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不同释放期包膜控释尿素与普通尿素配施在夏玉米上的应用效果研究

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Applications of polymer coated urea with different release time and conventional urea on summer maize growth

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摘要 通过大田对比试验研究了释放期为30 d、60 d、90 d的包膜控释尿素（分别用PCU30、PCU60、PCU90表示）与普通尿素（U）配合一次性基施对夏玉米产量、氮肥利用率、氮素积累量及经济效益的影响。结果表明: 在施氮量相等、包膜控释氮素占总施氮量30%的条件下，不同释放期的包膜控释尿素（PCU30、PCU60、PCU90）与普通尿素配合一次基施比习惯施肥显著增加夏玉米产量和氮素积累总量，提高氮肥利用率和经济效益，其中PCU60与普通尿素配合一次基施玉米产量最高，为8778 kg/hm^2，增产12.0%; 氮素积累总量为201.5 kg/hm^2，增加18.9%; 氮肥利用率提高11.02个百分点; 经济效益为11468.7元/hm^2，提高产量10.7%。

关键词： 夏玉米 包膜控释尿素 普通尿素 氮肥利用率 经济效益

Abstract： Field trials were carried out to study the effects of controlled-release coated urea products with different release durations(30 d, 60 d and 90 d marked with PCU30, PCU60 and PCU90 respectively)and conventional urea on summer maize grain yield, nitrogen recovery, accumulation and economic benefit. The results show that in condition of the same N-application rate, compared to traditional nitrogen application, yields, nitrogen recoveries, total nitrogen accumulations and economic benefits of summer maize are significantly increased under the basal applications 30% controlled-release coated urea(PCU30, PCU60, PCU90)and 70% conventional urea. For the 30% PCU60 and 70% conventional urea treatment, the summer maize yield is the highest, which is about 8778 kg/hm^2, and compared to the traditional nitrogen application, the yield, nitrogen recovery, total nitrogen accumulation and economic benefit are increased by 12.0%, 11.02 percentage point, 18.9% and 10.7%, respectively.

Keywords： summer maize controlled-release coated urea conventional urea nitrogen utilization efficiency;yield economic benefit

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