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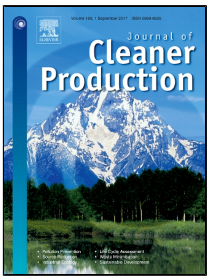

Agricultural Pollution and Regulation: How to Subsidize Agriculture?

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Agricultural Pollution and Regulation: How to Subsidize Agriculture?

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Abstract Agricultural pollution is extremely serious in China, and agricultural output quantity subsidy makes it even worse. This paper captures the impacts of agricultural subsidy, including quantity subsidy and innovation subsidy, on agricultural pollution. Agriculture output quantity, total pollution or emission, equilibrium price, consumer and producer surplus, government budget, and social welfare are all addressed in this study. The results show that emission-reducing innovation subsidy is better than quantity subsidy because it reduces the pollution from agriculture and profits for the agricultural firm are higher under innovation subsidy than under quantity subsidy. More importantly, output quantity and consumer surplus under innovation subsidy are also larger than those under quantity subsidy if the subsidy rate is not too high. This study finds that the importance of the environment to the consumer, marginal emission, and pollution tax will decrease output quantity, consumer and producer surplus and social welfare; however, agricultural subsidy increases them. Furthermore, this study indicates that innovation subsidy can alleviate the "food quantity safety and quality of environment" dilemma in agriculture.

Key words Agricultural pollution; agricultural subsidy; pollution tax; food safety

JEL Classifications Q52; D24; L12

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