This project will bring together experts in diverse fields such as biotechnology (UGLA, UB, CRAG, CIRAD, UMIL, INDEAR and ICS-CAAS), plant physiology (UB, UGLA, IRTA and CREA), farming and agriculture development (IRTA, CAMARA, CFR and CREA), electrophysiology and cell signalling (UGLA) and salinity monitoring systems (IRIS), thereby fostering new opportunities for training and additional collaborative research.

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Horizon 2020

NEURICE

New commercial EUropean RICE

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Scarcer water availability and sea level rise are some of the climate change effects that clearly contribute to the salinization of the river deltas, where rice is grown in Europe. Most rice varieties are severely injured by abiotic stresses caused by salinization, with a strong impact on rice production.

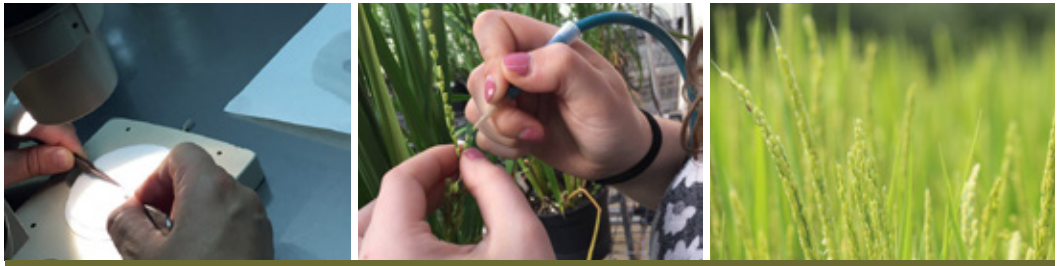
The NEURICE project aims to develop new comercial European salt tolerance rice (*Oryza sativa*) varieties that will protect the sector against the climate change effects.

In adition, the Ebro river delta, in Spain, is affected by the Apple Snail pest that is destroying rice paddy fields and eating the rice seedlings. Seawater treatment of the highly infested fields has demonstrated a high apple snail mortality since high salt concentrations are harmful for these invasive species, although it also affects negatively the production of current european rice varieties. Thus, seawater treatments in combination with new European salt tolerant lines could contribute to the eradicate of this pest.

The NEURICE project is funded by the Horizon 2020 program, within the call "Sustainable Food Security". It's a four year-long project (2016-2020) that is seeking for novel breeding targets to improve productibity, stability and quality in European rice production.

SPECIFIC OBJECTIVES

1. **To identify new salt tolerant varieties and new salt tolerance alleles** using phenotypical, physiological and genetic screening of germplasm collection and complementary approaches of Genome Wide Association Study (GWAS).
2. **To obtain advanced lines with improved salt tolerance by introgressing Saltol**, a chromosome segment carrying a salt tolerance gene from the highly salt tolerant Asian variety FL478 into European elite varieties.
3. **To evaluate salinity tolerance in controlled conditions using hydroponic systems** to validate salt tolerant lines after introgressing salt tolerance genes from FL478.
4. **To perform field trials** to evaluate in salinized and non-salinized conditions the traditional European rice lines harbouring the Saltol salt tolerance chromosomal region introgressed from salt tolerant FL478, as well as the most salt tolerant japonica accessions and RILs, in order to select those salt tolerant lines with commercial potential.
5. **To implement a salinity monitorization system** in rice plots treated with seawater using a novel autonomous salinity wireless sensor network.
6. **To transfer the knowledge** of the new elite European salt tolerant varieties and the salinity monitorization system to the end users.



Development of new salt tolerant rice (*Oryza sativa*) varieties

Climate change

Apple snail plague