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SS-01

High Zn bioavailability in peanut (*Arachis hypogaea* L.) cultivars: An implication of phytic acid and mineral interactions in seeds

Sushmita Singh*, Amrit Lal Singh, Gangadhara K, Vidya Chaudhari, C.B. Patel, Mahesh Mahatma, Aman Verma, Lokesh Kumar and Archana Bharadava

ICAR- Directorate of Groundnut Research, Junagadh, Gujarat, India
*Presenting author: sushmitapantnagar@gmail.com

Consumption of cereals as the predominant dietary source imposes a compounding effect on hidden hunger due to their low micronutrient content as well as availability. Thus, identification and inclusion of crop varieties with greater nutrient content and availability for human consumption is integral to alleviate micronutrient malnutrition. Peanut cultivars were studied for their phytic acid, Ca, Mg, P, K, Fe and Zn content in seeds and their interactions influencing Fe and Zn bioavailability. GG7 recorded highest Fe (0.067 g kg^{-1}), Zn (0.069 g kg^{-1}) and Mg (3.75 g kg^{-1}) while LGN 2, SG 99 and DRG 12 showed highest Ca (0.0633 g kg^{-1}), P (5.88 g kg^{-1}) and K (7.58 g kg^{-1}) contents respectively. Phytic acid content was highest in TMV 2 (27.68 g kg^{-1}) and lowest in DRG 12 (7.06 g kg^{-1}). Phytic acid was negatively correlated with Mg (-0.497) and K (-0.546), while a positive correlation with Ca (0.427) was recorded. Mg was positively correlated to Fe (0.568) and Zn (0.1), while Zn and P displayed negative correlation (-0.442). The cluster analysis revealed cluster I enlisting 13 cultivars with high Fe, Zn and Mg content having high Zn availability; whereas, cluster II displayed 6 cultivars with low Fe and Zn availability. Zn and Fe contents are substantially higher in peanuts. The predominance of Mg and Ca in kernels further aid in reduced binding of Zn and Fe with phytic acid, thereby improving their availabilities for human consumption. Peanuts are therefore a great source of dietary diversification to combat hidden hunger.