EDIA Empresa de Desenvolvimento e Infra-estruturas do Alqueva, S.A.

Water Quality Report for Irrigation
EFMA Primary Network

Lab results Responsible Laboratory: Cesab	(Bulletin n.º 244/22)		Water Quality for Irrigation (annex XVI, DL n.º 236/98)
Parameters	Units	Results	Conformity
Alkalinity	mg/L CaCO3	149	
Ammonium	mg/L NH4	0,097	
Nitrogen Kjeldahl	mg/L N	0,75	
Total Nitrogen	mg/L N	1,2	
Bicarbonates	mg/L CO3H-	182	(a)
Boron	mg/L B	0,03	
Calcium	mg/L Ca	53,2	
Chloride	mg/L Cl	147	
Total Hardness	mg/L CaCO3	236	
Total Iron (b)	mg/L Fe	0,113	
Phosphates	mg/L P2O5	0,007	
Total Phosphorus	mg/L P	0,022	
Magnesium	mg/L Mg	29,3	
Manganese	mg/L Mn	0,0157	
Nitrates	mg/L NO3	1,9	
Nitrites	mg/L NO2	0,067	
Potassium	mg/L K	4,86	
Ratio of Sodium Absorption (SAR)		1,91	
Ratio of Sodium Absorption adjusted (SARaj)		2,07	
Sodium	mg/L Na	70	
Total Dissolved Solids (TDS)	mg/L	471	
Total Suspended Solids (TSS)	mg/L	6	
Sulphates	mg/L CO4	47,6	
Total Coliforms	NPM/100 mL	84	
Fecal Coliforms	NPM/100 mL	4	

Note: With the exception of the SARaj parameter, test to determine the remaining parameters are included in the range of laboratory accreditation.

Field Results (Determined with a multiparameter probe)			Water Quality for Irrigation (annex XVI, DL n.º 236/98)
Parameters	Units	Results	Conformity
Temperature	ºC	13,4	
pH	Escala Sorensen	8,4	
Conductivity	µS/cm	800	

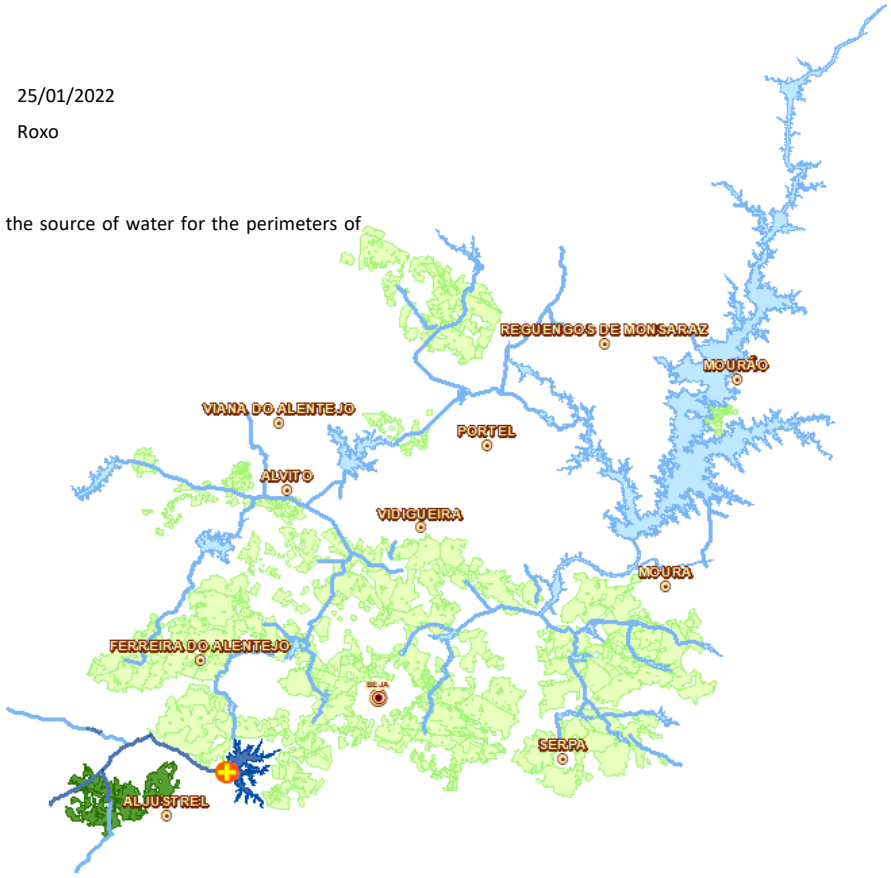
- Lower than the VMR (Maximum Value Recommended).
- Higher than VMR and below the VMA (Maximum Permitted Value).
- Higher than VMR. For this parameter is not defined one VMA.
- Higher than the VMA.

(a) The maximum value recommended in the Integrated Production Standards, for most crops, is 90 mg / L.
(b) The VMA in Annex XVI of the Decree-Law nº 236/98 refers to the dissolved iron (5 mg/L Fe).

Sampling Data: 25/01/2022

Sampling Place: Roxo

Benefited areas:
The Roxo reservoir constitutes the source of water for the perimeters of Aljustrel and Roxo-Sado.



Comments:
The pH result exceeds the Recommended Maximum Value range for water quality for irrigation (VMR: [6.5-8.4]). This may be due to an increase in the biological activity of algae. High pH values can affect the plant's ability to absorb nutrients and promote the precipitation of iron, calcium, magnesium and phosphate ions, which may promote the clogging of drip irrigation systems.
Chlorides exceed the VMR for irrigation (70 mg / L) and may originate from natural land drainage or agricultural runoff. At high concentrations they may be toxic to plants and cause deflocculation of soil clays, degrading their structure.
The bicarbonate values exceed the maximum value recommended in the Integrated Production Standards. High concentrations of bicarbonates can affect crop yields, making it difficult to absorb some mineral nutrients.
The results of the remaining elements are within the range of expected values for this typology of water bodies.
In the document "*Water Quality - Complementary Information*", EDIA recommends some general measures to reduce the concentration of salts in the water bodies.