

## 土壤调理剂对旱、盐条件下草种萌发的影响

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Effects of some water retention materials as soil conditioners on improving grass seedling emergence under dry and saline soil conditions

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**摘要** 利用田间和盆栽试验研究了不同材料土壤调理剂对草的生长影响,并探讨其使用条件和使用方法。结果表明,干旱条件下,应用调理剂可减轻干旱土壤盐碱的危害,提高出苗率在75%以上。土壤调理剂作种子包衣有较好的抗旱保苗效果,包衣处理的草籽出苗率较对照提高约19%;包衣处理的苗期土壤水分较对照高5%~11%;包衣处理的苗期耗水量较对照降低5%~12%。播期土壤水分分别为田间持水量的40%(土壤含水量约11%)和20%(土壤含水量约5%)的土壤上,土壤调理剂处理的出苗数分别较对照提高11%~14%和14%~24%;0~20cm土层含水量较对照增加4%~15%。当土壤水分分别为田间持水量的40%时,土壤调理剂处理的苗期生物量较对照增加3%~42%,单位耗水量较对照降低9%~34%;土壤水分在田间持水量的20%时,调理剂处理的苗期生物量和单位耗水量较对照亦分别表现为增加和降低趋势。

**关键词:** 土壤调理剂 种子包衣 草 土壤调理剂 种子包衣 草

**Abstract:** The experiments (including pot and field's) were conducted using different water retention materials as soil conditioners to study the effect on growth of ryegrass (*Lolium perenne*), and to evaluate the effectiveness and methods of conditioner applicatin under dry and saline soil conditions. The results showed that using water retention materials alleviated the damage by salinity under dry soil conditions, and increased seedling emergence by over 75% compared with the check. The seeds coated with water retention materials had 19% more seedling emergence than the uncoated seeds; the soil moisture contents with the coated treatments were 5%-11% higher at the seedling stage, but water consumption with the coated seeds was 5%-12% lower than the uncoated. A good effectiveness in increasing seedling emergence with water retention materials was found in dry soil conditions, for instance, the seedling emergence increased by 11%-14% and 14%-24%, respectively, in the treated soils at 40% and 20% of the field water holding capacity (FC), the top 20cm soil moisture content increased by 4%-15% as compared with the check. The dry biomass of the seedling with conditioners at 40% of the FC increased by 3%-42%, but the unit water consumption decreased by 9%-34%, the similar effects were also found in the treated soils at 20% of the FC.

**Keywords:**

### 引用本文:

王小彬;蔡典雄;张树勤.土壤调理剂对旱、盐条件下草种萌发的影响[J] 植物营养与肥料学报, 2003,V9(4): 462-

WANG Xiao-bin;CAI Dian-xiong;ZHANG Shu-qin.Effects of some water retention materials as soil conditioners on improving grass seedling emergence under dry and saline soil conditions[J] Acta Metallurgica Sinica, 2003,V9(4): 462-

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