Abstract

Prediction of potential overwintering areas in China for the *Neoseiulus barkeri**

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Predicting the potential distribution area of *Neoseiulus barkeri* can provide a good understanding of the habitat range of the *N. barkeri* and assess the possibility of overwintering in the release site (Khadem *et al.* 2021). The study of the habitat of *N. barkeri* can be used to determine whether it can overwinter in released areas and to assess its population dynamics (Abdellah *et al.* 2021).

Based on the current 38 distribution sites in China, the MaxENT model was used to predict the current distribution range and suitability of *N. barkeri* in China. The results showed that the AUC value was 0.914, indicating that the model was accurate and reliable. The dominant environmental variables influencing the distribution of the *N. barkeri* estimated using the knife cut method were the monthly mean diurnal temperature difference, the wettest quarterly precipitation, the driest month precipitation and the mean minimum temperature in January. The total area of *N. barkeri* in China is 259.20×104 km², accounting for 27% of the total area of the country. The low suitability zone is the largest, with an area of 120.48×104 km², accounting for 12.55% of the total area of the country. The medium suitability zone is 108.29×104 km², accounting for 11.28% of the total area of the country. The high suitability zone is 30.43×104 km², accounting for 3.17% of the total area of the country.

Keywords: MaxENT, overwintering areas, *Neoseiulus barkeri*, climate factors

References

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