

膜下滴灌棉花的土壤干旱诊断指标与灌水决策

Drought Diagnosis Indexes and Drip Irrigation Decision Making for Cotton Under Mulch

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作者	单位
胡晓棠	石河子大学农学院
李明思	石河子大学水利与建筑工程学院
马富裕	石河子大学水利与建筑工程学院

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中文摘要:

通过利用烘干法和中子仪法对膜下滴灌棉花和常规沟灌棉花的土壤干旱情况进行诊断试验,该文对所选两种干旱诊断指标—作物适宜土壤含水率和作物缺水指标CWSI的特点进行了研究。试验和分析表明,两种灌水方式下的棉花生长对土壤水分环境的要求是一致的。另外,两种指标所反映出的规律也基本相同。但是,因膜下滴灌棉花的耐旱性弱,受旱风险大,在生产中进行灌水决策时,其干旱诊断指标应比常规灌时灌水量稍大

英文摘要:

Based on experiments by using the methods of weighing soil moisture through drying and neutron probe, the soil drought condition was diagnosed for the cotton which was irrigated respectively with drip irrigation under mulch and furrow irrigation. By using two selected indexes of drought diagnosis, the soil moisture content suitable for growing crop and the crop water stress index (CWSI) were evaluated. According to the experiments and analyses, it is revealed that the soil moisture conditions required by the growing cotton, do not change with the irrigation techniques. In its high water demand period, the cotton, whether it was irrigated with drip irrigation under mulch or with furrow one, has almost identical index for drought diagnosis. Due to its poor drought tolerance and its high drought danger, however, the cotton irrigated with the drip irrigation under mulch should be given more water for the drought diagnosis compared with the one irrigated with furrow technique when the irrigation scheme decision is made for the cotton.

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服务热线: 010-65929451 传真: 010-65929451 邮编: 100026 Email: tcsae@tcsae.org

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