



# One Step Ahead with Sustainable Agriculture

**Hacienda Las Cardenas –  
Spain**



Bayer  
Forward   
Farming



**At Bayer ForwardFarms, farmers and Bayer experts demonstrate innovative solutions for sustainable agriculture that comprise three components:**

// **Tailored Solutions** – Innovative products and services tailored to customer needs, including high quality seeds and traits, biological and chemical crop protection products, and digital solutions. These solutions are backed by tailored services ranging from agronomic support, field demonstrations, diagnostics, and prediction tools, to documentation.

// **Proactive Stewardship** to ensure product integrity (for seeds and crop protection products), protect human health, and preserve the environment. We offer training to raise standards of handling and usage, as well as to minimize any possible risks to human health and the environment.

// **Partnerships** to enhance the quality of life for farmers, communities, and society. Mutually beneficial partnerships that include all players in the value chain and help to leverage the potential for collaboration in modern agriculture.

## Sustainable Agriculture in Practice

Hacienda Las Cardenas lies in the heart of Andalusia, in the Guadalquivir river valley basin known for the Mediterranean triad: wheat, olives and vine grapes. The Valdenebro family cultivates an even broader variety of crops. They believe that crop diversification allows them to keep their soil healthy and stabilize farm income. However, farming challenges are ample, especially with regard to water availability. With the Bayer ForwardFarming initiative, the family sees a great opportunity to further shape their ambition to create a truly sustainable farm environment, while further increasing modern agricultural practices.



### Introducing Hacienda Las Cardenas

**Managed by Diego and Patricio Valdenebro**



#### **Location:**

Carmona, near Sevilla.



#### **History:**

In the mid-20<sup>th</sup> century, Ignacio de Valdenebro Muñoz acquired the olive farm Hacienda Las Cardenas. Today, with over 1.000 ha, it is managed by the 2<sup>nd</sup> and 3<sup>rd</sup> generation of the Valdenebro family.



#### **Farming Land:**

On an alluvial plain of the Guadalquivir river with sandy, silty and clay soils with gravel and stones.



#### **Crops:**

Tomato, wheat, cotton, corn, quinoa, sunflower, orange, olive.



#### **Partners:**

University of Cordoba, Biodiversity Node, and Bioteus.



# Hacienda Las Cardenas

## Farm Profile



- Tailored Solutions
- Proactive Stewardship
- Partnerships

## Key Elements

- 1 **Productivity starts with the seed**  
Modern seed technology allows to produce higher yielding crops of better quality on the same land.
- 2 **Precision farming**  
Digital tools like Climate FieldView® allow for making more accurate decisions and increase efficiency while reducing the use of resources.
- 3 **Soil care**  
Ample crop rotation, fallow land and cover crop management to improve soil fertility and weed control.
- 4 **Smart crop protection**  
Monitoring and modelling pest and disease infestations to optimize chemical and biological product use, as well as cultural measures.
- 5 **Integrated weed management**  
Crop rotation, soil management, alternating herbicide modes of action and localized applications.
- 6 **Each drop of water counts**  
Efficiency in drip irrigation and digital solutions is essential to preserve water – a scarce commodity.
- 7 **From the field to the plate**  
Good agricultural practices, integrated management, biological treatment programs and pheromone trapping enable the production of high-quality food.
- 8 **Biodiversity conservation and enhancement**  
Planting native flower strips and shrub hedges, installing perches for birds of prey, nest boxes and insect hotels, floating islands for amphibians in a water reservoir and cover crops.
- 9 **Safety first**  
Maximizing user safety throughout all stages of crop protection handling with personal protective equipment, closed transfer systems such as easyFlow M, and continuous training.
- 10 **Best practice applications**  
Equipment calibration and adjustments, as well as the use of anti-drift nozzles.
- 11 **Water protection**  
Phytobac®: Sustainable management of wastewater from cleaning spraying equipment in a closed system that biologically breaks down crop protection product residues.
- 12 **Partnerships**  
Demonstrating that sustainable agriculture is possible with the involvement of various key players in the agricultural sector.





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## *Contact Us*

**Bayer Cropscience, S.L.**

Av. Baix Llobregat 3-5  
08970 Sant Joan Despí  
Barcelona  
Spain

**Reinaldo Pereira**

Mobile: +351 914 653 148  
E-mail: [reinaldo.pereira@bayer.com](mailto:reinaldo.pereira@bayer.com)

[www.cropscience.bayer.es](http://www.cropscience.bayer.es)  
[info@bayercropscience.com](mailto:info@bayercropscience.com)  
[www.cropscience.bayer.com](http://www.cropscience.bayer.com)

**Diego and Patricio  
Valdenebro**

Hacienda Las Cardenas  
Carretera A-462 s/n  
41410 Carmona  
Spain

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SBS-20-1094