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林学—研究报告

滇柏大痣小蜂Megastigmus duclouxiana Roques & Pan的潜在分布区预测

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摘要：

了解滇柏大痣小蜂在云南省的潜在分布区域，对于科学评估其危害并采取正确的应对策略具有重要意义。笔者利用该物种的分布点数据和环境数据，通过GARP模型预测了滇柏大痣小蜂在云南省的潜在分布区域。在选出的10个最优模型中，216.6＜x2＜269.5，1.50×10-60＜P＜4.95×10-49，表明这些模型对该小蜂在云南省的潜在分布区预测有显著的统计学意义。在24°~26°N一线，年平均温度14.5℃，以昆明为中心的滇中高原面及其南北两侧是滇柏大痣小蜂的高适生区；中适生区主要分布在滇西南、滇南及滇东南的少部分县（区）；低适生区包括文山、马关、西畴、麻栗坡、富宁5县；非适生区包括金沙江、伊洛瓦底江、怒江、红河、澜沧江等流域，海拔约1300 m以下的低热河谷区以及迪庆州和昭通市。除滇北的昭通、迪庆和六大水系的低热河谷区外，滇柏大痣小蜂在云南省具有大面积的适生范围。

关键词： 滇柏；滇柏大痣小蜂；GARP；潜在分布区；云南

Prediction of Potential Geographical Distribution of Seed Chalcids, Megastigmus duclouxiana Roques & Pan

Abstract:

To estimate scientifically the risk of this species and take effective measures, it’s necessary to investigate the infected region and potential distribution of the species in Yunnan Province. Ecological niche model technique, genetic algorithm for rule-set prediction (GARP), was used to predict potential distribution of the seed chalcids, Megastigmus duclouxiana Roques & Pan in Yunnan province based on associations between known occurrence records and a set of environmental variables. The results of Chi-square test were 216.6＜x2＜269.5 (1.50×10-60＜P＜4.95×10-49) for 10 best models, indicating that these models had statistical significance for predicting the potential geographical distribution. The suitable areas for Megastigmus duclouxiana infestations were over two thirds of total area of Yunnan province. The highly suitable was middle Yunnan plateau and its two sides ranged from 24° N to 26° N, where the annual average temperature was 14.5℃. The moderate suitable included minor counties of southwest Yunnan, south Yunnan and southeast Yunnan. The low suitable was located in Wenshan autonomous prefecture, including Wenshan, Maguan, Xichou, Malipo and Funing county. Low and hot valley, Diqing autonomous prefecture and Zhaotong municipality were predicted as unsuitable, where the climate was cold zone, temperate zone or tropical one. Large area of Yunnan province was suitable for Megastigmus duclouxiana infestations except for Zhaotong, Diqing and low and hot valley.

Keywords: Cupressus duclouxiana ;Megastigmus duclouxiana GARP potential distribution Yunnan

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