



# How to stop the spread of *Ambrosia* seeds in sowing material (crop seeds) throughout Europe?

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## THE RAISON D'ETRE THAT IDENTIFIES US

Take good care of the plant world for our health and a healthy environment

- 1st network in France of experts for plant, environment and people health
- **89** years of expertise
- 1 national federation
- **70** sites in France
- 400 employees



### WHO ARE WE?

#### **OUR MISSIONS**

3 field of activities



**VEGETAL HEALTH** 



**ENVIRONMENTAL HEALTH** 

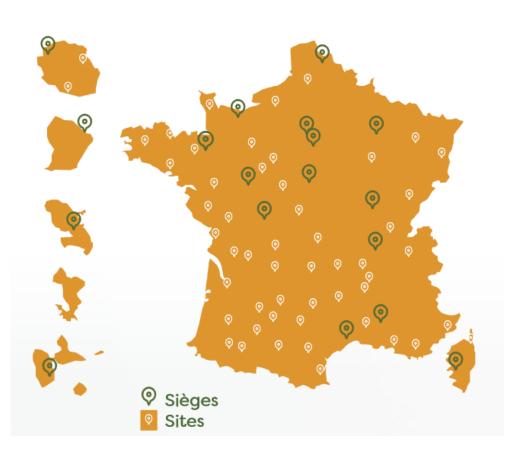


**HUMAN HEALTH** 



One Health approach

## OUR PRESENCE IN FRANCE



## WHO ARE WE?





Liberté Égalité Fraternité







### WHO ARE WE?

### Others ministries



Liberté Égalité Fraternité



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Ragweed Observatory FREDON France



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### WHO ARE WE?

#### Others ministries



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Égalité Fraternité

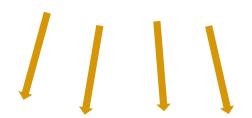


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Ragweed Observatory **FREDON France** 



**Partners** 



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International movement of seed counted for

8.3 billion USD and

# 5.3 million metric tons of seeds exported in 2019

and many additional seed exchanges happen for research and development purposes.

#### Source:

https://www.worldseed.org/resour ces/seed-statistics/



### DISPERSAL OF AMBROSIA SEEDS WITH CROP SEEDS: OLD FRENCH REFERENCES



Rev. Ser. Boursonnous 1923: 5-7



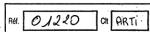
SIIR LA DISSÉMINATION DES PLANTES

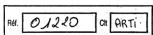
Certaines plantes se propagent avec une rapidité extraor-

En 1904, j'ai arpenté pas mal de terres situées à Chassenard, dans l'angle formé par le canal latéral et le canal de Roanne. Je n'y ai pas remarqué un seul pied de l'Ambrosia artemisæfolia, que je connaissais depuis longtemps. Il y a moins de dix ans que j'ai rencontré les premiers pieds. Aujourd'hui cette mauvaise herbe — aucune bête ne la broute -- couvre littéralement des hectares de terres sableuses.

C'est en 1910 que j'ai trouvé au bord de la Loire le premier pied de Collomia glutinosa. Aujourd'hui on trouve cette plante en abondance; et sur certaines grèves de Chassenard ou de Digoin, on la compte par milliers de pieds. Il en est à peu près de même du Lepidium virginicum, très abondant aujourd'hui le long de la Loire, surtout autour de Digoin, alors que vers 1890 je n'en trouvais que de très rares pieds. C'est également ce qui commence à se produire pour le Chenopodium Botrys.

L'Ambrosia artemisæfolia a été évidemment introduit par





Ann. Agron, 1929, 16-199

#### LES SEMENCES DES PLANTES ADVENTICES DANS LES CÉRÉALES

PAR

#### Louis FRANCOIS

DOCTEUR ÉS SCIENCES, CHEF DE TRAVAUX A LA STATION D'ESSAIS DE SEMENCES

(Suite) (1).

I. d.: 63.195.1

#### ÉTUDE DES SEMENCES D'IMPORTANCE CAPITALE DANS LA DÉTERMENATION DE LA PROVENANCE

Les semences suivantes doivent retenir tout particulièrement notre attention par suite de l'importance qu'elles présentent dans la détermination de la provenance des échantillons de céréales.

