# Dendrochronological potential of the Azorean endemic gymnosperm *Juniperus brevifolia* (Seub.) Antoine

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Tree-ring interannual pattern variation is crucial in dendrochronology, allowing the identification of possible limiting factors on growth. Thus, trees exposed to sub-tropical or tropical climates without a marked seasonality, may show a low degree of interannual variation, impeding a straightforward dendroclimatological approach. Meanwhile, subtropical regions, and areas in transitional climates such as the Azores archipelago, are widely unexplored in terms of dendroclimatology, providing opportunities to work with endemic trees, including the dominant Azorean tree Juniperus brevifolia (Seub.) Antoine. To evaluate the dendrochronological potential of J. brevifolia, we analyzed wood anatomy and tree-ring patterns, cross-dating capabilities, and correlation with climate parameters. We sampled 48 individual trees from 2 natural populations (São Miguel and Terceira islands) using an increment borer. In addition, a Trephor tool was used to obtain wood microcores for micro-anatomical analysis. Tree-ring widths were measured with CooRecorder (Cybis) and cross-dated with the PAST-5 software (SCIEM). After detrending, master chronologies were built and correlated with aggregated daily temperature and precipitation data using the dendroTools R package. Microcores were prepared following standard protocols to obtain high resolution images. Our results showed the transition from latewood to earlywood marked by thick-walled fibers, . However, there were also unclear ring transitions or partially indistinct ring boundaries and wedging rings, complicating the cross-dating process. Our preliminary climate-growth correlations indicated significant positive correlations with precipitation at the end of the growing season. Our results suggest an acceptable dendrochronological potential for Juniperus brevifolia, which could be further used in distribution modelling or in recent climatic reconstructions, for which more samples will have to be analyzed.