

Some Engineering and Chemical Properties of Cooked Locust Bean Seed (*Parkia biglobosa*)

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Abstract: This study was conducted to determine effect of cooking duration on some engineering and chemical properties of locust bean seed. The locust bean seed was cooked for 1, 2, 3, 4, 5, and 6 hours. Length, breadth, and thickness of locust bean were 10.38 to 12.52 mm, 8.61 to 10.04 mm and 4.79 to 5.83 mm, respectively. Bulk density ranged from 0.77 to 1.62 g/cm³. Cooking of the bean increased moisture content from 4.4 to 61.4%. Compressive forces required reaching the yield, breaking and peak point of the samples ranged from 10.22 to 211.26 N, 51.70 to 384.39 N, and 51.88 to 385.87 N, respectively. Young modulus decreased with increased cooking time while deformation increased. Cooking has significant influence on chemical properties at 5% level of significance. Thermal conductivity of un-cooked locust bean increased from 0.22 to 0.52 W/mK and specific heat increased from 1.92 to 2.60 kJ/kgK.

Keywords: Locust bean, cooking, physical properties, mechanical properties, proximate composition, thermal properties