

High zinc density groundnut cultivars: A solution to Zn malnutrition

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ABSTRACT

Analysis of a number of groundnut cultivars for several years showed variation in Zn concentration in seed with year, field and crop responsiveness to Zn fertilizers. Its concentration ranged from 21 to 67 mg/kg with a mean value of 42 mg/kg and with application of 1-2 kg Zn, increased to 24-78 mg/kg with a mean of 49 mg/kg. Twenty high Zn density groundnut cultivars with more than 50 mg/kg were identified for use as food.

Keywords: Essential nutrient, Groundnut, Human health, Malnutrition, Uptake, Zn

Zinc is an essential nutrient for human health and nearly half of the world population, is at the risk of its deficiency. Groundnut, an important food legume with high energy and protein, with 2-3 times higher Zn than cereals can be a solution to combat the Zn malnutrition (Lal and Singh 2007; Singh *et al.*, 2018). Through a number of experiments, efforts were made to identify high Zn density groundnut cultivars to be used as food.

A total of 190 groundnut cultivars were studied during last 10 years with and without application of Zn (1-2 kg/ha, Zn as zinc sulphate) at ICAR-DGR farm in a medium black calcareous clayey soil containing 1.2-1.4 mg/kg DTPA extractable Zn under recommended package of practices. Seed samples were analyzed for Zn content using atomic absorption spectrophotometer. Based on the mean and standard deviation (SD) values of seed Zn concentration, cultivars were categorized as high, medium and low in Zn density.

For first five years, 100-110 older cultivars with medium seed size were tested for seed Zn concentration that ranged from 30 to 65 mg/kg with an average of 45 mg/kg without Zn. With application of 2 kg/ha Zn, content increased to 39-78 mg/kg with a mean of 51 mg/kg and the cultivars above 55 mg/kg were categorised as high Zn cultivars.

Later, 170-190 newer cultivars with larger seed were studied and seed Zn content ranged from 21 to 67 mg/kg with a mean of 40 mg/kg which with application of Zn increased to 24-76 mg/kg with a mean of 48 mg/kg and the cultivars above 50 mg/kg were categorised as high Zn cultivars in this group. Among these, 20 cultivars viz., GG 7, CO 2, CO 1, ICG (FDRS) 4, R 9251, MH 1, VRI (GN) 6, MH 4, OG 52-1, GG 20, Gangapuri, Kopargaon 3, Jyoti, Tirupati 4, CSMG 884, SB XI, ICGV 86590, GJG 31, Kadiri 5, VRI 2 recorded consistently >50 mg/kg Zn under balanced nutrition. These high Zn density cultivars need extensive cultivation and consumption as food to combat Zn malnutrition.

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Evaluation of different mustard varieties under northern Telangana zone

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ABSTRACT

A field experiment was conducted to identify suitable variety among 6 mustard varieties (NRCHB 101, RH 406, DRMRIJ 31, NRCDR 2, Black gold and Local variety) in terms of growth characteristics, yield and its attributing components in a randomized block design (RBD) at Regional Agricultural Research Station (RARS), Jagtial, during *rabi* seasons of 2017-18 and 2018-19 respectively. The result of the experiment revealed that among six varieties Black gold variety (1474 kg/ha) recorded significantly superior yield over other varieties and it was on par with NRCHB 101 (1369 kg/ha).

Keywords: Mustard, Oilseeds, Randomized block design, Varieties