

Clinical index and bi-hourly ragweed pollen counts permit to define the ragweed threshold in different areas of France

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International Ragweed Society



Pollen exposure

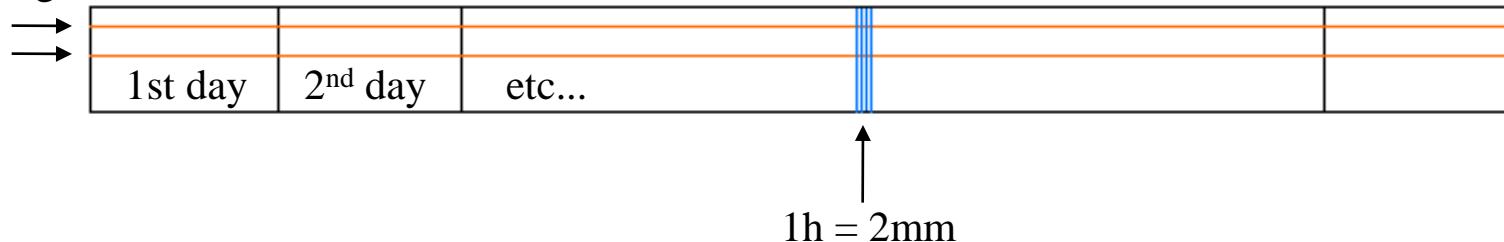
Pollen trap

Breathing orifice
(10 l. air/min)

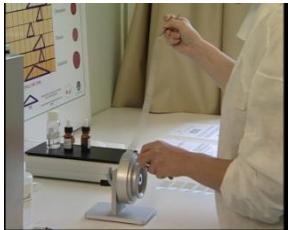


Horizontal
reading

Adhesive tape on the drum



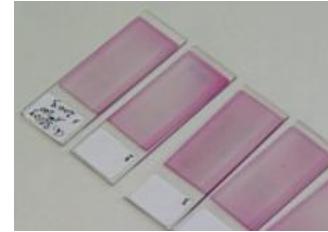
Analysis



Collection of the
drum band



Dividing the band
into daily sections



1 slide by day



Counting with a
vocal recognition system

Daily amounts (grains/m³)

Reports

LYON du 16/04/09 au 22/04/09

FOCUS : 1.08

	16/04/09	17/04/09	18/04/09	19/04/09	20/04/09	21/04/09	22/04/09	Total/m ³	E
Quercus	62	40	155	331	371	285	359	1603	+
Platanus	69	24	88	69	140	100	67	557	-
Morus	26	4	13	20	23	15	26	127	-
Betula	5	7	11	19	38	20	9	109	-
Fagus	-	-	4	2	33	31	30	100	+
Fraxinus	2	5	3	3	10	20	9	52	-
Cupressaceae-									
Taxaceae	2	-	4	6	7	10	18	47	-
Populus	2	4	5	9	10	8	7	45	-
Carpinus	-	4	3	3	16	13	5	44	-
Juglans	-	3	3	6	8	12	8	40	-
Poaceae	2	3	7	2	3	4	13	34	+
Plantaginaceae	2	5	3	2	9	2	6	29	+
Pinus	11	-	-	-	3	4	7	25	-
Salix	2	-	6	-	11	2	3	24	-
Ginkgo	-	-	2	2	4	2	3	13	+
Indetermines	2	2	3	-	4	-	2	13	-
Urticaceae	2	-	-	-	3	-	4	9	-
Ericaceae	-	-	-	3	2	-	3	8	-
Cyperaceae	-	-	2	2	-	-	3	7	+
Rumex	-	-	-	-	-	3	4	7	+
Acer	-	-	-	-	-	3	2	5	-
Celtis	2	-	-	-	2	-	-	4	-
Picea	-	-	-	-	-	-	4	4	+
Ulmus	-	-	-	-	-	2	2	4	-
Aesculus	-	-	-	-	-	-	3	3	+
Buxus	2	-	-	-	-	-	-	2	-
TOTAUX	193	101	312	479	697	536	597	2915	

