

Plant breeding innovation: A sustainable solution to drought issues - Mr. Pedro Gallardo

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In the south of Spain droughts are severe and farmers need crops that resist to extremely dry climate conditions while keeping the same level of yield, says Mr. Pedro Gallardo, President of the Spanish Association of Young Farmers (Asaja Asociación Agraria de Jóvenes Agricultores - ASAJA)

With unpredictable rainfalls in wetlands and harsh droughts in drylands, the effects of climate change are becoming more tangible. Is Spain also experiencing these issues?

Yes. Droughts occur frequently in the South of Europe. Partly because the average rainfall is low, but also because it may be highly erratic, with torrential storms during the cropping season, followed by long dry intervals. An increasing number of regions in Europe are vulnerable to droughts. Given the severity of droughts in dry areas, a central challenge for researchers is to devise technologies that lend greater resilience to agricultural production under stress.

This is particularly impactful in the south of Spain. Regions such as Andalucía can experience up to five months without rainfalls from May until October. In addition, elevated temperatures and dry wind exacerbates the situation.

Some think that plant biotech can help us tackle the effects of climate change. Is plant breeding important for your work?

Very much so. For example, Farmers will need maize crops that are resistant to dry climate conditions and need less water. This is now possible with breeding technologies that allow the

identification and the targeted use of drought-tolerance genes contained in various staples that have withstood harsh dryland conditions for thousands of years or in seeds that have been already conventionally bred to be more tolerant to low water levels.

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Mr. Pedro Gallardo - President at ASAJA

Agriculture accounts for 70 percent of global water usage, and crops like rice and [wheat use more](#) water than the rest of the world’s crops combined. Do you think it is possible to move towards more sustainable farming practices?

If we want to safeguard our farming systems we must. The need for drought-resistant crops such as sunflower and durum wheat ¹is quickly growing in Spain. In irrigated area of Andalucía maize production achieves the highest yield in Europe with more than 18 ton per hectare. However, in the future water use will be reduced and rationalize because of increasing droughts.

Mr. P. Gallardo (President at ASAJA & Vice President Working Groups on Cereals, Oilseeds & Protein Crops at COPA-COGECA). The Asociación Agraria de Jóvenes Agricultores (ASAJA) is the largest agricultural association in Spain with more than 200,000 members. Its objective is the defense of family farms and agrarian enterprises in Spain.

What is plant breeding?

Plant breeding is the art and science of changing the traits of plants in order to produce desired characteristics to improve the overall function of various plants and crop systems.

With the predicted growth in the global population and the effects of climate change, varieties with increased yields and resistance to drought and disease are critical if we are to provide enough food for future generations. Plant breeding is one of the tools that will help us achieve sustainable crop production in the long term.

About the NBT Platform

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¹ Durum in Latin means "hard", and durum wheat is the hardest species of all wheats. This refers to the resistance of the grain to milling, in particular of the starchy endosperm, implying dough made from its flour is weak or "soft". This makes durum favorable for semolina and pasta and less practical for flour.