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Identification of novel resistance sources to *Striga gesnerioides* in local Cowpea varieties through agronomic and molecular approaches

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ABSTRACT
Objective: To identify novel sources of resistance to *Striga gesnerioides* in local cowpea (*Vigna unguiculata*) varieties from Burkina Faso.
Methodology and results: Five local varieties (V1, V2, V3, V4, V6) and two improved varieties (V5, V7) were evaluated in pots to identify resistance sources against races 1 and KP. Agronomic performance was assessed using a randomized complete block design (RCBD), and molecular screening was conducted by PCR with the SSR1 marker following DNA extraction using the Whatman FTA card protocol. Molecular analysis confirmed the presence of resistance alleles to both races in the studied germplasm. Agronomic evaluation showed substantial genetic variability, particularly for grain yield (CV = 60.09%). Varieties V3, V5, and V7 combined resistance markers, high yield potential, and early maturity.
Conclusion and application of results: This study identified new sources of resistance to races 1 and KP of Striga gesnerioides in local cowpea varieties with the presence of 150 base pairs using the SSR1 marker. These genotypes constitute valuable resources for marker-assisted selection and potential direct release, contributing to reduced Striga-related yield losses and improved food security in Burkina Faso. These findings enable the direct use of this germplasm as an elite parental line in hybridization programs aimed at introgressing resistance to *Striga gesnerioïdes.*
Keywords: Cowpea, local varieties, *Striga gesnerioides,* molecular marker, SSR.