

**FARMER PERCEPTIONS OF SELECTED SOIL FERTILITY  
INDICATOR PLANTS IN CENTRAL UGANDA**

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## ABSTRACT

Assessing soil fertility status is one way of evaluating sustainability of land use and management activities. There are basically two methods of assessing soil fertility: the laboratory method and use of indigenous knowledge. One way of using indigenous knowledge is the use of soil fertility indicator plants, but this approach still needs refinement. The overall objective of this study was to enhance reliability of the use of plants in on-farm assessment of soil fertility. Specific objectives were to: (1) assess farmers' knowledge of selected soil fertility indicator plants in Central Uganda; (2) evaluate uses of soil fertility indicator plants in soil fertility management; and (3) assess the existing information flow networks of soil fertility indicator plants. A survey targeting 80 households in L. Victoria Crescent and Semi-arid agro-ecological zones was conducted. One focus group discussion with ten farmers per zone and key informant interviews with one extension worker of each of the two target sub-counties, were also conducted. Quantitative data were analyzed using Statistical Package for Social Scientists (SPSS) to generate chi-square values, mean, percentages, coefficients and probabilities. Qualitative data were analyzed by scrutinizing the patterns and connections between the farmer responses with respect to the uses of soil fertility indicator plants. These responses were then summarized into themes. The results indicated that overall majority (37.5%) perceived *Commelina africana* as an indicator of low soil fertility, contrary to *Commelina benghalensis* which was perceived by the overall majority (75.3%) as an indicator of high soil fertility. *Bidens pilosa* was perceived more as an indicator of moderate soil fertility (48.7%) and a relatively high percentage of farmers perceived *Imperata cylindrica* to indicate all the three soil fertility levels. However, the different factors that influenced farmers to perceive these plants as indicators of soil fertility were identified. Farmers' use of the plants in soil improvement fell under two themes: incorporation in the soil and indicators of need for soil conservation practices. However, *I. cylindrica* was never used for any of two (section 4.4.3) regardless of field conditions under which it appeared and soil fertility level it indicated. The informal information flow networks were farmer to farmer (10.3%) and parents to children (28.2%) while formal networks included agricultural extension workers to farmers (7.7%) and farmer groups (6.4%). It was then recommended that in order to facilitate research and extension to develop a tool that is easy to use by the farmers in assessing soil fertility, laboratory analysis of soils where the plants had appeared should be done in order to correlate and calibrate farmer perceptions and scientific knowledge. Soil fertility management packages should also integrate scientific and indigenous knowledge to enable farmers' access to a broad range of options from which they could select.