

植物保护—研究报告

早熟柑橘黄龙病空间格局参数特征及其应用

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摘要:

为了揭示柑橘早熟宫川黄龙病的空间分布信息和病株行为特征, 2004-2009年采取多级抽样法于每年11月上旬在果实成熟期对2块定点样地逐株进行病级调查, 取得了12组样本资料, 应用聚集度指标法、Iwao法和Taylor法等对其空间分布型进行测定检验, 结果表明柑橘黄龙病在早熟宫川果园呈聚集分布, 其聚集强度是随着病级升高而增加。其聚集原因经Blackith种群聚集均数测定, 当 $m < 2.1184$ 时, 其聚集是由于某些环境如气候、栽培条件、植株生育状况等所引起的; 当 $m \geq 2.1184$ 时, 其聚集是由病株本身的聚集行为与环境条件综合影响所致。在此基础上提出了理论抽样数和序贯抽样模型: $n = (1/D)2^{2[1/m+0.6761]}$ 和 $T_n = 1.831 / [D02-0.1581 / n]$ 。

关键词: 柑橘 早熟宫川 柑橘黄龙病 空间格局特征 抽样技术

The characteristics and application of spatial pattern parameters for Huanglongbing in mature Miyagawa orchard

Abstract:

The damage and loss caused by citrus huanglongbing in citrus orchards. in Taizhou city had become more and more serious since 2002. Occurrence of citrus huanglongbing in citrus orchards were investigated from 2004 to 2009 in order to reveal their distribution and population behaviour. Three methods of aggregated indices and Iwao's way (regressive relation by M^*-m) and power law of Taylor were used to test the spatial distribution pattern of citrus huanglongbing in citrus orchards. The results showed the population of citrus huanglongbing belong to the pattern of aggregation distribution. It was tested by Blackith's method ,when $m < 2.1184$, their aggregation was caused by some environmental factors such as climate, planting, and growth and so on; when $m \geq 2.1184$, their aggregation was caused by their behaviour and environmental conditions. Based on this distribution pattern the model for determining the optimum theoretical sampling number and the optimum sequential sampling are proposed. The model are as follows: $n = (1/D)2^{2[1/m+0.6761]}$ and $T_n = 1.831 / [D02-0.1581 / n]$.

Keywords: citrus, Citrus Huanglongbing, distribution pattern,sampling technique

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