

PESTICIDES AND CHEMICAL COLONIALISM

 HEINRICH BÖLL STIFTUNG
CALENDAR Worldwide

Friday, 19. January 2024

10:00 am – 12:00 pm

[Save in my calendar](#)

Panel discussion

Our Green Week: Plant protection or environmental pollution?

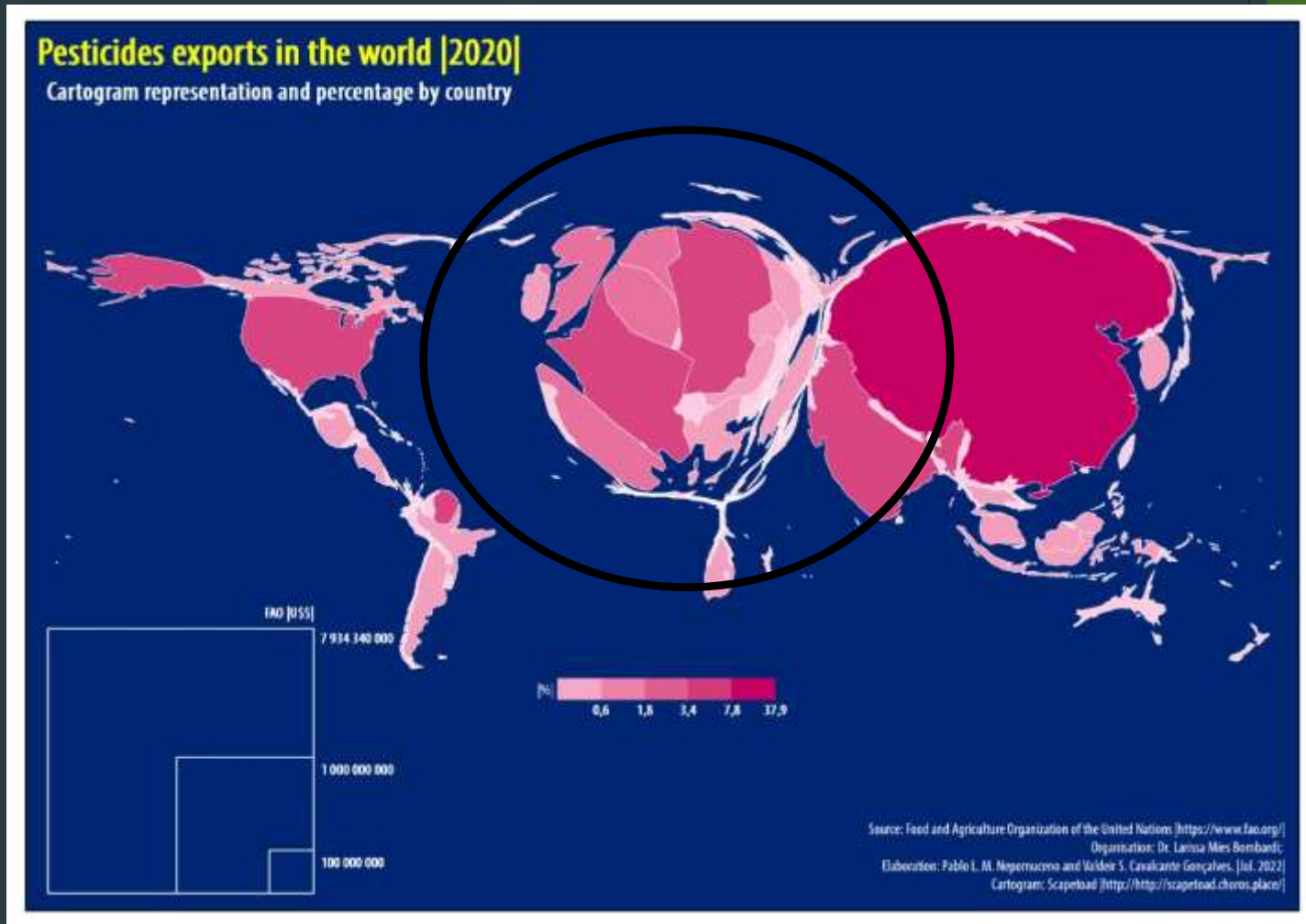
Why the world can no longer afford chemical pesticides

AGROTÓXICOS E COLONIALISMO QUÍMICO



LARISSA MIES BOMBARDI

Anamorphosis - Pesticides exportation



Anamorphosis - Pesticide Use

Pesticide use in the world |2020|

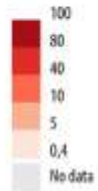
Cartogram representation in tonnes per country



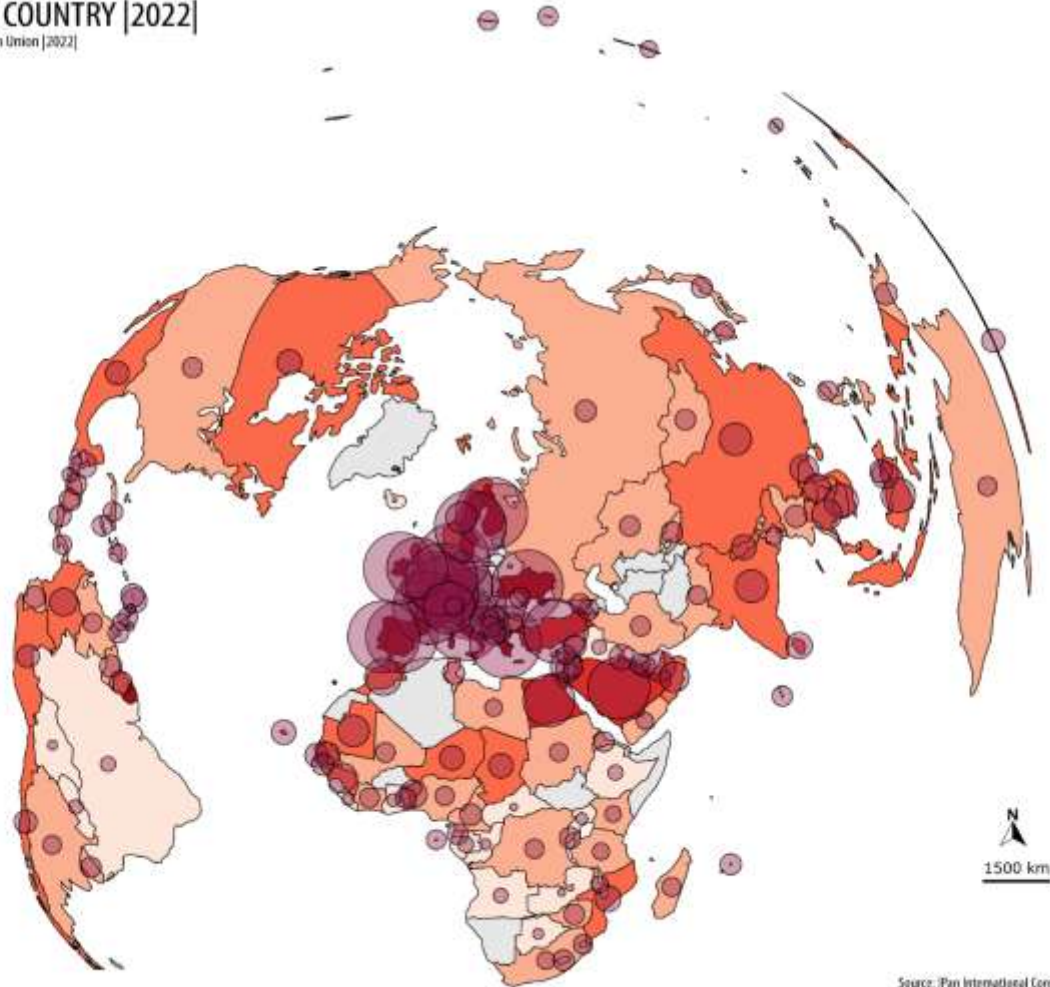
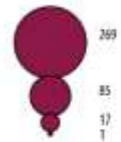
BANNED PESTICIDES BY COUNTRY | 2022

* There are 269 banned pesticides in the European Union [2022]

Percentage of banned pesticides, in relation to the total of 269 banned products in the European Union



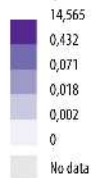
Number of pesticides banned, by country



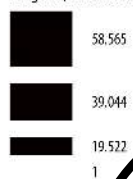
PESTICIDE EXPORTATION BY BELGIUM |2021|

Export of insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant growth regulators, disinfectants and similar products, put up for retail sale or as preparations or articles.

