ABSTRACT

Biochar is a carbon-rich product from pyrolysis of biomass at relatively low temperatures in a closed system with limited oxygen. The product has been shown to have economic and environmental benefits, ranging from improved soil moisture retention for carbon sequestration, reduced pollution and dependence on inorganic fertilizers. Additionally, biochar can be produced on-farm by small scale farmers using locally made stoves as well as on industrial scale in bioenergy plants. Chinese government is fast tracking commercial production of biochar based fertilizers from pyrolysis of crop straw. However, most of the work on biochar is confined to universities and other research institutions mainly through field trials. Yet, without understanding of farmers' roles as the main stakeholders in generation and use of this innovation, use of biochar is unlikely to be effective. Using survey data collected in the Henan region, Central China where major biochar industries are located, this study assesses farmers' perspectives and adoption decisions on the use of biochar in agricultural production. A binary logit model is used to analyze the factors influencing biochar adoption. Higher probabilities of adopting biochar are observed among farmers with more contact with extension officers and other sources of information, higher levels of education, credit access and those belonging to farmers' groups. Furthermore, the perceived positive aspects of biochar increased the probability of biochar adoption. These results strongly suggest that, government interventions in these areas are needed to realize the full potential of biochar production and use by farmers'.

Key words: Biochar adoption, logit model, smallholder farmers', agriculture, China.