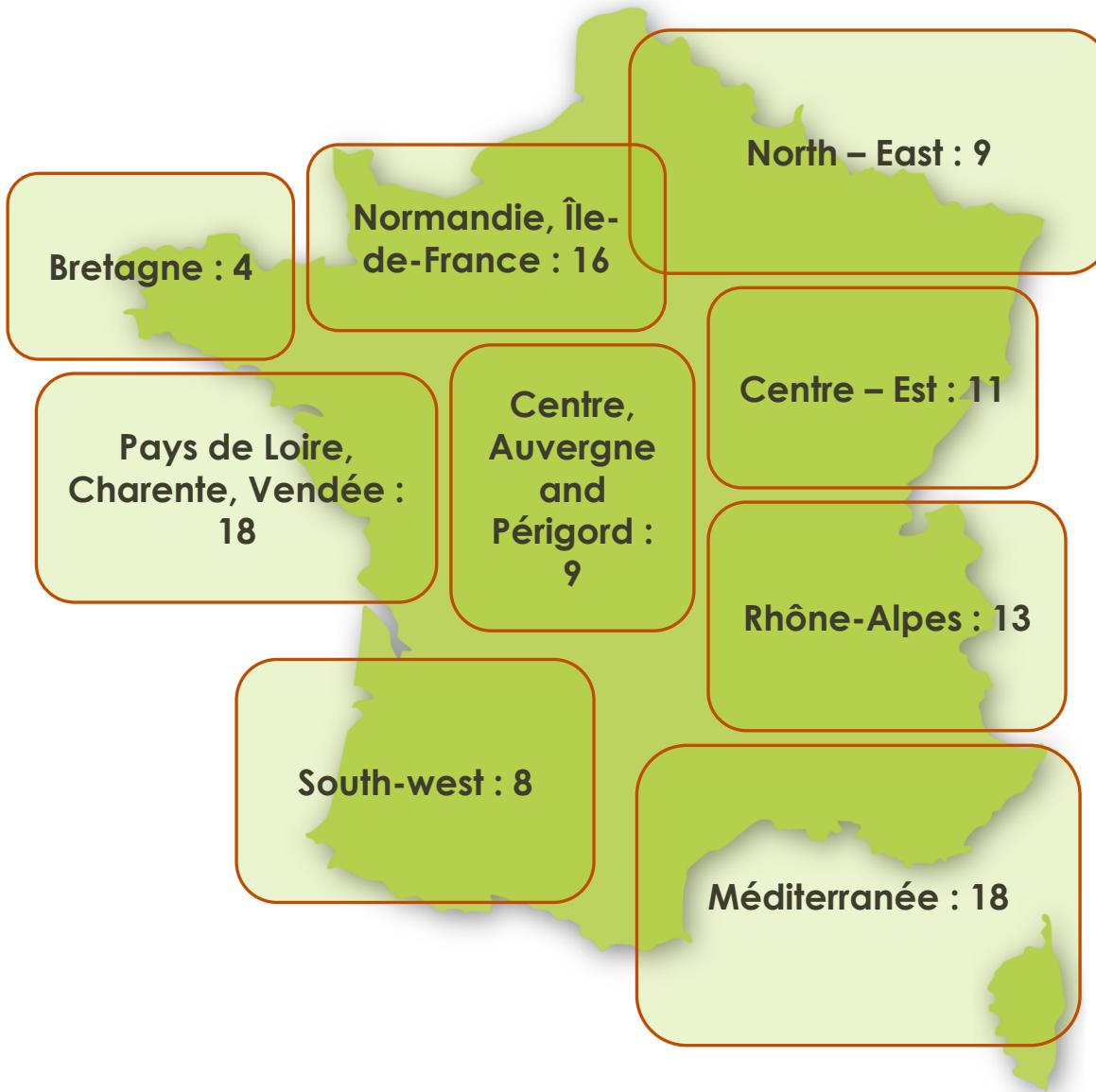
Weekly report

Daily report

03.05.08 LYON	2	6	10	14	18	22	26	30	34	38	42	46	1,08	
	H-0100	H-0300	H-0500	H-0700	H-0900	H-1100	H-1300	H-1500	H-1700	H-1900	H-2100	H-2300	373	
Quercus	6	9	3	1	12	18	13	13	23	12	7	5	122	132
Fraxinus	7	7	6	2	10	4	4	2	-	-	3	5	50	54
Poaceae	15	4	-	-	-	-	2	3	1	4	8	9	46	50
Morus	6	6	4	3	7	9	2	-	-	-	1	5	43	47
Pinus	6	5	9	4	-	1	2	-	-	-	2	4	33	36
Betula	-	7	2	1	3	5	1	-	1	1	5	1	27	30
Rumex	1	3	1	-	-	1	1	-	1	3	-	1	12	13
Cupressaceae-														
Taxaceae	1	1	2	-	-	-	-	-	3	1	1	2	11	12
Platanus	-	-	2	1	2	1	1	-	-	-	1	1	10	11
Plantaginaceae	1	2	-	1	-	-	-	1	-	1	1	-	7	8
Juglans	-	-	1	-	-	1	-	-	-	1	-	-	3	4
Aesculus	1	-	-	-	1	-	-	-	-	-	-	-	2	3
Cyperaceae	-	-	-	-	-	-	1	-	1	-	-	-	2	3
Renonculaceae	-	-	-	-	-	-	2	-	-	-	-	-	2	3
Indetermines	-	-	-	-	1	-	-	-	-	-	-	-	1	2
Populus	-	-	-	-	-	-	-	-	-	-	1	-	1	2
Sambucus	-	-	-	-	-	-	-	-	-	-	1	-	1	2

Clinical data

Doctors network



Clinical report

This report is send by e-mail every week to allergist working with RNSA (110) to collect clinical data.

RNSA Clinical Report						
RNSA - Clinical Report 2008			Dr.	Week 31 - City of		
Pollinic Symptoms	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Number of pollinoses	Evolution / previous week		
Symptom Gravity			Null	Weak	Mean	Strong
Conjunctivitis			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rhinitis			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cough			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Asthma			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cutaneous signs or symptoms			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollen type (Optional)						
Observations (Optional)						
