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## STEROL COMPOSITION OF SEED OILS IN NINE SAFFLOWER VARIETIES CULTIVATED UNDER NORTH-EASTERN ALGERIA CONDITIONS

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### ABSTRACT

Since Safflower is a drought tolerant crop, the objective of this research was to study the seed oil phytosterol -which is considered, one of the most important minor compounds, and characterizes vegetable oils- content of safflower varieties under semi-arid conditions. Our field experiment was carried out at INPV station of Constantine, North-Eastern Algeria. The plant material consists of nine safflower varieties different in their geographic origin. These genotypes were cultivated in randomized complete block design (RCBD) with three replicates. Plant seeds were grinded to fine powder, and the oil was extracted by hexane, saponified and filtered over anhydrous sodium sulphate, then, the phytochemistry profiling of the unsaponifiable matters was carried out using GC/MS. The results revealed that *Rio* and *Royal* varieties excelled and containing the highest content of seed oil sterols (61,81 and 54,16% respectively), while *80/482/3S* and *Kusumba* cultivars produced the highest hydrocarbons percentage in their seed oil (82,54 and 72,31% respectively). The variability was also remarked among genotypes when phytosterol fraction of seed oil was tested, Asian varieties (*Kusumba* and *OT-455*) contained the highest values of  $\beta$ -sitosterol, the dominant phytosterol, with 60,74% and 54,87% respectively, while the two US cultivars *Gila* and *80/482/3S* have respectively, the major contents of stigmasterol (47,43%) and campesterol (46,79%).

**Keywords:** *Carthamus tinctorius* L., GC/MS analysis, phytosterols, hydrocarbons, semi-arid conditions.