

Water Quality Report for Irrigation

EFMA Primary Network

Lab results			Water Quality for Irrigation (annex XVI, DL n.º 236/98)
Parameters	Units	Results	
Responsible Laboratory: ALS Life Sciences Portugal, S.A. (Bulletin nº 234848/2024)			Conformity
Alkalinity	mg/L CaCO3	167	
Ammonium	mg/L NH4	0,036	
Nitrogen Kjeldahl	mg/L N	1,02	
Total Nitrogen	mg/L N	0,85	
Bicarbonates	mg/L CO3H-	204	(a)
Boron	mg/L B	0,0371	●
Calcium	mg/L Ca	53	
Chloride	mg/L Cl	71	●
Total Hardness	mg/L CaCO3	221	
Dissolved Iron	mg/L Fe	<L.Q. 0,010	●
Phosphates	mg/L P2O5	0,046	
Total Phosphorus	mg/L P	0,02	
Magnesium	mg/L Mg	21,2	
Manganese	mg/L Mn	0,0048	●
Nitrates	mg/L NO3	<L.Q. 2	●
Nitrites	mg/L NO2	<L.Q. 0,01	●
Potassium	mg/L K	7,6	
Ratio of Sodium Absorption (SAR)		1,239	●
Ratio of Sodium Absorption adjusted (SARaj)		1,387	
Sodium	mg/L Na	42,3	
Total Dissolved Solids (TDS)	mg/L	362	●
Total Suspended Solids (TSS)	mg/L	3,4	●
Sulphates	mg/L CO4	49,3	●
Total Coliforms	UFC/100 mL	220	
Fecal Coliforms	UFC/100 mL	300	●

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	
Temperature	°C	24,8	
pH	Escala Sorensen	8,50	●
Conductivity	µS/cm	660	●

- 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.

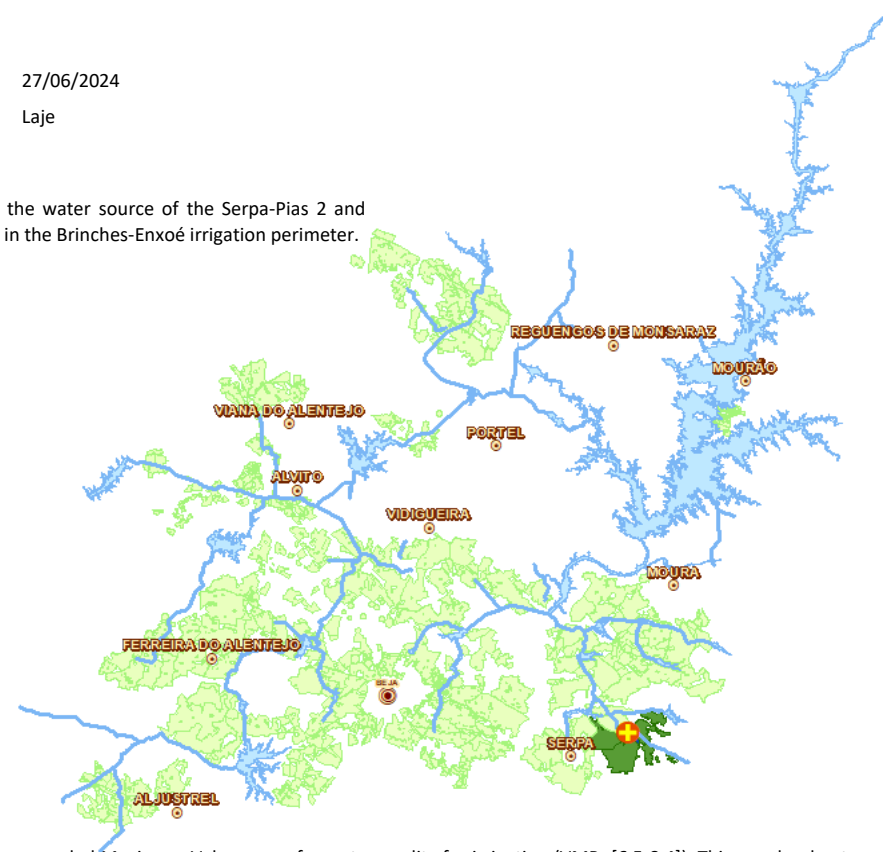
(a) The maximum value recommended in the Integrated Production Standards, for most crops, is 90 mg / L.

Sampling Data: 27/06/2024

Sampling Place: Laje

Benefited areas:

The Laje reservoir constitutes the water source of the Serpa-Pias 2 and Serpa-Pias 3 blocks, integrated in the Brinches-Enxoé irrigation perimeter.



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 fecal coliform result exceeds the Maximum Recommended Value for irrigation water (VMR: 100 NMP/100mL). A Maximum Admissible Value (VMA) has not been defined for this parameter. The fecal coliform results tend to be lower than the legal limit for irrigation water, with the result in the other two campaigns carried out in 2024 being much lower (January 2024: 9 CFU/100 mL and March 2024: 3 CFU/100 mL). The main problem associated with the presence of fecal coliforms in irrigation water is related to the irrigation of crops for direct consumption.

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.