Scientific sessions: aeropalinologia

ALLERGENIC POLLENS OF WEED PLANTS IN NORTH EAST ITALY

Pierluigi VERARDO[1], Francesca TASSAN MAZZOCCO[2], Damaris SELLE[3], Barbara DALL'ARA[4], Stefania LAZZARIN[5]

[1] Regional Agency for Environmental Protection Friuli Venezia Giulia, Italy. e-mail: pierluigi.verardo@arpa.fvg.it
[2] Regional Agency for Environmental Protection Friuli Venezia Giulia, Italy. e-mail: francesca.tassan.@arpa.fvg.it
[3] Regional Agency for Environmental Protection Veneto, Italy. e-mail: damaris.selle@arpa.veneto.it
[4] Regional Agency for Environmental Protection Veneto, Italy. e-mail: barbara.dallara@arpa.veneto.it
[5] Regional Agency for Environmental Protection Veneto, Italy. e-mail: stefania.lazzarin@arpa.veneto.it

Introduction

In North East Italy, in addition to the allochthonous plants that arrived in the past, new plant species that produce allergenic pollens have recently arrived and are spreading. Their spread and consistency are not always well known. An analysis of their pollen can indicate their presence, quantity and danger to health and the environment.

Materials and Methods

The sampling slides of the pollen monitoring network are used to identify pollen from alien plants. In some cases, specific training is required on the recognition of some rare or little known taxa. Krieging programs are used to spatialize the sampling data to visualize the places of greatest presence.

Results and Discussion

The pollens of some species of weeds such as Ambrosia and Amaranthus are frequently detected by the palynologists of the Italian POLLnet network.
Ambrosia has been studied throughout Italy for years and its distribution shows that it is mainly present in the North (fig. 1).
Amaranthus has shown a significant increase in recent years, due to the pesticide resistance of this plant, a typical crop pest (fig. 2).
In recent years specific courses and tests have been carried out to improve the competence of operators in the recognition of some taxa, such as Ailanthus, Xanthium, Broussonetia, Maclura. The reports of botanists have been useful for the search for new plants such as Baccharis (fig. 3), Impatiens, Senecium. Still others are not part of the Italian flora, but sometimes pollens are found in the air due to transboundary transport phenomena from not far away territories, where plants are present: this is the case of the VAT genus. In the routine monitoring of allergenic pollen, these pollen types are often not considered individually, but the counts refer to generic classes "Other pollen grains" or "Other Asteraceae".
In order to investigate the phenomenon of the diffusion of many allctone weeds, both quantitative sampling data and reports of their presence on the territory were collected; in some cases the information was reworked to obtain geographic distribution maps; in others, the possible impacts on human health and the ecosystem were assessed. In some cases, measures have been taken to contain the spread and consequent damage.

Conclusions

The study of airborne pollen can be of great help in knowing the presence, consistency and danger of some plant species that have arrived in north-eastern Italy. If the pollen is identifiable and detected in several stations, it is possible to create a distribution map that identifies the areas at greatest risk. The distribution maps of the plant over the years help to follow the phenomenon over time.

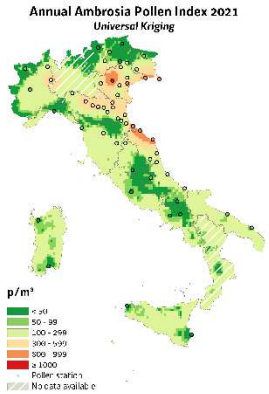

fig.1. Distribution of Ambrosia in Italy in 2021.

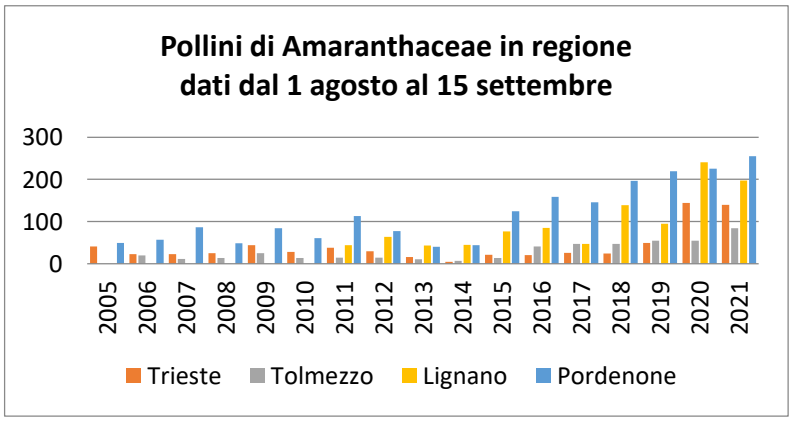

fig.2. total of Amaranthus pollen in some locations in North East Italy.

fig.3. Baccaris halimifolia in the Venice lagoon.