

Aerobiological Information Systems and allergic respiratory disease management AIS LIFE (AIS LIFE LIFE13 ENV/IT/001107)

Annual meeting

Vienna _ Austria

19-20 of June 2015

Update Action A1 and B4

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UNIVERSITÀ
DEGLI STUDI
FIRENZE

DISPAA
DIPARTIMENTO DI SCIENZE DELLE
PRODUZIONEI AGROALIMENTARI
E DELL'AMBIENTE



DIPARTIMENTO DI BIOLOGIA
UNIVERSITÀ DI PISA



ISTITUTO DI FISILOGIA CLINICA
CONSIGLIO NAZIONALE DELLE RICERCHE



MEDICAL
UNIVERSITY
OF VIENNA





Pollen stations in France in 2015

70 stations

+

10 during ragweed
pollination



RNSA is the French aerobiology network in charge of the analysis of the content of the air in biological particles, and to give some information about their health impact.

Information and prevention

Le site français des allergies aux pollens

RNSA
RESEAU NATIONAL DE SURVEILLANCE AEROBIOLOGIQUE

Alertes Pollens Cliquez ici

Pour vous connecter à l'espace adhérents cliquez ici

Pour vous inscrire au bulletin d'alerte cliquez ici

Accueil Le réseau Les bulletins Les risques MedAeroNet Les événements Nos partenaires Nous contacter

18 avril : Les données en temps réel sur notre site de Lyon nous permettent de prévoir un risque allergi

Le réseau
Les capteurs
L'allergie
Les pollens
Les bulletins
Bulletin allergeo-pollinique
Bulletin moisissures
Bulletin phénologique
Base de données
Alertes pollens
Les risques
Les risques par ville
Les risques par pollen
Les historiques
MedAeroNet
Les événements
Nos partenaires
Nous contacter
Liens
Rechercher
Le RNSA (Réseau National de Surveillance Aérobiologique) vous offre la possibilité de recevoir chaque semaine par e-mail les prévisions du risque allergique des départements de votre choix.
Inscription

Accueil > Les bulletins > Bulletin Allergeo Pollinique

Bulletin Allergeo Pollinique

Bulletin allergeo-pollinique n°16 du 18 avril 2014
Valable jusqu'au 25 avril

Les pollens de Pâques !

Entre les oeufs, les chocolats ou l'agneau Pascal, les pollens se bousculent pour profiter des Fêtes de Pâques.

Les pluies des prochains jours aideront à se débarrasser des derniers pollens de saule, charme, peuplier et frêne qui pourront encore localement provoquer un risque allergique faible.

Les quantités de pollens de platane oscillent au son des cloches, le risque allergique sera globalement moyen sur l'ensemble du territoire, mais pourra localement atteindre un niveau élevé, voire très élevé comme sur Castres.

Les pollens de bouleau se font doux enrobés de chocolat, le risque allergique est moyen sur une large moitié Nord de Nantes à Grenoble, très faible à faible de Lyon à La Roche sur Yon en passant par Castres et au milieu de cet enrobage sur le Sud de l'Auvergne et une partie du Limousin se cache un coeur de pollens de bouleau où le risque est élevé à localement très élevé. Les pollens de chêne participeront à toutes les chasses aux oeufs avec un risque allergique globalement moyen à élevé sur le Centre, l'Ouest de la Bourgogne, une partie du Limousin et de l'Aquitaine au Languedoc Roussillon.

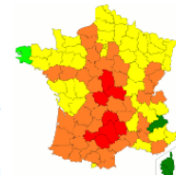
Pour les herbacées, une alternance entre pluie et soleil, avec des températures de saison, sera propice à leur développement. Les paritaires distribueront des pollens au lieu de chocolat sur le pourtour méditerranéen avec un risque allergique pouvant atteindre un niveau moyen. Plantain et oseille se cachent entre les herbes et pourront provoquer un risque localement très faible. Les pollens de graminées eux seront de plus en plus présents, avec un risque allergique qui sera moyen de l'Aquitaine à la Vallée du Rhône jusqu'au Sud de Lyon en passant par Castres et Nîmes et très faible à faible entre les averse partout ailleurs.

Si les pluies prévues la semaine prochaine apporteront quelques répit aux allergiques, ceux-ci doivent rester vigilants et suivre leur traitement en prévision de chaque période ensoleillée.

