

黄瓜幼苗生长信息的无损监测系统的应用与验证

Application and validation of computer vision based nondestructive measurement system for cucumber seedling growth conditions

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中文摘要:

初步探讨了利用计算机视觉技术, 在试验温室条件下, 对单株黄瓜幼苗的生长实行无损监测。分别对叶面积和干鲜重的破坏性测量与计算机视觉无损测量结果相比较, 通过相关性分析, 计算机视觉测量的叶冠投影面积与激光叶面积仪测量的叶面积决定系数为0.976, 与茎干干、鲜重的决定系数分别为0.874和0.914。试验证实计算机视觉无损监测系统可以对植物的生长参数进行比较可靠的预测。

英文摘要:

The possibility of using computer vision technology in greenhouse to monitor the individual cucumber plant growth conditions was studied. Destructive measurement of leaf area and dry weight and fresh weight of plant seedlings and computer vision based nondestructive measurement of these factors were compared and the correlation analysis was made. The R square value between top projected leaf area measured by computer vision and by laser leaf area meter is 0.976, and the ones between top projected leaf area and dry weight and fresh weight of individual plant are 0.874 and 0.914, respectively. The experiment shows that computer vision technology can make a relative accurate prediction of plant growth parameters.

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