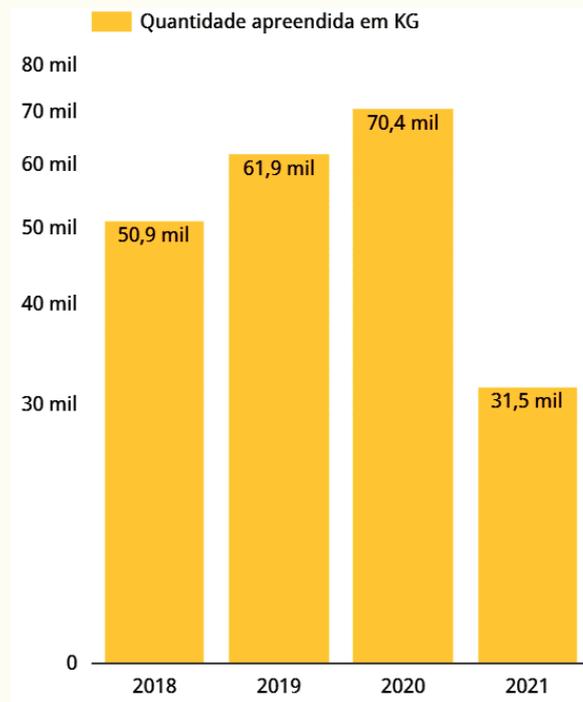
Ranking of seizures by states (Jan 2018 / Feb 2021)

	Estado	KG Apreendidos ▾
1.	MATO GROSSO DO SUL	50,7 mil
2.	MINAS GERAIS	40,5 mil
3.	SÃO PAULO	30,7 mil
4.	PARANÁ	27,2 mil
5.	MATO GROSSO	25,1 mil
6.	RIO GRANDE DO SUL	14,4 mil
7.	RONDÔNIA	7,8 mil
8.	TOCANTINS	7,1 mil
9.	GOIÁS	6,3 mil
10.	SANTA CATARINA	3,8 mil
11.	BAHIA	582
12.	DISTRITO FEDERAL	320
13.	AMAZONAS	242
14.	RIO DE JANEIRO	24

% Apreendido



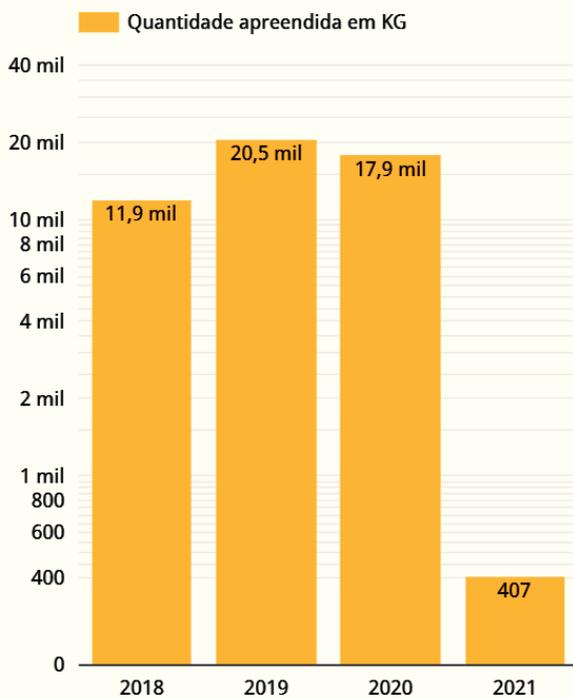
Quantity of seizures (Jan 2018 / Feb 2021)



Source: PRF/IDESF

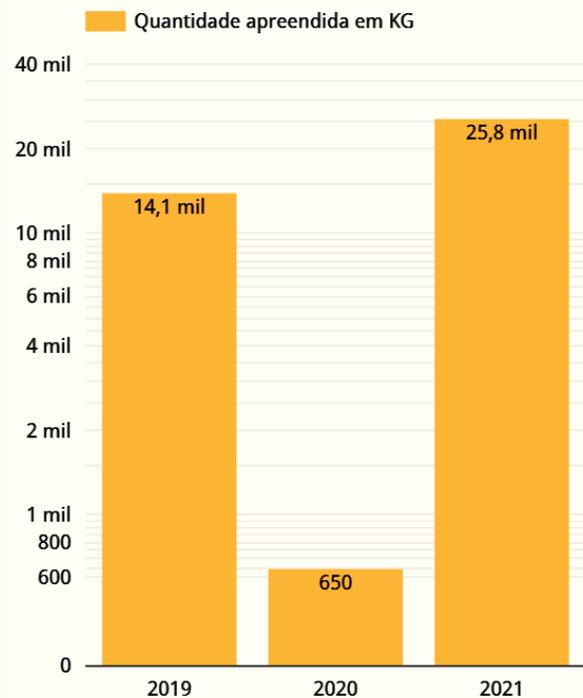
Quantity of seizures per state

1º Mato Grosso do Sul (50.7 ton.)



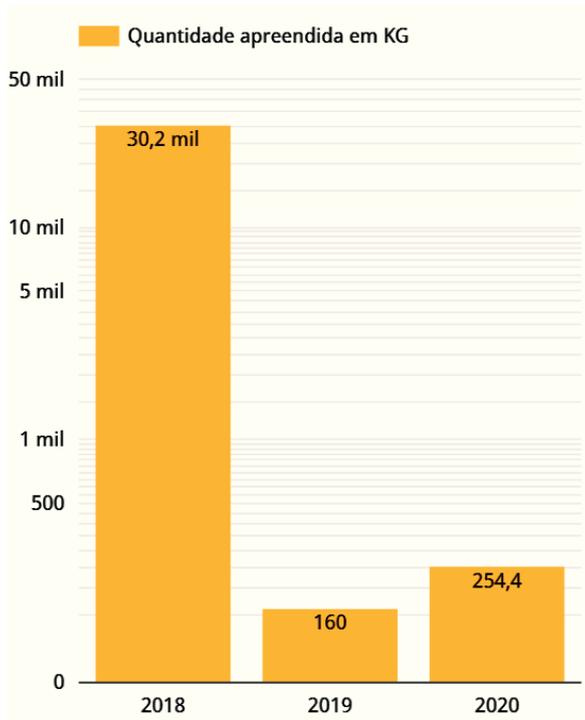
Source: PRF/IDESF

2º Minas Gerais (40.5 ton.)



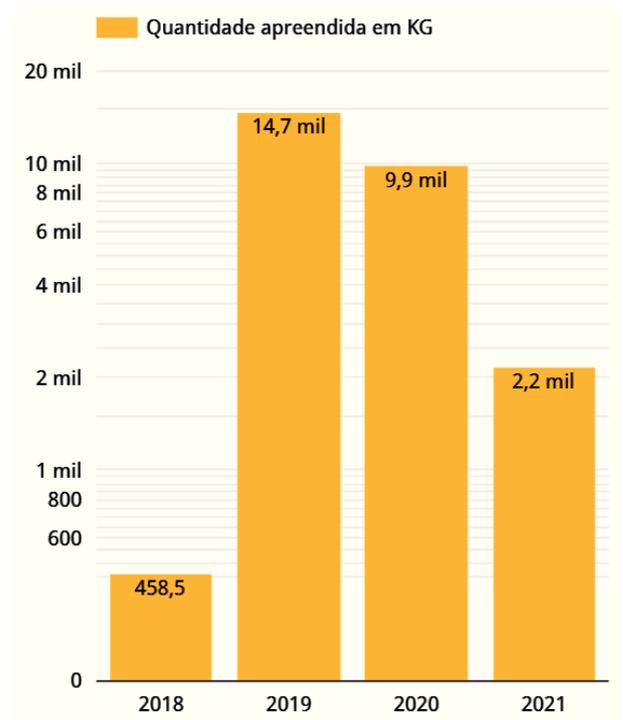
Source: PRF/IDESF

3° São Paulo (30.7 ton.)



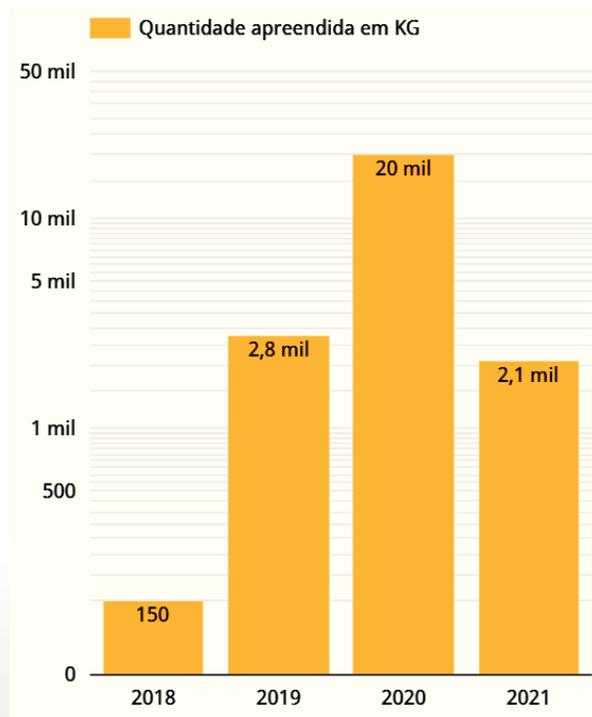
Source: PRF/IDESF

4° Paraná (27.2 ton.)



