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## Farmers' Perception and Use of Planted *Calliandra calothyrsus* Fallow in Southern Cameroon

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### Abstract

The leguminous tree *Calliandra calothyrsus* was introduced to farmers in southern Cameroon for soil fertility and crop yield improvement in shortened fallow phases in 1989. On-farm trials by ICRAF and IITA used the alley cropping concept, and various spatial patterns and tree densities. Initially 2 year old fallow was cropped after slash and burn land preparation. This study reports farmers' perception of the effects of *C. calothyrsus* fallow in four areas and verifies if farmers used the system without researchers' involvement.

After the initial 2 years fallow, 95 % of farmers cropped, after the second and third fallow 41 % and 13 % cropped, respectively. Labor requirements to clear and prepare land after *C. calothyrsus* was perceived as being larger than after natural fallow by 86 % of farmers after the first fallow; and by 24 % and 13 % after the second and third fallow. Perceived and recorded labour requirements were closely correlated. Across all crops, 61 % of farmers perceived yields being higher after *C. calothyrsus* than natural fallow; 17 % did not report any difference. Perceived yield advantages after *C. calothyrsus* increased from 57 % after the first fallow to 77 % after the third fallow. Yield perception varied with location: in the south 45 % of farmers believed *C. calothyrsus* produced higher crop yields, compared with 70 % north of Yaounde. Maize was believed by 78 % of farmers to produce higher yields in *C. calothyrsus*. Groundnut was believed to not respond positively to *C. calothyrsus* with 45 % of farmers reporting higher yields in *C. calothyrsus*. Cassava yields were perceived by 62 % of farmers as higher in *C. calothyrsus*. For sites where yields were measured by researchers, farmers either incorrectly perceived a yield advantage or overestimated the yield advantage of *C. calothyrsus* by a wide margin. The decline in the use of *C. calothyrsus* fallow indicates, that increased labour requirements for clearing and land preparation outweighed perceived and real yield advantages. Consequently, *C. calothyrsus* is virtually only used in the high population density area north of Yaounde. The species can neither be recommended for large areas nor for all crops.

**Keywords:** Adoption, alley cropping, labour requirements , tree based fallows