生态学报 Acta Ecologica Sinica

张克勤,邓秋香,Justin Liu,蒋诗梦,张左娇,李文秀,赵芳菊,姚启远,楼瑛强,高玮.大山雀对巢箱颜色的识别和繁殖功效.生态学报,2012,32(2):659~662

大山雀对巢箱颜色的识别和繁殖功效

Nest-box color preference and reproductive success of great tit

投稿时间：2010-11-30 最后修改时间：2011-11-23

DOI：10.5846/stxb201011301706

中文关键词: 大山雀 巢箱颜色 入住率 繁殖功效

English Keywords:great tit nest-box color occupancy rate reproductive success

基金项目:国家自然科学基金资助项目(30670293,30870318);吉林省教育厅科研项目(吉教科合字 第113号)

作者	单位	E-mail
张克勤	吉林农业科技学院动物科学学院, 吉林 132101	
邓秋香	北华大学化学与生物学院,吉林 132100	
Justin Liu	Lynbrook High School 1280 Johnson Ave. , San Jose, California 95129	
蒋诗梦	吉林农业科技学院动物科学学院, 吉林 132101	
张左娇	吉林农业科技学院动物科学学院, 吉林 132101	
李文秀	吉林农业科技学院动物科学学院, 吉林 132101	
赵芳菊	吉林农业科技学院动物科学学院, 吉林 132101	
姚启远	吉林农业科技学院动物科学学院, 吉林 132101	
楼瑛强	吉林农业科技学院动物科学学院, 吉林 132101	
高玮	东北师范大学生命科学学院,长春 130024	gaowei1937@yahoo.com.cn

中文摘要:

为了确定大山雀对巢箱颜色是否能够识别和对繁殖功效的影响,以利于更好的进行保护,于2007-2010年3-7月,在吉林省左家自然保护区,通过悬挂黑、蓝、绿、白和红色巢箱,对大山雀的入住状况和繁殖参数进行了调查和分析。结果显示:2007、2008、2010年红色巢箱的入住率最高,2009年低于平均值;窝卵数除2010年红色巢箱组略低于其它颜色组平均值外,其它年份略高于其它组,而各年份的出飞数红色组均高于其它组。将其它组的合并均值与红色组进行了方差分析,结果表明,窝卵数之间无显著差异,而出飞数之间则有显著差异(F=17.65,df=1,P=0.04),表明红色组的出飞数高于其他组的平均值。

English Summary:

To investigate the color preference of Great Tit in nest-box selection and its impact on reproductive efficiency, experiments were conducted by hanging black, blue, green, white, and red nest-boxes in Zuojia Natural Reserve, Jilin Province, from March to July in each year of four consecutive years (2007-2010). Occupancy status of the boxes and reproductive parameters of the birds were recorded and analyzed. Occupancy rate of red boxes was compared to the average of the boxes in other colors pooled together. The occupancy rate of red nest-boxes was significantly higher than the average of all other colors combined for year 2007 (χ^2=5.51,df=1,0.01<P<0.05), 2008 (χ^2=5.51,df=1, 0.01<P<0.05) and 2010 (χ^2=4.65,df=1,0.01<P<0.05). An exception was found in 2009 when boxes with noticeable faded red color were used and resulted in a lower (χ^2=4.99,df=1, 0.01<P<0.05) occupancy rate than the average of nest-boxes in other colors. All these indicate that great tits do prefer the red-color nest boxes to the boxes of other colors. For breeding efficiency, there was no significant difference in clutch size among boxes of different colors in each year. The clutch size of red nest boxes was numerically lower than each of the other colors in 2010, but for the rest of the years it was numerically higher. The fledging number for red nest-boxes was significantly higher than the boxes of any other colors. When the mean of red color boxes was compared to the mean of all other colors pooled together, no significant difference was found between the clutch size of red nest-boxes and the average of all nest-boxes of other colors (F=1.68, df=1, P=0.59), however the red nest-boxes had significant higher fledging number than the average of all nest-boxes of other colors (F=17.65, df=1, P=0.04). In conclusion, Great Tit prefers nest-boxes in red color, and red nest-boxes have higher occupancy rate and fledging number than the average of all nest-boxes of other colors.

查看全文 查看/发表评论 下载PDF阅读器

关闭

地址:北京海淀区双清路18号 邮编:100085 电话:010-62941099 E-mail : shengtaixuebao@rcees.ac.cn