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THE DISTRIBUTION OF *AMBROSIA SPP.* POLLEN GRAINS THROUGH NORTH EAST OF ITALY, SLOVENIA AND CARINTHIA (AUSTRIA) IN THE YEAR 2021

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Introduction

The data sharing of *Ambrosia spp.* pollen particles detection among the Environmental Agencies of North East Italy, Carinthia (Austria) and Slovenia has allowed the development of a geographical map showing where ragweed was mostly concentrated in 2021.

Materials and Methods

Ambrosia spp. pollen grains were identified during the routine microscope analysis of the samples collected in 2021 from n.24 stations belonging to the monitoring networks of the Environmental Agencies involved in the study. Specific training in the recognition of *Ambrosia spp.* pollen was previously carried out to distinguish it from similar genera. Pollen concentration data collected from each station were reported as annual pollen index, i.e. the sum of daily pollen concentration over the year (fig.1). Kriging model was applied to spatialize the punctual annual data and visualize the areas of greatest presence of the pollen.

Results and Discussion

The annual pollen indexes of *Ambrosia spp.* from North East of Italy, Carinthia (Austria) and Slovenia, spatialized with the Kriging method are represented in figure 2.

On this map, the sampling stations are also reported and since each station represents the main phytoclimatic areas of each territory, it was possible to validate the result obtained. It is evident a higher concentration of *Ambrosia* pollen in the eastern-south part of the study area

(Slovenia, Carinthia, and the Italian Veneto region) that tends to decrease toward North-West (Italian region of Friuli Venezia Giulia and Trentino).

Conclusions

Many studies on the presence of Ambrosia in Italy and in Europe show that this genus is abundant in North West Italy as well as in Hungary and Serbia. The sharing of annual monitoring data made it possible to verify that in 2021 ambrosia was very abundant on the border between Slovenia and Hungary, along the lower valley of the Drava and Sava rivers, both tributaries of the Danube. The Venetian plain seemed not to be very interested by the presence of this invasive plant, except for the Vicenza's area, while mountain areas were almost free of this pollen.

CITY	X	Y	AMBROSIA gr/m3
Belluno	12.22360568	46.16098718	111.85
Bolzano	11.342099	46.499332	85.32
Brunico	11.936946	46.800067	16.62
Feltre	11.91321206	46.01443649	131.98
Lignano Sabbiadoro	13.1162	45.6764	720
Padova	11.8875172	45.40276071	148.2
Pordenone	12.68305616	45.95712675	235.25
Rovigo	11.81650464	45.07303337	181.97
San Michele all'Adige	11.1135	46.194	139
Silandro	10.778849	46.62891	32.41
Tolmezzo	13.01031	46.40588	83.12
Treviso	12.24902283	45.66567596	137.78
Trieste	13.77430339	45.64705821	604
Val Canali	11.86851005	46.1992681	47
Venezia	12.25309923	45.47796371	755.8
Verona	10.99065954	45.43779327	297.43
Vicenza	11.54652049	45.54779178	1094.22
Izola	13.66	45.54	1143
Lendava	16.45	46.55	7961
Ljubljana	14.51	46.06	1080
Maribor	15.63	46.55	1770
Klagenfurt	14.3	46.62	516
Villach	13.83	46.6	446
Weizelsdorf Rosental	14.172	46.5225	1630

Fig.1 quantity of Ambrosia pollen in the year 2021 in the study locations.

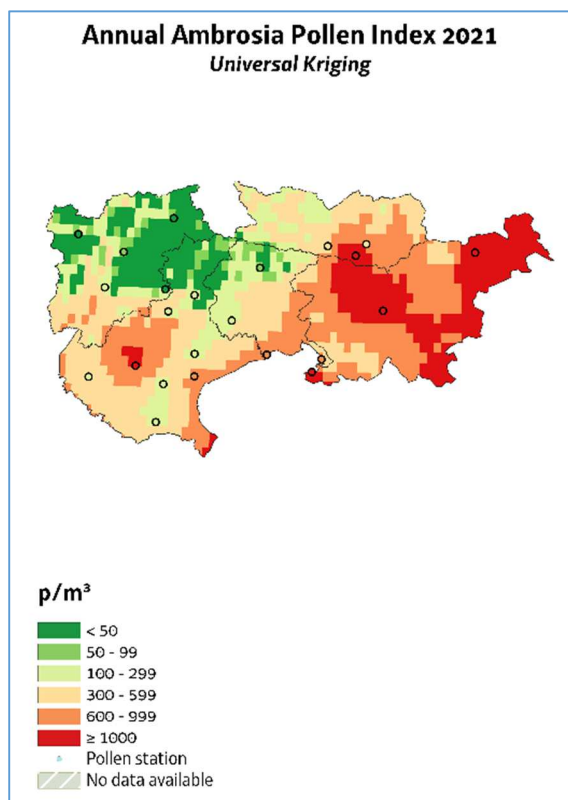


fig.2 Distribution of *Ambrosia spp.* through the North east of Italy (Trentino, Veneto, Friuli Venezia Giulia regions), Slovenia and Carinthia (Austria).