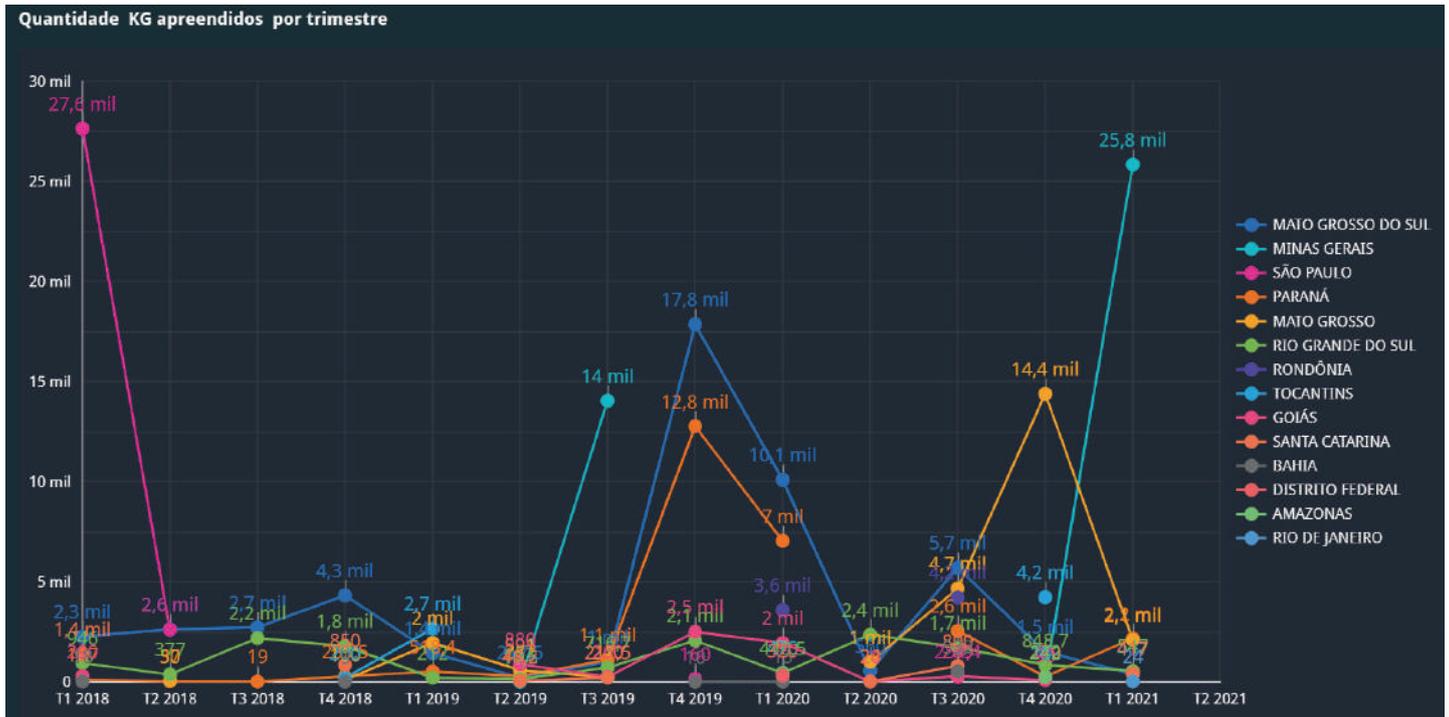
Source: PRF/IDESF

5° Mato Grosso (25.1 ton.)



Source: PRF/IDESF

Seizures of agricultural pesticides in Brazil by quarter



Source: PRF/

The evolution by state and quarter reflects the actions of the security forces in apprehending the illegals and indicates the movement of gangs, which use the tangle of highway routes and municipal rural roads, gaining fluidity to reach the producing areas.

The progress found in the national data of the PRF is corroborated by records of other agencies, which are part of the chain to combat smuggling in the country. The Department of Border Operations (DOF), of the Military Police of Mato Grosso do Sul, recorded seizure of almost 7.3 tons of agrochemicals in 2021, 19.1% more than the 5.9 tons seized in all last year.

Number of agrochemicals seized per year by DOF/MS

Year	Amount
2017	13.149 tons
2018	1.01 tons
2019	1.03 tons
2020	5.91 tons
2021	7.39 tons

Source: DOF/PM/MS

As a result of surveillance activity, the seizure of higher volume follows fluctuation recorded by the Department in recent years, when an average of 50% of the volume seized by agents, annually, was intercepted in January. Among the factors identified for seasonality, in addition to the exchange rate influence, is the harvest calendar, especially soybean, with sowing between August and January, and from this period the crop demands care such as the application of phytosanitary.

The amount in kilos retained at the

beginning of 2021 only loses, comparatively, to seizures made in 2017, when 13.1 tons of agrochemicals were removed from gangs by the DOF.

In liters, the beginning of 2021, also represents the largest volume seized in the last 5 years by the corporation, with the re-holding of 1,800 liters of illegal phytosanitary seized. Until this period, according to the table, the number of liquid agrochemicals seized by the DOF was derisory, in the evaluation of the corporation itself.

Number of agrochemicals seized per year by DOF/MS

Year	Amount
2017	332 L
2018	160 L
2019	0 L
2020	40 L
2021	1,872 L

Source: DOF/PM/MS

RFB Seizures

Amount	
2019	2020
26.3 tons	27.7 tons

Source: RFB

According to national data from the Internal Revenue Service, there is an increase of 5.5% in seizures of phytosanitary, stored in the organ in the comparison between 2020 and the previous year. The pandemic year ended with the storage accounting of 27.7 tons of pesticides in RF dependencies, against 26.3 tons in 2019

The Federal Police of Rio Grande do Sul also recorded a 15.2% increase in the volume of seizures of agricultural pesticides made in 2020, compared to 2019, an index also higher than that recorded in the previous year.

	2018	2019	2020
Investigations initiated	73	92	76
Blatant	66	50	59
Seizures (kg)	4245.95	4018.33	4741.92

Source: PF/RS

Photo: Cargo of seized agrochemicals / BPFron Disclosure



9. Illegal market routes

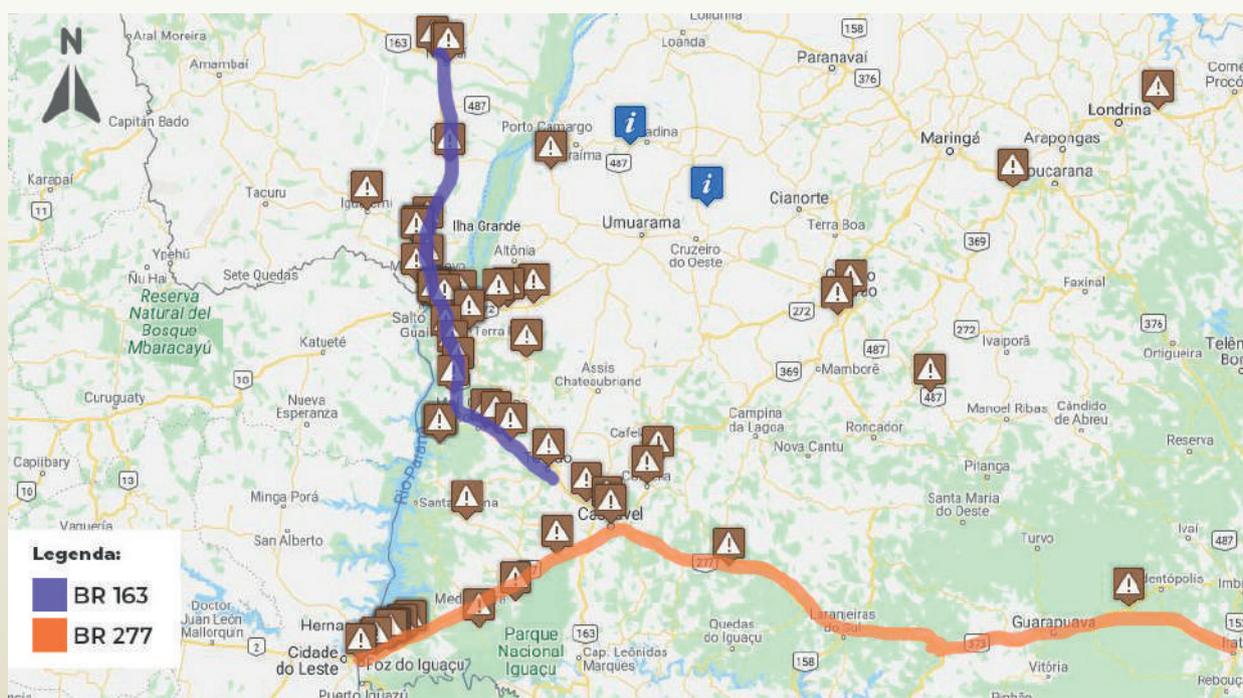
The data of agrochemical seizures carried out by the PRF were inserted in a data management system developed by IDESF with the objective of generating statistics on border crimes. Through a platform fed with information from official agencies, the system monitors the flow of smuggling trafficking in Brazil, providing the

georeferencing of the actions of gangs in illegal markets.

In relation to illegalities with agrochemicals, it is possible to identify, by the incidence of seizures on highways, which are the preferential routes of smugglers, which start at the borders and if they spread the new Brazilian agricultural fronts.

Smuggling from borders

Among the points that require more attention are the region of Cascavel, Paraná, meeting point between BR 277 and BR 163 (Map 1). The first originates in Foz do Iguaçu and continues to the coast of Paraná and the second crosses the country, from Rio Grande do Sul to Pará. At the crossroads of the two highways, and situated in one of the most agricultural areas, Cascavel and region became a hub or axis in the distribution of agrochemicals.



Map 1

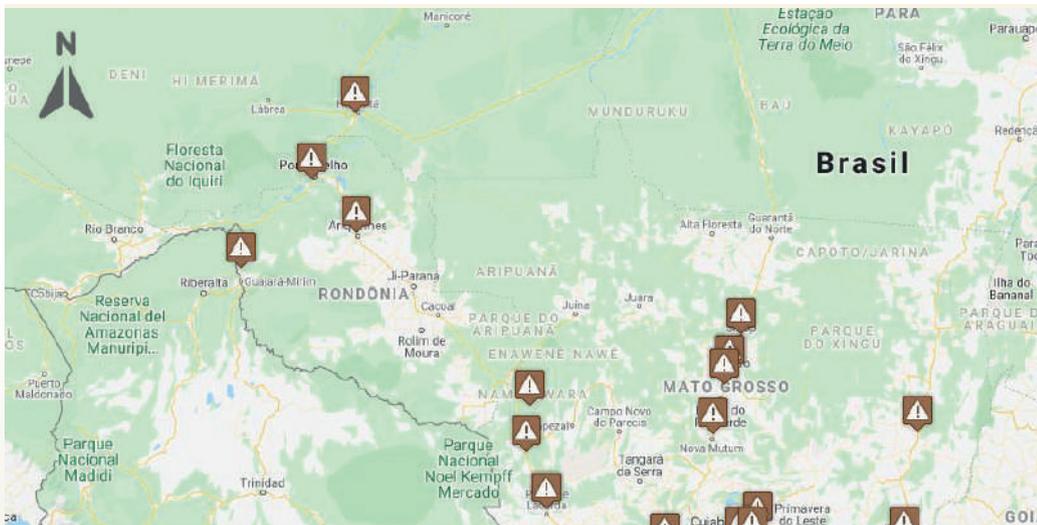
Source: IDESF, with information from PRF, PF, Irs, DOF, BPFron and MAPA

Border monitoring and seizure records allow you to more accurately verify the points through which trafficked agrochemicals are infiltrated into the country. Among the new routes of the smugglers networks is the one that enters Bolivia, Acre and Rondônia (Map 2). The flow of smuggling passes through BR 365, with probable flow to the Northeast of the country and the new agricultural frontier of MATOPIBA, formed by Maranhão, Tocantins, Piauí and Bahia.

