

Genetic variability in nutritional profile of maize germplasm

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Nutritional variability and Euclidean coefficient of dissimilarity (distance) for nine nutritional quality parameters, viz., protein, tryptophan, specific gravity, 100 kernel weight, sugar, starch, oil, total carotenoids and β -carotene studied in 22 elite maize genotypes received from various AICRP centres located across India revealed a variation in protein content from 8.23 to 12.34%. A significant variation in tryptophan content was observed (0.33 to 0.81% of endosperm protein). Starch content showed a significant variation ranging from 58.9 to 72.2% of mature kernel. Sugar content varied from 3.46 to 8.36%. Most of the genotypes exhibited oil in the ranges 3-5%. A significant achievement of the present study was the wide variability observed in the carotenoids and β -carotene content of these samples. Carotenoids content ranges from 0.84 to 27.4 $\mu\text{g/g}$, whereas the pro-vitamin A was found to be present in the range of 0.31 to 6.96 $\mu\text{g/g}$ in the samples. Euclidean coefficient of dissimilarity (distance) based on quality parameters distributed 22 genotypes in four clusters. Cluster I contains highest number of genotypes followed by Cluster II and IV whereas cluster III contains only two genotypes. The highest distance was observed in HKI 1105 and HKI 164-3(2-1)-1, further followed by HKI 1128 and HKI 164-D-3-3-2, HKI 164-3(2-1)-1 and HKI 164-3(2-1)-1. Present study suggests that the wide variability observed in the nutritional and genetic profile of the 22 genotypes could greatly help in the future breeding programs for developing nutritionally superior maize cultivars.

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Effect of biofertilizers and phosphorus levels on yield of greengram (*Vigna Radiata* L)

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The study was conducted at the Student Instructional farm of the Narendra Deva University of Agriculture and Technology, Kumarganj, Faizabad (U.P.) during summer season, 2010 to evaluate the phosphorus levels and biofertilizers viz. PSB, VAM and control. The treatments were laid out in randomized block design with 4 replications. The soil having low organic (0.29%), nitrogen (145.42), medium in phosphorus (17.20) and potassium (214.20) kg ha^{-1} . The results of field experiment revealed that seed and stover yield were increased significantly with increasing levels of phosphorus up to 60 $\text{kg P}_2\text{O}_5 \text{ ha}^{-1}$. The application of VAM was more effective in increasing in the seed and Stover yield which was statistically at par with PSB and significantly superior with uninoculated biofertilizers.

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