Nous allons, comme précédemment, suivre l'ordre habituel adopté dans les flores, sans revenir sur les caractères généraux des semences, ces caractères ayant déjà été examinés.

#### Famille des Crucifères.

Deux groupes de semences retiendront ici notre attention : le Vélar d'Orient (Erysimum orientale) et les Rapistres (Rapis-

1º Vélar d'Orient (Erysimum orientale) : graine très foncée d'un brun noir, plus longue que large, saillie radiculaire latérale

Ambrosia artemisiæfolia. - Fruits de couleur foncée, d'un gris noir terne, présentant à peu près au tiers de leur hauteur une couronne de dents épineuses; au delà de cette couronne, la



Fig. 35. - Ambrosia artemisiaefolia L. gr = 7-8.

semence présente une sorte de dôme terminé par une pointe plus ou moins développée. Longueur totale de la semence : 3 à 4 mm

Distribution géographique : espèce originaire de l'Amérique du Nord. Observée en Allemagne vers 1863, en France 1870 et répandue largement. Angleterre, Belgique, Hollande, Allemagne, Danemark.





<sup>(1)</sup> Voir ces Annales, 45e année, 1928, nº 6, p. 543 et suiv.

#### DISPERSAL OF AMBROSIA SEEDS WITH CROP SEEDS



2006

#### Journal of Biogeography



The historical spread of *Ambrosia artemisiifolia* L. in France from herbarium records

Bruno Chauvel , Fabrice Dessaint, Catherine Cardinal-Legrand, François Bretagnolle

First published: 28 March 2006 | https://doi.org/10.1111/j.1365-2699.2005.01401.x | Citations: 146

=> "The study of specimen labels indicates that [A.artemisiifolia] has been introduced in France in a seed crops at various independent geographical points and at various times"

Pest Risk Analysis and Pest Risk Assessment for the territory of the Republic of Poland (as PRA area) on *Ambrosia* spp.

2001

(updated version)

by dr. Witold Karnkowski 2012

2015

 $\overset{\text{\tiny DE}}{G}$ 

DE GRUYTER

Biologia **70**/7: 893—904, 2015 Section Botany DOI: 10.1515/biolog-2015-0102

Reciprocal contamination by invasive plants: analysis of trade exchange between Slovakia and Romania

Peter Ferus¹\*, Culiţă Sîr<br/>Bu², Pavol Eliáš jr.³, Jana Konôpková¹, Ľuba Ďurišová³, Costel Samuil² & Adrian Opre<br/>a $^4$ 

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- Department of Plant Science, University of Agricultural Sciences and Veterinary Medicine, Mihail Sadoveanu Alley 3, 700490 Iasi, Romania
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- <sup>4</sup> Botanical Garden, University Alexandru Ioan Cuza, Dumbrava Rosie st. 7-9, 700 487 Iasi, Romania

#### 2007

Exotic weed seeds detected from imported small cereal grains into Japan during 1990s'

Motoaki Asai\*, Shunji Kurokawa\*\*, Norihiro Shimizu\*\*\* and Takashi Enomoto\*\*\*\*

Oral session 7 Exploring the routes, pathways and vectors of invasion

The influence of quantity, quality and distances of seeds dispersed by different vectors on the dynamics of ragweed invasion

G. KARRER, I. MILAKOVIC, F. LENER & M. LEITSCH-VITALOS

Institute of Botany, University of Natural Resources and Life Sciences Vienna, Austria Email: gerhard.karrer@boku.ac.at

Etc...

#### DISPERSAL OF AMBROSIA SEEDS WITH CROP SEEDS

There are documented cases of introduction of **A. trifida** into Europe via:

- Seed of soybean, maize, sunflower and sorghum from North America
- seeds of grasses from the Netherlands (most likely the seed was imported into the Netherlands from other regions)
- in imported **flax seed** in Russia

Source : <u>EPPO 2019</u>, <u>Pest Risk Analysis for *Ambrosia trifida* L. (Asteraceae)</u>







#### DISPERSAL OF AMBROSIA SEEDS WITH CROP SEEDS

# Documented cases of introduction of *A. psylostachya* into Europe via :

- mixed with seeds that had been imported from Canada in Russia
- Several parts of herbariums also indicate the species near cargo ports where it was probably accidentally introduced with seeds (or with other goods).

