

which may be attributed to the higher fat content in the grain itself (19.5%).

Solubility index ranged from 6.30 to 15.86 per cent (Table 4). Highest solubility index was observed in acid treated samples (11.62%) and lowest in alkali treated (7.32). The highest solubility index was observed in blackgram seed coat (12.75%) as it is low in fibre content than the other seed coats. The lowest was observed in the dolichos seed coat (8.73%) followed by greengram seed coat (9.62%).

References

[1] Bobby RG, Leelamma S (2003) Blackgram fiber (*Phaseolus mungo*): Mechanism of hypoglycemic action, *Plant Foods Human Nutri*, 58: 7–13.
 [2] AOAC. International (2005) Official Methods of Analysis, 18th edition, Association of Official Analytical Chemists, pp 71-72, Washington. DC.
 [3] Sadasivam S, Manickam A (2005) Second edition, *Biochemical methods*. New age International



Bengalgram	84.18	4 (1.33)	3 (0.37)	17 (0.60)	06.50	9 (35.23)	2 (97.29)	1 (53.92)	77.61	5 (1.50)	72.51 (6.58)	1 (5.15)
Blackgram	70.86	65.82 (7.12)	64.98 (8.30)	64.93 (8.37)	01.08	01.28 (18.52)	01.97 (82.41)	01.82 (68.70)	69.78	65.05 (6.79)	63.01 (9.70)	63.11 (9.56)
Redgram	79.01	83.38 (1.4)	79.62 (1.4)	81.72 (0.0)	6.12	08.19	07.06 (13.)	06.73 (17.)	72.89	75.19 (3.1)	72.56 (0.46)	74.99 (2.8)

		4)	8)	5)			8)	86)		6)		9)
Soy bean	75.77	77.72 (2.57)	77.92 (2.83)	77.726 (2.58)	05.62	05.18 (7.83)	05.64 (0.30)	05.23 (7.03)	70.07	72.54 (3.53)	72.28 (3.16)	72.50 (3.47)
Dolichos	74.87	79.30 (2.39)	79.07 (2.67)	78.031 (3.95)	04.80	05.74 (19.67)	04.29 (10.63)	06.03 (25.52)	70.07	72.28 (3.16)	74.78 (6.72)	72.01 (2.77)
Mean	78.40	79.39	78.70	78.47	5.29	6.23	6.84	06.17	72.04	73.03	71.91	72.29
F value	*				*				*			
SEm±	0.250				0.024				0.235			
CD (P=0.05)	0.711				0.067				0.668			

*significant at P≤0.05

Table 2: Per cent total phenols and phytic acid content of legume seed coat samples

Legume seed coat samples	Total phenol				Phytic acid			
	Treatments				Treatments			
	Ra w	Stea m	Acid	Alka li	Ra w	Stea m	Aci d	Alka li
Greengram	0.095	0.070 (26)	0.028 (70)	0.022 (77)	3.19	2.44 (6)	2.63 (18)	3.00 (24)
Bengalgram	0.170	0.028 (84)	0.030 (82)	0.034 (80)	1.69	1.50 (11)	1.31 (22)	1.31 (22)
Blackgram	0.510	0.225 (56)	0.040 (92)	0.013 (97)	2.81	2.63 (7)	2.25 (20)	2.63 (17)
Redgram	0.300	0.079 (74)	0.095 (68)	0.006 (99)	4.13	3.94 (5)	3.19 (23)	3.38 (19)
Soy bean	0.080	0.089 (11)	0.049 (39)	0.018 (77)	2.63	1.88 (7)	2.25 (14)	2.44 (29)
Dolichos	0.230	0.040 (82)	0.030 (87)	0.048 (79)	2.44	2.44 (0)	1.88 (23)	2.06 (15)
Mean	0.199	0.125 (55.0)	0.045 (73.0)	0.024 (84.8)	2.881	2.47 (6)	2.25 (20)	2.54 (21)
F value	*				*			
SEm±	0.001				0.008			
CD (P=0.05)	0.003				0.022			

*significant at P≤0.05

Values in parenthesis indicates per cent reduction

Table 3: Per cent protein and fat content of legume seed coat samples

Legume seed coat samples	Protein				Fat			
	Treatments				Treatments			
	Raw	Steam	Acid	Alkali	Raw	Steam	Acid	Alkali
Greengram	08.05	10.32	12.25	09.63	00.24	00.73	00.73	00.21
Bengalgram	02.87	03.49	02.96	03.32	00.05	00.16	00.30	00.08
Blackgram	10.65	11.19	13.12	11.02	00.53	00.96	00.41	00.61
Redgram	05.40	07.16	05.76	05.76	00.83	01.23	01.40	01.00
Soy bean	10.65	14.53	13.09	10.48	01.33	01.79	1.26	00.94
Dolichos	08.11	09.73	08.23	07.87	00.40	00.47	00.28	00.38
Mean	7.62	9.40	9.24	8.01	0.56	0.89	0.73	0.53
F value	*				*			
SEm±	0.049				0.031			
CD (P=0.05)	0.138				0.088			

*significant at P≤0.05

Table 4: Per cent solubility index of the legume seed coat samples

Legume seed coat samples	Solubility index			
	Treatments			
	Raw	Steam	Acid	Alkali
Greengram	10.39	11.03	10.29	06.81
Bengalgram	10.32	09.69	12.49	08.80
Blackgram	13.02	15.86	14.74	07.68
Redgram	13.04	10.09	10.37	07.22
Soy bean	12.99	10.03	12.82	07.44
Dolichos	08.81	10.77	09.08	06.30
Mean	11.42	11.23	11.62	7.32
F value	*			
SEm±	0.031			
CD (P=0.05)	0.089			

*significant at P≤0.05

Table 5: Per cent swelling power of the legume seed coat samples

Legume seed coat	Swelling power			
	Treatments			
	Raw	Steam	Acid	Alkali
Greengram	5.26	5.47	5.81	5.53
Bengalgram	5.57	4.83	4.15	4.53
Blackgram	6.74	6.11	5.82	6.01
Redgram	5.31	5.37	5.38	5.94
Soy bean	6.51	5.34	6.20	5.63
Dolichos	6.24	6.26	6.46	6.10
Mean	5.93	5.56	5.63	5.61
F value	*			
SEm±	0.056			
CD	0.016			

*significant at P≤0.05

Table 6: Water absorption capacity of the legume seed coat samples

Legume seed coat samples	Water absorption capacity (g/g)			
	Treatments			
	Raw	Steam	Acid	Alkali
Greengram	3.4	3.0	3.2	3.2
Bengalgram	3.7	3.4	3.6	3.5
Blackgram	3.8	3.6	3.2	3.0
Redgram	3.7	3.6	3.1	3.6
Soy bean	3.6	3.5	3.6	3.1
Dolichos	3.8	3.3	3.3	3.6
Mean	3.7	3.4	3.3	3.4
F value	*			
SEm±	0.041			
CD (P=0.05)	0.1174			

*significant at P≤0.05

Table 7: Fat absorption capacity of the legume seed coat samples

Legume seed coat samples	Fat absorption capacity (g/g)			
	Treatments			
	Ra	Stea	Acid	Alkali
Greengram	3.6	3.2	3.5	2.9
Bengalgram	4.3	4.1	4.2	3.6
Blackgram	3.9	3.7	3.4	3.7
Redgram	4.2	3.3	4.0	3.3
Soy bean	4.8	4.4	4.6	4.2
Dolichos	3.4	3.2	2.8	3.1
Mean	4.0	3.7	3.8	3.5
SEm±				
CD (P=0.05)	0.026			
	0.074			

*significant at P≤0.05