<input type="button" value="Send the form"/>						
Please fill in all the obligatory fields						

Number of pollinosis :

**Chosen criteria for the determination
of pollinosis number correspond to the
number of patients with symptoms consulting
or calling.**

Clinical report

RNSA Clinical Report			Dr.	Week 31 - City of	
RNSA - Clinical Report 2008					
Pollinic Symptoms	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Number of pollen types	Stagnation <input checked="" type="radio"/>	Decrease <input type="radio"/>
Symptom Gravity	Null	Weak	Mean	Strong	
Conjunctivitis					
Rhinitis					
Cough					
Asthma					
Cutaneous signs or other					
Pollen type (Optional)					
Observations (Optional)					

Symptoms :

The 4 chosen criteria for the quotation of symptoms are :

- disabling
- diurnal
- nocturnal
- repercussions on work

0 criteria corresponds to **NULL**
1 ou 2 criteria corresponds to **WEAK**
3 criteria corresponds to **MEAN**
4 criteria corresponds to **STRONG**

Clinical index

		0	1	2	3
	Symptom gravity	Null	Weak	Mean	Strong
x1	Conjunctivitis			●	
x2	Rhinitis				●
x1	Cough		●		
x1	Asthma			●	
x1	Cutaneous sign	●			

Conjunctivitis « Mean » : $2 \times 1 = 2$

Rhinitis « Strong » : $3 \times 2 = 6$

Cough « Weak » : $1 \times 1 = 1$

Asthma « Mean » : $2 \times 1 = 2$

Cutaneous sign « Null » : $0 \times 1 = 0$

Clinical index → 11/18

The clinical data give information about the evolution of the pollinosis number and about the intensity of symptoms



**Measure of health impact
of exposure**

Allergic risk related to
ragweed pollens.

$$\text{Allergy risk forecast} = \text{Theoretical allergy risk} + \frac{\text{Ph} + \text{C} + \text{M}}{3}$$