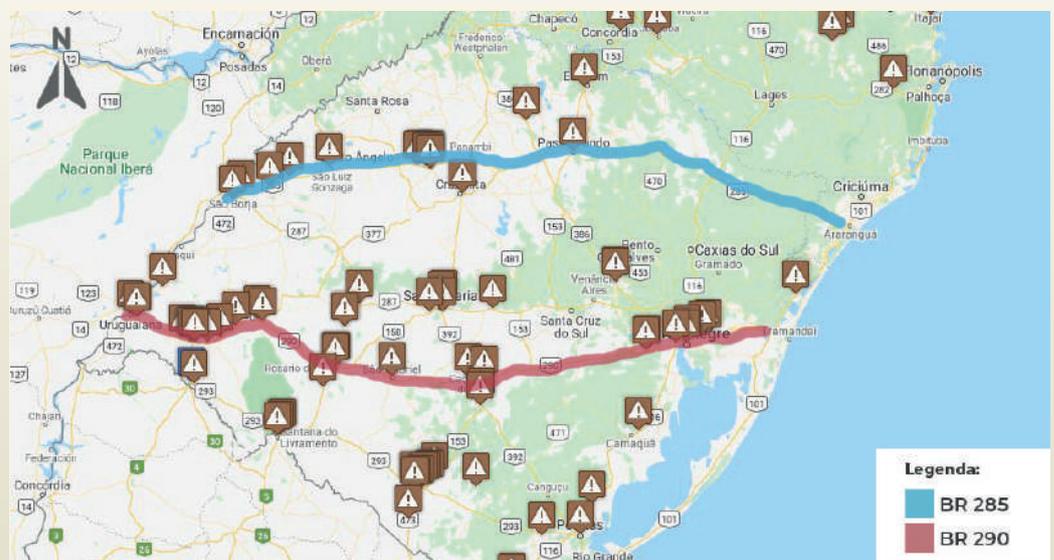
Another route well designed by the flow of agrochemical smuggling is established

from the border of Rio Grande do Sul with Argentina and Uruguay. The incidence of records shows expressive points of the agrochemical flow network, such as BR 290 and BR 285. Also noteworthy are the frequency in agrochemical seizures, the border cities of Santana do Livramento and Bagé

Further down the center, Santa Maria indicates a kind of crossroads on the pesticide smuggling map. The capital, Porto Alegre, is also evident in the map of seizures. (Map 3).



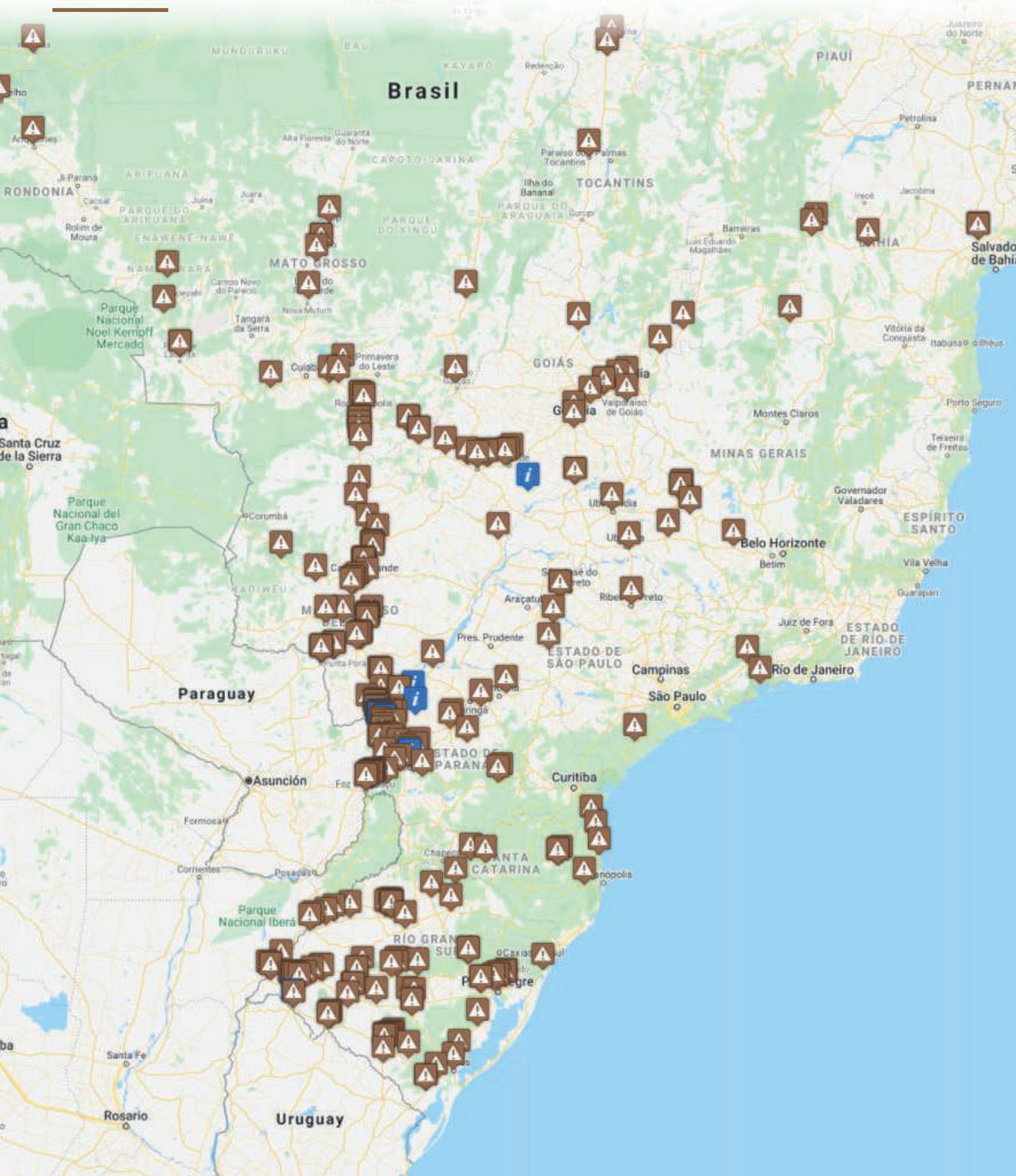
Map 2



Map 3

Source: IDESF, with information from PRF, PF, Irs, DOF, BPFron and MAPA

Occurrences of seizures of illegal agricultural pesticides



Source: IDESF, with information from PRF, PF, Irs, DOF, BPFron and MAPA

Highway smuggling

In terms of highways, BR 163 is the record holder in the flow of agrochemicals through Brazil, accounting for 54.8 tons seized since January 2018, or 25.5% of the total retained in the country by the PRF. It is almost twice the second position in the ranking of seizures in the roads, BR 116, registering volume of 28.1 tons, or 13.1% of agrochemicals intercepted in the same period.

The BR 262, BR 365, BR 364 and BR 153 highways later come, in order of volume, and close the table of highways with volumes of seizures that reach double digits in tons.

Ranking of seizures on federal highways

(Jan 2018 / Feb 2021)

	Rodovia	KG Apreendidos ▼
1.	RODOVIA 163	54,8 mil
2.	RODOVIA 116	28,1 mil
3.	RODOVIA 262	17,3 mil
4.	RODOVIA 365	16,2 mil
5.	RODOVIA 364	15,7 mil
6.	RODOVIA 153	13,3 mil
7.	RODOVIA 354	9,6 mil
8.	RODOVIA 369	8,3 mil
9.	RODOVIA 060	7,7 mil
10.	RODOVIA 487	7,1 mil
11.	RODOVIA 174	7,1 mil
12.	RODOVIA 290	3,5 mil
13.	RODOVIA 158	3,5 mil
14.	RODOVIA 070	3,1 mil
15.	RODOVIA 277	2,9 mil

BR 163 = 25.5%
BR 116 = 13.1%

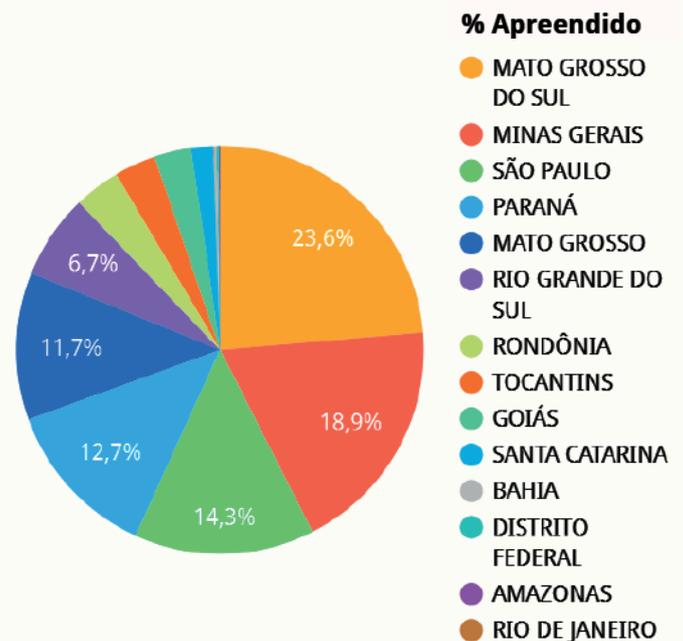
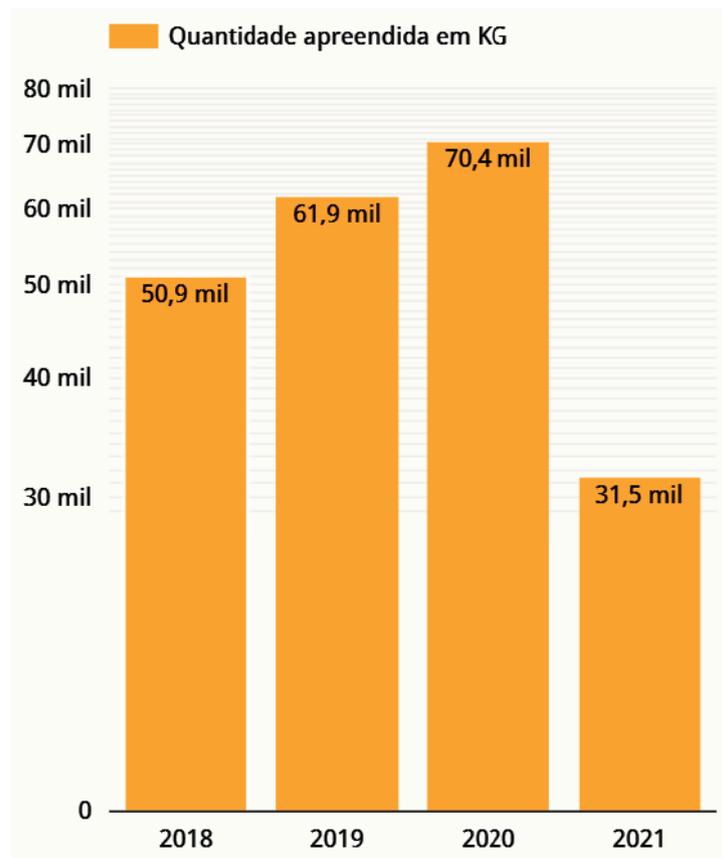




