



IECHo
2025
Conference

The 2nd International Electronic Conference on Horticulturae

27-29 May 2025 | Online



Analysis of Sustainable Practices in Greenhouse Horticulture in Almeria, Spain

Aparicio Castro, S.; González Vizcaíno, A; García García M.C.; Navarro Cuesta, V

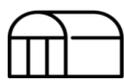
IFAPA La Mojonera. Andalusian Institute for Research and Training in Agriculture, Fisheries, Food and Organic Production. CAPADR, Regional Government of Andalusia



PROTECTED HORTICULTURE IN NUMBERS

ENVIRONMENTAL SUSTAINABILITY IN PROTECTED HORTICULTURE

Introducción



Greenhouse area 33.418 ha



Production 3.486.862 t

Value 2.094 M€



Solar greenhouse



Pollination of bumblebees



Integrated production



Waste management



Drip irrigation



Biological control



Ecological production



Circular economy

Material and methods

CUESTIONARIO "Actuaciones Sostenibles en horticultura protegida"

1. INFORMACIÓN GENERAL
1.1 Edad 1.2 Género Masculino Femenino Otro Prefero no decirlo

2. FORMACIÓN
2.1 Primaria Secundaria Formación Profesional Bachiller Titulación Universitaria

3. CULTIVO
3.1 Convencional Integrado Ecológico

4. METODOS DE CONTROL DE PLAGAS, ENFERMEDADES Y MALAS HERBAS
4.1 Fitosanitarios



- 105 surveys
- Young farmers
- Incorporation to the Agricultural Enterprise
- Production sector: Protected horticulture
- Data processed with Microsoft Office 2010

PROFILE OF RESPONDENTS

CULTIVATION SYSTEM

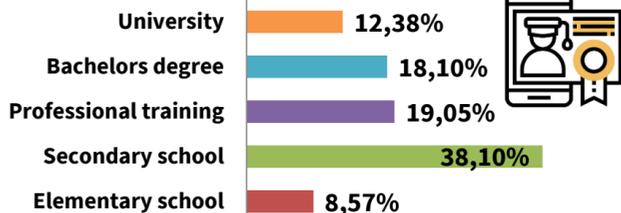
USE OF SUSTAINABLE MATERIALS

Results

GENDER



TRAINING



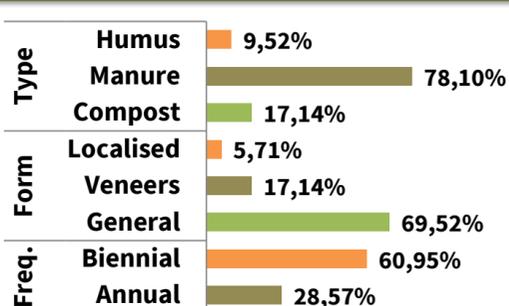
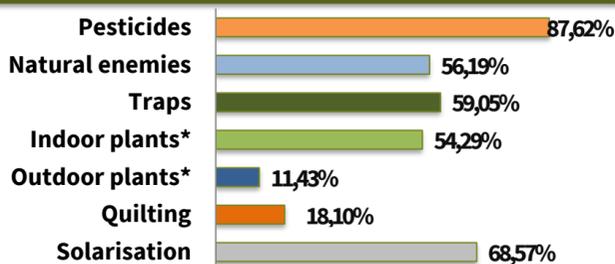
- There is a higher **percentage of women in training** than women who later become farm owners.
- The **level of education has increased** compared to previous studies.

- **14%** use **organic** production, **24%** use **integrated** production and **62%** use **conventional** production.

- The use of biodegradable materials is **very recent** and **no data** is available to compare survey results.

PEST AND DISEASE CONTROL METHODS

ORGANIC FERTILIZATION



- Organic fertilization is in the form of **manure**, applied as a **bottom dressing**, on average every **two years**.



- **88%** of farmers use **pesticides** as a control method.
- Release of **natural enemies** is used by **56%** of farms.
- Trap, rearing and reservoir **plants** are used in **61%** of cases.
- **Solarization** is the disinfection method used by **68%**.

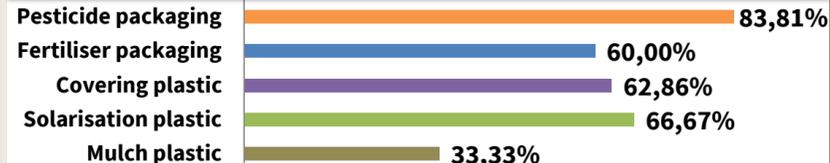


ORGANIC WASTE MANAGEMENT

INORGANIC WASTE DELIVERED TO MANAGEMENT COMPANY



- **74%** of **organic waste** is delivered to a waste **management company** and the remaining **21%** is **managed on the farm**.



- **Inorganic waste** is mostly managed by a waste **management company**.

Conclusions

- The use of natural enemies and trap, breeding and reservoir plants is being consolidated as a common practice, thus promoting biodiversity in greenhouses.
- The percentage of self-management of plant remains has increased with respect to 2016, although it is still mostly delivered to a composting plant.
- The use of biodegradable material is a relatively recent practice so there is no published data.
- The significant percentage of inorganic waste from intensive agriculture in Almeria delivered from management companies is reducing the negative effects of these on the environment.

This work is part of the projects "Incorporación de Jóvenes a la Empresa Agraria" (PP.FAI.IDFFAI2025.005), and "Producción Integrada de Plagas" (PP.FAI.IDFFAI2025.001), which are 90% co-financed by FEADER, within the PDR de Andalucía 2.014-2.020.