Ph = Phenological data



C = Clinical index



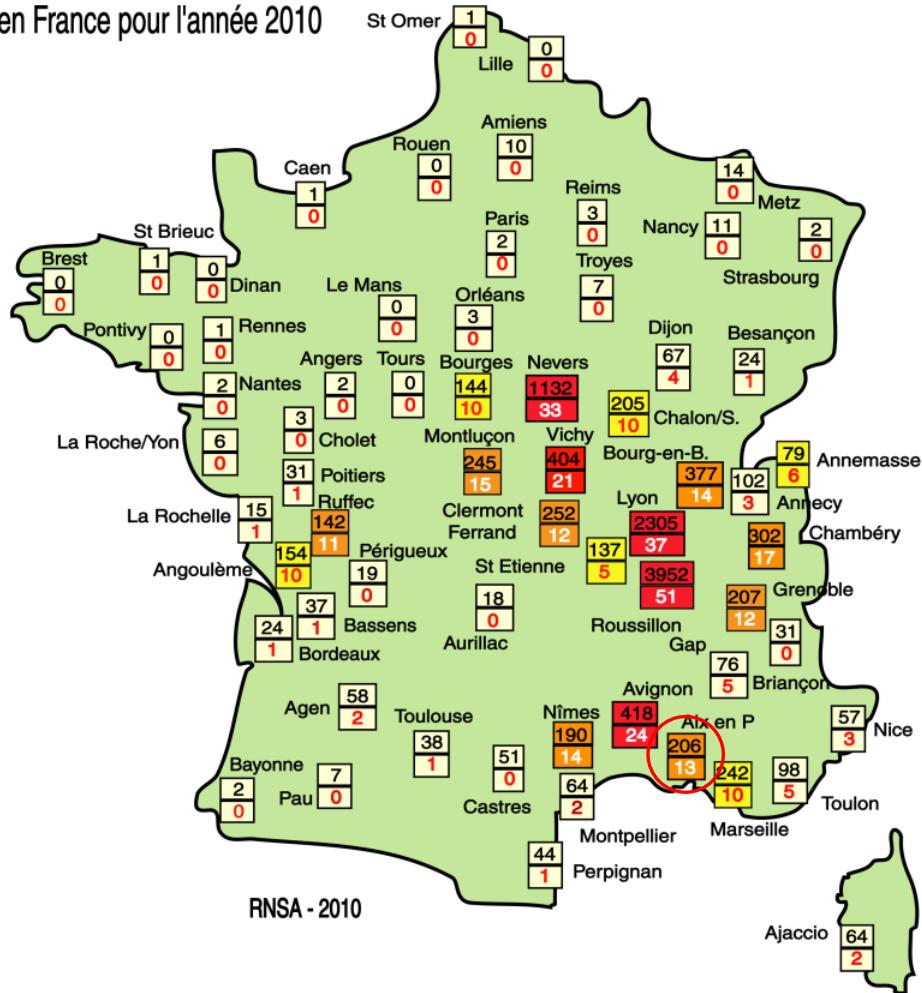
M = Meteorological forecast



Allergy risk 2010

Répartition des pollens d'ambroisie et du risque allergique d'exposition au pollen en France pour l'année 2010

