A MATHEMATICAL MODEL OF INTER-COLONY SPREAD OF AMERICAN FOULBROOD IN EUROPEAN HONEYBEES (APIS MELLIFERA L.)

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ABSTRACT

American Foulbrood (AFB) poses a significant threat to European honeybee colonies worldwide, affecting both bee health and apiary productivity. In this study, we develop a mathematical model to investigate the inter-colony spread of AFB among European honeybee colonies. The model integrates factors influencing disease transmission dynamics, such as bee drifting and robbing. This mathematical model contributes to the advancement of our understanding of disease ecology in honeybee populations and represents a significant step forward in the quest for sustainable beekeeping practices and the preservation of honeybee populations.

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