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Screening maize genotypes for high quality protein based on assessment of protein and limiting aminoacids

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ABSTRACT : Promising in bred lines of maize genotypes were screened for their protein content and dye binding capacity (DBC) for identifying high lysine lines. The variability in quality was assessed based on its protein content and limiting amino acid lysine. Among the 55 maize genotypes screened, the maize genotypes - UMI 328, IC 361398 IC 552815, IC 447501, and IC538788 were identified as elite one of superior quality. The selected elite genotypes were subjected to a field trial and they were further evaluated for quality parameters. Based on quality index, the maize genotypes IC 361398 and IC 538788 were considered as good quality one as they have QI ratio more than 3.5 as 3.75 and 4.48, respectively. Moreover, the maize genotypes IC 538788 and IC 361398 were found to have 2.28 and 2.04 per cent lysine in protein, respectively and DBC value of 44.43 and 40.47 mg per unit weight of protein, respectively. The genotype IC 538788 reported 0.51 per cent tryptophan in protein. The genotype IC 361398 recorded high crude protein content of 10.79 per cent. Hence, the maize genotypes IC 361398 and IC 538788 with high QI ratio, DBC value and lysine content were identified as elite one for development of QPM.

KEY WORDS : Maize, Quality protein, DBC, Lysine, Tryptophan

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