

# Water Quality Report for Irrigation

## EFMA Primary Network

Lab results		Water Quality for Irrigation (annex XVI, DL n.º 236/98)	
Responsible Laboratory: Cesab		(Bulletin n.º 18424)	
Parameters	Units	Results	Conformity
Alkalinity	mg/L CaCO <sub>3</sub>	157	
Ammonium	mg/L NH <sub>4</sub>	<LD	0,017
Nitrogen Kjeldahl	mg/L N	1,2	
Total Nitrogen	mg/L N	1,2	
Bicarbonates	mg/L CO <sub>3</sub> H-	190	(a)
Boron	mg/L B	-	-
Calcium	mg/L Ca	44,4	
Chloride	mg/L Cl	52	●
Total Hardness	mg/L CaCO <sub>3</sub>	200	
Total Iron	mg/L Fe	0,0806	●
Phosphates	mg/L P <sub>2</sub> O <sub>5</sub>	<LD	0,008
Total Phosphorus	mg/L P	0,056	
Magnesium	mg/L Mg	22,9	
Manganese	mg/L Mn	0,0204	●
Nitrates	mg/L NO <sub>3</sub>	<LQ	1
Nitrites	mg/L NO <sub>2</sub>	0,0482	●
Potassium	mg/L K	-	-
Ratio of Sodium Absorption (SAR)		1,2	●
Ratio of Sodium Absorption adjusted (SARaj)		2,4	
Sodium	mg/L Na	38,7	
Total Dissolved Solids (TDS)	mg/L	310	●
Total Suspended Solids (TSS)	mg/L	7	●
Sulphates	mg/L SO <sub>4</sub>	-	-
Total Coliforms	NPM/100 mL	44	
Fecal Coliforms	NPM/100 mL	1	●

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

Field Results		Water Quality for Irrigation (annex XVI, DL n.º 236/98)	
(Determined with a multiparameter probe)			
Parameters	Units	Results	Conformity
Temperature	°C	25,1	
pH	Escala Sorensen	8,5	●
Conductivity	µS/cm	581	●

- 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.

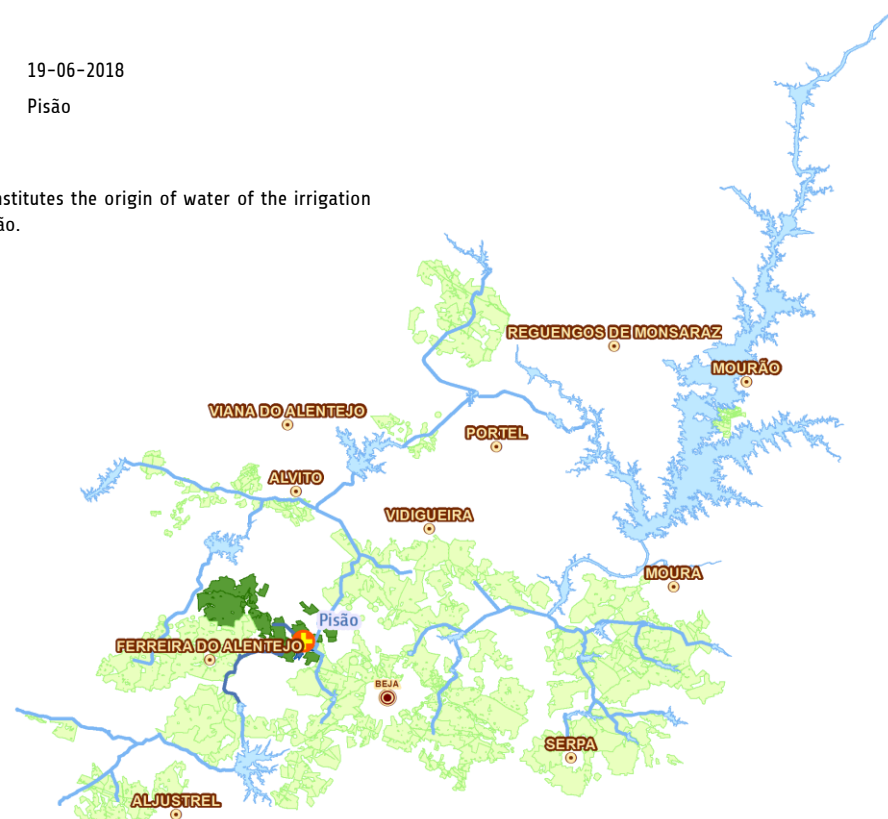
- (a) The maximum value recommended in the Integrated Production Standards, for most crops, is 90 mg / L.  
 (b) The VMA defined in Annex XVI of the Decree-Law No. 236/98 refers to the dissolved iron (5 mg / L Fe).

**Sampling Data:** 19-06-2018

**Sampling Place:** Pisão

### Benefited areas:

The reservoir of the Pisão constitutes the origin of water of the irrigation perimeter of Pisão and Alfundão.



### Comments:

The pH result exceeds the Recommended Maximum Value range for water quality for irrigation (VMR: [6.5-8.4]). This situation is usual in the spring and summer, as a consequence of the 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. At this time, the pH values tend to decrease in depth.

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.

In the present campaign the parameters boron, potassium and sulfate were not monitored. The most recent results are from the january 2018 campaign (boron: 0,024 mg / L, potassium: 4,38 mg / L and sulphates: 55 mg / L).