基于色度和形态特征的蝗虫信息提取技术

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关键词：　蝗虫 预测 色度 形态 图像处理

摘　要：　采用基于数字图像处理技术的蝗虫（以粤北腹露蝗为例）自动识别和计数方法，计算新型超低空蝗灾预警系统自动采集视频中的蝗虫数量。根据灰褐色蝗虫与以绿色叶片为主的栖息地之间的颜色差异，利用基于色度空间的图像分割方法从蝗虫栖息地中分割蝗虫区域，然后利用蝗虫区域面积和分散度提取单个存在的蝗虫，根据群居蝗虫个体大小基本一致的特性，由单个蝗虫的平均面积计算蝗虫数量。试验结果表明：蝗虫区域的识别计数精度大于85％。The locust detection and count method based on image processing was developed. The method was used to extract the number of locusts from color videos captured by a novel locust plague forecasting system with a super-low altitude helicopter. The color of locust is sandy beige, and the locusts' habitat is mainly composed of green leaves. Therefore, the region of locust was segmented at first from the habitat according to the color feature of the hue space. Then some single locusts were detected by the area and compactness of the segmented locust area, and the mean area of them was used to compute the number of locusts for the characteristic that the infestation locusts have generally same size. The experimental results showed that the precision of the number of locusts achieved 85%.

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