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***Site-Specific Agronomic Information, Technology Adoption, Farm Productivity and Household Welfare: Field Experiment from Ethiopia***

Smallholder farmers in Africa generally only have access to coarse, national- or regional-level agronomic advice (if any at all). The poor agronomic responses of such ill-tailored advice may be a factor in the low use rates of recommended technologies. Furthermore, the riskiness of technology recommendations is often not addressed by extension efforts. We are examining the impact of providing site-specific fertilizer recommendations on fertilizer usage, productivity, and welfare outcomes in Ethiopia, using a randomized control trial. Our experiment not only evaluates the impacts of better targeted recommendations, but also of reducing downside risk via insurance. This is the first study to experimentally address the impacts of better targeted extension advice in this way. Our evaluation of the complementary impacts of insurance on the uptake of such information is also novel. Results show that well targeted fertilizer recommendations encourage fertilizer investments and lead to greater maize productivity outcomes. More specifically, treatment farmers significantly close the gap between actual fertilizer use and the recommended value. We also show that there is a noticeable increase in average productivity of maize for plots cultivated by treatment farmers. However, we did not find differences in household welfare and profit margin between treatment and control farmers. We anticipate that our findings will provide valuable guidance to the design and delivery of improved extension services in developing countries.