Photo: PRF Disclosure

Amounts of seizures on federal highways (Jan 2018 / Feb 2021)



Source: PRF/IDESF

10. Growth of illicit

Security forces seizure data show the worrying growth of the illegal defensive-market in recent years. Among the factors for the increased interest in the product, named as 'white gold' by the gangs, are the profit margin, the ease of marketing and the soft penalty, if compared with other types of contrabands. Most of the time, the conveyor of smuggled pesticides pays bail and is then released.

The history of seizures of agrochemicals in the operations carried out by Brazilian security forces in recent decades varies. Survey of actions conducted by the Federal Police together with other departments, published in a previous study by IDESF

O contrabando de defensivos agrícolas no Brasil - (Smuggling of Pesticides in Brazil) demonstrates that since Operation CaaEte (2005) - the first major operation constituted with the purpose of supervising the smuggling and counterfeiting of phytosanitary - until Operation Pente Fino (2018), the largest seizure volumes were 13 tons of agrochemicals, quantities collected both in Operation Ceres (2007) and in Quileros II (2017).

It is important to consider that these amounts represent the sum of several charges of the security forces in continued investigative actions and seizures in smaller quantities.

Photo: BPFron Disclosure



Considering, however, the retentions recorded until February 2021, it is possible to realize how much this illegal market has grown. An example of this is the result of a single inspection, carried out in November 2020, in Ponta Porã (MS).

In a task force involving the Ministry of Agriculture, Livestock and Supply (MAPA) and the Federal Revenue (RF), the agents collected more than 56 tons of irregular agricultural pesticides. The seizure was carried out by federal agricultural tax

auditors being basically composed of Emamectin Benzoate, intended for the Midwest productive region.

Another example of great apprehension was that carried out by police officers from the Department of Border Operations (DOF/ PM).

In January 2021, the corporation recorded a single seizure of 3.5 tons of pesticides smuggled in Maracaju (MS). The load was valued at R\$ 6.7 million, according to the Campo Grande News.

Photo: BPFron Disclosure





In a single inspection action, task force collected 56 tons of agrochemicals smuggled in Ponta Porã (MS).

Photo: cargo of seized agrochemicals
DOF Disclosure

By 2019, according to records from the department, seizures had a maximum average of up to 600 kilos of pesticides, but the latest incidences show the growth of smuggling volume.

In action carried out by the Foreign Exchange Operations Command (COD)

of the State of Goiás and the Tocantins Division Operations Company, 2.6 tons of agrochemicals were seized on March 24, 2021, in Gurupi (TO). From China, the product left Minas Gerais and crossed the state to Maranhão, using the road network of the states of Goiás and Tocantins.

Factors for the increased interest in agrochemical smuggling:

- Marked profit margin.
- Ease of marketing.
- Soft penalty compared to other types of contraband.

11. Fighting against the illegal market

The seizure carried out by the Department of Border Operations (DOF) in Maracaju (MS), in which agents seized 3,500 kilos of smuggled pesticides, mentioned above, is the result of Brazilian security forces in combating the illegal market of phytosanitary.

Started in April 2019, the **HÓRUS OPERATION** is an example of continued action. It was implemented from the monitoring of the Paraná River and its use as an 'avenue' for smuggling transports, including the agricultural pesticides, shipped in Paraguayan ports and unloaded in clandestine ports in Brazil. In the planning phase of the operation, reconnaissance missions counted average traffic of 200 barges per night, in the vicinity of the Ayrton Senna bridge, a connection between the municipalities of Guaíra (PR) and Mundo Novo (MS).

Operation Horus is coordinated by the

Ministry of Justice and Public Security (MJSP), with the participation of several security and enforcement agencies. The action is part of the National Border Security Program, VIGIA, made up of military and public security institutions for the protection of Brazilian borders. Among the various seizures, 720 liters of pesticides were intercepted in Rio Grande do Sul, in actions carried out with the Military Brigade.

Started in 2019, **MURALHA OPERATION** (High Wall) is yet another example of the fight against smuggling. It is coordinated by the Internal Revenue Service and is coordinated in partnership with a set of federal and state agencies. It occurs in an integrated manner to Operation Horus and Muralha Operation (High Wall), the latter under the coordination of the Internal Revenue Service in Mato Grosso do Sul.

Photo: Deposit of seized agrochemicals / Disclosure Op. Pirates of the Field



Operação ÁGATA

Operação Estratégica de Fronteiras

Carried out by the Armed Forces, **ÁGATA OPERATION** has the aim to carry out preventive and repressive actions against cross-border and environmental crimes. It has the participation of 16 agencies, including the Federal Police, the Internal Revenue Service and the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA).

According to Agência Brasil, the operation's workforce is about 4,400 militaries, 72 vessels, 100 land and 14 aerial vehicles, including helicopters and airplanes. According to the Armed Forces, only the 22nd Brigade, during Operation Ágata Norte, caused losses of about R\$ 400,000 to criminal organizations operating in the region.

Among the actions of the inhibition

of the security forces and surveillance are specific and punctual operations carried out in order to contain the illegal markets. An example is the **ZEPHYROS OPERATION**, triggered in December 2020 by the Federal Police of Paraná, with the aim of disarticulating criminal organization of smuggling of cigarettes and pesticides in the northwest of the state.

Already in the first days of operation, the agents seized 900 kilos of agrochemicals, as well as found that the criminal activity of the smuggling of these products generated the huge accumulation of assets to criminals. The group intercepted products from Paraguay, via the Paraná waterway river mesh, and distributed, by road network, to the metropolitan region of Curitiba and to other states of the federation.

V.I.G.I.A.

PROGRAMA NACIONAL DE SEGURANÇA NAS FRONTEIRAS

The **PRINCÍPIO ATIVO OPERATION** (Active principle) is coordinated by the Acting Group Special Crackdown on Organized Crime (GAECO), the Public Prosecutor's Office of São Paulo (MP-SP) and was created in March 2020 with the purpose of disarticulating gangs involved in the counterfeiting of pesticides. The suspicion of the prosecutors indicates that the criminal group may have caused damage of R\$ 5.4 billion to the formal

agrochemical sector.

According to information from MP- SP, the Príncipe Ativo (Active Principle) operation seized, until March 2021, a total of 76,700 kilos/ liters of illegal agricultural defensives.

It is suspected that at least three criminal organizations would be involved in this illicit act, as well as with crimes of money laundering, active and passive corruption, and ideological falsehood in as public as private documents.

Official actions to combat the illegal pesticide market

Operation	Member organs
Ágata Operation	Carried out by the Ministry of Defense, with the participation of the Armed Forces and 16 agencies, including PF, RF and Ibama.
Hórus Operation	Coordinated by the Ministry of Justice and Public Security (MJSP), it is part of the National Border and Foreign Exchange Security Program (V.I.G.I.A.), integrated by military and public security institutions.
Muralha Operation	Coordinated by RF and conducted in partnership with a set of federal and state agencies.
QR-Code Operation	Carried out by the Special Action Group to Combat Organized Crime (Gaeco), Public Prosecutor's Office of São Paulo (MP-SP).
Piratas do Campo (Pirates of the Field Operation)	Triggered by the State Police of Repression of Thefts and Thefts of Cargo (DECAR), the Civil Police of Goiás.
Príncipe Ativo Operation (Active Principle)	Carried out by the Special Action Group for The Suppression of Organized Crime (GAECO), of the Public Prosecutor's Office of São Paulo (MP-SP).
Webcida Operation	Carried out by the Federal Superintendence of Agriculture of Paraná (SFA/MAPA/PR), Agricultural Defense Agency of Paraná (ADAPAR), IBAMA and MPPR.
Zephyros Operation	Carried out by the Federal Police of Paraná

Source: IDESF



Photo: Deposit of seized agrochemicals / DECAR/GO

Subsequently, in September of the same year, as a deployment of the **Princípio Ativo** operation **QR-CODE OPERATION** was launched, also with the objective of dismantle criminal organization specificized in the falsification and adulteration of pesticide products. In this operation, the seizure of pesticides registered by the Public Prosecutor's Office of São Paulo was 2.7 tons of kilos/liters of products.

The name refers to the traceability code used in some agricultural pesticides, which contains data guaranteeing the authenticity of the product, such as expiration date, batch number and single series of the packaging. The sophistication of the crime was such that the gang also proceeded to falsify this reading code, in addition to other items such as labels, packaging, boxes, seals and adhesives.

Called **PIRATAS DO CAMPO** (Pirates of the Field), the operation of the State Police of Repression to Thefts and Thefts of Cargo (DECAR/GO) intercepted, on January 28, 2021, a shed used by gang specialized in theft, reception and counterfeiting of

agricultural pesticides. In this action, R\$ 15 million were seized in and other products. In total, the Pirates of the Field operation seized 95.9 tons of products related to agricultural pesticides, including agrochemicals and inputs such as bottles, gallons, barrels, packs and false labels. Of this total, 21% was a product originating from theft.

