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保水剂对注水播种玉米土壤水分运移及水分生产效率的影响

Effects of water-retaining agent on soil water movement and water use efficiency of maize sowed with absolved water-storing irrigation

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英文关键词: [water content](#) [water conservation](#) [irrigation](#) [water-holding agent](#) [sowed with water](#) [soil water movement](#) [maize](#) [water use efficiency](#)

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中文摘要:

通过大田免储水灌注水加保水剂播种玉米灌溉试验,分析了保水剂对土壤水分扩散规律及变化动态、玉米耗水量、水分生产效率和产量等指标的影响效果。结果表明,保水剂施量为2.5 g/m²的注水播种玉米(YB2.5)在全生育期都具有良好的保水效果,是既增产又节水的最佳处理;保水剂施量为1.5 g/m²和保水剂拌种处理只在播后101 d内可有效增加土壤含水率,之后保水效果逐步衰减;施量为0.5 g/m²处理与不施加保水剂处理相比,土壤含水率无明显提高,说明保水剂施量过小时,保水效果不明显。

英文摘要:

Based on field experiment of maize sowing with absolved water-storing irrigation, the effects of water-retaining agent on soil water movement, dynamic of soil water, water consumption amount during whole growth period, yield and water use efficiency (WUE) were studied. The results showed that application of water-retaining agent 2.5 g/m² (YB2.5) could enhance yield and soil water content near the root of crop significantly, and could save water remarkably. Water holding efficiency for the application of water-retaining agent 1.5 g/m² (YB1.5) and seed dressing with water-retaining agent (YBH) treatment was good within 101 days after sowing, but the effect of water holding gradually decreased after 101 days. There was no apparent difference on soil water content between treatments YB0.5 and YB0, so water holding efficiency would not be improved obviously if little water-retaining agent was applied.

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