

农学—研究报告

交替隔沟灌溉对春播高粱光合特性及其水分利用的影响

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摘要:

为寻求高粱节水灌溉技术,提高灌水利用率,此试验运用了随机区组设计法,对高粱的灌溉进行了沟灌在不同灌水量下采用交替灌隔沟灌溉法与传统方式——漫灌的比较研究。结果表明,采用交替隔沟灌溉在灌水量达到75 mm时,气孔导度、蒸腾速率、净光合速率等光合指标同灌水量为135 mm的漫灌相比,差异不显著,产量相当。交替隔沟灌溉可提高水分利用效率11.94%,减少棵间蒸发量32.49%,灌溉水节水率可达44.44%,在满足植株蒸腾需求的条件下,具有显著的节水效应。对高粱进行沟灌,采用交替隔沟灌溉的方式,在产量相当的情况下,具有显著的节水效应。

关键词: 节水效果

Effect on Spring Sorghum Photosynthesis and Water Use of Alternate Furrow Irrigation

Abstract:

In order to improve irrigation efficiency, and make use of water-saving irrigation techniques to sorghum, the tests were carried out. Use the method of randomized block experiment to study save-efficient of sorghum. It compared the alternate furrow irrigation at different amount to the traditional flood irrigation. The results showed that, using alternate furrow irrigation when the irrigation water reached 75 mm, the change of the photosynthetic parameters, such as the stomatal conductance, transpiration rate, net photosynthetic rate and other ones was not significant compare with the irrigation amount was 135 mm, and the yield considerable. But alternate furrow irrigation can increase water use efficiency 11.94%, reduce evaporation 32.49%, and saving irrigation water 44.44%. Use of alternate furrow irrigation had significant water saving effect in condition of considerable yield.

Keywords: water saving effect

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