

Use of red cabbage (*Brassica oleracea* var. *capitata* f. *rubra*) as nutritional food

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In European folk medicine, cabbage leaves has anti-inflammatory properties. Red cabbage is also effective in relieving painfully engorged breasts in breast feeding women. To evaluate importance in human nutrition red cabbage was analyzed for their proximate composition and mineral contents. The results of the present study showed that red cabbage contained appropriate amount of essential nutrients. Moisture content was 88.66%. Protein, fat and carbohydrate were 0.35, 0.25 and 8.46%, respectively. Fiber and ash was 1.8 and 0.88%, respectively. Iron, phosphorus and calcium were 0.33, 19.90 and 3.56%, respectively. Calorific value was 17.69.

Red cabbage (*Brassica oleracea* var. *capitata* f. *rubra*) a sort of cabbage also known as Red Kraut is member of family Brassicaceae. Certain cruciferous vegetables (mustard family) of the genus *Brassica* including cauliflower, broccoli, cabbage, and Brussels sprouts have been studied extensively because of their high nutritional values as they are rich sources of antioxidants, vitamins, and fiber but contain little fat and energy (Mukherjee *et al.*, 2008). Its leaves are used to treat acute inflammation. A paste of raw cabbage may be placed in a cabbage leaf and wrapped around the affected area to reduce discomfort. Some claim it is effective in relieving painfully breasts in breast feeding women. Also used as an adjuvant therapy for recurrent respiratory papillomatosis, a disease of the head and neck caused by human papillomavirus. Its leaves are used in salad and for preparation of soups. Its leaves are colored dark red or purple. The juice of red cabbage can be used as a home made pH indicator, turning red in acid and blue in basic solutions. Red cabbage can add good amount of carbohydrates, minerals and fiber to the diet. In order to aware the people about nutritional value of red cabbage

the present study was undertaken to determine the mineral constituents and proximate composition.

Moisture was determined by oven dehydration method at 105°C up to the constant weight. Crude protein was determined by estimated the nitrogen content of the food minerals, using micro Kjeldhal method. Crude fat was determined by ether extraction method using soxhlet apparatus. Crude fiber was determined by acid digestion and alkali digestion. Ash content was determined in muffle furnace at 550°C for 6 hours. For all these determinations powdered and oven dried samples were used in triplicate. Food energy calculation was derived by multiplying the percentage of crude protein and carbohydrate by 4.1 and crude fat by 9.3 (Khalil and Saleemullah, 2004). For minerals analysis *viz.*, phosphorus (P) and calcium (Ca), the samples were digested by using $\text{HClO}_4/\text{HNO}_3$ method (Steckel and Flannery, 1965) and for the determination of micro mineral iron (Fe), the samples were digested by dry ash method (Isaac and Johnson, 1975).

Biochemical composition and energy value of red cabbage is shown in Table 1. The moisture content in this vegetable was very high 88.66%. After moisture the second major chemical constituent found was carbohydrate 8.46%, therefore, its energy value was found to be very high. Crude protein content was estimated 0.35%, The crude fat analysis showed that vegetables are deficient in fats (0.25%). This makes them good for health. The result shows that ash contents were 0.88%. The crude fiber content in red cabbage was 1.8%, which lowers the body cholesterol level; consequently decrease the risk of cardiovascular diseases. Iron, phosphorus and calcium were 0.33%, 19.90% and 3.56%, respectively. Fe is an important constituent of Hb. Calcium and phosphorus are the minerals present in the largest quantity