

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 736/20) | | Conformity | |
| Parameters | Units | Results | |
| Alkalinity | mg/L CaCO ₃ | 130 | |
| Ammonium | mg/L NH ₄ | >LD;<LQ | 0,03 |
| Nitrogen Kjeldahl | mg/L N | | 0,7 |
| Total Nitrogen | mg/L N | | 0,7 |
| Bicarbonates | mg/L CO ₃ H- | 148 | (a) |
| Boron | mg/L B | 0,0297 | ● |
| Calcium | mg/L Ca | 38 | |
| Chloride | mg/L Cl | 58 | ● |
| Total Hardness | mg/L CaCO ₃ | 177 | |
| Total Iron | mg/L Fe | 0,07 | ● |
| Phosphates | mg/L P ₂ O ₅ | <LQ | 0,007 |
| Total Phosphorus | mg/L P | 0,026 | |
| Magnesium | mg/L Mg | 20 | |
| Manganese | mg/L Mn | 0,017 | ● |
| Nitrates | mg/L NO ₃ | <LQ | 0,300354 |
| Nitrites | mg/L NO ₂ | <LD | 0,003 |
| Potassium | mg/L K | 5,52 | |
| Ratio of Sodium Absorption (SAR) | | 1,2 | ● |
| Ratio of Sodium Absorption adjusted (SARaj) | | 0 | |
| Sodium | mg/L Na | 36 | |
| Total Dissolved Solids (TDS) | mg/L | 282 | ● |
| Total Suspended Solids (TSS) | mg/L | <LQ | 3 |
| Sulphates | mg/L SO ₄ | 47 | ● |
| Total Coliforms | NPM/100 mL | 583 | |
| Fecal Coliforms | NPM/100 mL | 3 | ● |

Note: With the exception of the SARaj, the tests 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 | °C | 25,9 | |
| pH | Escala Sorensen | 8,8 | ● |
| Conductivity | µS/cm | 567 | ● |

- 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.

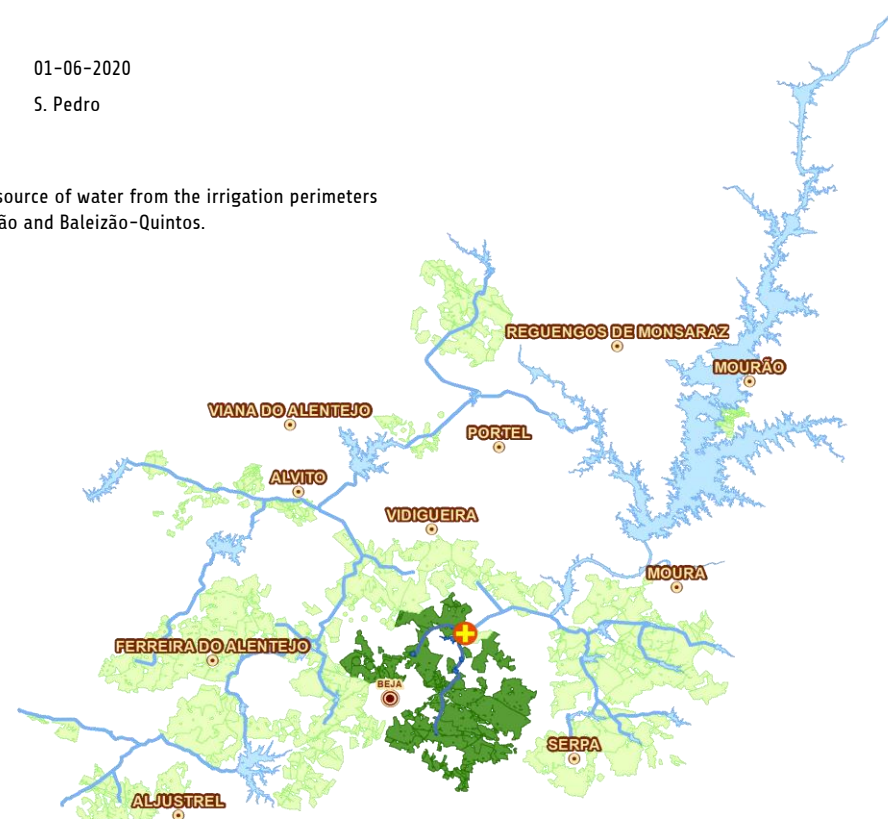
(a) The maximum value recommended in the Integrated Production Standards, for most crops, is 90 mg / L.
 (b) The VMA defined in Annex XVI of the Decree-Law No. 236/98 refers to the dissolved iron (5 mg / L Fe).

Sampling Data: 01-06-2020

Sampling Place: S. Pedro

Benefited areas:

The S. Pedro reservoir is the source of water from the irrigation perimeters of S. Matias, São Pedro Baleizão and Baleizão-Quintos.



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. The bicarbonate values exceed the maximum value recommended. 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.