

PVC管地下滴灌系统在温室番茄灌溉中的应用研究

Application of subsurface drip irrigation with PVC tube to tomatoes in greenhouse

投稿时间: 2005-3-8 最后修改时间: 2005-12-21

稿件编号: 20060339

中文关键词: PVC管; 地下滴灌; 温室; 番茄

英文关键词: PVC tube; subsurface drip irrigation; greenhouse; tomato

基金项目: 科技部农业科技成果转化基金项目(04EFN212100055); 辽宁省科委“十五”重大项目(2001212001)

作者	单位
田义	沈阳农业大学土地与环境学院, 沈阳 110161
张玉龙	沈阳农业大学土地与环境学院, 沈阳 110161
虞娜	沈阳农业大学土地与环境学院, 沈阳 110161
黄毅	沈阳农业大学土地与环境学院, 沈阳 110161
张辉	沈阳农业大学土地与环境学院, 沈阳 110161

摘要点击次数: 251

全文下载次数: 48

中文摘要:

针对温室节水灌溉需求,用PVC管制成了简易地下滴灌管。通过无作物小区灌水试验和番茄栽培试验的方法,对该PVC管滴灌系统的出水性能和应用效果进行了研究。所用硬质PVC管规格为外径20.4 mm,内径17.9 mm,每米质量0.1 kg;在管壁上打孔制成直径1 mm、4个为一组的出水孔,出水孔沿PVC管延长方向排列,组内两出水孔中心点距离20 mm,组间中心点距离300 mm。这一滴灌系统专为温室灌溉设计,长度同温室垄长6 m。滴灌管埋于地下30 cm,出水孔上覆盖过滤层。结果表明,灌水时供水压力大于15 kPa、控制灌水下限土壤水吸力设定为30 kPa,该PVC管滴灌系统出水均匀度可达到既定标准。与普通地下渗灌管相比,这一滴灌系统埋设简便,灌水速度快,节水增产效果明显。

英文摘要:

In view of the demand of efficient irrigation in greenhouse, a new subsurface drip irrigation with PVC tube was developed. Experiments of irrigation without plants and with tomato cultivation were carried out, and the irrigation capability and effect of subsurface drip irrigation with PVC tube were studied. The outer diameter of PVC tube was 20.4 mm, the inner one was 17.9 mm, 0.1 kg/m. Holes of irrigation were drilled on the wall of PVC tube, the diameter of which was 1 mm, and four holes became a group. Holes of irrigation were arranged along the PVC tube extended direction. The distance between central pots of two holes within a group was 20 mm, and the distance of central pots between groups was 300 mm. This drip irrigation system was designed specially for greenhouse irrigation, and the length of PVC tube was 6 m, the same as the length of greenhouse ridge. The tube was embedded below 30 cm of the soil surface, and there was a layer of filtration on the holes of irrigation. The results show that the uniformity of irrigation with PVC tube can meet the designed standard, using 15 kPa as irrigation pressure and 30 kPa soil water suction as the lower limit of irrigation. Compared with the common drip irrigation, subsurface drip irrigation with PVC tube is simple to be embedded, rapid to irrigate and evident to increase yield and water saving.

[查看全文](#)

[关闭](#)

[下载PDF阅读器](#)

您是第607236位访问者