Another important activity of the public agencies' surveillance authorities and police officers with illegal pesticides is **WEBCIDA OPERATION**, which aims to combating the state trade and interstate of illegal pesticides, stolen and counterfeit by the Internet.

This is a permanent joint operation, initiated in 2018 by MAPA-SFA/PR, ADAPAR, IBAMA and MPPR, and that is still acting in illicit pesticides over the Internet. Through this operation, electronic trade sites (marketplaces) have already been removed and 50,000 illegal pesticide advertisements have been provisionally collected. In this amount, the most varied illegalities involving pesticides were avoided, from the lack of an invoice and agronomic prescription to the trade in smuggled, counterfeit, expired and stolen products.

12. Association with other types of smuggling

The profitability generated by illegal agricultural defensives makes the smuggling of these products grow, not only as a distinct clandestine market, but associated with the crime of other types of products.

It is increasingly common for security forces to catch agrochemicals transported and marketed alongside cigarettes and illicit drugs, such as marijuana, indicating that it is a type of smuggling of specialized gangs. These criminal groups use instruments already established in their *modus operandi*, such as scouts and clandestine radios.

The use of the supply chain of other smuggling products makes the fight against crime even more complex, because phytosanitary are chemicals products of high complexity, which

need specific technical knowledge. The Department of Operations of Borders (DOF/PM/MS) sought an expert on the subject, to train the staff, training that was extended to the Training Course of Sergeants of the corporation in the state. As a result, the elevation of the volume of seizures of defensive recorded in early 2021 (See p. 27).

An example of criminal association was revealed by Zephyros Operation. During the first days of action, 900 kilos of agrochemicals, 1,200 boxes of cigarettes and 3,500 kilograms of “*marihuana*” were seized. Smuggling financed the concentration of assets to trafficking agencies, such as rural properties with extensive cattle herd, assets that were blocked by the Justice.

Photo: Depot of seized agrochemicals / Disclosure PRF

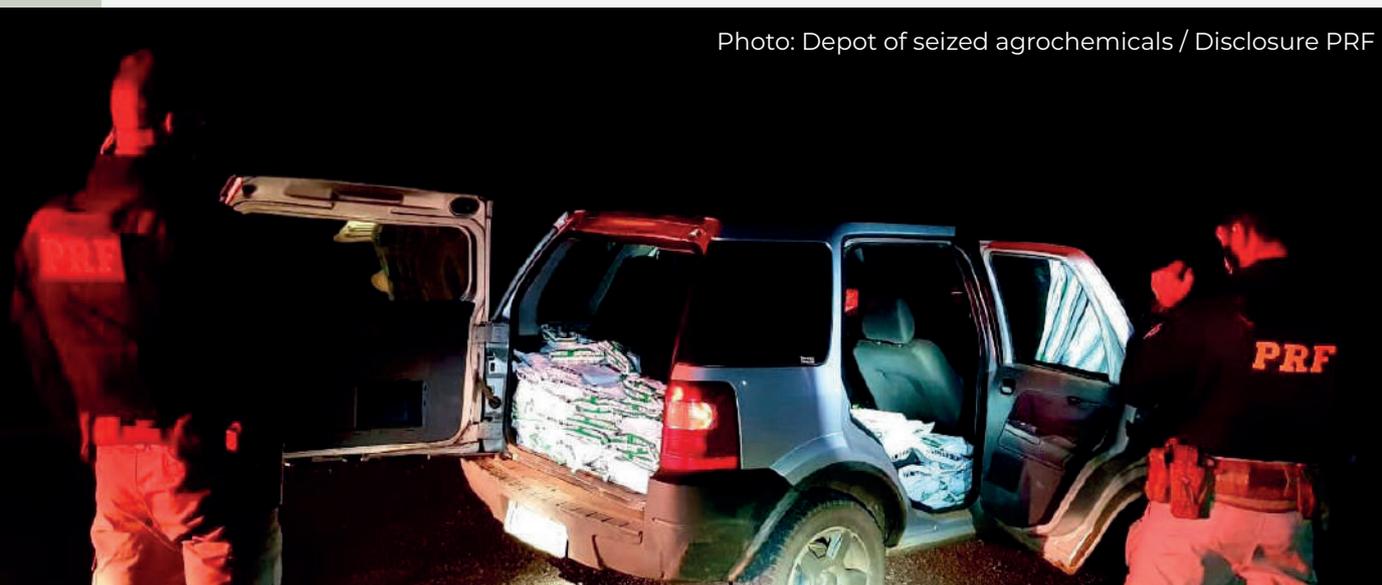




Photo: Seized money / Disclosure PF

Soon after, in January 2021, another example of criminal association. Approach of the Platoon of Operations with Dogs of the Border Police Battalion (BPFron), in action of operation Horus of the Ministry of Justice, seized cigarettes and pesticides in the city of Guaíra (PR). The action resulted in the seizure of 40 boxes of cigarettes, 2 smuggled trailer tires and 450 kilos of pesticides. The goods were valued at about R\$ 590,000.

The use of the same logistics and the introduction associated with different types of smuggling are perceptual practices, as the illegal market increases in quantity and in variety of products, and that gangs expand and 'professionalize'. The complexity of this 'market' is also reflected in the

relations established so that it can be maintained.

Láparos Operation, carried out by the Federal Police and other security forces in 2011, demonstrated the involvement of public agents who facilitated smuggling. In the investigations, more than 3 million packages of cigarettes smuggled from Paraguay and 6.5 tons of pesticides of the same origin were seized, in addition to 109 trucks, 76 cars and 13 vessels used in the transport of illicit assets.

The gang's activities covered the states of Paraná, São Paulo, Mato Grosso do Sul, Mato Grosso, Rondônia and Minas Gerais. Investigations lead to the involvement of more than 300 people with the criminal organization.

13. Traffic network profile

With the increasing interception of pesticide smuggling by security forces, it is possible to trace the profile of gang members. The chain of smugglers is formed by different links, which operate from the crossing of contraband their delivery to the rural producer.

The Department of Border Operations (DOF/PM/MS) outlined a profile of the trafficker who crosses agrochemicals from Paraguay to Brazil. Based on 41 occurrences of seizures, carried out in Mato Grosso do Sul, between January 2017 and February 2021, it was possible to raise that **the middleman** has an average age between 27 and 46 years (73% of the occurrences), is male (97%) and, more than half (52%), lived in the state.

Records of border security forces consulted by IDESF indicate the characteristic of opportunism of trafficking agents, who often have a history of smuggling and have already had illegalities registered in court. Many of them live in the countries of the border regions and include

the specific niche of agrochemicals in the traffic actions, forming connections with the formal logistics chain, so that the product arrives at the tip, or even the rural producer.

It is also the link of this chain **the dealer**, someone who knows the agricultural sector and has established customers, making use of this capillarity to spawn illegal products. This trader knows when to resell smuggled products but makes use of a formal structure to cover the circulation of illicit products, which can be smuggled, counterfeit or stolen.

The forger is the intellectual delinquent, who knows the chemical composition of the elements, often resorts to knowledge of chemical engineer or agricultural technician. Most of the time, the raw material used comes from smuggling or cargo theft, demonstrating the different modalities of this illegal market are closely linked.

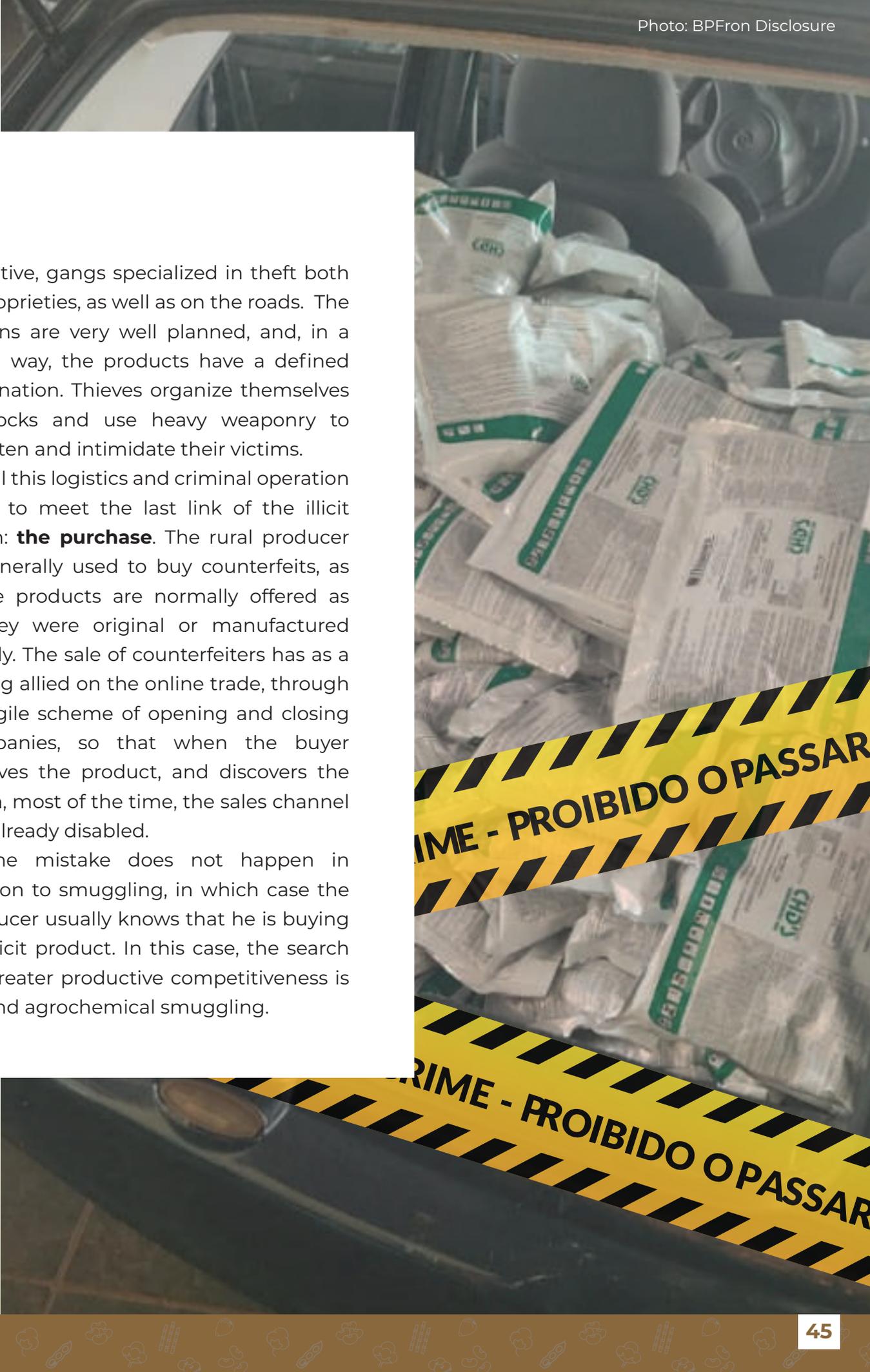
On the other **hand**, theft implies the most violent face of illegal agrochemical market. The thieves of the branch are

A DO CRIME - PROIBIDO O PASSAR

assertive, gangs specialized in theft both in proprieties, as well as on the roads. The actions are very well planned, and, in a good way, the products have a defined destination. Thieves organize themselves in flocks and use heavy weaponry to frighten and intimidate their victims.

