

# Aerobiological monitoring network in Extremadura (SW Spain)



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## Introduction

Extremadura region has been aerobiologically monitored with volumetric spore traps from 1993 by the aerobiological research unit of the University of Extremadura (*aerouex.es*). The first monitoring station was placed in Badajoz, and it has been operating continuously since then. In 1995, two new sampling points were established: Cáceres (82.5 km from Badajoz) and Mérida (54 km from Badajoz). The former operated until 2001 and the latter until 1998.



Fig 1. Locations aerobiologically studied from the network in Extremadura. In green color stations working in 2011

## Material and Methods

Three new aerobiological stations have been created in 2011 with funding from the regional government (Fig. 1). Plasencia, in the North, 148.3 km from Badajoz, close to the Sistema Central, provides aerobiological information from a more continental area with vegetation dominated by cork and Pyrenean oaks. Santa Amalia, in the West, 84.3 km from Badajoz, close to the Guadiana river with a landscape dominated by irrigated crops and close to holm oak dehesas. Zafra, in the South, 71.3 km from Badajoz, surrounded by olive and grapevine crops. Furthermore, another station, for experimental purposes, has been added in Badajoz. All stations use Burkard seven day spore traps that are changed at least with a weekly frequency.

## Results

Aerobiologically, Extremadura is characterized by high pollen concentration of grass and oak pollen, often with the highest values recorded of this pollen types, the first in May and the second in March (Fig. 3).

Plasencia showed, in general, lower levels of pollen concentration. Zafra and Santa Amalia showed higher values of Oleaceae pollen than Poaceae. Plasencia and Zafra showed lower values of *Platanus* pollen (Fig. 2).

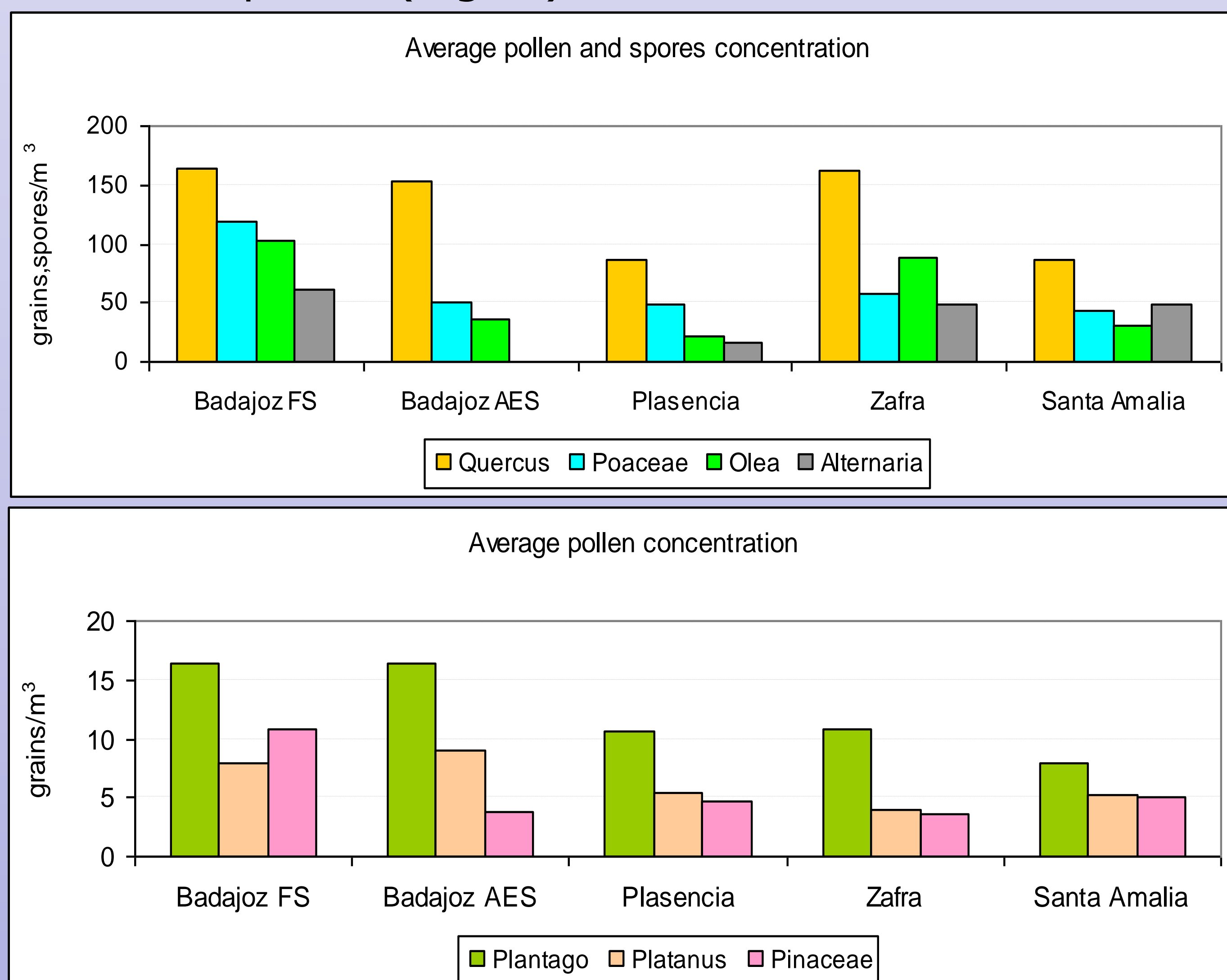


Fig. 2. Average pollen and spore concentration in the monitored stations. FS Faculty of Science. AES Agrarian Engineering School.

