

中国耕地保育技术创新不足已危及粮食安全与环境安全

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摘要: 中国自 20 世纪 80 年代初以来随作物产量的提高, 化肥等农用化学品投入量增加了 3.6 倍, 而同期农民耕地保育技术水平却没有明显提升, 盲目施肥、大量施肥、用药不当、灌溉不当, 即以“费”的方式补偿技术不足现象普遍, 由此不仅引起肥、水资源的过度消耗, 还导致土壤质量退化、农民生产成本增加, 水、土、大气环境和农产品污染加剧, 对粮食安全、环境安全和食品安全造成隐患。研究显示, 导致农民耕地保育技术水平难以提升的两大主要原因分别是耕地保育应用与应用基础研究的弱化与现代农技服务业的缺失。多年来, 国家级和省部级公益性土壤肥料农业专业研究机构均质化、碎片化、行政化问题不断加深, 使得需要长期研究才能有所突破的土壤肥料应用与应用基础研究难以为继并被空洞化, 至今难以为各农区提供易于为农民掌握和应用的耕地保育分区、分类、量化技术指标, 难以推动现代专业化农技服务业的发展。要在根本上解决这一问题, 亟需在 3 个方面进行改进: 第一, 重视稳定和保持国家与省级公益性土壤肥料专业科研院所的专业特征, 发挥其在耕地保育技术创新研究中的核心作用。第二, 在国家科研计划中, 对耕地保育应用与应用基础领域研究主题适度稳定, 执行年限也应适度延长, 以便中国能够逐步为各主要农区建立一批科学、可靠的耕地保育技术规程, 并对其进行持续的升级换代。第三, 探索与中国农村经济技术条件更相适应的现代农技推广模式, 发展现代信息技术、通讯技术、智能技术在耕地保育技术推广传播中的作用, 以技术创新带动中国农技推广方式的转变, 全面提升中国农民耕地保育技术水平。

关键词: 耕地保育; 土壤质量; 施肥; 应用技术研究; 环境安全

Shortage of Innovative Technology for Arable Land Fertility Management Endangered Food Security and Environmental Safety in China

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Abstract: With yield increasing, the agrochemical inputs had been raised by 3.6 times since the beginning of 1980s. Over the same period, however, the crop land fertility management techniques of farmers had not been improved obviously. Blind and excessive application of fertilizers, pesticides and irrigation had been frequently involved in crop production to compensate technological shortages. Lack of technology for arable land fertility management not only caused over expending of fertilizer and water resources, but also led to soil quality degradation, production cost increase and pollution of water, soil, air and farm products. It endangered environmental safety and food security. Analyses showed that there were mainly two obstacles for improving farmers' techniques. The first one was the weakening of applied researches and applied basic researches. Over the years, the nonprofit state and provincial professional research institutions, which were formerly responsible to carry out soil and fertilization field experiments had changed their main focus into more generalized scientific questions as those from the universities. Due to such changes, the implementation of long-term studies, which were essential for developing regional technical indexes and standard for best

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