



## Screening Bambara groundnut accessions for early Maturity in the sudano-sahelian zone of Cameroon

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### ABSTRACT

*Objective:* this study was to identify Bambara groundnut accession with early maturing characteristics under pot conditions in the Sudano-sahelian zone

*Methodology and Results:* The experimental design was a Fisher block, comprising Bambara groundnut seed based on colour tegument as treatments (black, white, brown, red), each replicated four times. Early maturity black accession grew faster than the others (29.0 cm height) at 50 DAS. For the flowering, white accession is recorded as the late (39 DAS) and the black, early (34 DAS). Seed yield was more elevated for the black accession (1027.3 kg ha<sup>-1</sup>). The ecophysiological parameters revealed that, apart from the photosynthetic yield, black accession had the best stomatic conductance (45.7 μmolH<sub>2</sub>O.m<sup>-2</sup>S<sup>-1</sup>), water used efficiency (5.42 kg m<sup>-3</sup>), and transpiration (36.1 g hr<sup>-1</sup>).

*Conclusion and application of results:* These pot's results under the Sudano-sahelian conditions suggest that the black Bambara groundnut accession compare to others accessions based on the colour of their teguments (red, brown and white) is the more adapted as far as the agro-ecophysiological parameters of this crop are concerned. Therefore, the black Bambara groundnut accession is suggested for promotion as a food security crop, especially in a contrasted drought stress area, such as that of the Far-North Region of Cameroon if growers expect to get a return net benefit from its cultivation and marketing. The results of this study will also help geneticists particularly the varietal improvement program by selecting genotypes of the early maturing Bambara groundnut accessions able to optimize the water uptake and use efficiency; that can help developing varieties with short development cycle which until now remains scientifically unknown in area like Farth-Nord Region of Cameroon which only have 3-4 months wet period.

**Keywords:** *Vigna subterranea*, ecophysiological parameters, grow, yield, sudano-sahelian zone.