



WATERAGRI

# FACTSHEET

## WATER RETAINER

### **Key information**

Water Retainer is an organic soil conditioner liquid that can be added to the soil surface. Water Retainer changes the physical properties of the soil, making it more resistant to drought. The product is biodegradable and ready to use in agricultural fields, horticulture and home by professional gardeners.

**Target users:** farmers, advisory services.



### **A. Brief Introduction:**

Water Retainer is applied to the soil by surface spraying. It can be sprayed with most pre-emergent herbicides. Water Retainer is easy to apply using any type of sprayer.

In the WATERAGRI project, the product was tested in a soil physical laboratory and in a field trial. The measurements show that the product has an effect on soil water retention. The product is designed to reduce the effects of drought. A field-scale study has been carried out which indicates changes some in soil physical parameters. The effect on crop yield has not been scientifically documented.

### **B. Design concept and experimental set up:**

The product can be applied at the time of sowing, either by spraying on the soil surface or dissolved in irrigation water. The Water Retainer can be mixed with water-soluble pesticides or pre-emergent herbicides that are applied by spraying, so no additional operational costs are required for application. The recommended minimum dosage is 10 litres per hectare, diluted 20-100 times depending on the spraying technique.

The effect of Water Retainer lasts for 3 months as it biodegrades during this period. The application can be repeated if necessary and possible. (See also 'Challenges and opportunities' below for this option).

### **C. Technical information:**

The technical principle of the water retain as tested in WEATERAGRI show changes in soil water retention for different soils tested in laboratory at University of Salford, UK (see reference).

### **D. Costs and Benefits:**

The cost of purchasing the Water Retainer product (75-90 EUR/hectare, net price) and delivery.

Utilizing the product in fields without irrigation can result in extended endurance of crops during drought periods and better yield.

### **E. Challenges and opportunities**

The product is biodegradable and registered for use in organic farming. The product is hygroscopic, so in the case of treating fields where plants are growing, it has to be taken into account that the liquid shall be washed off after the treatment from the surface of the plants by 2-2.5 mm irrigation or rain, to avoid localized dehydration of the plant tissues. The product developer report also other agronomic benefits, but we have not tested these or found information that support these potential benefits.

### **F. Reference and demonstration:**

<https://waterandsoil.eu/index.php/elementor-3085/?lang=en>

Microfluidic system for nutrient recovery

<https://waterandsoil.eu/index.php/elementor-3206/?lang=en>

<https://www.youtube.com/watch?v=lzJZdWxKhZM>

<https://www.youtube.com/watch?v=lqnAOi-KWnU>



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