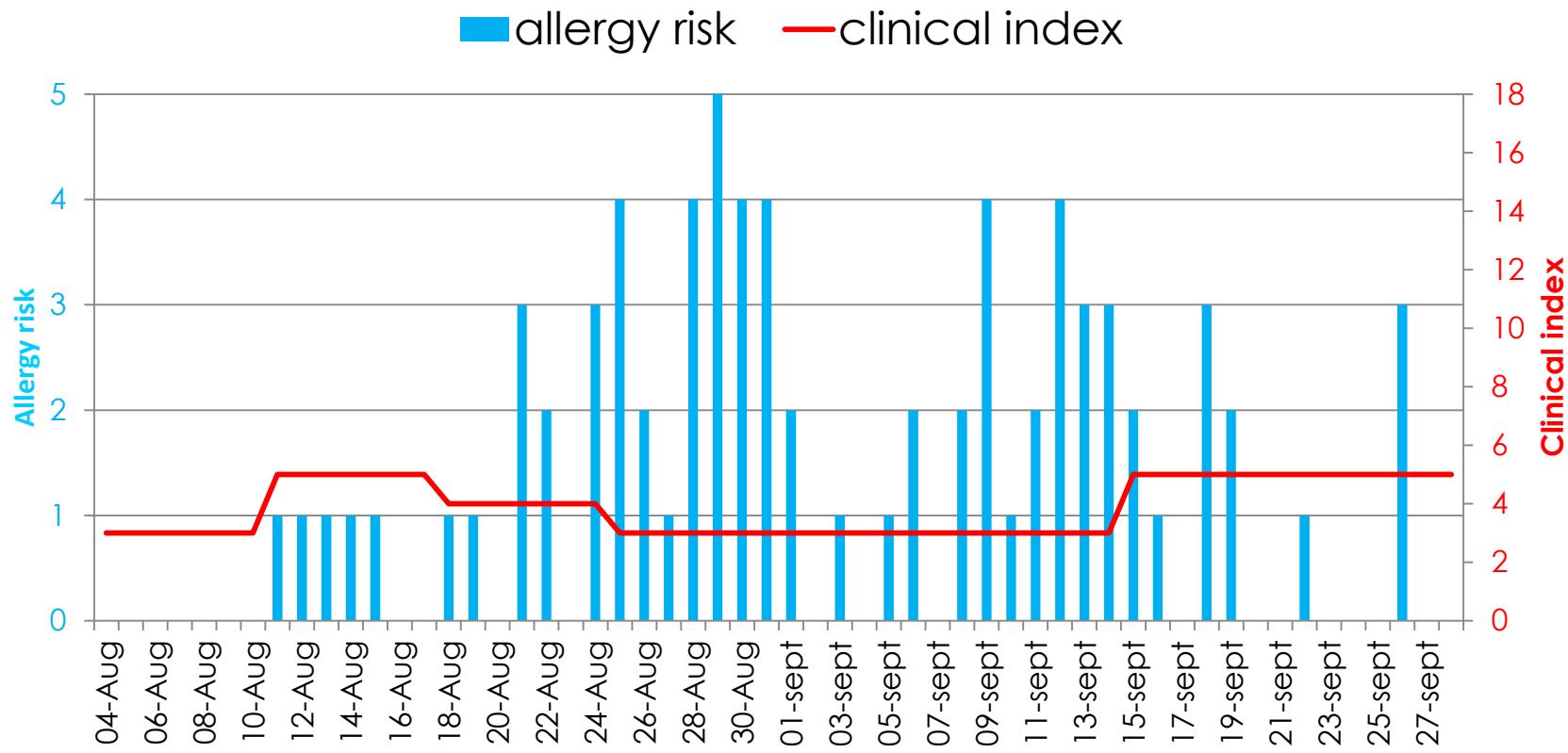
- Index pollinique 2010
 - Nb de jours où le risque allergique est ≥ 3 pour 2010
 - de 0 à 5 jours où le risque allergique est ≥ 3 en 2010
 - de 5 à 10 jours où le risque allergique est ≥ 3 en 2010
 - de 10 à 20 jours où le risque allergique est ≥ 3 en 2010
 - plus de 20 jours où le risque allergique est ≥ 3 en 2010
- RNSA - 2010



- Until 2010, the scale of allergy risk related to ragweed pollen was the same for all French stations.
- But according to the different areas in France, a « high » rate of ragweed pollens did not mean that patients have symptoms



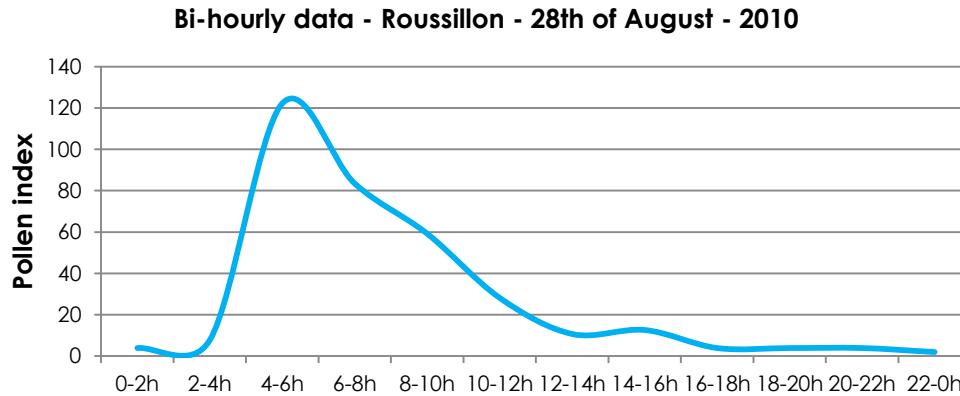
Allergy risk and clinical index of Aix-en-Provence - 2010



