



FERTIPINEA

Nutrition and fertilization of rainfed and irrigated *Pinus pinea*

Goals

1. Establishment of fertilizer recommendations for installation of new stone pine stands based on soil analysis
2. Establishment of fertilizer recommendations for young and adult stone pine stands based on soil and leaf (needles) analysis and, where applicable, irrigation water quality
3. Establishment of reference values for needle analysis interpretation to stone pine stands
4. Validation of irrigation opportunity criteria at the most critical stages of the vegetative cycle
5. Establishment of biometric and ecophysiological indicators for monitoring environmental stresses to pine stone stands

Developed activities

- Establishment of a P and K fertilizer field experiment before planting in the Portuguese region of Alcácer do Sal
- Establishment of a N and B fertilizer field experiment in a young stone pine stand in the Portuguese region of Coruche
- Follow-up of two fertigation field experiments installed in the Portuguese regions of Vendas Novas and Chamusca
- Establishment of 34 Permanent Observation Plots (POP) in the Portuguese Provenance Region V, in rainfed stands (26% grafted), and 3 POP in Évora region
- Establishment of a fertilizer pot experiment with N and B

Results

- Evaluation of soil fertility status of POP: Soils mainly with coarse texture, acid, low levels of organic matter and extractable phosphorus, zinc, copper and boron and low cation exchange capacity
- Evaluation of needle mineral composition of POP: Great variations of nutrient levels that showing some deficiencies
 - Pine cone yield of POP: 2017/18 - Average: 12.4 kg/tree (between 0 and 157 kg/tree)
2018/19 - Average: 6.2 kg/tree (between 0 and 109 kg/tree)