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Agric. Econ. – Czech

Tao Zhang: The efficiency assessment of food safety in China ' s agriculture: a case study of the rice sector

Agric. Econ. – Czech, 54 (2008): 521-528

: Rice is the main food in China ' s home consumption and plays an important role in its food security. But, how is the status of food safety and environmental efficiency in China ' s agriculture? Obviously, an incorrect manner of

pesticide application will hold negative effects on human health and environment. In this article, we develop an analytical framework based on the Luenberger DEA method to calculate the output technical efficiency and input environmental efficiency simultaneously. In the second-stage analysis, the stochastic frontier model is used to estimate the impact of explanatory variables and managerial efficiency on efficiency. We apply the methodology in the empirical case study of China ' s rice production for measuring the food safety performance of China ' s rice sector.

Keywords:
food safety, environmental performance, Luenberger DEA, Distance output Technical Efficiency (DTE), Distance input Environmental Efficiency (DEE), stochastic frontier model, managerial efficiency, rice

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