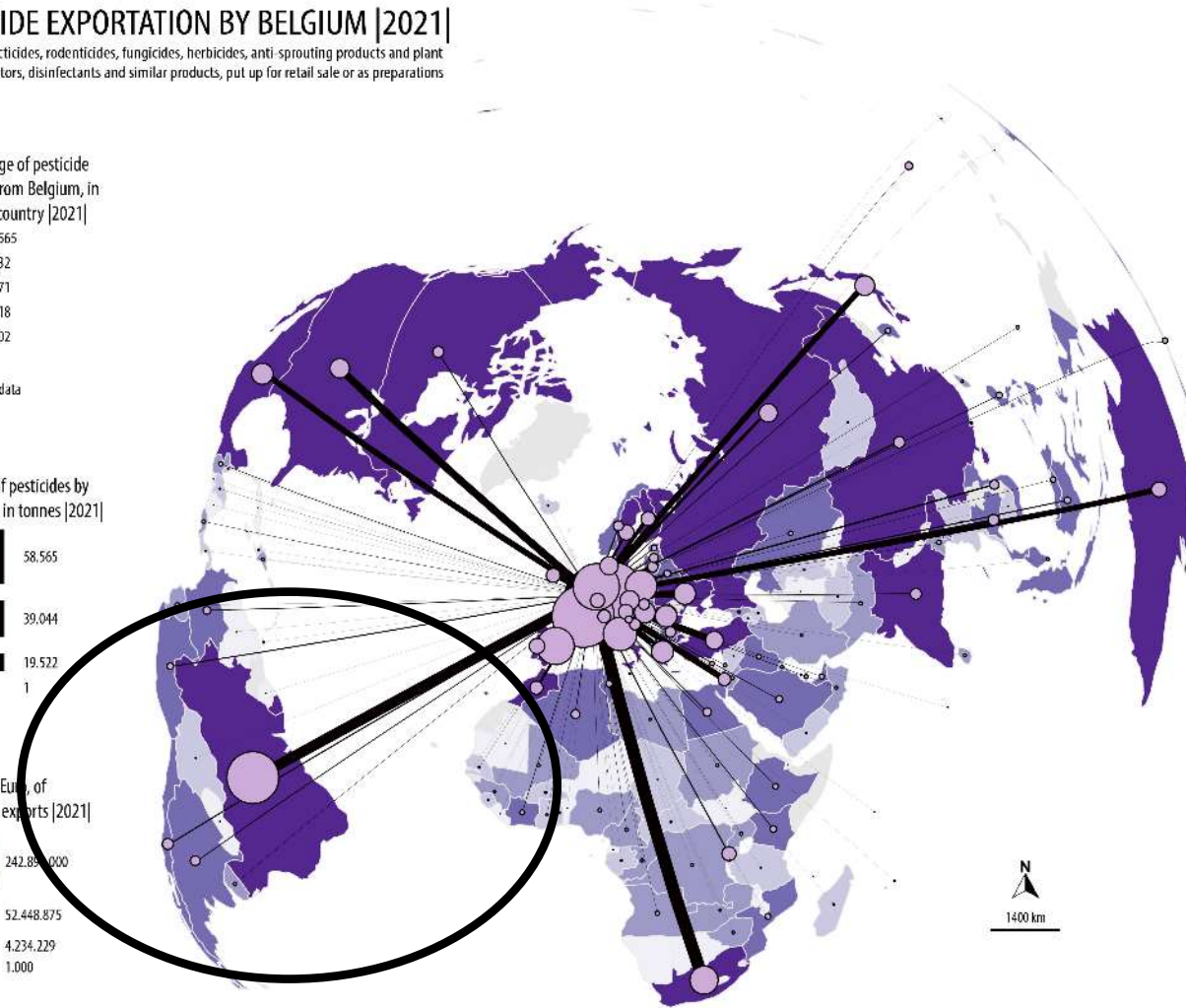
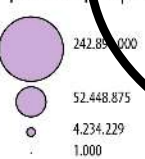
Percentage of pesticide exports from Belgium, in tons, by country [2021]



Exports of pesticides by Belgium, in tonnes [2021]



Value, in Euro, of pesticide exports [2021]

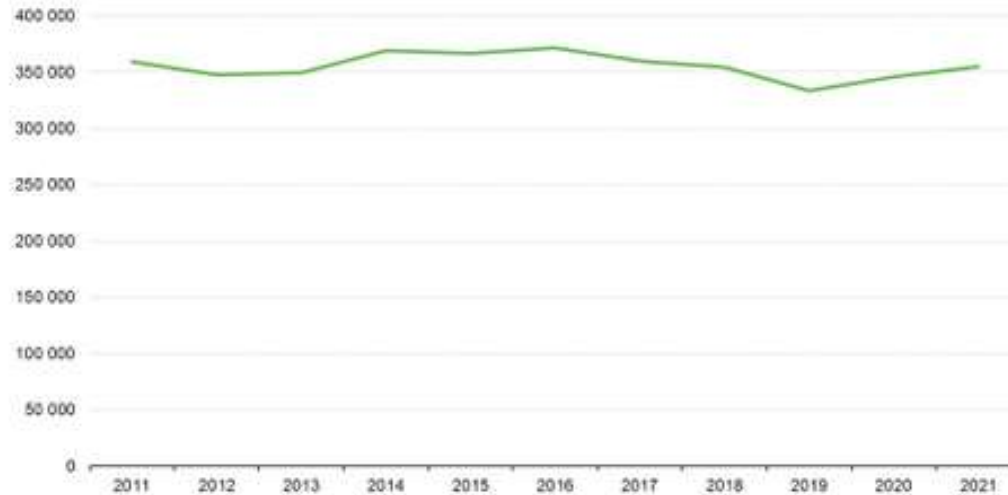


Group of 15 largest pesticide importers from Belgium [2021]



PESTICIDES SALES - EUROPEAN UNION (2011-2021)

Sales of pesticides
(tonnes, EU, 2011-2021)



Note: EU estimate for 2021 includes 2020 data for BE. EU data do not take into account confidential values, which represent < 1 % of the total sales over the entire time series.

