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Research Abstract

## Physicochemical Analysis of Protein Fractions of Mesquite (*Prosopis spp*) Seeds

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**Abstract:** Physicochemical analysis and amino acid composition of protein fractions from mesquite seeds native of Sonora State was investigated. Albumin, glutelin, globulin and prolamin of defatted mesquite seed meal were obtained according to the Osborne method. The protein content, molecular weight, chemical identity and amino acid composition were determined. Defatted mesquite seed protein fractions were 18.6% albumins, 61.9% globulins, 8.9% glutelins, and 10.5% prolamins. SDS-PAGE of the albumin fraction showed 6 major bands at 10, 20.5, 22, 28, 40 and 41 kDa, globulin showed 4 major bands around at 6.5, 18, 23.5 and 38 kDa, glutelin resolved into 5 bands at 6.5, 18, 23.5, 25 and 40 kDa, and prolamin fraction showed 5 major bands around at 6, 18, 23, and 40 kDa. Fractions FT-IR spectrum showed the amide A bands at  $3320\text{ cm}^{-1}$ , amide I at  $1650\text{ cm}^{-1}$ , amide II at  $1540\text{ cm}^{-1}$  and amide III at  $1240\text{ cm}^{-1}$ . The levels of essential amino acid of globulin and glutelin fractions were similar and higher compared with albumin and prolamin fractions. This study showed that mesquite seed meal contained four protein fractions in varying proportions with different molecular weight and amino acid composition.

**Keywords:** Mesquite Seed, Protein Fractions, Physicochemical Analysis, FT-IR, Amino Acid.

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