Source: ANSES 2017, Opinion and Report on conducting a risk analysis relating to the western ragweed (*Ambrosia psilostachya* DC.) in order to formulate management recommendations







# Is there a regulation to prevent this ??









17.8.2012

EN

Official Journal of the European Union

L 219/5

#### COMMISSION REGULATION (EU) No 744/2012

of 16 August 2012

amending Annexes I and II to Directive 2002/32/EC of the European Parliament and of the Council as regards maximum levels for arsenic, fluorine, lead, mercury, endosulfan, dioxins, Ambrosia spp., diclazuril and lasalocid A sodium and action thresholds for dioxins

(Text with EEA relevance)

maximum content =

50 mg/kg of animal

feed  $I \sim 15 - 30$  seeds



Undesirable substance	Products intended for animal feed	Maximum content in mg/kg (ppm) relative to a feed with a moisture content of 12 %
'11. Seeds from Ambrosia spp.	Feed materials ( <sup>3</sup> ) with the exception of	50
	— Millet (grains of Panicum miliaceum L.) and sorghum (grains of Sorghum bicolor (L) Moench s.l.) not directly fed to animals (3).	200
	Compound feed containing unground grains and seeds.	50'





### EU SEED MARKETING LEGISLATION



- To be marketed freely within the EU, seeds must comply with EU norms and rules.
- Seed marketing Directives define the quality standards that must be met in the field for seed production of agricultural plant species and seed lots. EU countries can only market officially certified seed
- To be certified, seeds must fulfil some criteria and they shall have sufficient analytical purity and shouldn't exceed a maximum content of seeds of other plant species.
- Some unwanted species are completely prohibited in sowing material (i.e. Avena fatua). But not Ambrosia spp!
- This regulation is currently reviewed and could be upgraded with new rules.







# Risk of introduction of herbicide resistance

No regulation relating to the control of the introduction

=> risk of introducing genotypes of *Ambrosia* resistant to herbicides











# We need to do something! What do we do?



# IRS Letter to European instances on the regulation relative to crop seeds in Europe

 Object: Letter to European Commission, European Council and European Parliament on the regulation relative to crop seeds in Europe with the addition of Ambrosia spp. in the list of prohibited species.

Add your name in signatories!



MichelTHIBAUDON

Precident of the International Ragweed Society Nyon (Switzerland) International ragweedsociety.org Buropean Commission Buropean Council Buropean Parliament 1049 Brussels, Belgium

Object : Letter to European Commission, European Council and European Parliament on the regulation relative to crop seeds in Europe with the addition of Ambrosia app. In the list of prohibites resource.

#### International Ranwood Society

The international Regimeed Society is a non-profit association which aims to promote the knowledge concerning Ambrodic species, facilitate collaboration, research, education, information, suchsical development, practical applications, and laws concerning regimeed and its direct and indirect impacts.

#### invasive Ambrosiz species

Common, giant and western regioneds (Ambrosic ortensis)billo L., A. mifido L. and A. poliostochyo DC.), native to North America, have invaded different parts of the world. They are considered invasive in many European countries (see the EPPO Global Database) and their spread and impact are likely to increase with climate change.

#### impact on human healt

Those species produce large quantities of pollen, highly allergenic, transported by wind over far distance. Some 13.5 million persons suffered from Ambrosio-Induced allergies in Europe, causing costs of Euro 7.4 billion annually (see Schaffner et al, 2009).





# Take home messages

- European regulations do not prohibit the presence of Ambrosia seeds in sowing material.
- These regulations are currently reviewed and could be upgraded with new rules.
- IRS asked the European instances to adapt the regulation relative to crop seeds in Europe with the addition of *Ambrosia* spp. in the list of prohibited species (zero *Ambrosia* seed allowed in a sample of crop seed).
- Please contact us if you want to be a part of it (addition of your name in signatories) and send it to the
  concerned authorities in your country. We have more chances to be heard if a lot of different EU members
  report this request.
- This is a first step for Europe: if we succeed, let's go for international regulation!