Source: Eurostat (online data code: aei_fm_salpest09)

eurostat

Figure 1: Sales of pesticides (tonnes, EU, 2011-2021)

Source: Eurostat (aei_fm_salpest09)

USE OF PESTICIDES IN BRAZIL

(in tons per year)



BRAZIL - PESTICIDES SALES - 2020: TOP 10

Glifosato e seus sais

2,4-D

Mancozebe*

Atrazina *

Acefato *

Clorotalonil *

Malationa

Enxofre

Imidacloprido

Clorpirifós *

* Banned or not allowed at EU

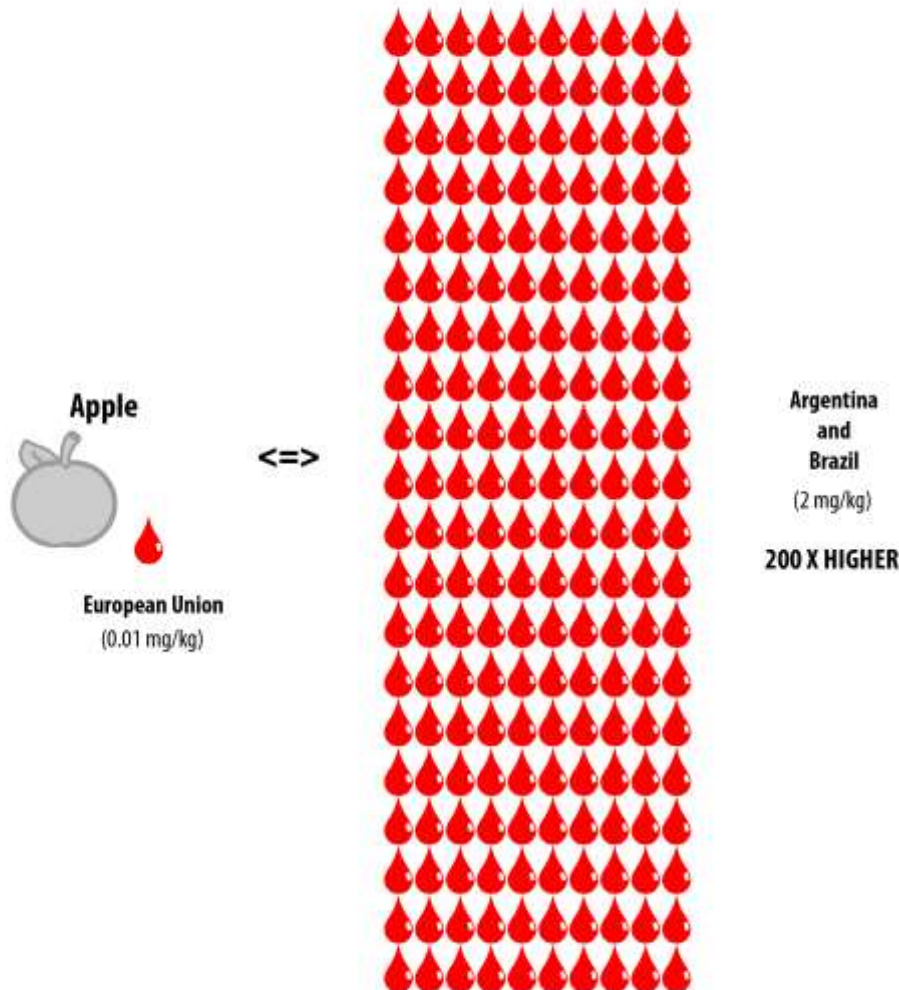
ATRAZINE -

EFFECTS ON HUMAN HEALTH:

Stomach cancer, non-Hodgkin's lymphoma, prostate cancer, thyroid cancer, ovarian cancer (triazine), Parkinson's disease, asthma, noisy breathing, infertility, poor semen quality, congenital malformations/teratogenesis (Mostafalou & Abdollahi, 2017), liver cell damage (Abass et al., 2009).

Bibliographic survey organised by Prof. Dr. Sonia Corina Hess- UFSC

THE EUROPEAN UNION AND ARGENTINA, BRAZIL
MAXIMUM RESIDUE LIMIT - MRL / CARBARYL (insecticide)
(mg/kg)



TOXICITY
Pesticide: Carbaryl

ACUTE	CHRONIC	ENVIRONMENTAL
■	■	■

CARBARYL - MRL

Highly toxic to mammals and an endocrine disruptor.

<https://sitem.herts.ac.uk/aeru/ppdb/en/Reports/115.htm>

Source: European Commission [https://ec.europa.eu/ 2020] and IBAMA [http://www.ibama.gov.br/agrotoxicos/ 2020]

Senasa [https://www.argentina.gob.ar/files/lmrsjulio2020dsca 2020]

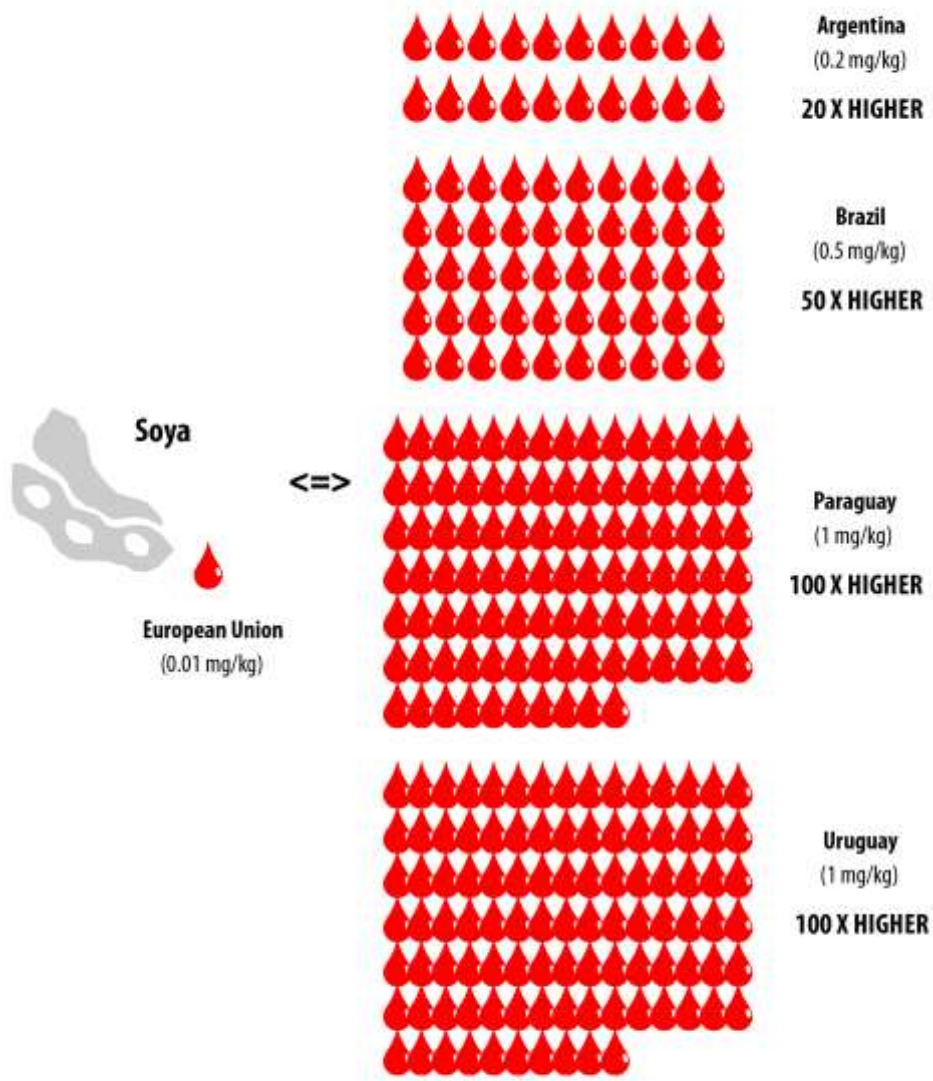
Organisation: Dr. Larissa Mies Bombardi / Design: Eduardo Dutenefer, Pablo Luiz Maia Nepomuceno, Paulo R. A. Moraes and Valdeir S. Cavalcante Gonçalves, Nov. 2020

- Unauthorised use in the European Union according to legislation 2007/355/EC: Commission Decision of 21 May, 2007.

THE EUROPEAN UNION AND ARGENTINA, BRAZIL, PARAGUAY, URUGUAY

MAXIMUM RESIDUE LIMIT - MRL / CHLOROTHALONIL (fungicide)

(mg/kg)



TOXICITY
Pesticide: Chlorothalonil

ACUTE	CHRONIC	ENVIRONMENTAL

CHLOROTHALONIL-Fungicide

Endocrine disruption (Hao et al., 2019),
poor semen quality (Zhang et al., 2019).