Charlotte Sindt

Michel THIBAUDON,
Directeur du RNSA

Prévisions à 3 jours de la pollinisation des bouleaux sur la France



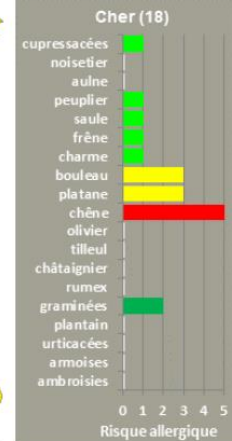
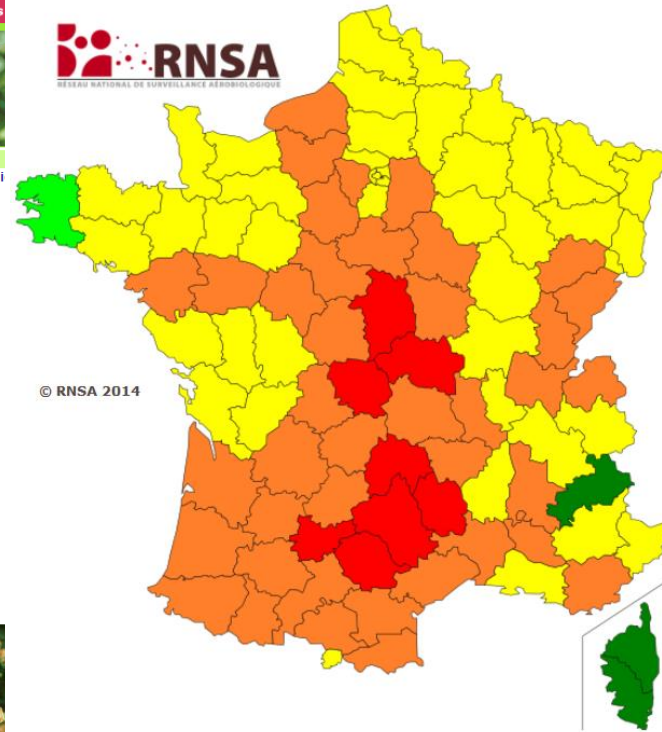
Carte de vigilance



Végétation en ville.
Guide d'information sur les
plantes à pollen allergisant



Cyprès



Vigilance map

Pollinic and mould bulletins

www.vegetation-en-ville.org

RNSA activities

Arbres & Arbustes • Plantes & Herbacées

GUIDE D'INFORMATION
Végétation en ville

Passer l'écran d'accueil

RNSA

Aerobiological Information Systems and allergic respiratory disease management – AIS LIFE

A. Preparatory actions

A1. Set up of an Integrated Information System (IIS) in 3 countries (France, Italy, Austria)

A2. Set up of an enhanced Personalised Pollen Information system (PPI) in France and Italy, in combination with an in depth QOL survey

B. Implementation actions

B1. Implementation of IIS and PPI in 3 countries

B2. Health assessment of Allergy Patients

B3. Case Study Italy: Mapping of urban and rural environments through land use and allergic plants data, agroclimatic indices

B4. Case Study France: Analysis of plant occupation of public green spaces

C. Monitoring of the impact of the project actions

C1. Monitoring of the long-term implementation of Aerobiological Information Systems

C2. Validation and comparison of the effectiveness of the two Aerobiological Information Systems

D. Communication and dissemination actions

D1. Setting of procedures for reporting results and dissemination

D2. Creation and continuous updating of web page for project activities

D3. Stakeholder Involvement Activities

D4. Target Audience / General Public Awareness Raising

E. Project management and monitoring of the project progress

E1. Overall project operation

E2. Networking with other projects

E3. After-LIFE Communication Plan

E4. External Audit

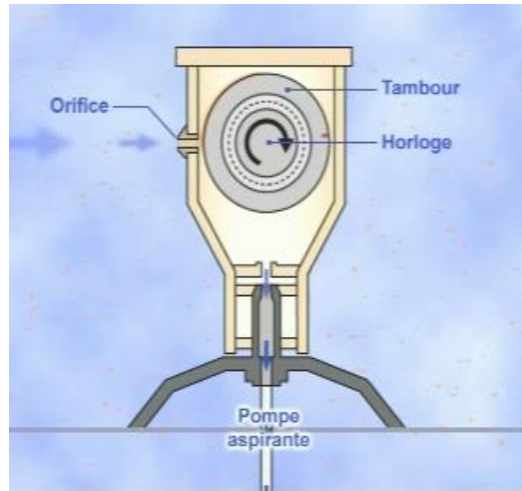
RNSA actions A1: Objectives

Action A1: Set up an Integrated Information System (IIS) in France, Italy, Austria

- **Objectives :** This action sets up the Integrated Information System (IIS) for improvement of allergic respiratory diseases management in general population samples. **The action provides the installation of pollen sampling and air pollutants monitoring system in Pisa, Vienna, Paris and Lyon.**
- **Expected results:** installation of system for monitoring chemical data and pollen and fungal spores. Description of the cycle of pollination and sporulation and the air pollutants concentration in atmosphere.

