3. Study of diet

Characterization of the flora that can be associated with the species, either in terms of its diet or through insect predation.

Identification of plant species visited by the insect to collect nectar and other sweet juices and identification of pollen deposits in specimens.

Samples from different nests located in multiple environments.

Identification of pollen present in samples taken from nests - digestive contents of larvae, adults and meconium - through pollen analysis.

Meconium

The larva molts five times and the material defecated during its emergence (meconium) stays compacted at the bottom of the alveolus. The number of layers clarifies the number of generations that have occurred, and gives indication of population dynamics.

29 nests were sampled, and 127 samples of meconium, 17 samples of larvae and 21 samples of adults were prepared.

CONTACT US

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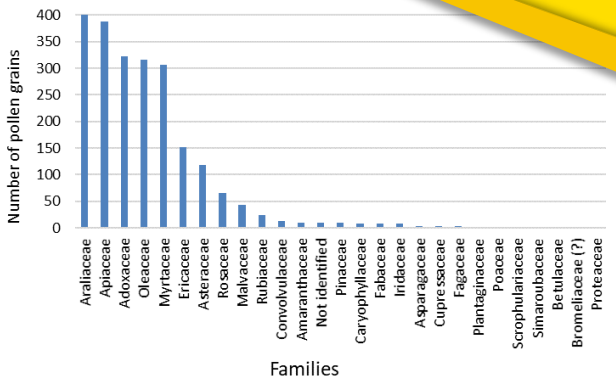
For more information:

http://atlanticpositive.eu

https://www.iniav.pt/projetos/atlantic-positive

4. Flora associated with the dynamics of the species

Identified pollen from 26 botanical families and 37 genera



Families	Gender	L / A / M *	Total	Families	Gender	L / A / M *	Total
Ericaceae	Arbutus (?)	L	1				
Betulaceae	Alnus	M	1	Não-identificado	...	M	10
Proteaceae	Banksia (?)	M	1	Pinaceae	Pinus	M	10
Bromeliaceae (?)	....	M	1	Convolvulaceae	Convolvulus	M	13
Simaroubaceae	Ailanthus	M	2	Rosaceae	Rubus	M	14
Plantaginaceae	Plantago	M	2	Malvaceae	Tilia	M	21
Poaceae	....	M	2	Malvaceae	...	M	23
Scrophulariaceae	Verbascum	M	2	Rubiaceae	Galium	M	25
Asparagaceae	Asparagus	M	3	Rosaceae	...	M	27
Fagaceae	Castanea	M	3	Ericaceae	Calluna	M	30
Caryophyllaceae	...	M	3	Asteraceae	Taraxacum	A M	34
Cupressaceae	...	M	3	Asteraceae	Calendula	M	36
Fabaceae	Ononis	M	3	Asteraceae	Senecio	M	36
Asteraceae	Bellis	M	5	Ericaceae	Erica	L M	122
Fabaceae	...	M	5	Myrtaceae	Eucalyptus	A M	306
Caryophyllaceae	Agrostemma	M	6	Oleaceae	Ligustrum	M	316
Asteraceae	Anthemis	M	7	Adoxaceae	Viburnum	L M	323
Iridaceae	...	M	8	Apiaceae	..	M	388
Amaranthaceae	Chenopodium	M	10	Araliaceae	Hedera	L M	578

*L (larva) / A (adult) / M (meconium)

PLANTS VISITED BY THE INSECT

June 2023

Authors: Anabela Nave, Joana Godinho, Inês Portugal - INIAV, I. P.

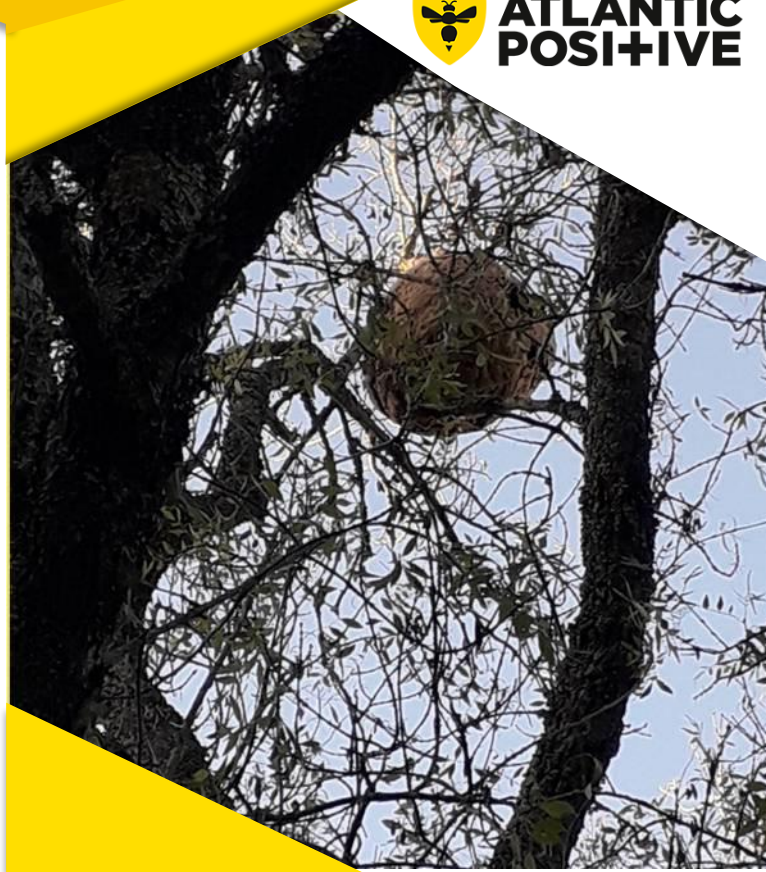
Thanks: Entities that made nests available, Ana Paula Alves (INIAV,I.P:) for flyer template, APISMAIA for palynology analysis.