THE EUROPEAN UNION AND BRAZIL
MAXIMUM RESIDUE LIMIT - MRL / IPRODIONE (fungicide)
(mg/kg)



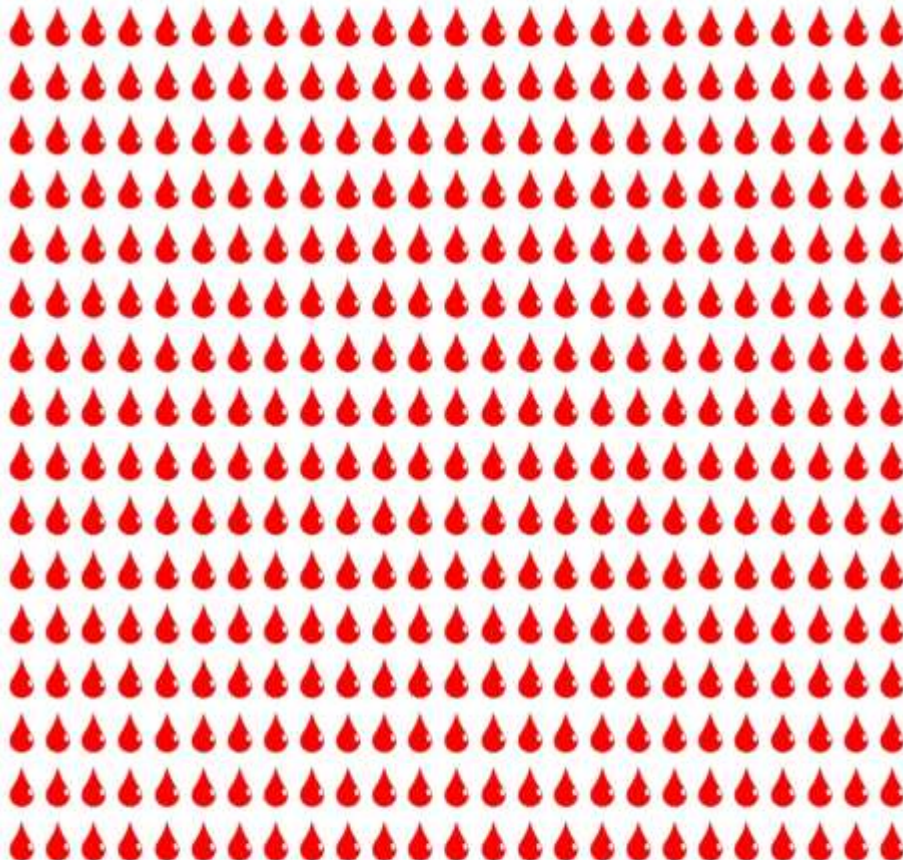
Bell Pepper



European Union
(0.01 mg/kg)

Brazil
(4 mg/kg)

400 X HIGHER



TOXICITY

Pesticide: Iprodione

ACUTE	CHRONIC	ENVIRONMENTAL

- Unauthorized use in the European Union according to Commission Implementing Regulation (EU) 2017/2091 from 14 November, 2017.

- Iprodione is the seventy-third best-selling pesticide in Brazil. In 2018, sales reached 129 tonnes.

Source: European Commission (<https://ec.europa.eu/>) 2020 and IBAMA (<http://www.ibama.gov.br/agrototoxicos/>) 2020
Organisation: Dr. Larissa Mies Bombardi
Design: Eduardo Dutkenfer, Pablo Luiz Maia Nepomuceno, Paulo R. A. Moraes and Valdeir S. Cavalcante Gonçalves. (Nov. 2020)

IPRODIONE - Fungicide

In addition to causing lung, liver and prostate problems, Iprodione is also an important endocrine disruptor, causing reproductive and developmental effects in humans.

[Iprodione \(Ref: ROP 500F\) \(herts.ac.uk\)](#)

THE EUROPEAN UNION AND BRAZIL

MAXIMUM RESIDUE LIMIT - MRL / CHLOROTHALONIL (fungicide)
(mg/kg)



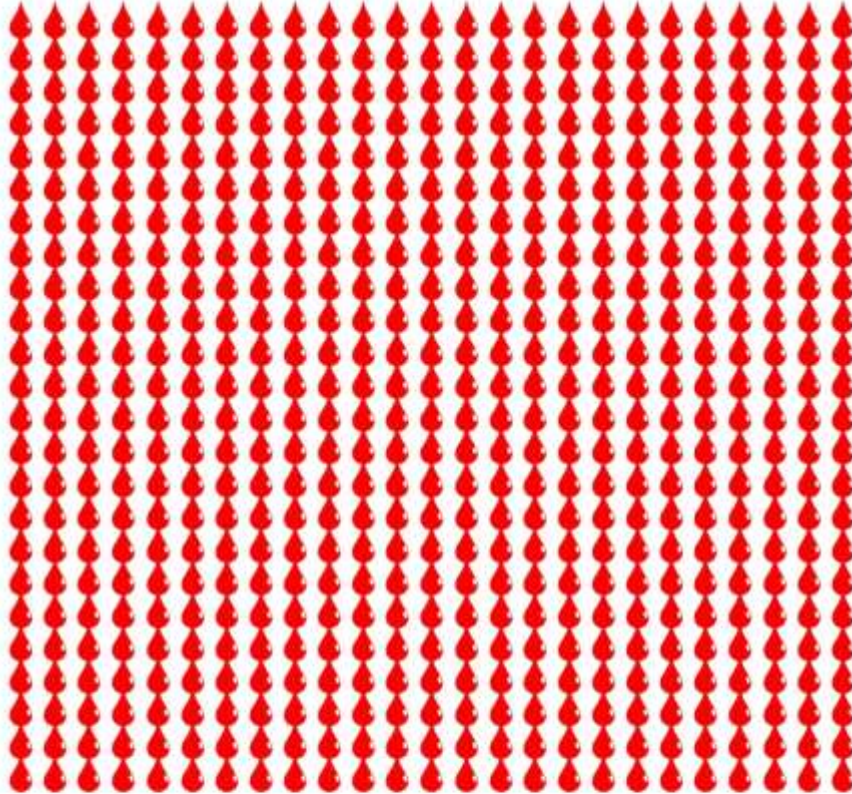
Lettuce



European Union
(0.01 mg/kg)

Brazil
(6 mg/kg)

600 X HIGHER



TOXICITY
Pesticide: Chlorothalonil

ACUTE	CHRONIC	ENVIRONMENTAL

Source: European Commission (<https://ec.europa.eu/>) 2020
and IBAMA (<http://www.ibama.gov.br/agrotoxicos/>) 2020
Organisation: Dr. Larissa Mies Bombardi
Design: Eduardo Dutkenfer, Pablo Luiz Maia Nepomuceno,
Paulo R. A. Moraes and Valdeir S. Cavalcante Gonçalves. (Nov. 2020)

