COMMON RAGWEED POLLINATION IN FRANCE

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Introduction of ragweed in France

- 1860: in a field of Allier (French department) with seeds of red clover from North America
- First World War
- Then spreading along roadsides and river banks (Rhône, Loire)
Ragweed in France in 2011

Number of ragweed observations by 10x10 km

- **White** 1 – 5
- **Yellow** 6 – 10
- **Blue** 11 –
- **Red** >15

![Map of France showing ragweed observations](image)
Healthy impact of ragweed pollens

- Around 1970, the role of ragweed was highlighted in pollinosis cases in Lyon.
- 6 to 12% of the French population is allergic to ragweed, especially in the Rhone-Alps region.
Pollen stations in France in 2014

70 stations
+
8 during ragweed pollination
Pollen exposure: pollen traps

- Orifice
- Orifice (10 l. air/min)

Reading
2 horizontal lines

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<td>1st day</td>
<td>2nd day</td>
<td>etc...</td>
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Tape on the drum

1h = 2mm
Pollen exposure: analysis

Retrieving of the strip on the drum

Cutting of the strip in daily parts

1 slide by day

Daily concentrations (grains/m³ of air)
Based on a bi-hourly time step

Counting thanks to a voice recognition system

Pollens counts
Allergy risk:
- depends on allergy potency and concentration of pollens
- scale: from 0 (null) to 5 (very high)
- Allergy risk = 3 → all allergy sufferers show symptoms
Pollen index of ragweed – 2013

16 stations in Rhone–Alps region
4 areas

Map key

Yearly pollen index
Days with allergy risk ≥ 3

- < 5 days with allergy risk ≥ 3
- From 5 to 10 days with allergy risk ≥ 3
- From 11 to 20 days with allergy risk ≥ 3
- > 20 days with allergy risk ≥ 3
25 years of pollen data

- Evolution of the start date of pollination
- Evolution of the yearly pollen index
- More and more infested areas
Start date of ragweed pollination in Lyon

Average Day n°224
20 days with an allergy risk ≥ 3 in 2013
Sharp fall since 2012
50 (!!) days with an allergy risk ≥ 3 in 2013
Stable but very high level of pollen index
Grenoble
Keep a close eye on

Yearly pollen index


26 days with an allergy risk $\geq 3$ in 2013
Low level of pollen index but increase since 1996
More and more infested areas
Bi-hourly data

- Allow to determine the circadian rhythm of the plant and to evaluate if the pollens are of a local origin or transported over longer distance by the wind.
Only the North of the region (Montluçon and Vichy) seems to be infested by ragweed.

Clermont–Ferrand (center of the region)
Some pollens but few days with allergy risk $\geq 3$

Few ragweed pollens in Aurillac (South of the region)

* Map of 2012
Case of Auvergne region: Vichy

Local pollens
Case of Auvergne region: Montluçon

Local and transported pollens
Case of Auvergne region: Clermont–Ferrand

Transported pollens
Conclusion

Twenty-five years of pollen data history offers an interesting overview of the evolution of ragweed pollination in France: season begins earlier, the amounts of pollen are increasing in most of the stations and it seems that more and more areas are infested and, consequently, more and more people become sensitive and symptomatic.
THANK YOU FOR YOUR ATTENTION