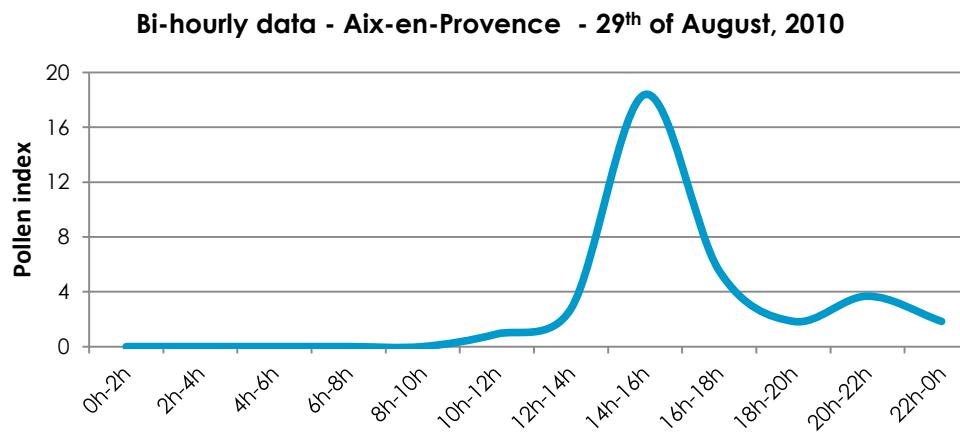
- Changing of scale for the allergy risk according to the areas to have clinical index and allergy risk in harmony.
- Use of bi-hourly data to determine the different areas infested by ragweed

Bi-hourly data

- Ragweed pollinate in the morning, between 4 and 10 am.