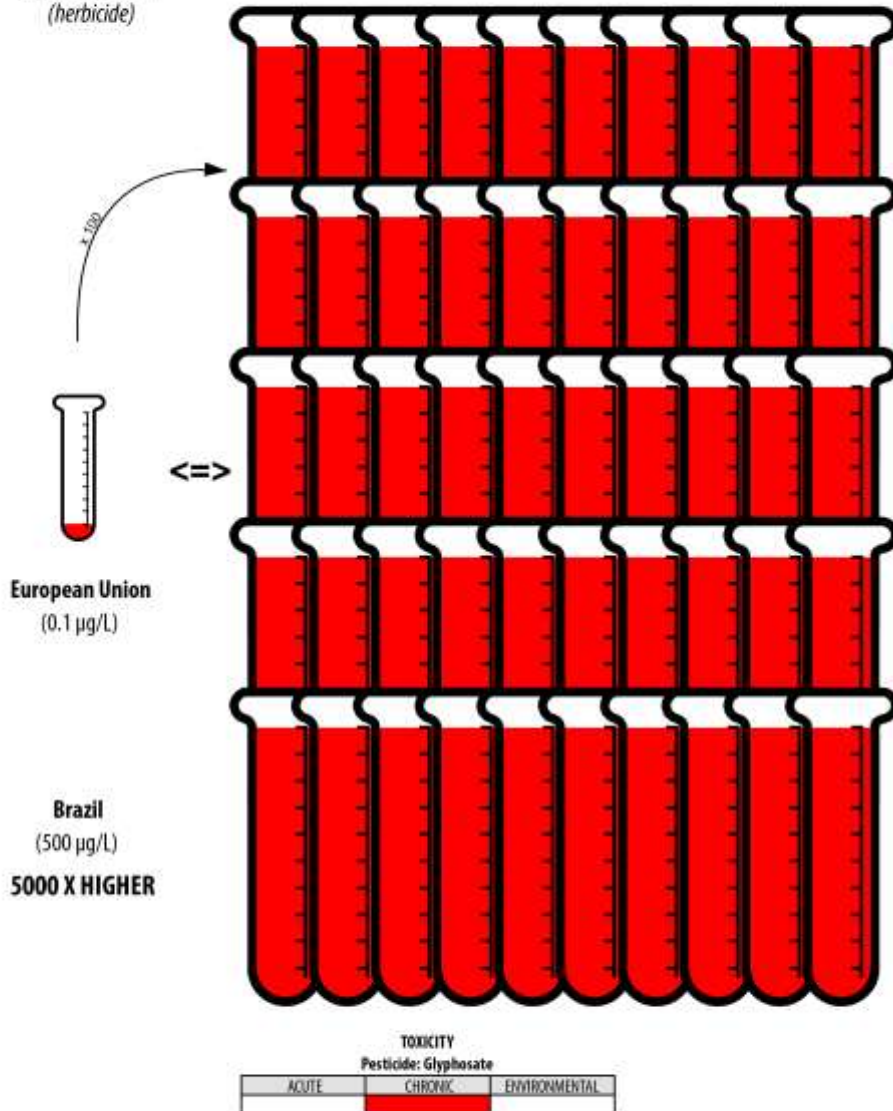
- Unauthorized use in the European Union according to Commission
Implementing Regulation (EU) 2019/677 from 29 April, 2019.

CHLOROTHALONIL- Fungicide

Endocrine disruption
(Hao et al., 2019),
poor semen quality
(Zhang et al.,
2019).

THE EUROPEAN UNION VS. BRAZIL
MAXIMUM RESIDUE LIMIT - MRL / DRINKING WATER
(µg/L)

GLYPHOSATE
(herbicide)



Glyphosate - Herbicide

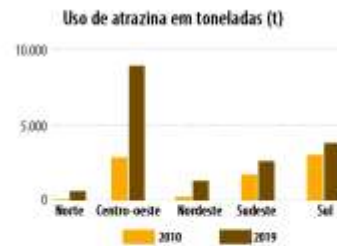
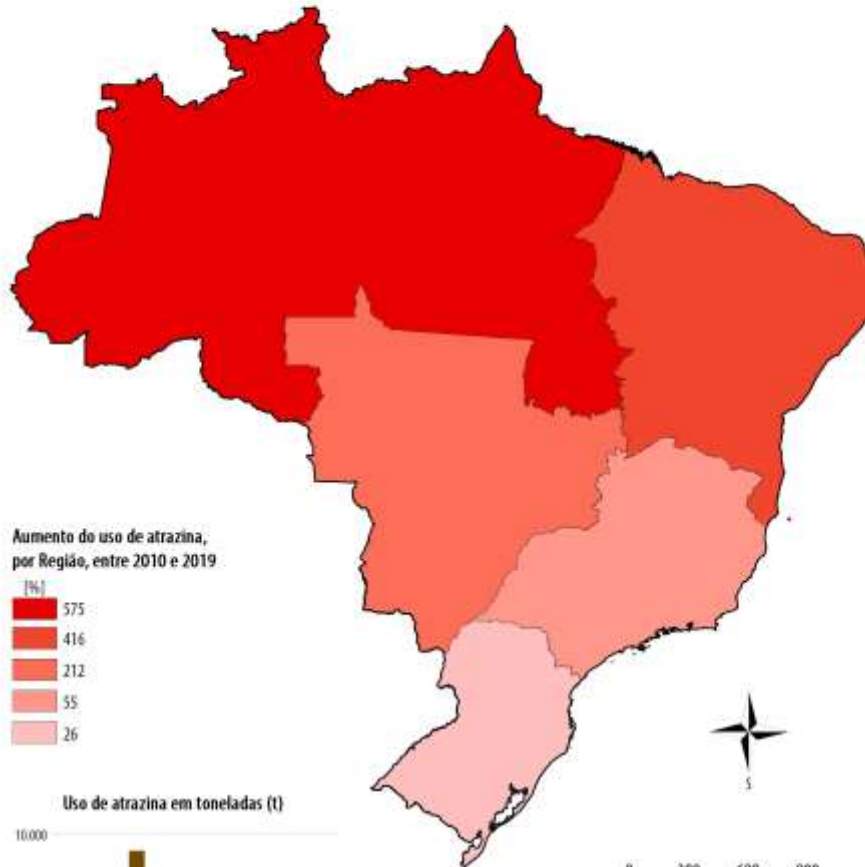
Effects on human health:

Non-Hodgkin's lymphoma, infertility (Mostafalou & Abdollahi, 2017), autism (Von Ehrenstein, 2019), chronic kidney problems, damage to embryonic and placental cells, programmed death and necrosis of placental, umbilical and embryonic cells, endocrine disruptor in liver cells, proliferation of breast cancer cells (Hess; Nodari, 2018), damage to liver cells (Abass et al., Bibliographic Review: Profa Dr Sônia Hess and Prof Dr Rubens Nodari).

BRASIL - AUMENTO DO USO DE ATRAZINA

INGREDIENTE ATIVO

Regiões Brasileiras [2010 - 2019]



Do total de 47.200 toneladas de atrazina, utilizadas nos anos de 2010 e 2019, há 10.959 (23,2%) em que não há definição da Região no qual o ingrediente ativo foi comercializado, e, portanto, não estão representadas neste mapa.

Fonte: IBGE (2017); IBAMA (2019)

Elaboração: ProP Dr^a Larissa Mies Bombardi

Cartografia: Pablo Luiz Maia Nepomuceno, Thatyane Mônico Nascimento e Valdeir S. Cavalcante Gonçalves. (Jul.2021)

