

Measurement of sungkai tree-ring width from Jogjakarta, Indonesia

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Because equatorial monsoon and ENSO strongly influence on the climate of Indonesia, Indonesia is an important place to understand these climate systems. However, modern meteorological observation in Indonesia lacks long-term data and observation stations. Therefore, it is necessary to reconstruct long-term climate changes by using some proxies. In the proxy such as stalagmite and ice core, tree-ring has an advantage that it records climate data with high time resolution.

Paleoclimatological researches using tree-ring have been conducted in Indonesia. Although almost trees in the tropics don't make tree-rings, teak and sungkai make tree-rings exceptionally. Teak has been studied so far, but there are only a small number of studies about sungkai. Understanding differences between responses of teak and sungkai to the climate makes it possible to compare the two species, and that is useful in reconstructing paleoclimate.

In this study, we observed three sungkai disk samples (samiga1, samiga2, samiga3) from Jogjakarta, Indonesia, and measured tree-ring widths in order to increase numbers of studies about sungkai. We confirmed that the outermost tree-ring formed in 2014. Because of tree-ring widths and shapes, we presumed that samiga2 and samiga3 were sampled from the same tree. A false ring wasn't observed in samiga1. Samiga2 had some doubtful rings. By comparing samiga2 with samiga1 and sungkaiNAN7 (Tamura, 2008), we concluded that samiga2 has two false rings. Thus, we concluded that samiga1 has 28 tree-rings, and samiga2 has 37 tree-rings.

However, it is a problem that the number of samples for comparison is small, and sungkaiNAN7 was sampled at Serang. To compare sungkai with teak, it is needed to analyze more samples from the same area.

Keywords: tree-ring, ring width, paleoclimate