VESPA VELUTINA

Exotic and invasive species

EATING HABITS

ATLANTIC POSITIVE



REPÚBLICA PORTUGUESA | AGRICULTURA E ALIMENTAÇÃO

Interreg Atlantic Area
European Regional Development Fund

EUROPEAN UNION

iniav
National Institute for Agrarian and Veterinary Research

Asian Hornet
(*Vespa velutina*)

Classified,
in July 2016, as an invasive
alien species of concern in the
European Union, under Regulation (EU)
No. 1143/2014 of the European Parliament
and of the Council of 22 October.

Detected in 2011, in Viana do Castelo, the Action Plan for the Surveillance and Control of *Vespa velutina* has been underway in Portugal since 2018, following Order No. 813/2017, published on 6 October 2017, by the Ministry of Agriculture, Forestry and Rural Development, as amended by Order No. 11351/2017, published on December 27, 2017, by the Ministry of Agriculture, Forestry and Rural Development.

INVASIVE EXOTIC STATUS

Species whose introduction into the wild or spread in a given territory threaten or has an adverse impact on biological diversity and ecosystem services, or has other adverse impacts.

IMPACTS OF THE ASIAN HORNET

1. **Environment/Biodiversity** - Natural predator of insects, with impacts on the biodiversity of the autochthonous entomofauna and with consequences for the pollination of species of natural or cultivated vegetation.
2. **Beekeeping** - Predators of honey bees, to obtain the protein food they give to the larvae in the nest.
3. **Public health and safety** - Danger due to its aggressiveness when disturbed in nests.
4. **Agricultural Production** - Indirect effect, due to the decrease in the pollinating activity of bees and due to the consumption of carbohydrates obtained from fruits close to the harvest stage.

1. Objectives of the Atlantic-POSitiVE project

1. Avoid further expansion and minimize the impact of the species on the ecosystems and the socio-economic development of the Atlantic Area.
2. Establishment of a transnational cooperation network for the implementation of joint activities.
3. New control methods.
4. Atlantic Strategic Plan to protect biodiversity and ecosystem services.

PROJECT PARTNERS

ASSOCIATED PARTNERS

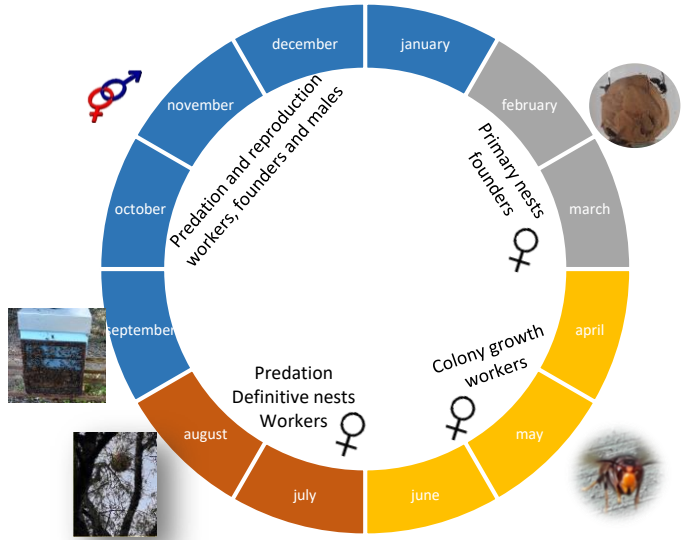
ATLANTIC POSITIVE

(EAPA_800/2018) - Conservation of Atlantic pollination services and control of the invasive species *Vespa velutina*, INTERREG program and Atlantic measure.

2. Life cycle and eating behavior

LIFE CICLE

- Annual cycle
- Diurnal species
- Maximum activity in summer



EATING BEHAVIOR

The adults feed on other insects, nectars and sugary exudations that they obtain from the flora. The larvae receive protein food from the insects that workers prey.