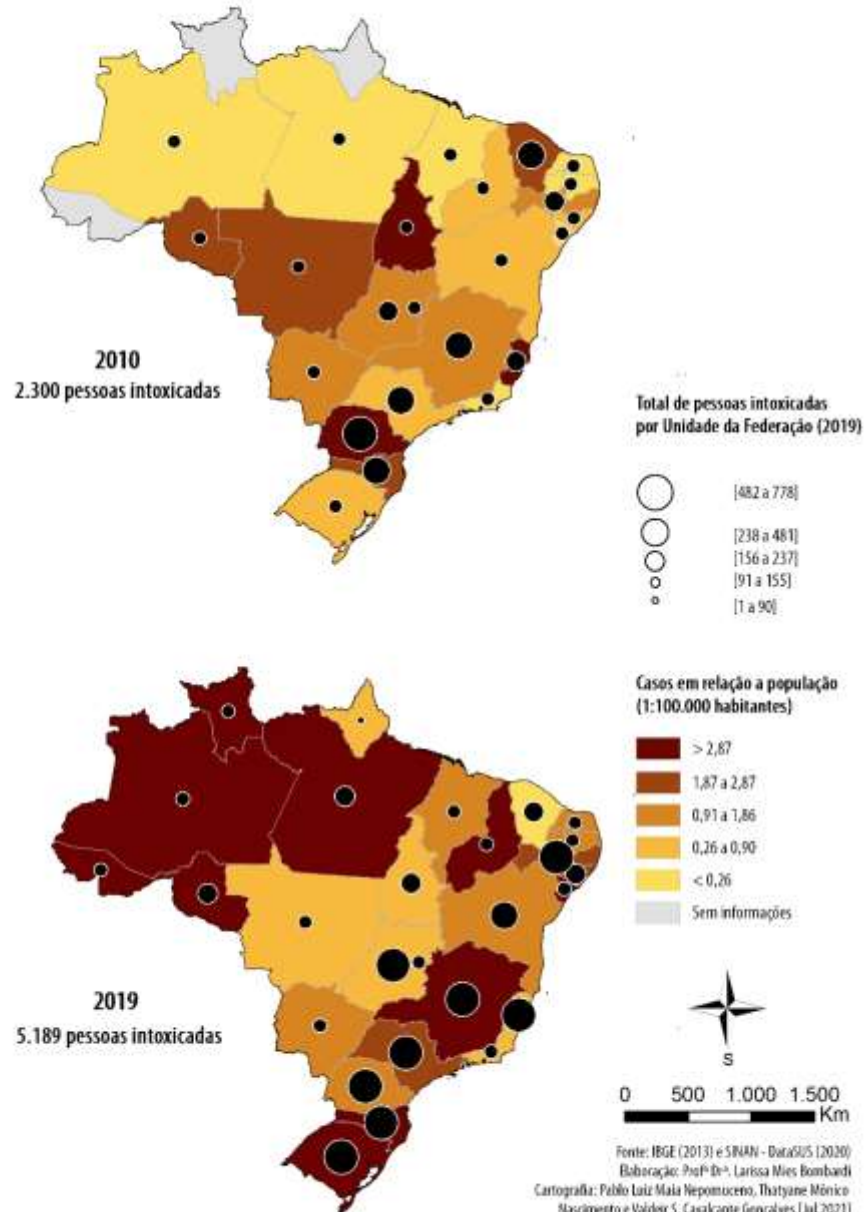
Atrazine

Herbicide
Banned in the EU
since 2003

Possible effects on human health:
Stomach cancer,
prostate cancer,
thyroid cancer,
ovarian cancer,
Parkinson's disease,
foetal malformation

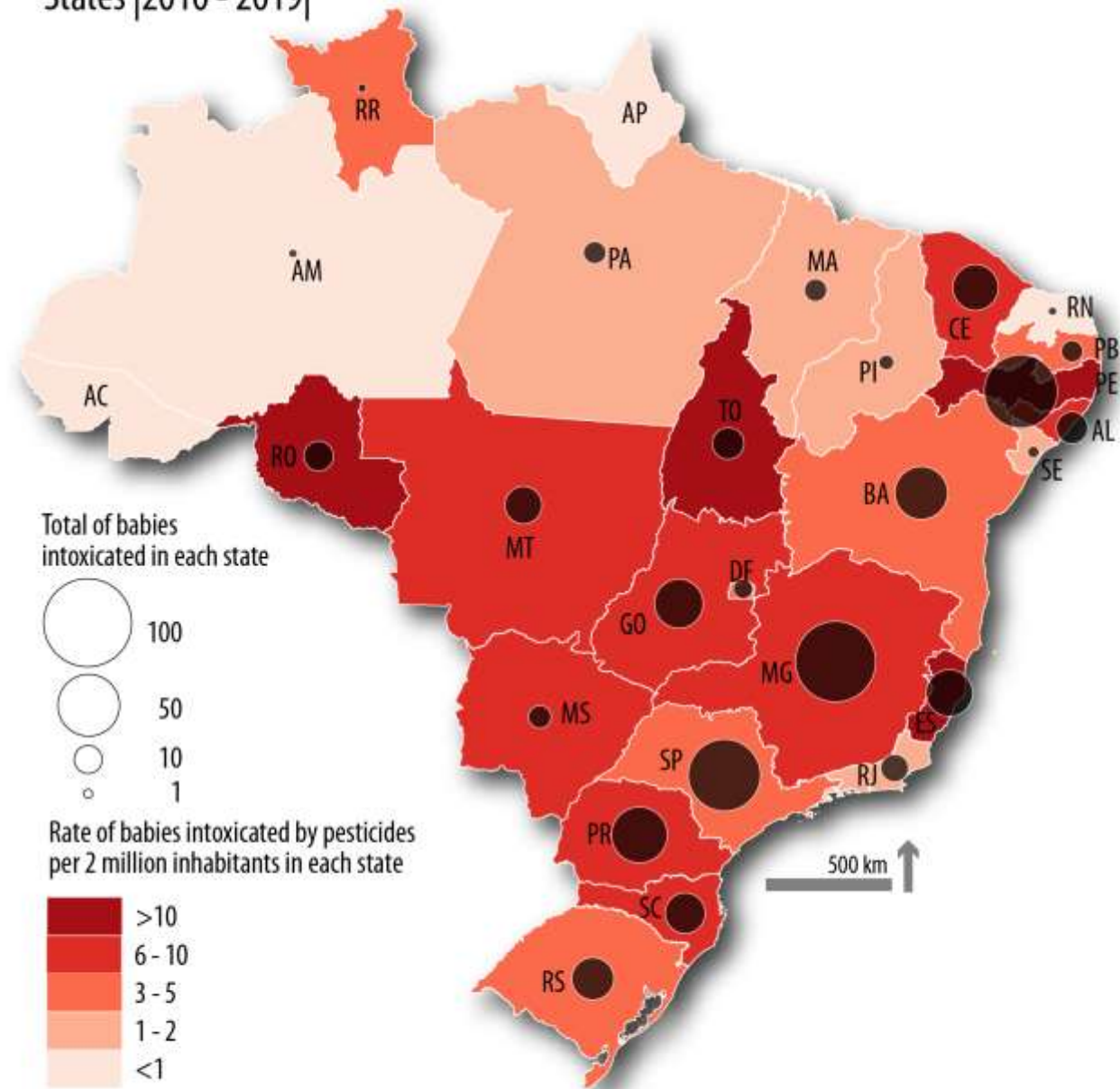
BRASIL - AUMENTO DE INTOXICAÇÕES POR AGROTÓXICOS DE USO AGRÍCOLA

Unidades da Federação (2010 e 2019)

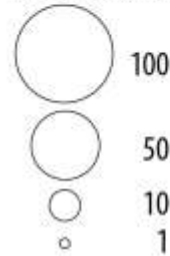


BRAZIL - BABIES INTOXICATED BY PESTICIDES [0-12 months]

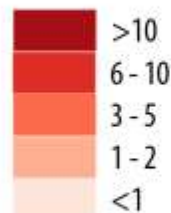
States [2010 - 2019]



