

喷灌均匀系数对冬小麦需水规律的影响(英文)

Crop Water Consumption Under Nonuniform Sprinkler Irrigation

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英文关键词: sprinkler irrigation; uniformity; efficiency; winter wheat; crop water requirements; yield

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中文摘要:

利用田间试验研究了不同喷灌均匀系数条件下的冬小麦耗水规律及喷灌蒸发漂移损失。试验设置低、中、高喷灌均匀系数处理, 喷灌均匀系数的变化范围为62%~82%。试验结果表明, 在北京地区冬小麦生育期内, 喷洒水利用系数的变化范围为0.64~0.86, 利用系数随喷灌均匀系数的增大而增大, 随风速的增大而降低。低均匀系数处理的冬小麦耗水量高于高均匀系数处理。试验结果还表明, 在所研究的喷灌均匀系数范围内, 均匀系数对产量的影响不明显。

英文摘要:

Field experiments were conducted to observe winter wheat response to nonuniform sprinkler irrigation under various Christiansen uniformity coefficient (CU) levels ranging from 62% to 82%. Evaporation and drift losses were estimated during the whole irrigation season of winter wheat based on catch can data. The results demonstrated that sprinkler efficiency, defined in this article, varied in a range of 0.64~0.86, increasing with sprinkler uniformity but decreasing with wind speed. For the same yield level the amount of water consumed by winter wheat in the growing season was greater for low sprinkler uniformity than for high uniformity since low uniformity produced a reduced sprinkler efficiency. Experimental results also indicated that sprinkler uniformity had little effect on crop yield for the studied range of CU.

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