

Three questions to Julia Posevina, aerobiologist in Russia

In this issue:

Three questions to Julia Posevina, aerobiologist in Russia

Scientific and technical meetings where ragweed was the subject of discussion

The Field dodder, a vampire for ragweed?



Julia Posevina lives in Ryazan (Central Russia). This city is located 180 km south - east of Moscow. She works in the Ryazan State University named by SA Esenin in the Department of Biology and Education Methods.

Could you describe your current research about ragweed?

The main areas of my study are the dynamic of qualitative and quantitative composition of the pollen spectrum, the impact of meteorological factors on the composition of the pollen spectrum and analyses of long-distance transport episodes.

What is the current pollen situation of the Common Ragweed in Ryazan?

The first floristic findings of *Ambrosia artemisiifolia* in the Ryazan region were made in 1982. Now a few populations of two ragweed species, *A. artemisiifolia* and *A. trifida*, are known in our area. In the air of Ryazan' *Ambrosia* pollen has been detected since 2007 using a gravimetric trap.

The total annual catch (2007-2014) varied from 9 pg/cm² (pg = picograms) (2013) to 49 pg/cm² (2008)(**Fig.1**). Peak values were usually registered during the second part of August.

2015 was the first year of observation with a volumetric trap. This year, seasonal maximum was observed during the night (00h-2h) or early in the morning (6h-8h) (**Fig. 2**) on September 17-18.

It is well-known that pollination of *Ambrosia* has very clear diurnal rhythms with maximum between 9 am and noon. Peak concentrations during the night and early morning indicate non local origin of pollen. The high concentration of *Ambrosia* pollen on September 17-18 2015 was correlated with the South and South-East wind. The change of wind direction immediately led to the decrease in pollen count.

Back trajectories calculated for this episode showed that possible source areas for *Ambrosia* pollen in Ryazan' were Eastern Ukraine and Southern Russia.

We consider that pollination of *Ambrosia* in Ryazan' is a combination of transport episodes (sharp peaks) and local flowering with low pollen concentration.

How could your research be useful for allergic people?

The results of pollen monitoring are presented online three times per week (**1**), and in the social project (site + mobile application) «Pollen Club». The project collects and publishes data of pollen monitoring and pollen forecast. The application can also be used as pollen diary where people can indicate their health and symptoms.

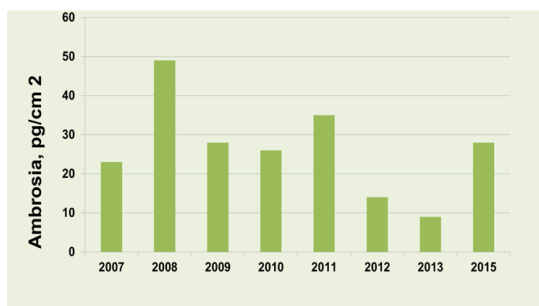


Fig.1 - The total annual pollen catch of *Ambrosia* (gravimetric data, 2007-2015)

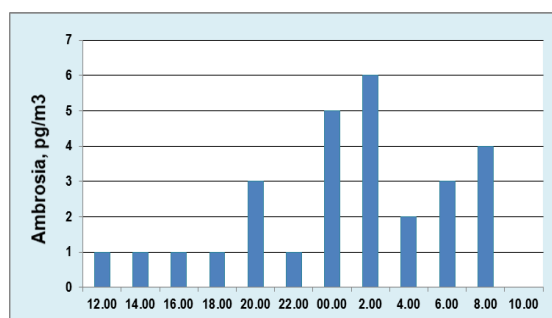


Fig.2 - The daily variation of the concentration of *Ambrosia* (17.09.15)

Scientific and technical meetings where ragweed was the subject of discussion

In 2016, several conferences were or will be the opportunity for discussions on the themes of common ragweed between managers and scientists from a variety of disciplines.

Two meetings took place in March enabling issues associated with ragweed to be tackled: **Ecoveg** (Brest) and the **French Allergology Congress** (Paris).

The **European Aerobiology Symposium** (ESA) was held in Lyon in July 2016. One afternoon was devoted to ragweed, with a session organized in the framework of the European project COST-SMARTER. At the scientific level, several studies were presented on the ragweed-eating beetle, *Ophraella communa*. Captain Allergo, an entertaining way of making children aware of the problem of ragweed was the subject of an oral presentation by the Ragweed Observatory (**Fig.3**).

Two technical meetings will be held in September and October 2016. At the **Territorial Meetings about Health** of the CNFPT (**2**), in Nancy, the Auvergne-Rhône-Alpes Regional Health Agency will be presenting the structure of ragweed officers. Then, the **Conference on the upkeep of Gardens, Green Spaces and Infrastructures** (JEVI) (**3**), organized in Toulouse by the French Association for the Protection of Plants (AFPP), will be an opportunity to tackle the question of managing invasive species at a time when plant protection products are ceasing to be used.



The Field dodder, a vampire for ragweed?



Fig.3 – Field dodder, with its long yellowy-orange filaments, wraps itself around the ragweed plant

It is well-known that the presence of other plants hinders the development of common ragweed. In this case, it is phenomena of **competition** for light, water or nutrients of the ground which will act. But ragweed can also be parasitized by plants such as the field dodder (*Cuscuta campestris* Yunck). This situation of parasitism can be observed on river-banks and in fields, where it can cause serious damage.

Dodders belong to the same family as bindweed (Convolvulaceae) and are parasitic plants that can attack several species. They are annuals, achlorophyllous

and have very small leaves (scales). The flowers are little whitish balls. The dodders' orange stalks (**Fig. 3**) wrap themselves around the stems of the host plants and send out suckers that will feed on their sap.

Originally from North America, the field dodder cannot be a means of combating ragweed, but it can contribute, with other organisms, to limiting its invasion.

Sources of information

(1) <http://www.allergology.ru/monitoring/content/416.aspx>

(2) <http://www.villes-sante.com/actualites/cnfpt-rencontres-territoriales-de-la-sante-27-et-28-septembre-2016-a-nancy/>

(3) http://www.academiedubiocontro.le.org/wp-content/uploads/2016/08/Programme_JEVI_v8-04-2016.pdf

News

- ♦ **Public defense** of the thesis on ragweed by William Ortman : **7 September 2016** at 14h at the PhV de Gembloux auditorium (Belgium) Agro-bio Tech.
- ♦ 9th international congress **NEOBIOTA** on biological invasions: **14-16 September 2016** at Vianden (Luxembourg).
- ♦ **Territorial Meetings about Health**, organized by the CNFPT : from **27 to 29 September 2016** at Nancy.
- ♦ **Conference of the AFPP on the upkeep of JEVI** : **19 and 20 October 2016** at Toulouse.

Editorial staff:

Rebecca Bilon
Bruno Chauvel
Marilou Mottet

Translation:

Jane Curtis-Williams

* The issues of the Ragweed Observatory letter can be consulted on:
<http://ambroisie.info/>