

Effect of soaking on physical functional and cooking time of cowpea, horsegram and mothbean

C.K. BHOKRE AND A.A. JOSHI

The effect of different soaking media on physical parameter such as hundred seed weight, bulk density, density, functional characteristics viz., hydration capacity, swelling capacity and cooking time of cowpea, horsegram and mothbean were studied. The study was carried out in year 2014 at the college of Food Technology Vasantnaik Marathwada Krishi Vidyapeeth Parbhani. The seeds were soaked in three different solution at room temperature viz., normal drinking water (T_1), 1 per cent NaCl solution (T_2) and 1 per cent NaHCO_3 solution (T_3) separately for 12 hr and one was kept untreated (T_0). In cowpea significant increase in hundred seed weight from 6.82 g (T_0) to 9.40 g (T_1), 9.54 (T_2) and 10.54g (T_3) was found. Similar results observed for horsegram and mothbean of significant increase in Hundred Seed Weight after soaking. The highest bulk density (0.633 gml^{-1}) was observed in cowpea seeds soaked in sodium bicarbonate solution (T_3) compared T_2 (0.622 gml^{-1}) and T_1 (0.59 gml^{-1}). Likewise in cowpea density of T_0 was significantly highest (1.24 gml^{-1}) followed by T_3 (1.05 gml^{-1}) and T_2 (0.95 gml^{-1}). The similar trend of decrease in bulk density and density compared to samples without soaking was observed in mothbean and cowpea. The T_3 sample gave significantly higher hydration capacity $0.037 \text{ g seed}^{-1}$ of cowpea, $0.055 \text{ g seed}^{-1}$ of horsegram and $0.027 \text{ g seed}^{-1}$ of mothbean than T_2 and T_1 in all three legume. In cowpea the soaking treatment did not show significant difference in swelling power for T_2 ($0.045 \text{ g seed}^{-1}$), T_3 ($0.045 \text{ g seed}^{-1}$) and T_1 ($0.044 \text{ g seed}^{-1}$). While sample T_3 had maximum value for swelling power in both horse gram (0.50 g seed^{-1}) and mothbean ($0.035 \text{ g seed}^{-1}$) compared to T_2 and T_1 treatment. Soaking study revealed that there is significant reduction in cooking time of three legume soaked. For cowpea the treatment T_1 , T_2 and T_3 showed 51.42 per cent, 65.71 per cent and 85.71 per cent reduction in cooking time, respectively compared with unsoaked seed samples (T_0). In horsegram the soaking treatment T_3 , T_2 and T_1 had 45.45 per cent, 30.90 per cent and 12.72 per cent decrease in cooking time, respectively. Similarly in mothbean decrease in cooking time of T_3 (80%), T_2 (50%) and T_1 (20%) was found. Among three legume the lowest cooking time recorded in mothbean followed by cowpea and horsegram.

Key Words : Cowpea, Cooking time, Functional attributes, Horsegram, Moth bean, Physical properties

How to cite this article : Bhokre, C.K. and Joshi, A.A. (2015). Effect of soaking on physical functional and cooking time of cowpea, horsegram and mothbean. *Food Sci. Res. J.*, 6(2): 357-362.

MEMBERS OF RESEARCH FORUM

Author for correspondence :

A.A. JOSHI, Department of FCN, College of Food Technology, Vasantnaik Marathwada Krishi Vidyapeeth, PARBHANI (M.S.) INDIA
Email : lakha02-cft@rediffmail.com

Associate Authors' :

C.K. BHOKRE, Department of FCN, College of Food Technology, Vasantnaik Marathwada Krishi Vidyapeeth, PARBHANI (M.S.) INDIA
