

Exploration of *Bauhinia variegata* (Kachnar) and *Cordia dichotoma* (Lesora) for their Mineral Content

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ABSTRACT

Minerals play an important role in the metabolic regulations of the human body. Wild vegetables and fruits can be important and cheaper sources of minerals. In the present study, *B. variegata* and *C. dichotoma*, two wild foods with their two stages of maturity were analyzed for their mineral content. The study revealed that buds of *B. variegata* and immature fruits of *C. dichotoma* were high in calcium, magnesium, sodium, iron, and zinc than a mature stage. Flowers of *B. variegata* were rich in phosphorus, and mature fruits of *C. dichotoma* were good in phosphorus, potassium and copper content. The study concluded that both plants with two stages of maturity could be utilized as sources of minerals in combating mineral deficiencies.

Keywords: Buds, Calcium, Flame photometer, Immature fruits, Maturity stage.

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INTRODUCTION

Bauhinia variegata (Kachnar) and *Cordia dichotoma* (Lesora) are wild vegetables and fruits grown and used as food in many tribal regions of India. *B. variegata* grows over North-East Indian sub mountainous tract as well as in lower dry regions of India, where its leaves and buds are used as vegetables (Kayang, 2007). *C. dichotoma* is a common fruit tree growing all over India used as food in rural areas (Saini et al., 2005). Compared to conventional cultivated species, wild vegetables and fruits are sometimes superior to the introduced cultivars. The present study was designed to explore the mineral content of *B. variegata* and *C. dichotoma* with their two stages of maturity.

MATERIALS AND METHODS

The study was conducted during 2010-11 in the food analysis lab of College of Home Science, CSK HPKV Palampur. The raw material for the study was procured from the local villages of Palampur. The samples were dried and wet digested (Ranaganna, 2007). Sodium and potassium were analyzed using Flame Photometer. Calcium, iron, zinc, magnesium, and copper were analyzed by the atomic absorption spectrophotometer (Piper, 1996) while phosphorus was determined by vanadomolybdo phosphoric yellow color method (Jackson, 1973).

RESULTS AND DISCUSSION

The mineral content of *B. variegata* buds and flowers is presented in Table 1. Buds and flowers differed in their mineral contents. A remarkable difference was found in calcium, phosphorus, sodium, and magnesium contents of *B. variegata* buds and flowers. Calcium and magnesium contents were higher in buds (800.00 and 337.00 mg/100 g respectively) as compared to flowers (134.00 and 190.00 mg/100 g respectively). Whereas, phosphorus content was higher in *B. variegata* flowers (297.50 mg/100 g) than buds

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(107.50 mg/100 g). The sodium, iron, copper, and zinc contents were also higher in *B. variegata* bud (69.00, 12.80, 7.90 and 6.60 mg/100 g respectively) than in *B. variegata* flower (55.20, 9.90, 3.40 and 5.10 mg/100 g respectively). This might be due to the higher ash content of *B. variegata* buds. But the content of potassium was same (82.80 mg/100 g) in both stages of maturity i.e., bud and flower. The mineral content of *B. variegata* flowers has also been reported in a study by Anonymous (1988). When flowers were analyzed for ash and minerals, it was reported that 100 g edible portion of *B. variegata* flower contained about 1.30g ash. While calcium, phosphorus, and iron contents were reported as 70.10, 74.20 and 6.10 mg per 100 g of edible portion respectively.

The content of minerals also varied in immature and mature *C. dichotoma* (Table 1). Immature *C. dichotoma* was higher in minerals than mature fruits. Calcium, phosphorus and magnesium contents in mature *C. dichotoma* were found to be 212, 310 and 143 mg/100 g, while in immature *C. dichotoma* these contents were slightly higher and were to the tune of 257, 140 and 156 mg/100 g respectively. The

Table 1: Mineral content of *B variegata* and *C dichotoma* (dry weight basis)

Minerals (mg/100 g)	<i>Bauhinia variegata</i>		<i>Cordia dichotoma</i>	
	Buds	Flowers	Immature fruit	Mature fruit
Calcium	800.00	134.00	257.00	212.00
Phosphorus	107.50	297.50	140.00	310.00
Magnesium	337.00	190.00	156.00	143.00
Sodium	69.00	55.20	66.30	63.90
Potassium	82.80	82.80	130.28	150.54
Iron	12.80	9.90	5.90	5.80
Copper	7.90	3.40	2.00	2.50
Zinc	6.60	5.10	4.50	3.80

maximum amount of sodium was recorded in immature fruits (66.30 mg/100 g). Potassium content was high in mature *C. dichotoma* (150.54 mg/100 g) while in immature fruits it was 130.28 mg/100 g. Similarly, iron, copper, and zinc content were higher in immature *C. dichotoma* (5.90, 2.00 and 4.50 mg/100 g). While the corresponding values for these minerals in mature *C. dichotoma*, were 5.80, 2.50 and 3.80 mg/100 g, respectively.

Some variations were found while comparing the results of the present study with the data given by Kaushik and Dwivedi (2004). The values for calcium, phosphorus, zinc, iron and manganese contents analyzed by them were 55, 275, 2, 6 and 2 mg per 100 g of *C. dichotoma* fruit respectively. Duhan et al. (1992) also reported similar values for phosphorus content on dry weight basis. Katiyar et al. (1990) and Valvi and Rathod (2011) have also reported mineral contents of *C. dichotoma* with some variations which may be due to differences in variety, stage of maturity, and agro-climatic conditions.

CONCLUSION

The present study revealed that *B. variegata* and *C. dichotoma*, with the two stages of maturity are rich in various macro and micro minerals. But They can be cheaper sources of minerals in the Indian community and can make an important contribution in combating micronutrient malnutrition as well as providing food security overcoming the mineral deficiencies of the people.

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