

植物生产层

地木耳提取液及根瘤菌对小叶锦鸡儿幼苗生长的影响

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摘要:

小叶锦鸡儿 (*Caragana microphylla*) 是一种极抗寒和抗旱的豆科植物, 既能防风固沙、保持水土, 又可为畜牧业提供优质饲料, 是干旱草原、荒漠草原植被恢复的先锋植物。本研究通过施用地木耳提取液及根瘤菌菌剂对小叶锦鸡儿幼苗的生长进行了研究。结果表明, 2种微生物制剂对该植物的生长均具有显著的促进作用, 田间栽培试验中, 根瘤菌菌株HBU037001接种种子出苗率高达91.1%; 地木耳提取液1/20原液浓度、菌株HBU037002处理的小叶锦鸡儿幼苗生物量分别比对照提高11.5%和17.7%; 地木耳提取液1/10原液浓度+菌株HBU037001的联合处理表现最好, 可提高植物生物量高达28.2%。

关键词: 小叶锦鸡儿 地木耳提取液 根瘤菌菌剂 共生固氮

Effect of water extraction of *Nostoc commune* and rhizobial inoculants on seedling growth of *Caragana microphylla*

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Abstract:

*Caragana microphylla* not only plays important roles in wind prevention and sand fixation, conservation soil erosion, but also provide high quality feed for livestock due to its strongly cold and drought resistance. A pot and a field experiments were conducted to determine the effect of water extraction of *Nostoc commune* and rhizobial inoculants on seedling growth of *C. microphylla* in this study by individually and jointly ways. This study showed that the extraction of *N. commune* and rhizobial inoculants remarkably encouraged the seedling growth of *C. microphylla*. The field experiment showed that the rate of seed emergence was 91.1% when seeds were inoculated by the rhizobial inoculants HBU037001. The seedling biomass of *C. microphylla* increased by 11.5% and 17.7% when seeds were treated by 1/20 concentration of *N. commune* and HBU037002, respectively. The combined treatment (1/10 concentration of *N. commune* & rhizobial inoculants' HBU037001) were the best one, which increased the seedling biomass by 28.2%.

Keywords: *Caragana microphylla* water extraction of *Nostoc commune* rhizobial inoculants symbiotic nitrogen fixation

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