All this logistics and criminal operation aims to meet the last link of the illicit chain: **the purchase**. The rural producer is generally used to buy counterfeits, as these products are normally offered as if they were original or manufactured legally. The sale of counterfeiters has as a strong allied on the online trade, through an agile scheme of opening and closing companies, so that when the buyer receives the product, and discovers the scam, most of the time, the sales channel has already disabled.

The mistake does not happen in relation to smuggling, in which case the producer usually knows that he is buying an illicit product. In this case, the search for greater productive competitiveness is behind agrochemical smuggling.



CRIME - PROIBIDO O PASSAR

CRIME - PROIBIDO O PASSAR

14. The plantations' nonconformities

The tax audits carried out by the Ministry of Agriculture and Livestock (MAPA), in its competence to supervise the agrochemical industries installed in Brazil, have an average level of 99.9% compliance in manufacturing, that is, there are rarely inadequacies in the production and import of phytosanitary products, in relation to the liberation issued by the sanitary authorities.

The commercial supervision, one of the states of the federation responsibilities, in turn, records a level of compliance of 70%, as provided information from MAPA. The margin

of inaccuracy is filled by situations such as the sale of products without prescriptions, or operations that do not meet the provisions of the legislation, among other situations.

In relation to the final consumer of agrochemical production, farmers, an average level of conformity of use of these products can be obtained from data from the Goiana Agricultural Defense Agency (AGRODEFESA). Through the Agroactive Program, the agency developed a tool to classify rural properties in relation to the use of agrochemicals.



Photo: Inspection action in Paraná / Disclosure ADAPAR

The initiative is an oriented check list of 23 items of analysis and found a level of compliance in the use of agricultural pesticides in 86% of the rural properties surveyed. Among other verifications, the registration, agronomic prescription, and application of the products are entered into the analysis. The program has MAPA recognition and adds a universe of 1,368 properties evaluated since 2019 in the state.

The percentage of 14%, conceptualized as low level of compliance, is considered reasonable by the applicators. Fulfilling the greater purpose of health education, properties outside the conformities are given a deadline for adjustments before the application of punitive measures.

Within the percentage of nonconformities identified in Goiás are inserted farmers who make use of illegal products, composing a portion of producers that adopt irregular procedures. It is important to note that, as in any form of illegal, infringers do not leave illegal products to show. In most cases, agrochemicals are hidden far from the property's head office, in places where the tax man does not have ac-

cess.

Task force of supervision in rural properties, in merchants and in road works carried out by the Ministry of Agriculture, Livestock and Supply (MAPA), through the Federal Superintendence of Agriculture in Paraná (SFA/PR) and the Agricultural Defense Agency of Paraná (ADAPAR), together with police forces and other inspection bodies, it was possible to that about

10% of rural properties evaluated in the state used illegal agrochemicals. Called Operation Westcida, the action was carried out in November 2019, in the West and Southwest regions of the state, and found that the largest proportion of illegal products used constituted insecticides.

According to MAPA, the profile of nonconforming users does not follow a univocal pattern. Even farmers, with structured and well-organized rural properties, cooperative partners, agricultural advocates or anti-cor-

ruption and other illicit, engage in this illegal action. The use of smuggled products in crops is fueled by the inconsequent search for competitive advantages for production costs in the field.

Production and handling of agrochemicals

99.9% of Brazilian industries are within manufacturing conformities.

70% of commercial establishments operate within the compliance levels of the segment.

14% of the rural properties evaluated in Goiás were classified as low level of compliance in use.

10% of the rural properties inspected in operation against illegal pesticides in Paraná made use of these products.

Source: MAPA and AGRODEFESA

15. Illegal market sizing

In the first study conducted on the smuggling of agricultural pesticides, IDESF found a figure that corroborates the research 'Illegal Market of Agrochemicals', conducted by the Federation of Industries of the State of São Paulo (FIESP), based on information on the trade in illegal agrochemicals of the 2015/2016 crop.

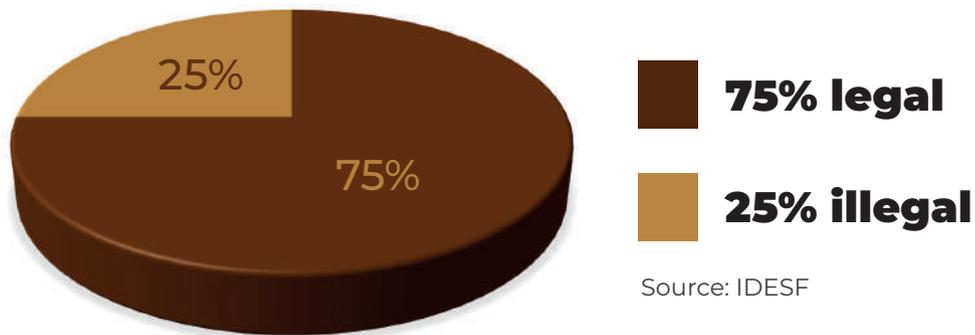
Using data on supply and demand of agrochemicals, the researchers estimated that the illegal market represented 24% of the total agricultural pesticides used in Brazil. The calculation of demand was made based on the survey of cost per hectare, with pesticides in crops that covered more than 90% of the Gross Value of Agricultural Production and the area cultivated with agriculture and forests planted in that period.

As discussed earlier, the information of the Brazilian security forces leaves no doubt about the substantial growth of this illegal market, and the crimes of counterfeiting, tax fraud, smuggling and theft of cargo have been increasing, significantly, explaining how attractive the illicit have become to criminal gangs.



Photo: Seized money / Disclosure PF

Estimation of the agrochemical market



The illegal market for agricultural pesticides is composed of different illicit:

- Smuggling.
- Deviation from the purpose of use.
- Forgery.
- Fraudulent import.
- Robbery/thievery.

With the increase in production in Brazilian agriculture, there was an increase of 13.7% in the total volume of seizures of phytosanitary products on highways only in 2020.

The information shows the incidence of thievery and counterfeiting, while it is possible to scale an average percentage of 25% for the illegal market today.

Added to these factors are sales in the formal market of products, in accordance with sanitary determinations, carried out by legal establishments, which also meet the interests of gangs.

It is important to highlight that, by illegal market, are considered the illicit smuggling, theft, forgery and diversion of the purpose of use of the domisanitary.



16. The bottleneck of the destination the products seized

One of the biggest difficulties of the security forces in the seizure of pesticides is the disposal of the illegals. High toxicity products, agrochemicals require specific conditions of transport, storage and destruction. And there is no official logistics in the country for the disposal of these products.

The most common procedure adopted by law enforcement agencies and the inspection is the sending of seized substances for storage in the Internal Revenue Service, for further destruction. However, it is common for illegal pesticides seized to remain improperly stored, in

improvised depots in the civil, military and federal police, in the surveillance agencies or even inside the vehicle where the seizure was made.

In several states, the correct disposal of seized pesticides has been made possible thanks to joint actions by public agencies. This is the case of Paraná, which through the project "Destination and Diagnosis of Illegal Pesticides", under the coordination of the Service of Inspection of Plant and Plant Health (SISV) MAPA (SFA/PR), obtained funding for actions to support the fight against illegal pesticides, derived from the Term of Commitment and Environmental



Photo: Illegal Agrochemical Deposit / Disclosure Op. Pirates of the Field

Cooperation signed between violators of Operation Webcida (illegal trade of pesticides on the Internet, Public Prosecutor's Office of Paraná - MPPR and MAPA-SFA/PR itself.

The initiative maintains organized logistics for collection, transport, storage and destruction by incineration of illegal pesticides and provides for availability of laboratory for analysis of the seized products.

Another example is the state of Goiás, in which representatives of the state signed a technical cooperation agreement with the federal, state and labor ministries, to obtain funds for the collection, transport and incineration of the seized agrochemicals.

Industries also contribute to the disposal of seized illegal products.

CropLife do Brazil, an agency integrated by the main manufacturers installed in the country, through partner entities, promoted in 2020 the incineration of 67.3 tons of illegal agrochemicals seized by the Federal Revenue of Foz do Iguaçu (PR) and Ponta Porã (MS) and by the Federal Police of Naviraí (MS).

In the first two months of 2021 alone, CropLife promoted the incineration of 75.7 tons of illegal agrochemicals and other raw materials, such as packaging, labels and counterfeit boxes, seized by the Civil Police of Goiás.

17. The illegal seed market

Seed forgery is another crime that is present in rural areas. Estimates of the Brazilian Association of Seeds and Seedlings (ABRASEM) point to the rate of 29% of Brazilian corn production and 8% of soybean grown with pirated seeds. In the case of beans and rice, the index reaches 90% and 44%, respectively.

