

Nutritive Value of Some Specialized Legume / Pulse Based Preparations of Himāchal Pradesh

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INTRODUCTION

Among food legume/pulses continue to occupy an important place in human nutrition particularly in the developing countries. Historically, pulses are natural protein supplements to cereals since ages in Indian sub-continent. Pulses are consumed either whole or as dhal (after removing outer husk). Each area has its own special pulse preparations with varying methods of cooking. The compiled information in the book "Nutritive value of Indian foods" published by National Institute of Nutrition, Hyderabad, under the auspices of Indian council of Medical research, provides data on nutrient content of practically all Indian food stuffs in common use. The information is provided for 100g of raw edible portion. However now-a-days it is a matter of great concern for the nutritionists, researchers and to common public to know the nutrient content of cooked food preparations as consumed. A few attempts have been made earlier by few workers including Devadas et al. (1976) and Pasricha and Rebello (1962). In the same direction the present investigation was undertaken to determine the nutrient content of a few commonly consumed legume/pulse based preparations consumed in Himachal Pradesh.

MATERIALS AND METHODS

Collection of Information Regarding Locally Consumed Preparations and Procurement of Raw Materials

The information was collected from 120 housewives regarding commonly consumed preparations, their method of preparation and ingredients used. On the basis of collected information selected preparations were prepared in the laboratory. The ingredients required for the investigations were procured from the local market.

Chemical Analysis of Cooked Samples

After determining the moisture content, freshly cooked samples, were dried at $50 \pm 5^\circ\text{C}$ in a drier, powdered and stored in polyethylene bags for further analysis. The prepared samples were then analysed (triplicate) for crude protein (AOAC, 1990), crude fat (AOAC, 1990), total ash (AOAC, 1990) and crude fibre (AOAC, 1990) contents using standard methods. Carbohydrate content was calculated by differential method and energy was calculated by multiplying carbohydrate and protein contents with factor four and fat content with factor nine.

Expression of Results

The dry samples were analysed in duplicate and results are presented both on dry and fresh weight basis. The nutritive value of fresh preparations was calculated on the basis of dry preparations by taking into consideration the moisture content of fresh preparation.

RESULTS AND DISCUSSION

Nutrient Composition of Preparations on Dry Matter Basis

The data presented in table 1 shows that among various preparations studied the protein contents of *Telia mash* (Black gram whole) was the highest (25.69 %) whereas, the lowest value was recorded in *sappu bari* (10.86 %). The fat content was also highest in *telia mash* (38.51%), while sour whole lentil (*khatte massar*) contained minimum fat (8.63%). The ash content of various preparations ranged from 5.06 per cent (*Telia mash*) to 9.23 per cent (bengal gram whole). Green gram whole recorded the highest value for crude fibre (3.69%). The energy content was found to be the maximum in *Telia mash* (565 kcal), in contrast to the minimum in sour whole lentil (366 Kcal).

Table 1: Nutrient composition of some legume/pulse based preparations consumed in H.P. (% on dry matter basis)

Name of preparation	Protein	Fat	Ash	Crude fibre	Carbohydrate	Energy (Kcal)
Bengal gram dhal (Channa Dhal)	18.02	18.17	7.07	0.83	56	460
Bengal gram whole (Kale Channe)	19.56	15.86	9.23	2.02	53	433
Bengal gram whole (dry) (Kale Channe)	18.29	15.88	6.57	1.83	57	444
Black gram whole (Telia mash)	25.69	38.51	5.06	1.59	29	565
Cow pea Madhra Rongi madhra	24.40	26.60	7.80	3.07	38	489
Green gram whole (Moongi Sabut)	20.12	18.98	7.88	3.69	49	447
Sour whole lentil (Khatte massar)	20.09	8.63	6.37	3.68	52	366
Kabuli channa	18.32	16.97	6.05	3.49	55	446
Rajmash	17.75	22.76	7.91	3.45	48	468
Mixed bengal & black gram dhal (Mash channe dhal)	24.16	13.07	7.48	2.99	52	422
Sappu bari	10.86	28.93	7.29	2.64	50	504
Red gram dhal (Khatti arhar dhal)	20.29	14.38	8.64	0.85	56	435

Bhama and Sadana (1999) studied the effect of processing on availability of nutrients from bengal gram products and reported the nutrient contents of pressure cooked bengal gram whole and fried bengal gram dhal. The protein

(%), fat (%), ash (%), crude fibre (%) and energy values (Kcal) of pressure cooked bengal gram whole and fried bengal gram dhal were found to be 23.29, 13.44, 5.56, 4.00, 405 and 22.06, 19.21, 3.71, 1.74 and 462, respectively.

Table 2: Nutrient composition of some legume/pulse based preparations consumed in H.P. (% on fresh weight basis)

Name of preparation	Moisture	Protein	Fat	Ash	Crude fibre	Carbohydrate	Energy (Kcal)
Bengal gram dhal (Channa Dhal)	65.50	6.21	6.27	2.44	0.29	19	157
Bengal gram whole (Kale Channe)	72.50	5.38	4.36	2.54	0.56	15	121
Bengal gram whole(dry) (Kale Channe)	24.50	13.81	11.99	4.96	1.38	43	335
Black gram whole (Telia mash)	26.00	19.01	28.50	3.74	1.18	22	421
Cow pea Madhra (Rongi madhra)	63.00	9.03	9.84	2.89	1.14	14	181
Green gram whole (Moongi Sabut)	61.00	7.85	7.40	3.07	1.44	20	178
Sour whole lentil (Khatte massar)	76.00	4.82	2.07	1.53	0.88	15	104
Kabuli channa	73.00	4.95	4.58	1.63	0.94	15	121
Rajmash	70.50	5.24	6.71	2.33	1.02	14	137
Mixed bengal & black gram dhal (Mash channe dhal)	65.00	8.46	4.57	2.62	1.05	18	147
Sappu bari	68.00	3.48	9.26	2.33	0.84	16	161
Red gram dhal (Khatti arhar dhal)	61.50	7.81	5.54	3.33	0.33	21	165

Nutrient Composition of Preparations on Fresh Weight Basis

The moisture content of freshly cooked preparations ranged from 24.50 per cent (bengal gram whole) to 76.0 per cent (sour whole lentil). On fresh weight basis *telia mash* contained 19.01 per cent protein while, *Sappu bari* had the lowest value (3.48 %) (Table 2). The fat content of various preparations ranged from 2.07 (sour whole lentil) to 28.50 per cent (*Telia mash*). Ash, crude fibre and energy contents of various preparations ranged from 1.53 to 4.96 per cent and 0.29 to 1.44 per cent and 104 to 421 Kcal per 100 g, respectively.

KEY WORDS Nutrient Content. Legume/Pulse. Traditional Recipes.

ABSTRACT The study was undertaken to determine the

nutrient content of some specialised legume/pulse based recipes consumed in Kangra district of Himachal Pradesh. The preparations included Bengal gram whole and dhal, green gram whole, *Telia mash*, *Rongi Madhra*, *Kabuli chana*, *khatte mazzar*, *Rajmash*, *Sappu Bari*, mixed bengal and black gram *dhal* and *khatti arhar dhal*. The nutrients analysed included crude protein, crude fat, total ash, crude fibre, carbohydrate and energy contents. The results are presented on dry and fresh weight basis.

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