



Determination of Mineral Composition of Some Varieties of Iranian Dry Bean (*Phaseolus vulgaris* L.)

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ABSTRACT:

Grain legumes can contain all fifteen of the essential minerals required by man, although concentrations will vary in response to both genetic and environmental factors. The common bean is one of the most important food legume, providing essential nutrients for millions of people in developing countries. Given the widespread use of beans throughout the world, efforts to improve their micronutrient content may benefit people.

The data collected suggest that there is sufficient genetic variability to increase significantly mineral concentrations in common beans.

The objective of this study was to determine iron, zinc, copper, manganese, boron, phosphorus, potassium, calcium and sodium content in fifteen genotypes related to three varieties (red, Chiti and white) of Iranian common bean. In the evaluation of bean genotypes observed, there was a significant difference ($P < 0.01$) in Fe, Zn, Cu, Mn, B, P, K, Ca and Na content between the 15 genotypes and in a range of 50.37 to 118.35 ppm for iron, 28.01 to 47.55 ppm for zinc, 11.94 to 16.85 ppm for copper, 12.68 to 23.73 ppm for manganese, 0.44 to 0.55% for phosphorus, 1.5 to 1.78% for



potassium, 0.15 to 0.29% for calcium and 0.014 to 0.041% for sodium . A Comparison between three varieties of red, Chiti and white, revealed that there was no significant difference in Zn, Cu, B and Ca content but there was a significant difference ($P<0.01$) in iron, manganese and sodium content. The red bean variety had the highest iron content and white bean variety had highest Mn and Na content. There were significant difference ($P<0.05$) in phosphorus and potassium content. Chiti bean variety had highest phosphorus and potassium content in present study. In this study there was a significant ($P<0.01$) correlation between Ca and Fe content of genotypes but there wasn't any statistically significant correlation between other mineral elements.

Key words: Common Bean, Varieties, Mineral Content, Genetic Diversity.