

Aerobiological monitoring of air in Prague

The Prague Pollen Monitoring Station of the Czech Pollen Information Service was put into operation in March 1993. The graphs presented demonstrate concentrations of the most significant airborne pollen allergens in Prague air during the last six years.

Fig. Concentrations of pollen allergens in Prague in 2006

Source: PIS

Since the 1960s the network of monitoring stations, enabling on the basis of mutual results comparison to make the predictions of the pollen season more precise, become to grow fast in Europe. The pollen season course is slightly different every year. The reason for is the various weather conditions and so phenological conditions in respective year, namely the development in average daily temperature and humidity. Furthermore, in respective years the intensity of pollen season is different in various species of flora, that the amount of pollen, which certain plant species growing over the area release into air and which thus may affect the level of troubles to an allergic person. Czechoslovakia joined the network of the European Pollen Information Service in 1992. In 2006 there were in total ten monitoring stations of the Pollen Information Service operated on the territory of the Czech Republic.

The Prague Pollen Monitoring Station was put into operation in March 1993. Till June 1995 the Monitoring Station was located on the premises or the Polyclinic at Karlovo Square, and then due to operational reasons it was moved into the premises of the National Institute for Public Health (SZÚ) in Šrobárova Street, Prague 10. In 2006 it was under operation from 27 February till the end of October.

During the spring period (when tree species pollen dominates) pollen grains of birch (*Betula*) belong to the most important aeroallergens in Prague and generally in the Czech Republic as well. Taken in a broader sense this means entire family of *Betulaceae*. Pollen of single species of this family feature significant cross-reactivity. Therefore, an individual allergic to one genus of this group can show clinical problems when put into contact with other members of this family. During the summer period grass (*Poaceae*) pollen form the most important group of aeroallergens. They also display a significant cross-reactivity among single members. Concentration of mould spores usually increases in this period too. This applies most significantly to *Cladosporium* and *Alternaria* genera. For the autumn period the dominance of weed pollen is typical, mostly mugwort (*Artemisia*). Pollen grains of ragweed (*Ambrosia*), which are important aeroallergens in Hungary, Slovakia and in part in south Moravia, have been regularly occurring in the spectrum of aeroallergens found in Prague at the end of summer and brink of autumn (see graph). With respect to the explosive spreading of ragweed throughout Europe observed during the last decades this allergen monitoring of is of prime importance. What is also necessary is to promptly implement preventive measures to eradicate ragweed from the Prague region. In August a peak concentration of mould spores usually occurs being an order of magnitude higher than concentration of all other pollen allergens.

The pollen season 2006 in Prague started relatively late again – around 20 March by blooming of hazel (*Corylus*) and alder (*Alnus*) (see graph) and lasted approximately for the same time as in the previous years till the end of September and the beginning of October. The birch (*Betula*) season is usually simultaneous with that of ash (*Fraxinus*). Birch bloomed a bit later than in the previous year, around 15 April, and its season was of average strength. It has its peak in the period from 24 April through 10 May 2006, then the airborne allergen concentration quickly decreased (see graph). In 2006 the grass (*Poaceae*) season started in the second half of May, within the long-term average, and was slightly under average. The main peak of the concentration of this pollen appeared from the half of June till the half of July, and grass pollen grain maximum was at the beginning of July.

In July there was average amount of grass pollen in the Prague air. Passing through several smaller peaks the air concentration of this pollen remained at the allergologically significant level till the end of July. Then the amount of airborne grass pollen was negligible, also due to the rainy August (see graph). The occurrence of mugwort (*Artemisia*) began to appear regularly in air in the last decade of July. Its season was very weak and attained its peak in the first half of August (see graph). On the contrary, the ragweed (*Ambrosia*) season in 2006 was relatively strong season. This allergen started to appear regularly in the air of Prague since the beginning of September, a significant peak was recorded from 11 to 18 September. At the time of this overview preparation (beginning of October) the ragweed season has been slowly fading (see graph). Since the second decade of September the overall airborne pollen concentration was very low only.

The graphs presented demonstrate concentrations of the most significant airborne pollen allergens in Prague air during the last six years that is since 2001 till the end of September 2006.

Fig. Concentrations of pollen allergens in air in Prague in 2001–2006

Source: PIS

Fig. The ragweed pollen concentration in Prague in 1993 to 2006

Source: PIS

Archive:

- [Aerobiological monitoring of air in Prague \(2005\)](#)