### AND BY THE WAY...

- Our newsletter in english
- Observatory of high-stake species for human health

=> If you want to be added to the list, just ask me!

#### **NEWSLETTER OBSERVATORY OF HIGH-STAKE** SPECIES FOR HUMAN HEALTH



In this issue



The 25th April of 2022, the oak and pine processionary moths entered the health code of the French egulation. Just like Ambrosia species, this addition allows territory managers to take action for the ontrol of those species propagation.4

Carrying urticanting hairs, the processionary caterpillars can cause health problems in humans and other warm-blooded animals. Their population are increasingly important in France, and their distribution areas are expanding every year because of climate change. The health risk therefore has been increasing every year.



On a local level, this new regulation will allow territory managers in order to raise awareness and prevent the spread of these species.

Is there a similar regulation in your country? Please, contact us to share your experience of processionary management





#### The observatory of high-stake species for human health is doing an international watch!

With its brand new web page (www.especes-risque-sante.info) the observatory publish informations on species that may pose a risk to human health around the world. These species may or may not already be present in France. If you have information about a species we might be interested in, please send us an email and we will write an article about it.

#### OSTREOPSIS, LOOK OUT FOR THIS SUMMER MICRO-ALGAE

Ostreopsis is a tropical micro-algae that can cause significant human intoxication. First observed in France in 1972, it is

Under the right conditions, Ostreopsis grow and release a toxin that can cause damage on marine biodiversity and human health. This species can contaminate swimmers, water sports enthusiasts and all other coastal users.

The toxin produced by the micro-algae is palytoxin\*, which can cause a flu-like condition for humans. Symptoms after cutaneous contact, inhalation or ingestion are metallic taste, skin reactions, ENT infections, conjunctivitis, dizziness, nausea and fatigue. Clinic signs can appear over the next 48 hours after exposition, but they generally appear 2 to 6 hours after exposition. They usually disappear within 24 to 48 hours of their appearance. The reaction can be more severe in tropical

Another effect of this proliferation of microalgae is that some seafood products (fish, mollusc, shellfish, urchin, etc.) can concentrate the toxin inside them and pose a risk for consumers. As a precaution, it is recommended to not consume recreational fishing products in these areas.

Additional info: In the Mediterranean sea, the most represented species is Ostreopsis of ovata, whereas on the Basque coast it is



\*Functioning of palytoxin:

This is the same toxin that is produced by the sunrey zoenthid (Palythoa heliodiscus), a coral species. The toxin binds to the sodium-potassium pumps in the cells and changes their functioning. This can lead to the destruction of red blood cells and violent contractions of cardisc and muscle cells.

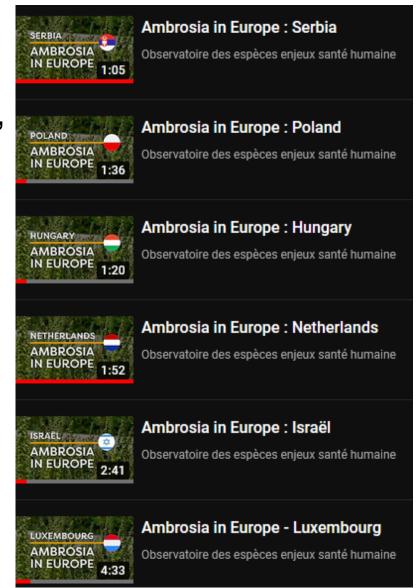






## Youtube: "Ambrosia in Europe"

https://www.youtube.com/watch?v=4 ZEAYROih4k&list=PLEJX7ly3C1b71 QuqQi qlNwMOPCfvB Z5&index=4







BUDAPEST, HUNGARY



# Thank you for your attention





Website of French Ragweed Observatory:

ambroisie-risque.info

For any questions:

observatoire.ambroisie@fredon-france.fr





