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How Much Can We Trust Farmer Self-Reported Data on Crop Varieties? Experimental Evidence Using DNA Fingerprinting of Cassava Varieties in Malawi

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Abstract

This paper reports results from the methodological experiment that was conducted to test the effectiveness of different methods of cassava variety identification in socio-economic surveys. The objectives of the experiment were: (1) to examine whether varieties in the field are true to their type; (2) to establish the extent of correct identification of cassava varieties by different methods; (3) to determine factors that influence correct identification of cassava varieties by farmers using different method using DNA finger printing as a benchmark; and (4) to assess the cost effectiveness of variety identification including DNA fingerprinting in socio-economic surveys. The methods being tested are farmer elicitation methods and use of photo aids. The results showed that some of the varieties in the field are not true to type, with only 35 % of the farmers correctly identifying cassava varieties they planted using farmer elicitation and only 5 % using photo aids of morphological attributes. Farmer elicitation methods overestimate adoption of improved cassava varieties and asking a farmer to state the name of the cassava variety is a better question to be included in household surveys compared to asking a farmer to state whether the variety is local or improved. The main factors influencing correct cassava variety identification are varietal mixing in the plot, access to extension, and age of the respondent. The costs per sample per household for including is $25. The results suggest that DNA fingerprinting should be included in varietal adoption surveys because it improves the accuracy of variety identification by 65 % and the costs are reasonable compared to the costs of having wrong data on variety identification.

Keywords: Cassava varieties, DNA fingerprinting, Malawi, self reporting

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