

Study on Physical, Proximate and Fatty acid Profile of Medium Seeded Groundnut (*Arachis hypogaea* L.) Varieties and Promising Lines in Sri Lanka

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The information related to physical properties, chemical composition and fatty acids profile of medium size groundnut grown in the country are scarce. Therefore, the present study was designed to determine above mentioned properties of some commonly grown groundnuts cultivars and promising accession in Sri Lanka. Selected medium size groundnuts varieties (Indi, Tikiri, Tissa and ANKG1) and promising lines (ICGV01276, ICGV 00073 and ICGV 86590) were planted as randomized complete block design with two replicates. Physical properties such as numbers of kernels, pod beak, reticulation, testa colour, and shell out percentage varied considerably among groundnuts varieties and line. Moisture (5.4-8.4%), crude protein (18.7-28.5%), lipid (43.4-53.0%), ash (4.4-5.8%), carbohydrates (9.3-18.2%) and energy level (565.7-618.2kcal) contents varied considerably among the tested varieties, and also showed a significant difference among varieties. The quality and flavor of edible groundnuts and its products is highly affected by fatty acid composition of oil. Lipids profile of groundnuts were mainly composed of mono and polyunsaturated fatty acids (>78% of the total lipids). Fatty acid composition analysis indicated that oleic acid (C18:1) was the main constituent of all tested varieties except the variety ANKG1, where linoleic acid (C18:2) was the major fatty acid. The saturated fatty acids palmitic, stearic acid and behenic acid in different cultivars ranged between 10.2 -15.6%, 2.5 - 6.3% and 1.1- 5.3%, respectively. Differences among cultivars for oleic acid exhibited significance which ranged between 38.2 to 47.4%. Similarly, cultivars differed statistically for linoleic acid which showed a range of 23.1 to 38.7%. Oleic to linoleic acid ratio was differed and all the released varieties were below the minimum standard level of 1.6, whereas ICGV 86590 and ICGV 00073 showed higher O/L ratio of 1.94 and 1.75 respectively. Finally, it can be concluded from present investigation that groundnut varieties and accessions grown in the country match the international quality standards in terms of physical, proximate composition and fatty acid composition.

Keywords: Fatty acid, Groundnut, Medium-seeded, Promising lines, Sri Lanka