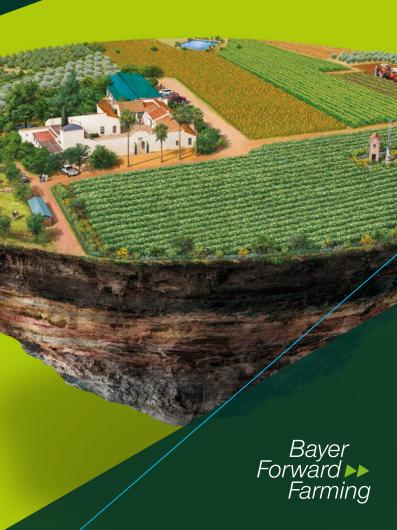
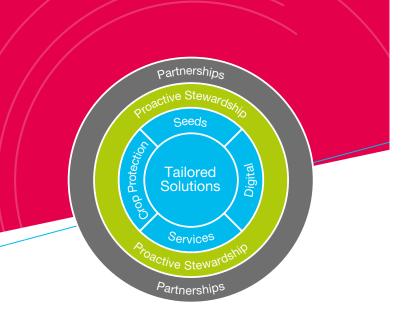
One Step Ahead with Sustainable Agriculture



Hacienda Las Cardenas – Spain





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 FowardFarming 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-20th century, Ignacio de Valdenebro Muñoz acquired the olive farm Hacienda Las Cardenas. Today, with over 1.000 ha, it is managed by the 2nd and 3rd 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

- Productivity starts with the seed

 Modern seed technology allows to produce higher
 - yielding crops of better quality on the same land.
- Precision farming
 - Digital tools like Climate FieldView® allow for making more accurate decisions and increase efficiency while reducing the use of resources.
- Soil care
- Ample crop rotation, fallow land and cover crop management to improve soil fertility and weed control.
- 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.
- 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.
 - 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.
- Best practice applications

 Equipment calibration and adjustments, as well as the use of anti-drift nozzles.
- Water protection

 Phytobac®: Sustainable management of wastewater from cleaning spraying equipment in a closed system that biologically breaks down crop protection product residues.
- Partnerships
 Demonstrating that sustainable agriculture is possible with the involvement of various key players in the agricultural sector.



For further information, visit our website: www.forwardfarming.com

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