

中国农户复合(混)肥施用效果分析

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Effectiveness of compound fertilizer on grain yields in China

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摘要

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摘要 近10年来中国肥料快速走向复合化, 复合(混)肥是拉动肥料产业发展的主要力量。本研究基于农业部测土配方施肥农户调研数据, 对全国6个省的1143户农户水稻、小麦和玉米三大粮食作物的复合(混)肥施用现状及效果进行分析。结果表明, 复合(混)肥中提供的氮磷钾养分已经占肥料投入总量的32.1%、57.0%和58.2%, 其中氮复合化水平超过西欧水平。施用复合(混)肥导致三大粮食作物养分投入数量平均增加12.2%, 肥料成本平均增加26.7%, 但在不同作物上的增产效果差异较大, 其中玉米上施用各种类型复合(混)肥均能显著增产, 增产幅度平均达29.9%, 有部分复合(混)肥配方在水稻上增产, 大部分复合(混)肥在小麦上不增产。复合(混)肥配方制定不科学、施用不科学及假冒伪劣过多是主要原因。

关键词: 复合(混)肥 实际效果 农民实践 中国

Abstract: China's compound fertilizer industry has developed very fast in the past decade, and has been the major catalyst for development of the chemical fertilizer industry. In this study 1143 farmers in 6 provinces were surveyed in 2009, and the contribution of compound fertilizer to crop yields and crop production costs were evaluated. Compound fertilizer dominated the nutrient input in grain fields, with 32.1% of N, 57.0% of P₂O₅ and 58.2% of K which is higher than that in Western Europe (especially of N). Compared to the farmers who only used single fertilizer, amount of nutrient inputs and fertilizer cost were increased by 12.2% and 26.7% respectively in farmers who used compound fertilizer. But the crop yield did not increased accordingly when use compound fertilizer. Maize yield was significantly increased by 29.9% when use various type of compound fertilizer. Rice yield was significantly increased when use some type of compound fertilizer, but not happened in all case. Nearly all of the compound fertilizer did not increase wheat yield. The results showed that the application of compound fertilizer is not soundly based in China. There are three main reasons for this: formulas of compound fertilizer are not designed based on the results of soil tests and field experiments; farmers do not receive effective instructions on how to use the fertilizer correctly and efficiently; and too many fake products exist in the Chinese compound fertilizer market.

Keywords: NPK compound fertilizer effectiveness farmers' practice China

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