

SPAIN: Gallecs trial

Start: 2011

Description

The experiment aims at the introduction of reduced tillage combined with the strategic use of farmyard and green manures in organic crop rotations, which should be compatible with maintaining biodiversity and improving soil quality and crop productivity parameters.

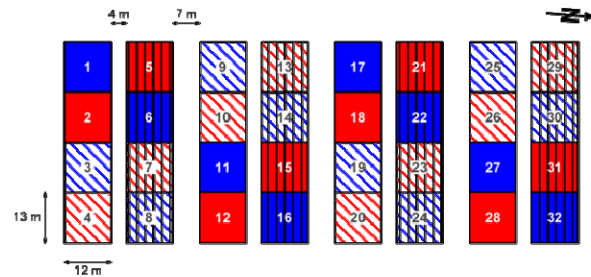
Site: Gallecs, Catalonia (Spain)

Precipitation: 647 mm year⁻¹

Mean annual temperature: 14.9°C

Soil: loamy clay

Design (field map)



- | | |
|---------------------------------------|---------------------------------------|
| Plough - Fertilisation - Green Manure | Chisel - Fertilisation - Green Manure |
| Plough - Fertilisation + Green Manure | Chisel - Fertilisation + Green Manure |
| Plough + Fertilisation - Green Manure | Chisel + Fertilisation - Green Manure |
| Plough + Fertilisation + Green Manure | Chisel + Fertilisation + Green Manure |

Factorial treatments

1. Soil tillage
2. Fertilisation
3. Green Manure

Tillage (at 15 cm depth)

- Mouldboard ploughing (P)
- Chisel ploughing (C)

Fertilisation

- Farmyard manure (+ F)
- No farmyard manure (- F)

Cover crops

- Green manure (+ GM)
- No green manure (- GM)

Crops (under discussion)

- 2011 Spelt (*Triticum spelta*)
- 2012 Common flax (*Linum usitatissimum*)
- 2013 Chickpeas (*Cicer arietinum*)
- 2014 Winter wheat (*Triticum aestivum*)
- 2015 Lentils (*Lens culinaris*)

Planned datasets

- Crop yield
- Soil carbon
- Soil nutrients
- Aboveground weed cover
- Aboveground weed biodiversity
- Weed seedbank



About the Rural Area of Gallecs

Gallecs is a publicly owned peri-urban agricultural area of 753 hectares located 15 km north of Barcelona. In 2005, farmers and the Consortium of Gallecs started the conversion to organic agriculture of the rainfed land. The Research Group Ecology of Agroecosystems of the University of Barcelona monitors the conversion of 225 ha to organic farming to spread organic farming to the whole of this territory, thus converting Gallecs in the largest area devoted to organic farming in Catalonia.



Projects supporting the Gallecs trial and technical assistance

1. Reduced tillage and green manures for sustainable organic cropping systems. TILMAN-ORG. ERA-Net CORE Organic II, 2011-2014.
2. Efecto del paisaje y las prácticas agrícolas sobre la biodiversidad vegetal en los agroecosistemas herbáceos: implicaciones para la conservación de la biodiversidad. CGL2009-13497-c02-01. Ministerio de Ciencia y Tecnología, 2010 - 2012.
3. Establiment d'un experiment a llarg termini sobre la llaurada reduïda i els adobs verds per a sistemes ecològics sostenibles a la regió mediterrània. 2011 AGEC 00011. Generalitat de Catalunya, 2011.
4. Consorci del Parc de l'Espai d'interès natural de Gallecs.