RNSA actions A1: Material and methods

Pollen exposure: pollen traps



Orifice
(10 l. air/min)



Reading
2 horizontal lines

Tape on the drum

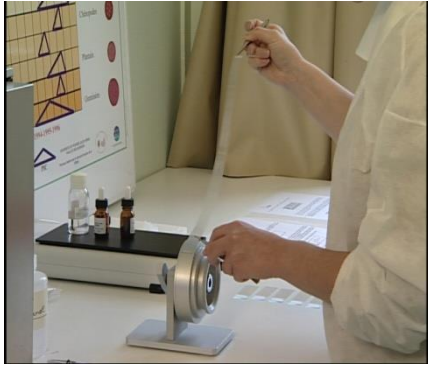


1h = 2mm

RNSA actions A1:

Material and methods

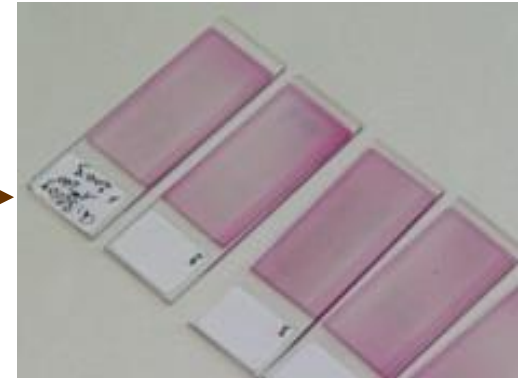
Pollen exposure: analysis



Retrieving of the strip
on the drum



Cutting of the strip
in daily parts



1 slide by day



Counting thanks to
a voice recognition system

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

Pollens counts

Location in France where we find the 2 pollen traps used for this study : Paris and Lyon



RNSA actions A1:

Pictures of the pollen traps



Paris

The pollen trap is located on the roof of the Pasteur Institut in the 15th district.

*Long. 2°20 – Lat. 48°52 – Alt. 60 m –
pollen trap brand : Lanzoni – number
of people concerned : 2 500 000*



Lyon

The pollen trap is located on the roof of the Biomnis and Inserm Institut in the 7th district Gerland).

*Long. 0°38 – Lat. 44°12 – Alt. 48 m •
pollen trap brand : Lanzoni • number
of people concerned : 1 000 000*

RNSA actions A1:

Weekly bulletin

Risk for allergenic people on the most allergenic pollen types

Period: 13.04.2015 - 19.04.2015

Pollen types	13.04.	14.04.	15.04.	16.04.	17.04.	18.04.	19.04.	Tendency
hazel (Corylus)								
alder (Alnus)								
cypress family (Cupressaceae)								
ash (Fraxinus)								↔
birch (Betula)								↗
Plane tree (Platanus)								↔
olive (Olea)								
oak (Quercus)								↗
poplar (Populus)								↘
Chestnut (Castanea)								
grasses (Poaceae)								
nettle family (Urticaceae)								
fungal spores (Alternaria)								
mugwort (Artemisia)								
ragweed (Ambrosia)								
Remark:	Birch and plane tree pollen keep the allergy risk to the maximum level!							

Legend:

Risk			
No allergy risk			
Low		Tendency	
Moderate		Increasing	↗
High		Steady	↔
Very high		Decreasing	↘

Expected start in the project :
September 2015

Suggestion : start earlier because in winter there is very little pollen in the air and doing a weekly bulletin in that period has no sense!

RNSA actions B4: Objectives

“Aerobiological Information Systems and allergic respiratory disease management”

Case Study France: analysis of plant occupation of public green spaces

- General: to provide recommendations for plant occupation of public green areas.
- Specific:
 - 1) assess pollen counts (and allergen content) in public gardens
 - 2) on basis of the obtained results to formulate recommendations in order to protect allergic patients.

