



Comment on Article: Variation in crude protein content in cassava (*Manihot esculenta* Crantz)

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by

Pollyanna Gomes and Nagib Nassar

Universidade de Brasília, Brasília, Brazil

We wish to comment on this article as follows:

1. Research on Root protein content in cassava goes back to the decade 1930s, Unfortunately essential references were omitted , For example: (Lanjouw,J.1939 in Recuel des Travoux Botaniques Neerlandais 36:542-549)-This reference is Not cited by authors;the decade 1950´s (Jennings,D.L.1959. in Euphytica 8:157-162)-Not cited once again by autors; Boluis,G.G.1953 in Euphytica 2:176-185 In the decade 1970s(Nassar, N.M.A. andCosta C.P. 1978. Experientia(Basel) 33:1304-1306) Not cited once again by these authors; the decade 1980s(Nassar, N.M.A. and Dorea,G.1982. Turrialba 32:429-432) Not cited once again by these authors.

2. In item results, It is noted variation range. This variation is not normal neither logical, but is due to that dishydration of root samples not unified. Errors like this happens frequently in evaluating protein when work done by beginners. It is recommended to repeat the evaluation on unified dishydrated samples. The same error has happened in previous work of CIAT in the decade 1970´s. That time a report by this institution stated cassava variety having 9% protein in root, sooner no any mention to it been made later.

3. Various authors reported interference of HCN in protein evaluation in cassava (Narty, F. 1969. Studies on cassava, *Manihot utilissima* Pohl 1. Cyanogenesis of Linamarin and luteoscalin in etioled seedlings. Phytochemistry 7:1307-1312), and the same author, 1981. Cyanogenesis in tropical crops. In Cyanide in Biology Vennesslands B. et al. Academic Press, 1981 pp.548. Both of the two references not cited by the authors. Some cases of high protein content proved no more than high HCN content in the used material. This is due to evaluation of protein as total Nitrogen not as true protein; i.e amino acids, and due to byproducts such as urea formation when digging the roots of this high HCN material. It is recommended for this reason that evaluation of protein content must be accompanied by evaluating HCN in the same material + evaluating protein as TRUE protein through estimating amino acids as Nassar and Sousa did (Nassar, N.M.A. and Sousa,M.V. 2007. Amino acid profile in cassava and its interspecific hybrid. Genet.Mol.Res. 192-197).Please note that some cassava cultivars are extremely rich in HCN; more than 1000 mg/kg.

References

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