

## Species Distribution Model for Zanthoxylum Rhetsa Genus in Thailand

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**Abstract :** Species distribution model (SDMs) is one of the powerful tools used to create a suitability map used to predict and address ecology and conservation approaches. MaxEnt is a tool used among SDMs that is highly popular because it only uses presence data. Zanthoxylum rhetsa has more than 200 species distributed in the tropics. Most commonly found in cooler forest environments, there are 8-9 species found in Thailand. In northern Thailand, 3 varieties are commonly grown: Zanthoxylum myriacanthum, Zanthoxylum rhetsa and Zanthoxylum armatum. In the northern regions, these varieties are mainly used as a spice and as a cooking ingredient. MaxEnt has been used in this study to predict potential habitats for these Zanthoxylums in current and future times (2041 and 2060). Suitable habitats are predicted using data from the EC-Earth3-Veg general circulation model with 19 climatic variables. The results indicate that the suitability of future habitats of Zanthoxylum rhetsa may expand into the lower northern part of Thailand. The habitat suitability map obtained from the MaxEnt tool shows that the Precipitation of Wettest Quarter (Bio16) is the most important climatic variable influencing the current and future spread of Zanthoxylum rhetsa.

**Keywords :** MaxEnt, Zanthoxylum rhetsa, species distribution modelling, climate change

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