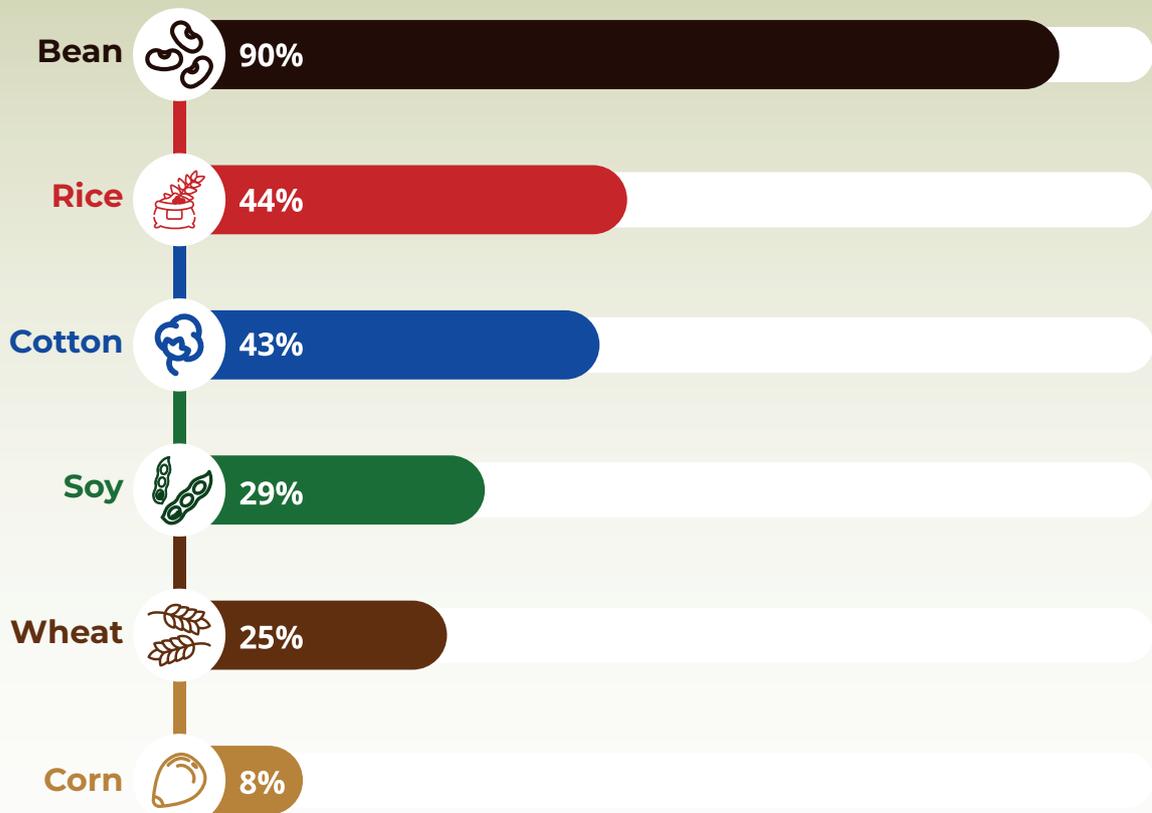
The seizures indicate that this is also an evolving illegality in the country. The use of uncertified seeds impacts on crop productivity and loss of purity.

In June 2020, an action carried out in Rio Grande do Sul sale of pirated soybean

seeds on a large scale. Triggered by the Delegation Specialized in the Repression of Rural Crimes and Abigeato (DECRAB) of Bagé (RS), together with the Secretary of Agriculture, Supply and Rural Development and the Ministry of Agriculture, Livestock and Supply (MAPA), the operation seizes more than 450 tons of illegal seeds, stomped in four different locations. According to the investigation, the gang circumvented the production and sale, marketing the seeds as if they were certified. In the same investigation, the use of illegal agrochemicals was found.

Photo: Seed seizure in Dilermando de Aguiar/RS / PRF Disclosure





Source: Brazilian Association of Seeds and Seedlings (ABRASEM - Associação Brasileira de Sementes e Mudanças)

The illegal trade in seeds is also fueled by 'ant' smuggling, which makes the crossing of products on small scales. On March 25, 2021, PRF and Military Brigade agents found 200 kilograms of seeds brought illegally from Uruguay in a utility vehicle.

The seizure occurred in BR 158, municipality of Dilermando de Aguiar (RS). As in the case of agrochemicals, the illegal seed market consists of variants such as smuggling and counterfeiting, or, in this case more specifically, the sale of treated illegal seeds.

In Paraguay, the use of uncertified seeds becomes increasingly common. While the projection for the 2020-2021 soybean crop was 3.6 million hectares of cultivation, the record of buying legal seeds corresponded

to the planting of about 1 million hectares. The Asociación Paraguaya de Obtentores Vegetales (PARPOV) estimates that about 4.9 million bags of seeds would be needed for this extension, and the legal market confirms the sale of about 1.2 million certified bags.

As in Brazil, in the neighboring country more and more gangs use the internet for sales, making it difficult to control by the National Service of Quality and Plant Health (SENAVE). It is estimated that, in a decade, Paraguay has stopped raising US\$75 million corresponding to taxes and the issuance of soybean seed certification labels. In Brazil, the losses calculated by ABRASEM with seed piracy in the national agribusiness is around R\$ 2.45 billion.



Photo: Disclosure BPFron

18. Characteristics of the illegal market of agricultural pesticides

- A.** As criminal organizations are agile, flexible, and adaptable.
- B.** The distribution chain is differentiated in its logistics (passenger vehicles, cargo and collective transport, postal service) and involves from inputs to labels and packaging.
- C.** The routes are multiple and change, depending on the current scenario.
- D.** Documents may be falsified throughout the entire length of the product path.
- E.** Often, the inputs are transported separately, and the composition is made at the destination.
- F.** The corruption factor is present in several stages of the logistics chain.
- G.** Several regulatory gaps open loopholes for illicit.
- H.** The low rigidity of sentences for this type of crime favors practices.
- I.** The standards of certification of origin and production of pesticides are not universal, which makes it difficult to identify them.
- J.** As tariff and tax policies, especially in Mercosur, have a decisive impact on the smuggling of products.



19. The scenario of illegality in Argentina

By Liliana Korniat

Currently, there are no statistics on the seizures of illegal pesticides carried out in Argentina territory, as well as on the trafficking of chemical products to produce phytosanitary products in the country. It is important to highlight that smuggling in general is not a crime in Argentina, and the misdemeanor is considered only as a customs and sanitary violation (Customs Code - Law 22.415).

As a violation of customs and sanitary order, the smuggling of pesticide substances is usually associated with insignificant production structures. The export and import tax relationship, exchange rate developments and asymmetries with neighboring countries also contributes to this scenario.

In this context, the value of these products

is usually lower in Argentina territory than in neighboring countries and, being the most lenient legislation, the characterization of this crime is not significant in the country. For this reason, the products are not the targets of systematic and regular operations of the security forces such as cigarettes, narcotics, clothing, among other products.

According to the president of the Action Network of Pesticides of Latin America, an organization that brings together institutions, associations, and universities from 11 countries, Javier Souza Casadinho, "there are no official figures on the estimated volume of smuggling in the country", because the "access and use of pesticides is naturalized, the sale is very flexible and there is no awareness of the risks of misuse or use of illegal products".



Audits point to weaknesses in surveillance

The control of the market of products of the sector is exercised, in Argentina, by the National Service of Health and Agri-Food Quality (SENASA). In the organization chart of the agency, the supervision of the registration of products and commercialization is a task exercised by the Federal System of Agrochemical and Biological Control (SIFFAB).

Recently, the Auditor General of the Nation (AGN) conducted a management analysis on SENASA, in order to verify the performance of the agency in the period between 2016 and 2019, noting that the annual inspection plans were not fulfilled in full of 2016 to 2018.

The AGN audit analyzed the results of 263 violations found by SIFFAB agents, and the highest incidences of non-conformities contained in the records were irregularities in the traceability of products, detected by SIFFAB technicians in 70 occurrences, and wrong seal, in 52 situations. The audit

also found that there is no control and monitoring of stocks of seized material, which demonstrates high vulnerability of the chain of custody of illegal products.

Another weakness pointed out by the auditors was in relation to the laboratory analyses of the samples, which consider only the percentage of the active substance and the stability of the sampled product, disregarding the rest of the components. The practice makes it difficult to monitor possible unreported changes in the composition of product formulas.

Actions such as these are incorporated into SIFFAB's operational procedure manuals and the Inspection Guide, but these documents are mere guides of good practice, and their compliance is not legally mandatory. This condition makes, depending on the criteria of the agents, monitoring can become arbitrary, which represents a risk in verifying operations and transparency of the management of infractions.



Additional difficulty in surveillance is the fact that the Argentine agrochemical and biological control system lacks procedures for the removal of the commercial circuit of prohibited products, whose records have been canceled. Thus, uninspected batches can continue to be marketed if they are not intercepted in inspections.

Inflationary acts also do not follow parameters, and the audit found different penalties for the same misdemeanor. Among the cases that illustrate the lack of uniformity, there is the marketing of prohibited products. In the universe of the 263 cases analyzed, 15 cases of this kind were detected, and procedures with fines, criminal complaint, notification to provincial authorities and destruction of goods were adopted procedures with fines, criminal complaint, notification to provincial authorities and

Smuggling in general is not a crime in Argentina, and misdemeanor considered only as customs and sanitary infringement.

destruction of goods.

The agrochemical market in Argentina has historical dependence on imported products. Currently, the cultivated area in the country exceeds 30 million hectares, but the national industry can meet only a percentage of demand as a result of the increase in soybean cultivation.

Marketing also goes through the indirect channels of the internet and physical stores that sell products for gardening, seeds, and even, in hardware, fodder, seedling and cleaning items businesses, without prescription require-

ments or formal protocols. An important step to curb illicit products was taken in 2019, when Senasa signed an agreement with the Free Market to prevent the sale of veterinary and plant protection items, in unauthorized channels for products that require advice and professional prescription.

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20. Brazilian legislation

By Javert Ribeiro da Fonseca

There is not a recent debate on the irregular transport of agricultural pesticide (pesticide) and its consequences in the criminal sphere, namely the case series on the criminal typification of this conduct and its framework. It is also important to know whether the pesticide container contains a toxic product or substance, since, if it is not, the criminal framework will be different.

In this sense, the importance of the concept of pesticides, and the like, brought by Ordinance MTb 1086 (18/12/2018), which amends Ordinance TEM (Ministry of Labor and Employment) 2,546, Annex I, by defining "chemicals with toxic properties and which are used in agriculture to control pests, diseases, or weeds that cause us to plantations" (and "related are products with characteristics or functions like pesticides").