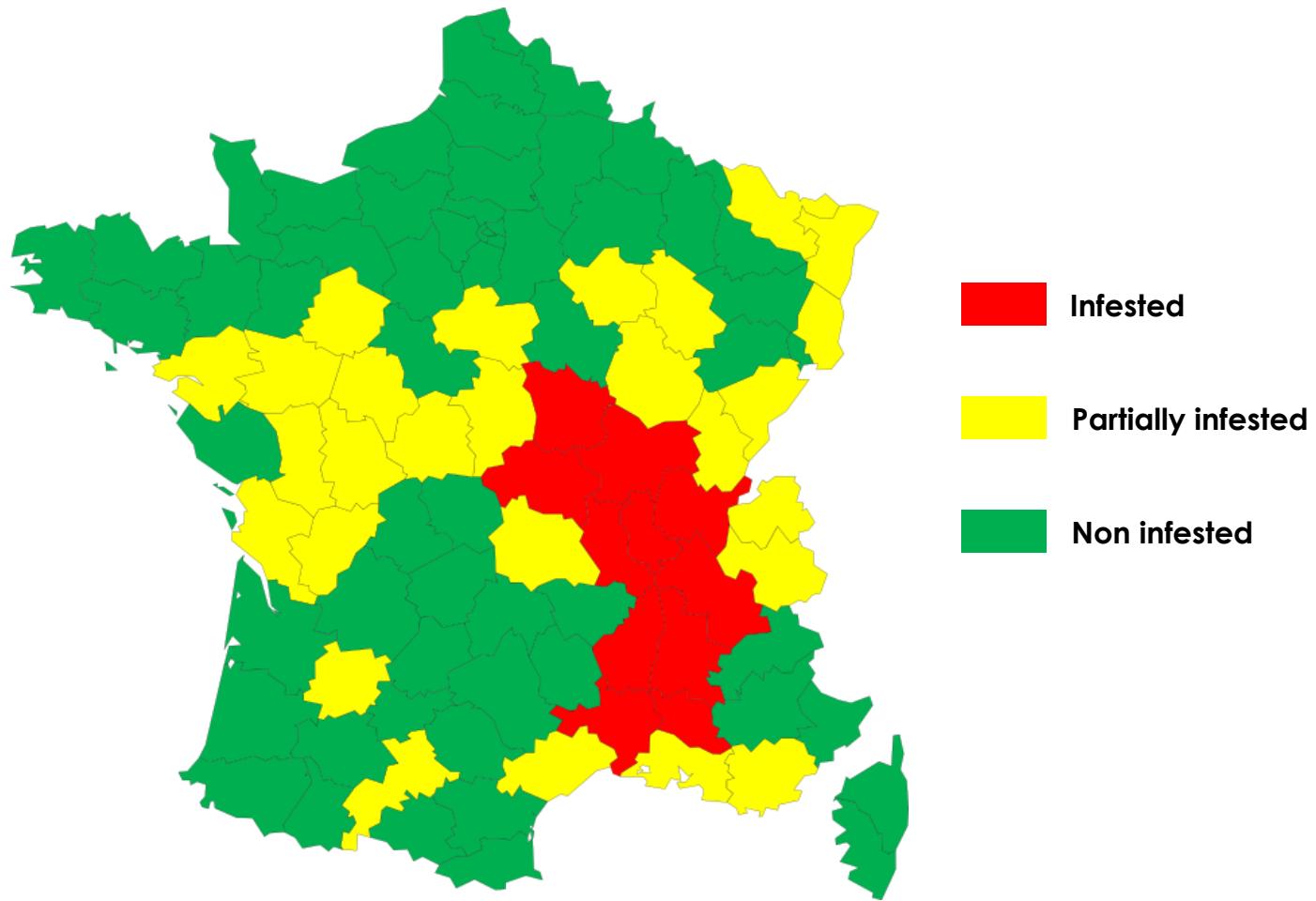


- On the stations which are located not so far of the infested areas, ragweed pollens are present between 1 and 6 pm



