

综合评述

免疫能力与动物种群调节和生活史权衡的关系

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摘要

在生物医学和动物科学领域, 免疫能力是指有机体对疾病的抵抗能力. 近年来, 对野生动物免疫能力的研究是一个新兴的热点领域, 它与生态学结合, 产生了生态免疫学. 本文从生态学的角度, 介绍了免疫能力的概念、影响因素及其与动物种群调节机理的关系, 概述了与小型哺乳动物种群密度波动有关的免疫衰退假说、免疫能力选择假说和冬季免疫增强假说, 总结了免疫能力与能量代谢和内分泌特征之间的关系, 并对免疫能力在生活史权衡研究中的最新进展, 即有机体生长与免疫、繁殖与免疫之间的权衡关系等进行了阐述, 最后结合国际上本学科研究的发展动态, 提出了一些未来的研究方向.

关键词 [生活史, 种群调节, 免疫能力, 权衡](#)

分类号

Animal immunocompetence and its effect on population regulation and life history tradeoff

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Abstract

Immunocompetence is a common conception in biomedical and animal sciences, and refers to the ability of organisms against diseases. In recent years, a new field, ecological immunology, has been received much attention, which deals with the variation of immunocompetence in wildlife by immune methods. This paper introduced the conception of immunocompetence, the factors affecting its performance, and its roles in regulating animal population dynamics. Some hypotheses on population regulation in small mammals, such as immunocompetence handicap hypothesis, immunocompetence selection hypothesis and winter immune enhancement hypothesis were summarized. The relationships among energy metabolism, endocrine controlling mechanism and immune system were introduced, and the recent progress on immunocompetence and life history tradeoff was analyzed. The tradeoff between survival and immunocompetence, as well as between reproduction and immunocompetence were discussed, and some developing perspectives and new problems in ecological immunology were proposed.

Key words [Life history](#) [Population regulation](#) [Immunocompetence](#) [Tradeoff](#)

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