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EFFECT OF COOKING IN DIFFERENT TYPES OF VESSELS ON THE NUTRITIONAL COMPOSITION OF AMARANTH LEAVES

Green leafy vegetables coastitute excellent components of the diet in tropical countries. They are rich in minerals, vitamins and proteins. Amaranth coastitutes a singe major group of green leafy vegetables. Studies conducted elsewhere had indicated that the type of containers used for cooking and application of heat have a negative influence on the retention of nutrients.

In the present experiment, twenty day old leaves from red and green *Amaranthus tricolor*

Table 1. Effect of varieties and cooking vessels and their interaction on iron content of red and green amaranth during rainy and summer season (mg per 100 g)

Cooking vessels	Rainy season		Mean	Summer season		Mean
	Red amaranth	Green amaranth		Red amaranth	Green amaranth	
Aluminium	15.05	17.20	16.13	14.82	18.98	16.90
Steel	15.34	17.03	16.19	14.72	18.55	16.64
Alloy	15.45	17.48	16.47	15.61	18.25	16.93
Iron	32.83	34.65	33.74	33.97	35.70	34.84
Copper	14.70	18.05	16.38	15.52	17.93	16.73
Mud pot	15.20	17.70	16.45	14.78	17.90	16.34
Mean	18.10	20.35	-	18.09	21.22	-
CD(0.05) for varieties	0.6450			0.6535		
CD(0.05) for cooking vessels			1.117			1.1493

Table 2. Effect of varieties and cooking vessels and their interaction on ascorbic acid content of red and green amaranth during rainy and summer season (mg per 100 g)

Cooking vessels	Rainy season		Mean	Summer season		Mean
	Red amaranth	Green amaranth		Red amaranth	Green amaranth	
Aluminium	46.0	41.0	43.5	35.0	31.0	33.0
Steel	43.0	38.0	40.5	33.0	29.0	31.0
Alloy	43.0	39.0	41.0	35.0	32.0	33.5
Iron	28.0	23.0	25.5	23.0	20.0	21.5
Copper	19.0	16.0	17.5	14.0	10.0	12.0
Mud pot	44.0	38.0	41.0	37.0	32.0	34.5
Mean	37.21	32.5	-	29.5	25.7	-
CD(0.05) for cooking vessels	-	-	29.5	25.7	-	10.87

varieties grown during rainy and summer seasons were cooked by boiling and shallow frying in aluminium alloy, iron, copper, steel and mud-pot vessels. Known quantities of cooked samples were analysed for protein (Hawk and Oser, 1965), ascorbic acid (AOAC,

1955) calcium and iron (Perkin-Elmer, 1982) and crude fibre (Chopra and Kanwar, 1978). The data collected were subjected to statistical analysis as per methods suggested by Panse and Sukhatme (1957).

Among the different types of vessels tried, it was found that the vessels had no influence on the protein, fibre and calcium contents of the two varieties during cooking, at two seasons. However, a significant influence on the iron content of amaranth leaves was observed during the two seasons when cooked in iron vessel (Table 1) indicating the possible action of the acidity of the amaranth on the surface of the vessel. This finding is in agreement with the reports of Swaminathan (1987) and Devdas *et al.* (1965). However, the other types of vessels had no influence on the iron content of amaranth leaves.

When considering the effect of different types of cooking vessels on the ascorbic acid content of the two varieties of amaranth, it was revealed that copper and iron vessels had a significant influence on the ascorbic acid content of amaranth leaves during the two seasons (Table 2). This may be due to the interaction of copper and iron with ascorbic acid. This finding is supported by the earlier reports of Swaminathan (987) and Borenstein (1977).

College of Agriculture
Vellayani, Trivandrum 695 522, India

N.C. **Jijiamma**
L. Prema

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