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Title: Tackling the Fall Armyworm outbreak in Africa: An empirical analysis of farmers’ control actions

Since its emergence in Africa in 2016, the fall armyworm (FAW) has spread rapidly and is posing a severe threat to the food security and livelihoods of millions of smallholder farmers in the continent. Using survey data from 465 farm households in Ghana and Zambia, we examine the control methods adopted by farm households against FAW infestations, and their impacts on farm outcomes, measured by maize yield, self-reported yield loss, and own maize consumption. Results show that the main control methods used include pesticide application, and handpicking of egg masses and caterpillars, and that access to information on FAW is a key driver behind the adoption of the control methods. Accounting for selection bias using endogenous switching regression, we find that the adoption of a FAW control method significantly enhances maize yield and households’ own maize consumption and reduces self-reported yield loss, and that farm households’ that did not adopt would also have benefited had they adopted a control practice. Applying a multinomial treatment effects model to disentangle the impacts of the main control methods, we find that the joint adoption of pesticide application and handpicking of caterpillars produces the highest yield gain of 125%. We conclude that the current interventions put in place by farmers to tackle the FAW infestations are providing positive outcomes, but successful management of the pest will require more actions, including raising awareness to enhance the adoption of control interventions.