RNSA actions B4. Methods

“Aerobiological Information Systems and allergic respiratory disease management”

Case Study France: analysis of plant occupation of public green spaces

- **WHAT: Pollen count and allergens**
- **HOW: Pollen traps for analysis of local pollen dispersion:**
 - Sigma 2 passive pollen trap (32 week period, 2 campaigns)
 - Hirst pollen trap
 - Slides analysis analysing by the RNSA.
- **WHERE:**
 - Public gardens in Paris and Lyon
- **WHEN: 2 campaigns 16 weeks = 32 weeks**
 - Campaign 1: March 2015 to end-June 2015
 - Campaign 2: March 2016 to end-June 2016

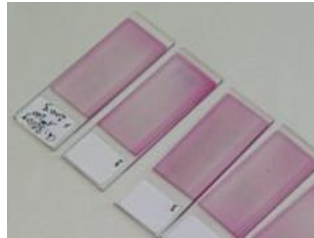
RNSA actions B4.

Material and Methods

- Sigma2-like traps (SLT): passive pollen trap
- SLT is composed on one hand of a transfer zone of air flow (high part) and on the other hand of a reception zone of particles by sedimentation (low part). Air flow goes through the trap in central zone, particles sediment and come on a coated slide disposed in the lower part of the trap
- The slides are changed every day
- Then the slides are send to the RNSA and analyzed with an optical microscope to obtain pollen counts (number of pollen grains by unit of time).



**Analyzes
in a lab**



**1 slide
by day**



**counting pollen
through a speech
recognition system
with an optical
microscope**

RNSA actions B4. Schedule

- ☐ **January 2015 : meetings in Paris and Lyon to implement the project and meet the persons in charge of green gardens and staff of city hall.**
- ☐ **February 2015 : visit of the pollen traps location in each garden.**
- ☐ **March 2015 : set up of the pollen traps and training the staff in charge of the daily change of the slides. Beginning of the monitoring of the first measurement campaign in Lyon and Paris. Beginning of the analysis.**
- ☐ **June 2015 : end of the first campaign of measurement / Following analysis**
- ☐ **March-June 2016 : Campaign monitoring and analysis N°2**



RNSA actions B4.

Problems encountered

- ✓ One of the most important problem was to find 3 public gardens in each city of the project.
- ✓ There are no non allergic gardens so we decided to choose gardens according to their proximity to the Hirst pollen traps.
- ✓ For the city of Lyon it's difficult to find "reliable" staff to change the slide of the SLT every day.

RNSA actions B4.

Presentation of the gardens

- **Park de Choisy** : It's a public garden of 43 000m² which was created in 1937.

Address : Avenue de Choisy 75013 Paris France.



2 SLT pollen traps have been installed and the slides are changed every day by trained staff from LHVP (Laboratoire d'Hygiène de la Ville de Paris) who work next to the park.

RNSA actions B4.

Presentation of the gardens

- **Park Pierre Adrien Dalpayrat** : It's a public garden of 9898 m² which was created in 1985.

Address : 2 Rue André Gide, 75015 Paris France.



1 SLT pollen trap has been installed and the slides are changed every day by trained staff from city hall of Paris (“service exploitation des jardins”) who work in the park.

RNSA actions B4.

Presentation of the gardens

- **Park Jardin des Plantes du Museum d'Histoire Naturelle:** It's a big public garden of 24 hectares open to the public for over 400 years with a wide variety of species.

Address : 57 Rue Cuvier, 75005 Paris France



1 SLT pollen trap has been installed and the slides are changed every day by trained staff from the natural history museum (MNHN) who works in the garden.

