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Preliminary Study on Cooking Quality of Some Pulses

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Pulses are important protein riched food for Indian vegetarian people, protein content ranged from 20 to 28 per cent in different pulses. In India, pulses are used as whole grain or split dehusked *dhal* cooked until shoft, mashed then mixed with water and reboiled to get a consistency of a soup. It generally take considerably longer time for cooking in comparision to vegetables. There is also a variation in the cooking time in different pulse crops and varieties. From consumers point of view it would be desirable to have types which take less time in cooking and help the consumers in respect of saving the fuel. However, a plant breeder, the selection of such favourable types is a time consuming process. Therefore, the knowledge of some physical characteristics of seeds would help to judge the cooking time.

Main pulse crops of the region were selected for the study. The seed samples of the crops were collected from the experiments conducted at the Main Pulses Research Station, Gujarat Agricultural University, Sardar Krushinagar.

Water absorption and cooking time was determined by taking 10 gm seeds of each variety in a beaker and add in 100 ml of distilled water and boiled for 20 minutes. Then drained off the excess of water and weighed. Repeated the above procedure again and cooked till the acceptable degree of softness. Each variety was repeated four times. Protein content was determined by Kjeldahl method.

The observations on the water absorption, cooking time, protein content and 100 seeds weight are recorded and presented in Table- 1. The data indicated that mung variety Gujarat-2 recorded minimum water obsorption (1.149. g/g) with maximum cooking time (26 min.) alongwith higher seeds weight (4.87 g). However, Sabarmati took minimum time (21 min.) for its grain cooking with smallest seed size (4.13 g). Which reveals that the vareity which had bolder seeds absorbed less water and taken more time for cooking. Similar findings were also recorded by Rao *et al.* (1978). The maximum and minimum protein content was observed in the cultivars Gujarat-2 and Gujarat-1 with a value of 23.27 and 22.57 per cent, respectively. In case of mothbean, varietal differences did not show any variation in characters studied (Table-1). Moreover, in case of cowpea, similar trend was observed as in case of mungbean. Guj. Cowpea-2 had smaller seeds absorded more water and taken less cooking period (Table-1). Similar results were also observed by Rajniraina *et al.* (1986) in chickpea.

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TABLE 1

Cooking quality and some related characteristics of pulses.

Crop and variety	*Mung*				*Month*		*Cowpea*				*Tur*					
Characteristics	*Guj-1*	*Guj-2*	*K-851*	*Sabarmati*	*Baleshwar-12*	*G-1*	*GC-1*	*GC-2*	*Pusa Falguni*	*V-16*	*Pusa Ageti*	*BDN-2*	*T-15-15*	*GAUT-82-104*	*GAUT-82-90*	*GAUT-82-99*
Water absorption (g/g)	1.208	1.149	1.384	1.472	1.225	1.37	1.138	1.317	1.037	1.011	1.012	1.109	0.908	0.911	1.021	1.045
Cooking time (min.)	24	26	22	21	24	25	33	29	36	39	40	41	44	49	36	43
Protein (%)	22.57	23.27	22.75	23.10	20.16	20.47	22.97	22.42	22.92	23.73	21.48	20.76	20.38	21.55	21.09	20.37
100 Seed Weight (gm)	4.33	4.87	4.61	4.13	3.09	3.06	7.91	6.70	7.49	9.79	8.78	10.24	12.10	10.76	11.78	10.28

The dhal of different tur varieties were also behaved similar to cowpea and mungbean varieties in cooking time, water absorption and test weight except variety Pusa-Ageti in which water absorption was less. This might be due to the difference in seed composition. The variety BDN-2 and T-15-15 absorbed maximum (1.109 g/g) and minimum (0.908 g/g) water respectively. The strain GAUT-82-104 had maximum seed protein content (21.55%). While GAUT-82-99 had minimum value of 20.37 per cent.

The present study reveals that water absorption and test weight in mungbean and cowpea varieties were closely related with cooking time. Therefore, it is suggested that the characters like seed size and water absorption in these pulses could be used as criteria for selection of line required less cooking time.

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