

农学—研究报告

盐碱地土壤改良剂筛选研究

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摘要:

为筛选适宜盐碱地改良的土壤改良剂及其最佳配比,通过盆栽试验方法,选择6种环保、低成本土壤改良剂施用于盐碱地上,对种植春小麦后的土壤全盐含量、pH及产量进行研究。结果表明,在各处理中,>20 cm土层土壤全盐含量最高,其次是0~5 cm土层土壤,5~20 cm土层土壤的最低;在不施用土壤改良剂的条件下,灌溉咸水可显著增加土壤全盐含量,而pH降低;35%木质素有机物+35%牛粪+30%石膏处理土壤全盐含量最高;在不施用土壤改良剂的条件下,灌溉咸水与灌溉淡水相比,小麦减产45.2%、千粒重降低12.1%,而小麦的秸秆生物量、根重、根长和株高差异却不显著;在施用土壤改良剂的条件下,平均增产190.0%,其它各指标也显著增加,其中50%醋渣+50%褐煤处理产量最高(11.57穗/盆);在小麦各项生理指标中,秸秆生物量、根重、株高和千粒重与小麦的产量呈显著正相关,而小麦的根长与小麦产量无相关性;在土壤的各指标中,土壤的pH与小麦产量呈负相关。

关键词: 土壤pH

Study on Filtration of Suitable Krilium in Saline-alkali Soil Amendments

Abstract:

In order to screen out the proper krilium and their proportioning for effectively ameliorating alkaline soil, environmental protection and low cost 6 kinds of krilium were added to test soil for evaluating their effect on amelioration of saline and alkaline by pot experiment, soil total salt content, soil pH value and wheat yield were measured. These dates may provide methodological basis for ameliorating alkaline soil in this region. The results showed that saline water irrigation compared with freshwater irrigation significantly decreased on wheat yield and kernel weight by respective 45.2%, 12.1%, no significant differences in wheat biomass, root weight, root length and plant height when krilium were not application; The combine application patterns of difference krilium significantly increased by 190.0%, with the highest wheat yield for the combined application patterns of S7 (11.57 spike per pot), at the same time, significant increasing on other index, too. The highest in soil total salt content and soil electric conductivity at depths of >20 cm after wheat harvest, the lowest at depths of 5-20 cm. The saline water irrigation compared with freshwater irrigation significantly increased on soil total salt content and decreased on soil pH value. The highest soil total salt content for the combined application patterns of S4. Wheat biomass, kernel weight showed an extremely positive relationship with wheat yield. There was a negative correlation between the soil pH value and wheat yield.

Keywords: soil pH value

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