

Determination of Nutritional Value and Steroidal Saponin of Fenugreek Genotypes

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Abstract : Nutrient rich and high-yielding varieties of fenugreek can be developed by using genotypes which are naturally high in nutrients. Gene banks harbour scanty germplasm collection of *Trigonella* spp. and a very little background information about its genetic diversity. The extent of genetic diversity in a specific breeding population depends upon the genotype included in it. The present investigation aims at the estimation of macronutrient (phosphorus by spectrophotometer and potassium by flame photometer), micronutrients, namely, iron, zinc, manganese, and copper from seeds of fenugreek genotypes using atomic absorption spectrophotometer, protein by Rapid N Cube Analyser and Steroidal Saponins. Twenty-eight genotypes of fenugreek along with two standard checks, namely, Pant Ragini and Pusa Early Bunching were collected from different parts of India, and nutrient contents of each genotype were determined at G. B. P. U. A. & T. Laboratory, Pantnagar. Highest potassium content was observed in PFG-35 (1207 mg/100g). PFG-37 and PFG-20 were richest in phosphorus, iron and manganese content among all the genotypes. The lowest zinc content was found in PFG-26 (1.19 mg/100g), while the maximum zinc content was found in PFG-28 (4.43 mg/100g). The highest content of copper was found in PFG-26 (1.97 mg/100g). PFG-39 has the highest protein content (29.60 %). Significant differences were observed in the steroidal saponin among the genotypes. Saponin content ranged from 0.38 g/100g to 1.31 g/100g. Steroidal Saponins content was found the maximum in PFG-36 (1.31 g/100g) followed by PFG-17 (1.28 g/100g). Therefore, the genotypes which are rich in nutrient and oil content can be used for plant biofortification, dietary supplements, and herbal products.

Keywords : genotypes, macronutrients, micronutrient, protein, seeds

Conference Title : ICHCS 2017 : International Conference on Horticulture and Crop Science

Conference Location : Bangkok, Thailand

Conference Dates : August 30-31, 2017