

# Guidelines on the crop production rules depending on salt concentration and farmland physical properties

## Deliverable D\_5.2.3

Contributing partners:

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## 1. Criteria to identify actions

- Efficiency for crop growth
- Doable by the farmers
- Affordable by the farmers
- Suitable for the specific environment of the Veneto Region coastal areas
- Implementation of available technologies


## 2. The guidelines framework

Each action is described using the following scheme:


<b>ACTION NAME</b>	
DESCRIPTION AND OBJECTIVES	
HOW TO RREALIZE THE MEASURE	
WHERE TO REALIZE THE MEASURE	
ADVANTAGES	
DISADVANTAGES	
EFFICACY-COST-TECHNOLOGY-ENVIRONMENT-APPLICABILITY	★ ★ ★ ★ ★
ACTORS INVOLVED	
NORMATIVE REFERENCES	

### 3. Guidelines: agronomical practices

#### 3.1 Conservation agriculture

DESCRIPTION AND OBJECTIVES	<p>Conservation agriculture (CA) is a farming system that promotes maintenance of a permanent soil cover, minimum soil disturbance, and diversification of plant species. The main positive impacts of CA on soil salinization are related to:</p> <ul style="list-style-type: none"> <li>• Permanent soil cover that reduces the evaporative water loss and keeps the soil at high moisture content avoiding the upward movement of salts from groundwater</li> <li>• Minimum or no tillage approach that will slow down the process of peat oxidation thus decreasing the rate of land subsidence and the risk of seawater intrusion.</li> <li>• Increases soil water holding capacity</li> </ul>
HOW TO REALIZE THE MEASURE	<p>Permanent soil cover should be realized with the following measures:</p> <ul style="list-style-type: none"> <li>• Keeping crop residues at the soil surface</li> <li>• Using cover crops</li> <li>• Minimum tillage or no-tillage</li> </ul>
WHERE TO REALIZE THE MEASURE	The measure can be realized in all the farms that cultivate crops.
ADVANTAGES	<ul style="list-style-type: none"> <li>• Energy saving</li> <li>• Lower GHGs emissions</li> <li>• Improved soil quality and biodiversity</li> </ul>
DISADVANTAGES	<ul style="list-style-type: none"> <li>• Weed management</li> <li>• Cost of the equipment</li> </ul>
EFFICACY-COST-TECHNOLOGY-ENVIRONMENT-APPLICABILITY	
ACTORS INVOLVED	Farmers

### 3.2 Crop choice

DESCRIPTION AND OBJECTIVES	The crop choice is fundamental to deal with soil salinity. The response to salinity depends on the crop species, variety, rootstock, and stage of growth
HOW TO REALIZE THE MEASURE	<p>The choice of the crop type and rotation should be among those categories:</p> <ul style="list-style-type: none"> <li>• Resistant winter crops such as wheat, barley, triticale, and rye</li> <li>• Resistant summer crops such as sorghum, sunflower and soybean</li> <li>• New drought-resistant maize and wheat hybrids/varieties</li> <li>• Salt resistant rootstock</li> <li>• Salt resistant vegetable crops such as artichoke and asparagus</li> </ul>
WHERE TO REALIZE THE MEASURE	The measure can be realized in all farms
ADVANTAGES	<ul style="list-style-type: none"> <li>• Higher crop yield (for the same crop)</li> <li>• Higher number of crop species/varieties in the cropping management</li> <li>• Lower irrigation needs</li> </ul>
DISADVANTAGES	<ul style="list-style-type: none"> <li>• Lower productivity cropping systems</li> <li>• Higher costs</li> </ul>
EFFICACY-COST-TECHNOLOGY-ENVIRONMENT-APPLICABILITY	
ACTORS INVOLVED	Farmers