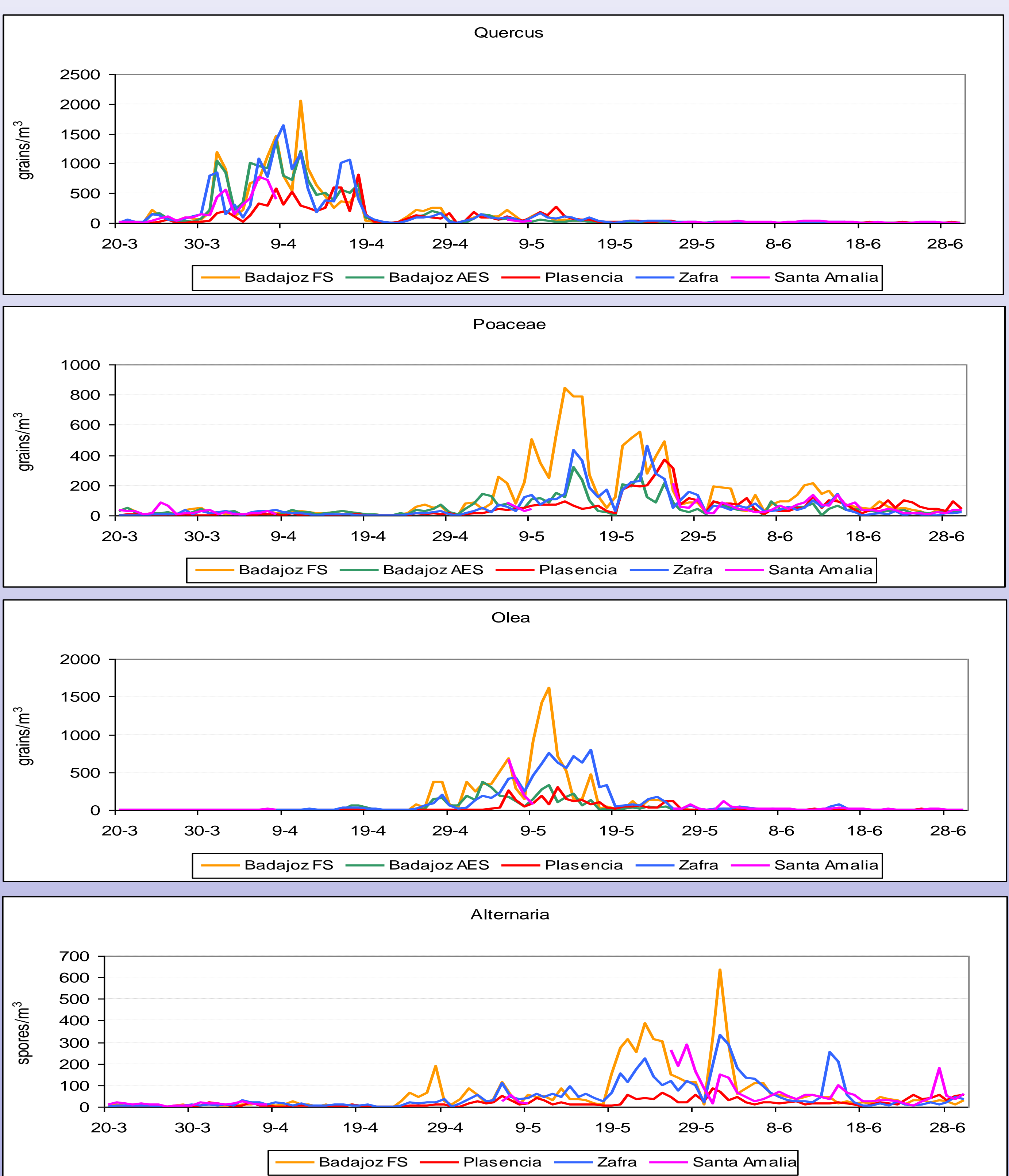


Fig. 3. Daily concentrations of different pollen and spore types.

## Conclusions

The four aerobiological stations provide more accurate information about airborne pollen and spores in Extremadura region whereas they include the main landscapes. Results available so far often show an earlier presence of pollen in the South, then in the Centre, and finally in the North and East with a delay about one to two days in the peaks.