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Diversity Assessment of Sunflower (*Helianthus annuus* L.) varieties in Cameroon through Agromorphological and Biochemical Traits

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ABSTRACT

Objectives: The sunflower (*Helianthus annuus L.*) is an important worldwide oilseed crops, with new available genetic resources preserved by growers. It is rich in lipids and protein that could be suitable for direct consumption. The purpose of this research is to assess and characterize sunflower varieties maintained by growers in Cameroon.

Methodology and Results: Nine varieties collected from producers in Cameroon were evaluate using thirteen agro-morphological and four biochemical parameters. Analysis showed significant differences ($P < 0.05$) among the cultivars evaluated across all traits measured. The principal component analysis showed that the first two axis explained 70.44% highlighting information relating to biochemical parameters. The diameter of the flower head correlated positively with the collar diameter ($r = 0.75$). Protein content correlated positively and significantly with number of achenes per flower ($r = 0.64$) and oil content is correlated with leaf surface ($r = 0.60$). Seeds of DsZM variety were richer in lipids and DsZG and MbBM, richer in protein.

Conclusions and application of findings: This study shows a remarkable genetic diversity of the studied sunflower varieties as an indication of a broad genetic base potential that could be performed for sunflower breeding programs in Cameroon. These findings show that growth parameters have an impact on plant yield while good vege/tative development of the plant promotes good development of the reproductive system. Sunflower seeds rich in lipids could be appropriated for the production of vegetable oils while those were rich in protein, could be suitable for direct consumption.

Key words: *Helianthus annuus*, morphological characters, nutritional values, varieties, yield.