Total of babies intoxicated in each state



Rate of babies intoxicated by pesticides per 2 million inhabitants in each state

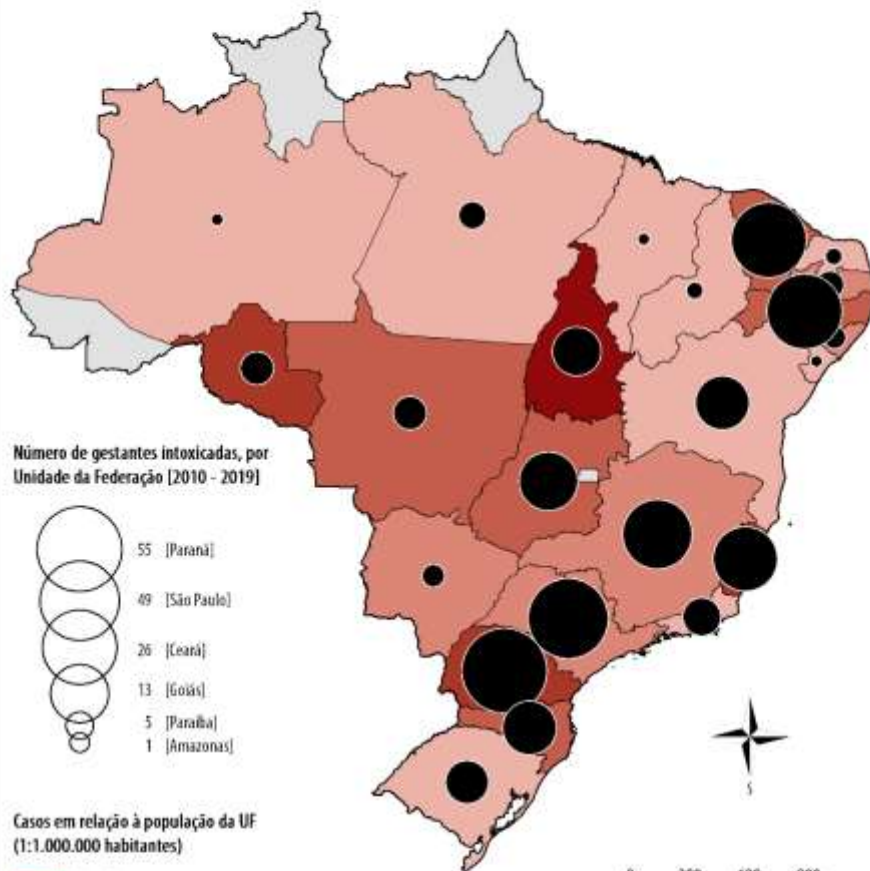


Total of 542 babies intoxicated by pesticides in Brazil in the period

Source: SINAN-DATASUS 2020 [<https://datasus.saude.gov.br/>] and IBGE, 2020;
Organisation: Dr. Larissa Mies Bombardi; Elaboration: Eduardo Dutenkefer,
Pablo L. M. Nepomuceno, Paulo R. A. de Moraes and Valdeir S. Cavalcante Gonçalves [Nov. 2020]

BRASIL - GESTANTES INTOXICADAS POR AGROTÓXICO

Unidades da Federação [2010 - 2019]



Considera-se, no total de 293 casos de gestantes intoxicadas, gravidez do 1º, 2º, 3º trimestre, além da idade gestacional ignorada.

Fonte: IBGE (2013) e SINAN - DataSUS (2020)

Elaboração: Profa. Dra. Larissa Mies Bombardi

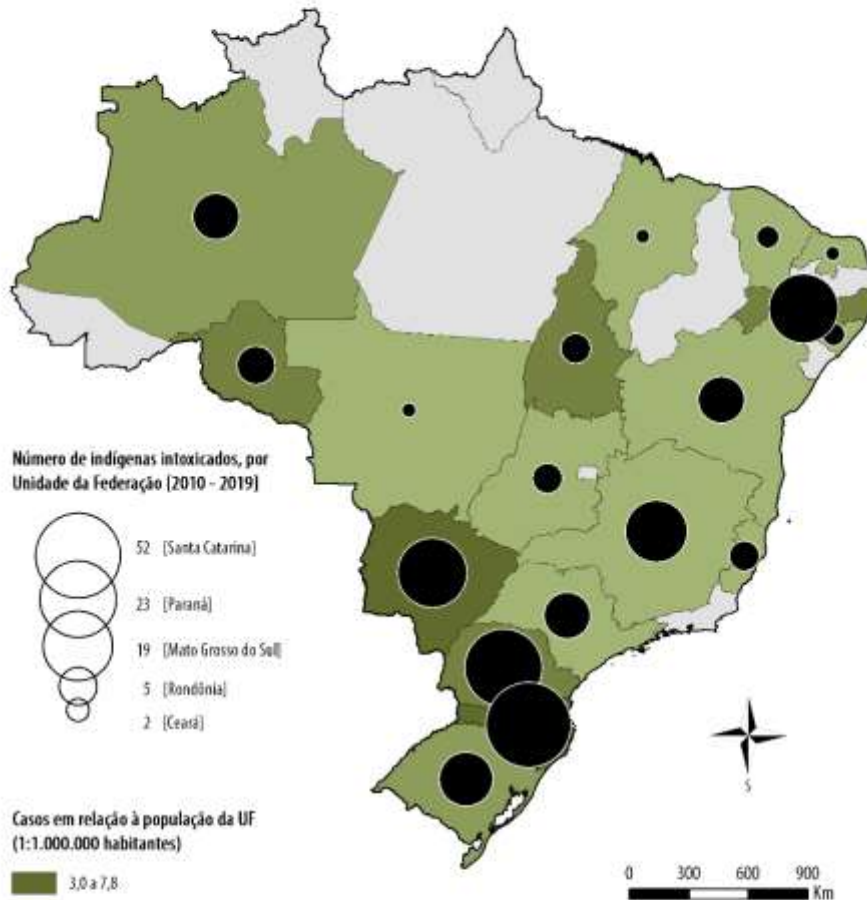
Cartografia: Pablo Luiz Maia Nepomuceno, Thalyane Mônico Nascimento e Valdeir S. Cavakante Gonçalves (Jul.2021)

293 Pregnant women poisoned by pesticides.

Probably (due to unreported cases): 14,650 pregnant women poisoned.

BRASIL - INTOXICAÇÃO DA POPULAÇÃO INDÍGENA POR AGROTÓXICO

Unidades da Federação (2010 - 2019)



Do total de 223 casos de intoxicação, há 37 (16,9%) em que as Unidades da Federação são ignoradas, e, portanto, não estão representados neste mapa.

Fonte: IBGE (2013) e SINAN - DataSUS (2020)

Elaboração: Pós-Dr. Larissa Mies Bombardi

Cartografia: Pablo Luiz Maia Nepomuceno, Thalyane Mônico Nascimento e Valdeir S. Cavakante Gonçalves (Jul.2021)

Indigenous People Poisoned by Pesticides

Aerial spraying:
Pesticides used as weapons in land conflicts and in Agroecological
Communities



