

动物生产层

荒漠区子午沙鼠种群数量动态及其预测

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摘要:

2002-2010年, 在内蒙古阿拉善荒漠区采用铤日法对禁牧区和轮牧区子午沙鼠 (*Meriones meridianus*) 种群数量进行调查, 分析子午沙鼠种群数量的季节和年间变动规律, 同时利用线性回归分析进行种群预测。结果表明, 9年共捕获子午沙鼠2 360只, 占总捕获量的39.68%, 说明子午沙鼠为该地区的优势鼠种。在轮牧区, 2008年子午沙鼠种群数量显著高于其他年份, 捕获率达到13.25%, 为最低年份的57倍, 其他年份捕获率均未超过3%; 在禁牧区, 子午沙鼠在9年中的种群数量波动较小, 均低于4%。线性回归分析表明, 用当年4月子午沙鼠捕获率预测7月捕获率, 预测的准确率较高, 可为啮齿动物防治提供实践指导。禁牧区的预测模型为 $y_1 = 0.3849 + 1.0854x_1$ ($P = 0.046$, $r^2 = 0.456$, $df = 8$); 轮牧区的预测公式为 $y_2 = -0.9741 + 2.3973x_2$ ($P < 0.001$, $r^2 = 0.925$, $df = 8$)。

关键词: 荒漠; 子午沙鼠; 种群数量; 预测预报

Population dynamics and prediction for *Meriones meridianus* in Alxa desert

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Abstract:

The dynamics of *Meriones meridianus* population both in ban grazing and rotation grazing area were studied by live trap method in Alxa desert from 2002 to 2010, and further analysed its seasonal and year variation. Meanwhile, a prediction model for *M. meridianus* population was achieved by applying the linear regression analysis. The results showed that a total number of 2 360 *M. meridianus* were captured during experimental period, amount to 39.68% captured rat, which indicated *M. meridianus* was the dominant species in this area. In rotational grazing area, the capture rate of *M. meridianus* was 13.25% in 2008 was 57 times than the lowest population, and significantly greater than the other years. In ban grazing area, the population of *M. meridianus* exhibited a small fluctuation and capture rate, was lower than 4% each year. Linear regression analysis showed that the capture rate in July can be estimated by the capture rate in April, and the prediction accuracy was very high. The prediction function for ban grazing area was $y_2 = 0.3849 + 1.0854x_1$ ($P = 0.046$, $r^2 = 0.456$, $df = 8$), and the prediction function for ban grazing area was $y_2 = -0.9741 + 2.3973x_2$ ($P < 0.001$, $r^2 = 0.925$, $df = 8$).

Keywords: desert; *Meriones meridianus*; population dynamics; prediction

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