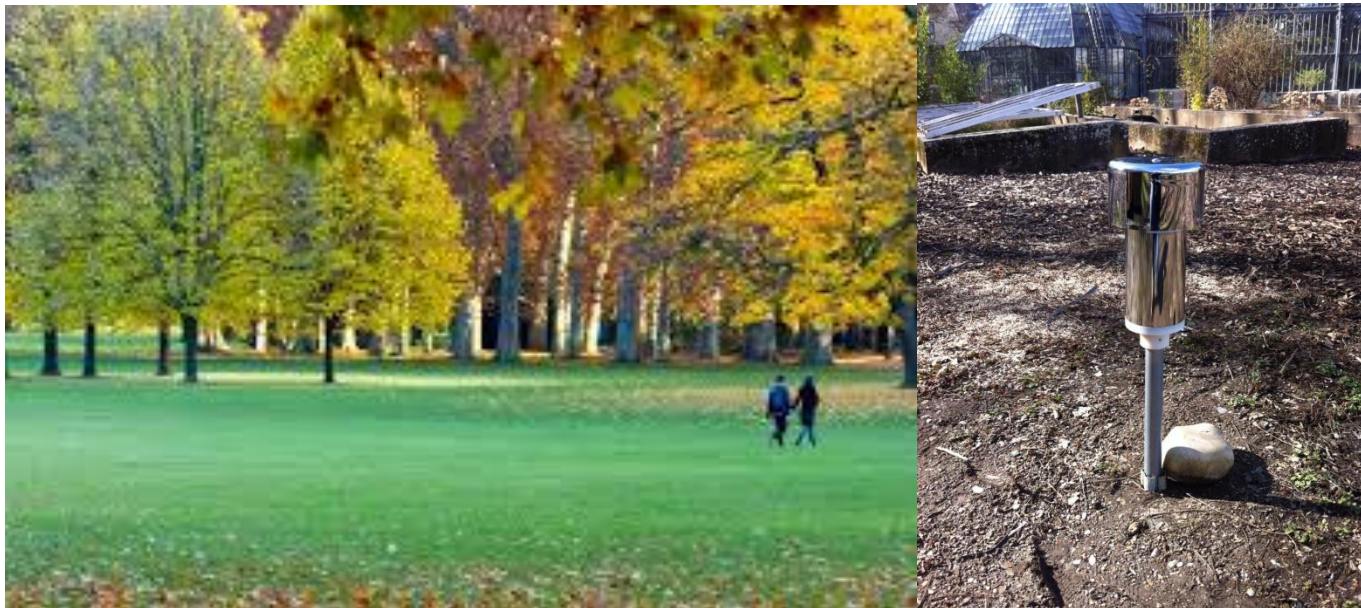
RNSA actions B4.

Presentation of the gardens

➤ Park de la Tête d'Or :

The “Park de la Tête d'Or” is one of the bigger public park in France.
It was designed on the model of the English garden and was created in 1857.

Address : Boulevard de Stalingrad 69006 Lyon France



1 SLT pollen trap has been installed and the slides are changed every day by trained student staff from Lyon.

RNSA actions B4.

Presentation of the gardens

- **Park de Gerland:** It's the second bigger park in Lyon; it occupies an area of 18 hectares and was created recently in 2000.

Address : Avenue Jean Jaures 69007 Lyon



1 SLT pollen trap has been installed and the slides are changed every day by trained staff from “jardin des fleurs” of the park de Gerland in Lyon.

RNSA actions B4.

Presentation of the gardens

- **Park de l'Hôpital de la Croix Rouse:** It's a park of 4.5 ha Located in the 4th arrondissement of Lyon next to the Croix-Rousse hospital. It was designed by René-Edouard André in 1913 and includes about 1200 trees.

Address : 103 Grande Rue de la Croix-Rousse 69004 Lyon France



1 SLT pollen trap has been installed and the slides are changed every day by trained student staff from Lyon.

RNSA actions B4.

Large public communication to present the action



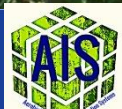
mesure des pollens atmosphériques



Un capteur de pollen a été installé à la crèche Kalabane par le RNSA (Réseau National de Surveillance Aérobiologique) et le LHVP (Laboratoire d'hygiène de la ville de Paris). Capturés par aspiration, les pollens se déposent sur des lames. Relevés tous les jours de mars à juin, elles sont envoyées au RNSA afin de compter et d'identifier les pollens.

Chez les personnes sensibles certains pollens déclenchent des symptômes allergiques. Les pollens de bouleau, noisetier, cyprès, platane, ambroisie et chêne sont parmi les plus allergisants.

En disposant de mesures régulières des "alertes allergiques" pourront être lancées.
www.pollens.fr



Gant Chart action B4 - RNSA

<u>Tasks/ Activities</u>		2014				2015				2016				2017			
		1T	<u>June</u>	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T	1T	2T	3T	4T
B4	<u>Proposed</u>																
	<u>Actual</u>																
				Preparatory Phase		1st campain measure and analysis		Analysis		2 nd campain measure and analysis		Analysis and conclusion					

Thank you for your
attention !

A blue rectangular box with a subtle gradient, containing the text "The End" in a stylized, cursive font. The text is white with a red outline and a slight 3D effect.

The End