**22nd April- 2021- Araçá - Peasant Community - Agroecological
Production - Maranhão - Brazil**

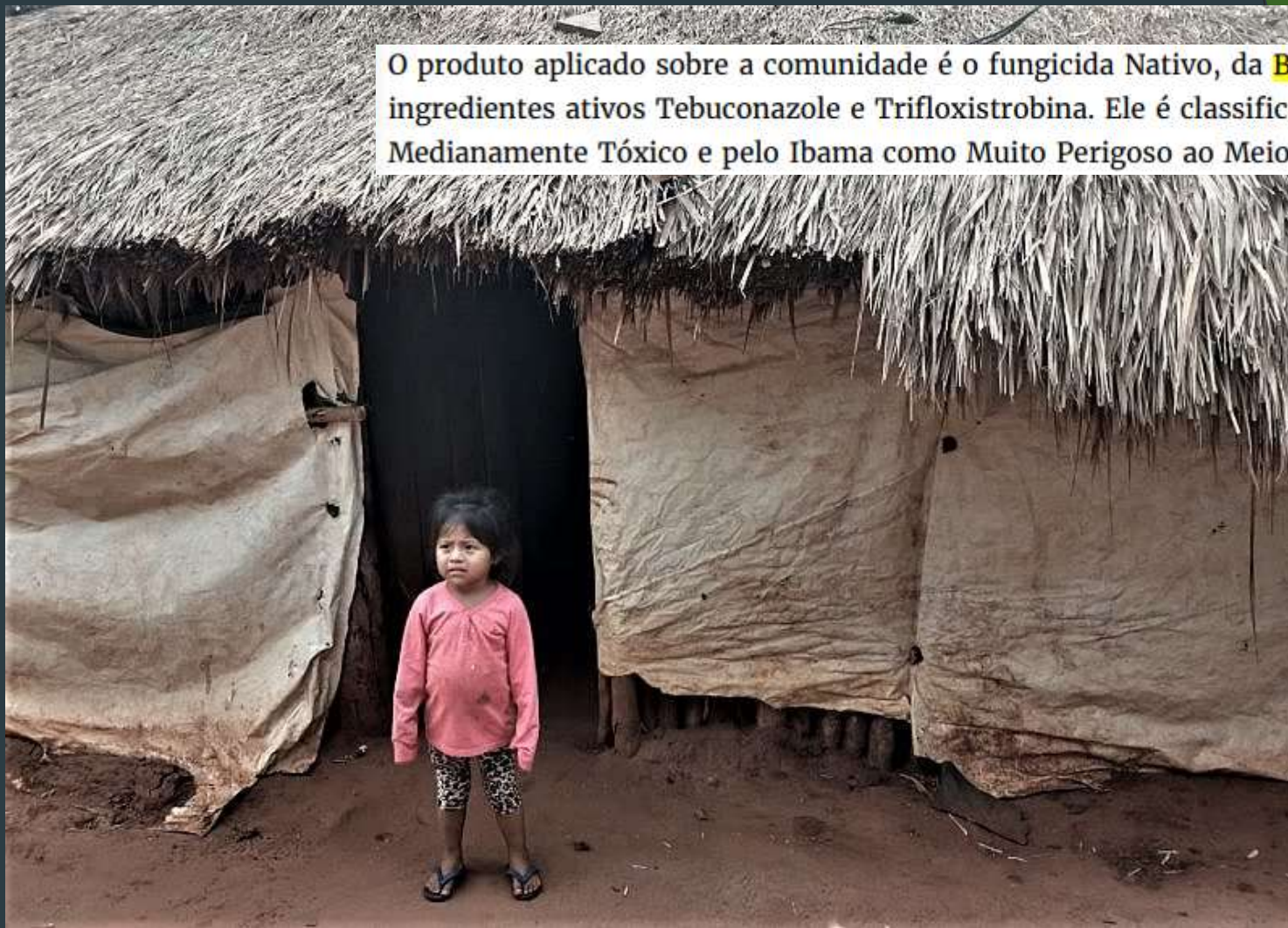
<https://www.redebrasilatual.com.br/ambiente/2021/05/agrotoxicos-sao-lancados-de-aviao-sobre-criancas-e-comunidades-em-disputa-por-terra/>

Aerial spraying:
Pesticides used as weapons in land
conflicts and in Agroecological
Communities



6th January - 2015- Indigenous Community- Mato Grosso do Sul -
Brazil

O produto aplicado sobre a comunidade é o fungicida Nativo, da Bayer, composto pelos ingredientes ativos Tebuconazole e Trifloxistrobina. Ele é classificado pela Anvisa como Medianamente Tóxico e pelo Ibama como Muito Perigoso ao Meio Ambiente.



Fungicide
“Nativo”
from Bayer

<https://www.brasildefato.com.br/2020/01/23/indigenas-vitimas-de-chuva-de-agrotoxico-recebem-indenizacao-de-rdollar-150-mil>

BRASIL - POPULAÇÃO ATINGIDA POR PULVERIZAÇÃO AÉREA DE AGROTÓXICOS

INTOXICAÇÃO

Regiões Brasileiras [2013 a 2021]

✈ Attingido(a) por pulverização aérea
 ✈ Localização do município de ocorrência

Buriti - MA

Comunidade é intoxicada por agrotóxico lançado de avião em Buriti, no Maranhão. Vídeo mostra avião que tenta lançar o produto sobre um menino. Outros 8 pessoas também foram atingidas.
 Globo / G1 | 06/05/2021

Pau D'Arco - PA

Agrotóxicos são lançados de avião sobre crianças e comunidades em disputa por terra. Criança de 7 anos ficou com feridas abertas pelo corpo após levar barbo de agrotóxico. Moradores de comunidades rurais no Maranhão e Pará gravaram o momento em que os aviões jogam pesticidas, sobre suas casas em áreas disputadas com grandes fazendeiros.
 Reporter Brasil / Agência Pública | 04/05/21

Espigão Alto do Iguaçu - PR

Município de Paranaíba, potencialmente fatal, intoxicou 96 pessoas, a maioria crianças que estavam em escola vizinha à área de plantação.
 Pública | 11/12/2018

Bela Vista de Goiás - GO

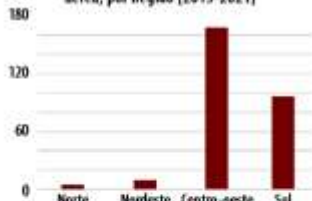
Uma dia, 47 intoxicados: cidade goiana sente na pele o ataque da soja e do veneno (...)
 Brasil de Fato | 11/05/2021



Percentual de casos noticiados em que houve contaminação, de homens e mulheres, devido à pulverização aérea de agrotóxicos, por Região [2013 a 2021]



Atingidos por agrotóxicos devido a pulverização aérea, por Região [2013-2021]



Fonte: IBGE (2013); Ministério da Saúde(2013); Org. Fato (2015); Reporter Brasil (2015/2021); IRV (2015/2017); Pública (2018); Focuz (2020/2021); Brasil de Fato (2021); KV (2021); Globo (2021) e Vectreoy.com (Vector).

Elaboração: PrP^{Dr.} Larissa Mies Bombardi
 Cartografia: Pablo Luiz Maia Nepomuceno, Tharyane Mônico Nascimento e Valdeir S. Cavakante Gonçalves. [Jul.2021]

Aerial spraying:
 Pesticides used as weapons in
 land conflicts

Agroecology as a path

Agroecology and the MST

(MST - Landless Rural Workers Movement)



“When the MST appeared and drew up its first definitions, recognising the peasantry as guardians of forests, seeds, springs, rivers and fauna”

MST - landless rural workers movement

Creole seeds: beans, mayze, etc



Source: <https://mst.org.br/nossa-producao/>

Brazil (Agroecological Cocoa)



Source: <https://mst.org.br/nossa-producao/>

AGROECOLOGICAL FAIR



Source: <https://mst.org.br/nossa-producao/>

MST - Donation of agroecological food during the pandemic



Source: <https://mst.org.br/nossa-producao/>

Brazilian Congress of Agroecology - November 2023 - More than 5000 participants

Com presença de mais de 5 mil participantes, encontro celebrou a construção da agroecologia no país e a retomada de espaços e políticas públicas estruturantes; saiba como foi o dia de abertura desse que é o maior Congresso de Agroecologia da América Latina



Saguão da Fundação Progresso enche-se de som e cor durante o cortejo de abertura do 12º CBA (foto: Juliana Chalita/Greenpeace Brasil)

Without feminism, there is no agroecology!



Cortejo de abertura do 12º CBA começou nos Arcos da Lapa e terminou na Fundação Progresso (foto: Ju Chalita / Geenpeace)

BOMBARDI, Larissa Mies. Agrotóxicos e colonialismo químico. (*Pesticides and Chemical Colonialism*) São Paulo: Editora Elefante, 2023.
<https://editoraelefante.com.br/produto/agrotoxicos-e-colonialismo-quimico/> (Book-Atlas)

BOMBARDI, Larissa Mies. “*Geography of Asymmetry: the vicious cycle of pesticides and colonialism in the commercial relationship between Mercosur and the European Union*”. *The Left*. Belgium, 2021. V1 52 pages + annex 140 pages. <https://left.eu/events/en-mercotur-the-vicious-circle-of-pesticides/> (Atlas-Book)

BOMBARDI, Larissa Mies. *A Geography of Agrotoxins Use in Brazil and its Relations to the European Union*. 1st ed. São Paulo: – Laboratory of Agrarian Geography, FFLCH – USP. 2019. v. 1. 267p.
<http://www.livrosabertos.sibi.usp.br/portaldelivrosUSP/catalog/book/352> (Atlas-book)

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