Infestation

Infestation map of ragweed



2011 data

Distribution map of ragweed in France in 2011

Pollen index

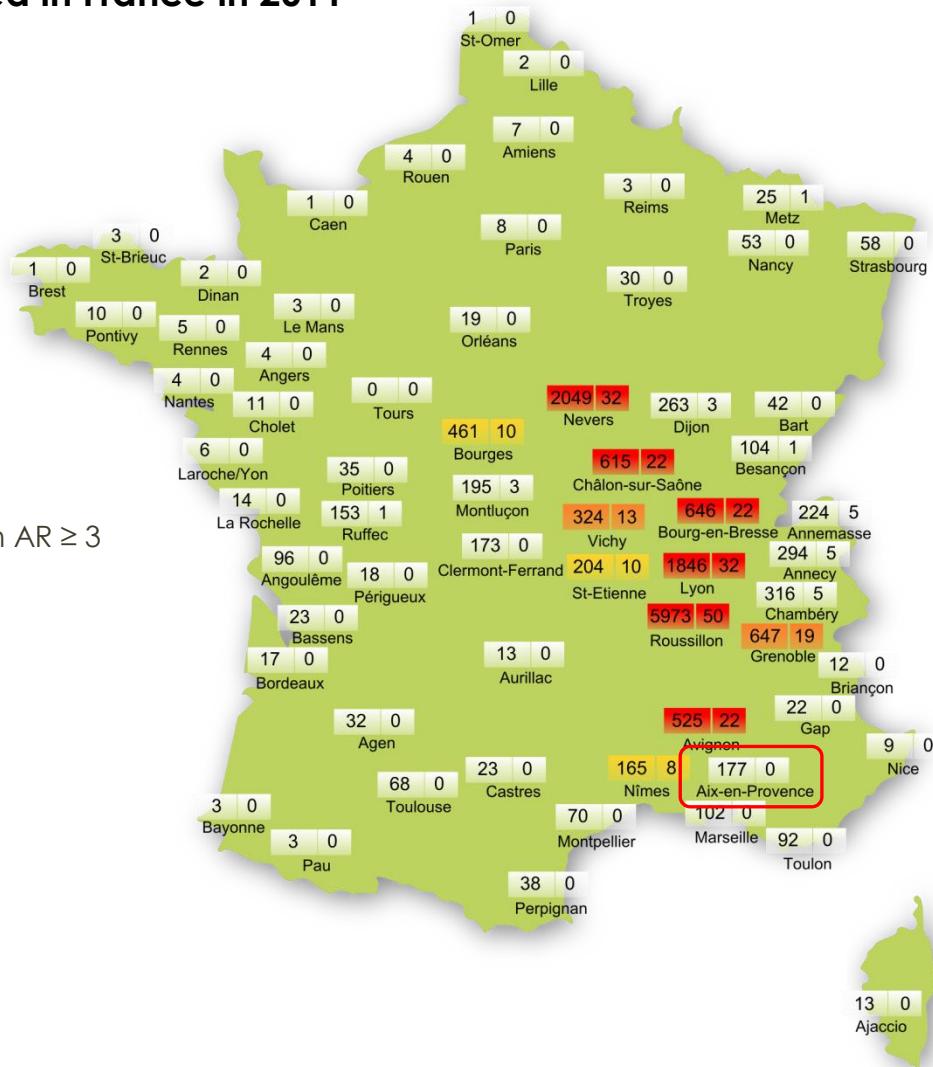
Number of days with AR ≥ 3

from 0 to 5 days with AR ≥ 3

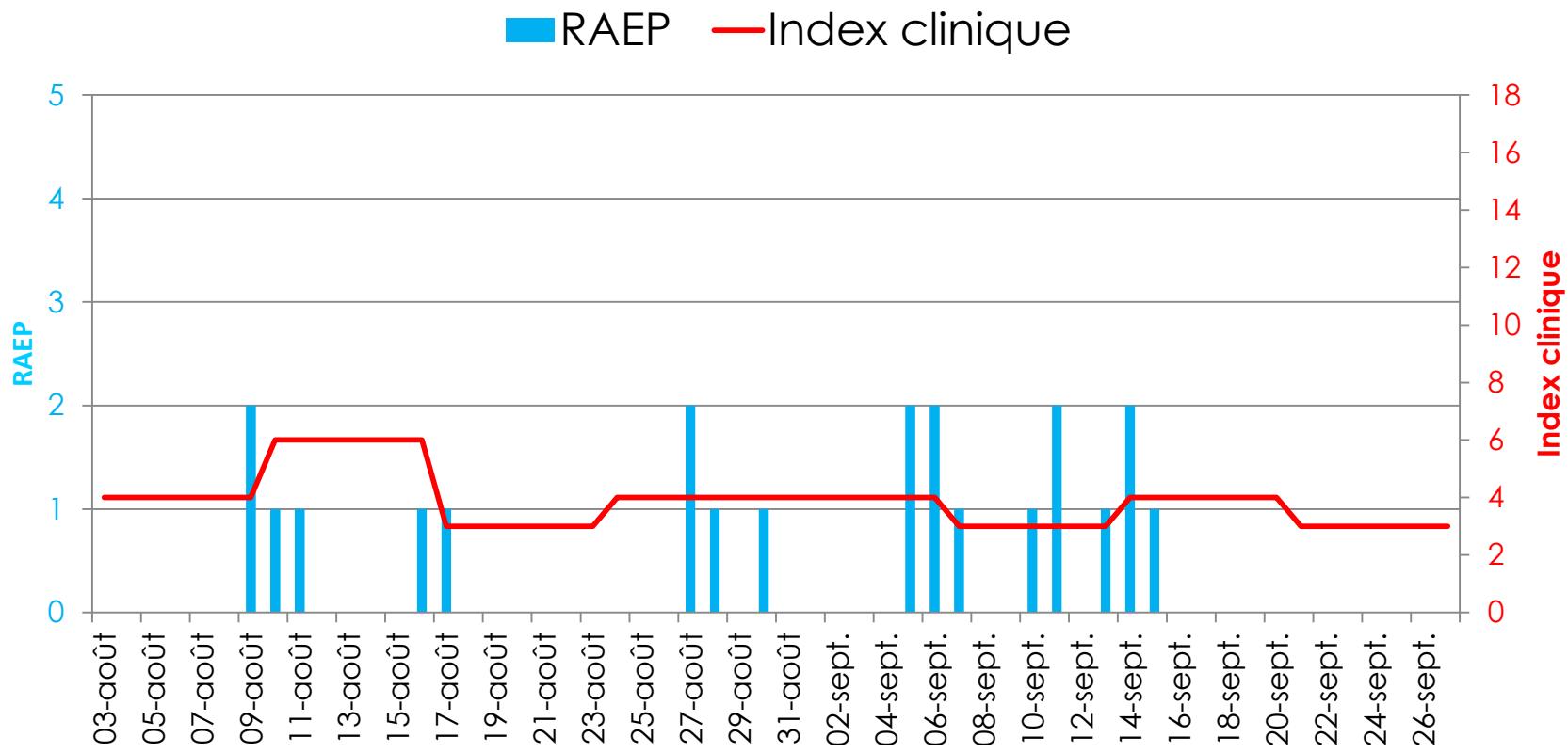
 from 5 to 10 days with AR ≥ 3

 from 10 to 20 days with AR ≥ 3

 from 10 to 20 days with AR ≥ 3



RAEP et index clinique d'Aix-en-Provence



Thanks for your attention!