Law 7,802/1989, in its article 3, states that pesticides (and the like) "*can only*

be produced, exported, imported, marketed and used, if previously registered in federal agency, according to the guidelines and requirements of the federal agencies responsible for the health, environment and agriculture sectors".

As for transport, TEM Regulatory Standard 31 (03/03/2005) defines that "*Pesticides, adjuvants and related products are transported in containers labeled, resistant and hermetically sealed and seals their transsized in the same compartment containing food, rations, fodder, utensils for personal and domestic use, while proclaiming that Vehicles use them for the transport of pesticides, adjuvants and related products shall be sanitized and decontaminated where they are intended for other purposes.*"

To be clear about these issues, one can better understand the effects and scope in the criminal sphere, as to the irregular transport of agricultural pesticides.

Analyzing such conduct, from the point of view of Law 9.605/1998, which *"provides for criminal and administrative sanctions arising from conduct and activities harmful to the environment, and gives other providences"; which in its article 56 typifies criminal practice punishable by penalty of "detention, from six months to one year, and fine" the conduct of "transporting toxic product or substance, harmful to human health or the environment, in disagreement with the requirements laid down in laws or regulations."*

There is also provision for a penalty of 'seclusion' for those who, in the form of Article 15 of Law 7.802/1989, *"transporta resíduos e embalagens vazias de agrotóxicos, seus componentes e afins, em descumprimento às exigências estabelecidas na legislação pertinente"*

Who, then, *"export or import pesticides, without being authorized by the legislation of regency"* focuses on criminal typification of the crime of Art. 56 of Law 9.605/1998, taking into account that the action of "import" and "export" are not specifically provided for in art. 15 of Law 7.802/1989⁹.

Unless better judgment, it is affirmed that the dictates of Art. 15, of Law 7.802/1989, should be in harmony with Art. 56 of Law 9.605/1998.

In another perspective, although Article 334-A, § 1, of the Brazilian Penal Code, a crime of smuggling, has as its primary precept 'import' or 'export' (*prohibited merchandise*), there is no express typification as to the act of 'transport, on the land', even if it precepts penalty for those who commit the crime by air, sea or inland waterway.

In fact, it is based on the purpose that the words *import' or 'export' (prohibited merchandise)*, it entails a wider meaning, so that it perfectly welcomes the verb to *transport (prohibited merchandise)* on the land route, since such cri

me encompasses various modalities, means of materialization. In fact, what is perceived is that the legislature did not line up 'land transport', only intended to increase the penalty when the route used (air, sea or inland waterway transport) made it more difficult for the competent agents to monitor it.

In the face of this, who imports, or exports prohibited goods incurs the crime of smuggling, subject to the penalty of 2 (two) to 5 (five) years of imprisonment, provided for in the Brazilian Penal Code, Decree-Law 2.848, of 12/07/1940, amended by Law 13,008, of 06/26/2014, in the same way that those who transport,

9. "Those who produce, market, transport, apply, provide service, give disposal to waste and empty packaging of pesticides, their components and the like, in breach of the requirements established in the relevant legislation will be subject to the penalty of imprisonment, from two to four years, in addition to a fine." (Wording given by Law No. 9,974 of 2000.)

21. Legislative proposals

The sanctions provided for by Brazilian legislation are isolated facts among Mercosur's neighbors. One of the biggest obstacles in combating illegal market crimes, especially smuggling, is the lack of homogenization of laws on the illegal market of agricultural pesticides between Brazil, Argentina, Paraguay, Uruguay and Bolivia. Disparities in the legal rules on imports of plant protection products have, and attracts, operators of the illegal market.

In this sense, focusing on combating the illegalities of the segment, this study brings some propositions, to improve the effectiveness of the inhibition of illicit and to protect society from consumption and consequent implications of these products of effects not yet dimensioned. Here are the propositions:

A. Development of a national

agrochemical inspection program. Brazil is a successful case, headed by the Ministry of Agriculture, in the fight against bovine foot-and-mouth disease. Like the National Program for the Eradication of Foot-and-Mouth Disease, the country needs to implement a national policy to combat the illegal market, homogenizing procedures related to agricultural pesticides, both in relation to the supervision of use and the procedures for inhibiting smuggling. Currently, responsibilities are divided between federal and state agencies. At the federal level, it is the competence to supervise the manufacture and import of these products. Responsibility is shared between MAPA, ANVISA and IBAMA. The states are to monitor the marketing of products. The lack of synergy and technical and human procedures for the fulfillment of these steps is a marked factor in the difficulty of

supervising and curbing illegal practices.

B. Increase of the penalty of imprisonment, currently established between 2 and 4 years of detention, in addition to fine, by the Law of Pesticides, to whom "produce, market, transport, apply, provide service disposal to waste and empty packaging of pesticides, its components and the like", in breach of the requirements established in the relevant legislation" (Law. 7.802/1989).

C. Definition of resources to adequately equip the supervisory and repression agencies, as well as periodic training of agents involved in combating the illegal market. The growing flow of contraband also requires structuring of official laboratories for the analysis of active ingredients in illegal agrochemicals.

D. Inclusion of the theme 'illegal agricultural pesticides' in Mercosur's priority agenda, with a view to regulatory alignment and ensuring greater accuracy in the analyses for registration, import, marketing, and use of these products, among member countries. In this sense, we propose the creation of a commission composed of technicians from the regulatory agencies of the member countries, with purposes such as the sharing of product analysis and the homogenization of the legislation of the sector.

E. According to trends of various other productive and industrial segments, establishment of mechanisms of traceability of products, generating greater reliability of products in circulation and hindering the action of gangs in the commercialization of smuggled, stolen and counterfeit products.

F. Approval of Bill 6299/2002, which proposes the implementation of Articles 3 and 9 of Law 7.802/1989, in the process of being processed in the National Council, following the legislation adopted by several countries. Among the main points in favor of the proposal is:

- Guarantee of safety: the new law is completer and more specific than the Law of Pesticides, which facilitates its application and simplifies procedures, currently regulated by standards, such as the definition of responsibilities of public organs, manufacturers, and rural producers.

- Attention to international agreements: the text provides that the control of pesticides and the like must comply with the international agreements to which the country is a signatory. The adequacy of international agreements is a requirement, but the strengthening is important to you, for greater effectiveness in complying with these specific standards.

- Systems update: the bill provides for updating and computerization of procedures through unified systems of information, evaluation, registration, and control of pesticides, giving greater agility and transparency to approval processes.

- Definition of competencies: the attributions of agencies such as ANVISA and IBAMA will be provided for in law, different from the current condition, in which they are defined by decrees. The MAPA will be the registrant agency, to ensure that there is a single entry and processing.

- Alignment of risk analysis: the text in process provides for the alignment of the risk analysis methodology with international recommendations.

- Effectiveness in product approval: the new legislation also proposes to reduce the time to approve a new propipeline in Brazil, which today reaches up to 8 years, for the maximum period of 24 months.



Photo: Seized Agrochemicals / Disclosure ADAPAR

22. Final considerations

The remarkable development of agribusiness consolidates the sector as one of the most important vectors of the national economy. Based on this result, there are a set of technical factors that, combined with climate and soil, reinforce the competitiveness of the Brazilian agrobusiness at each harvest. The scientific contribution to the advances obtained in the more efficient use of planting areas is undeniable.

In this perspective, agricultural pesticides, chemical or biological products inserted in the proposition of agriculture to produce more, offering more food, without expanding the cultivated areas, thus reducing the pressure on the areas of preserved vegetation are considered. Safety in the use of these products, however, is at risk by a factor still little sized, formed by illegalities in the production, import,

marketing, and use of pesticides.

The growing insertion of illegal products in a market surrounded by criteria, such as agrochemicals, has as a background legal and tax differentiations of Brazil with neighboring countries. Products such as the insecticides Benzoate of Emamectin and Thiamethoxam, two of the most smuggled in the country, have differentiated release of use and commercialization between Brazil and its border neighbors.

In addition to these products, the performance of public security and supervisory agents finds a diversity of active principles illegally entered national territory. Smuggled pesticides cross borders, mainly from Paraguay, Uruguay and Bolivia, tracing routes that can be georeferenced, along with border states to the farthest producing areas of the country.

A system developed by IDESF¹⁰, graphically, shows that the smuggling of agrochemicals runs through the map of Brazil, from the highways of the border, such as Rio Grande do Sul, Paraná and Mato Grosso do Sul. The evolution of this 'clandestine market' is noticeable not only by the increase in the volume of seizures, but also by the frequency with which ever higher loads of quantity are intercepted by the police.

The gangs associate the illegalities of the illicit market of agrochemicals with other crimes, composing associations with various types of smuggling. Chains composed of different agents are formed, in elaborate logistics, so that illegal substances reach the rural producer.

In addition to identifying routes already consolidated, the present study, through georeferencing carried out on the IDESF platform, contacts the opening of new paths in the spraying of illegal pesticides to agricultural areas. This smuggling niche is expanded to border areas further north of the country. This condition requires an extension of the gaze of the public power, with an increase in the security system also for these regions.

The illegal market for agricultural pesticides is formed by practices such

as: theft, counterfeiting and smuggling of pesticides, as well as the deviation of the purpose of using these products. Combined, these practices represent an increasing risk to health and the environment, as well as damage to the Brazilian economy. They also represent an estimated percentage of one quarter of the total agrochemical market in Brazil.

Combating illegal practices demands urgent attention from the Brazilian government in relation to actions, such as updating the legislation of the sector, ensuring more efficiency to justice, greater punishment to smugglers and all other links of the illegal chain of agrochemicals, and establishment of more efficient procedures for inspection and control in the application of agrochemicals.

As it is a transnational crime, the fight against pesticide smuggling requires joint efforts by countries, especially Mercosur members, to align criteria for importing, manufacturing, marketing and using these products. The theme requires improvement in international cooperation, based on the convergence of understandings. As member nations of the same bloc, all countries could gain advantages by aligning actions to the illegal market.

10. <https://plataformacrimes.idesf.org.br/idesf/croplife>



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5. CropLife Brasil (CLB)
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11. Ministério da Agricultura, Pecuária e Abastecimento (MAPA)
12. Polícia Federal (PF)
13. Polícia Rodoviária Federal (PRF)
14. Receita Federal do Brasil (RFB)
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16. Serviço de Fiscalização de Insumos e Sanidade Vegetal (SISV/SFA-MAPA/PR)
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