

**Research Article**

## **NUTRITIVE STATUS OF SOME CAPPARIDACEOUS PLANT SPECIES OF ARID ZONE OF RAJASTHAN**

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### **ABSTRACT**

Evaluation of nutritive contents from three selected plant species growing in arid zone of Rajasthan was carried out. The roots, shoots and fruits of *Capparis decidua*, *Cleome gynandra* and *Cleome viscosa* collected from three different areas Kolayat, Ratangarh and Suratgarh of north-west Rajasthan were analysed for nutritive contents. Crude protein (16.26%) were found maximum in fruits of *Capparis decidua* collected from Kolayat and Crude fibre (41.35%) and Total carbohydrates (84.70%) in the shoots of *Capparis decidua* collected from Suratgarh While Crude fat (4.58%) in fruits of *Cleome viscosa* collected from kolayat.

**Keywords:** *Nutritive Contents, Capparidaceoud Plant Species, Arid Zone, Rajasthan*

### **INTRODUCTION**

The plants of arid zone of Rajasthan are potential source of nutritionally important compounds. The animals and human beings in this region are fully dependent on these plants for food, fodder, fibre and fuel.

The plant species growing in this region besides their medicinal importance may contain sufficient amount of nutrients to be considered as livestock feed.

A number of arid zone plants have been analyzed for their nutritive contents by various workers (Kapoor *et al.*, 1988; Singh *et al.*, 1989, Mathur *et al.*, 1989; Sharma and Sen, 1993; Kapoor and Ritu, 2001; Kapoor and Sarika, 2002; Kapoor *et al.*, 2004; Kapoor *et al.*, 2004; Gaur and Kapoor, 2008, Kapoor and Kumar, 2015; Kapoor and Swami, 2016; Kumar and Kapoor, 2016).

### **MATERIALS AND METHODS**

The present investigation deals with nutritive contents of the roots, shoots and fruits of *Capparis decidua*, *Cleome gynandra* and *Cleome viscosa* of family Capparidaceae. The plant parts were collected from three different sites Kolayat, Ratangarh and Suratgarh of north-west Rajasthan. The roots, shoots and fruits were separately dried at 100° C for 15 minutes so as to inactivate the enzymes followed by 60° C till a constant weight was achieved. These dried samples were powdered using 20Mesh screen in Willey mill and then subjected to chemical analysis by method (A.O.A.C., 1995) for Crude protein, Crude fibre, Crude fat, and Total Carbohydrates.

### **RESULTS AND DISCUSSION**

Concentration of the nutritive contents in the various plant parts (roots, shoots and fruits) of all the selected plant species collected from three different sites i.e. Kolayat, Ratangarh and Suratgarh are presented in Table- 1.

The maximum (16.26%) amount of crude protein content was estimated in the fruits of *Capparis decidua* collected from Kolayat area, while minimum (8.40%) in the roots of *Cleome gynandra* collected from the same area.

Maximum (41.35%) crude fibre content was found in shoots of *Capparis decidua* collected from Suratgarh area and minimum (11.0%) in roots of the *Cleome gynandra* collected from the Kolayat area.

Crude fat (ether extract) concentration was found maximum (4.58%) in the fruits of *Cleome viscosa* collected from Kolayat area, while minimum (0.86%) in roots of *Capparis decidua* collected from Ratangarh area.

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**Table 1: Nutritive Contents of Selected Plant Species in Percentage on Dry Matter Basis  
 Values are Mean  $\pm$  SE (Five Samples for each Plant)**

Nutritive Contents	Sites	<i>Capparis Decidua</i>			<i>Cleome Gynandra</i>			<i>Cleome Viscosa</i>		
		Roots	Shoots	Fruits	Roots	Shoots	Fruits	Roots	Shoots	Fruits
Crude Protein	Kolayat	10.51	9.35	16.26	8.40	11.26	10.20	11.30	12.46	9.23
		$\pm 0.18$	$\pm 0.22$	$\pm 0.21$	$\pm 0.14$	$\pm 0.08$	$\pm 0.02$	$\pm 0.19$	$\pm 0.22$	$\pm 0.12$
	Ratangarh	11.45	10.12	14.19	9.89	12.20	10.30	12.60	13.22	10.19
		$\pm 0.32$	$\pm 0.18$	$\pm 0.02$	$\pm 0.15$	$\pm 0.02$	$\pm 0.56$	$\pm 0.26$	$\pm 0.19$	$\pm 0.28$
	Suratgarh	10.49	9.20	15.00	10.00	11.09	9.96	10.20	12.91	9.29
		$\pm 0.06$	$\pm 0.20$	$\pm 0.48$	$\pm 0.24$	$\pm 0.21$	$\pm 0.11$	$\pm 0.04$	$\pm 0.04$	$\pm 0.24$
Crude Fibre	Kolayat	20.18	40.24	16.42	11.00	22.00	18.12	12.10	22.48	12.21
		$\pm 0.24$	$\pm 0.16$	$\pm 0.12$	$\pm 0.35$	$\pm 0.81$	$\pm 0.04$	$\pm 0.57$	$\pm 0.09$	$\pm 0.32$
	Ratangarh	18.92	39.92	17.81	19.21	30.15	18.19	11.31	24.10	19.72
		$\pm 0.08$	$\pm 0.20$	$\pm 0.42$	$\pm 0.42$	$\pm 0.15$	$\pm 0.24$	$\pm 0.18$	$\pm 0.48$	$\pm 0.05$
	Suratgarh	24.34	41.35	17.30	18.13	28.10	19.11	11.19	32.51	17.14
		$\pm 0.19$	$\pm 0.08$	$\pm 0.36$	$\pm 0.56$	$\pm 0.21$	$\pm 0.34$	$\pm 0.43$	$\pm 0.47$	$\pm 0.36$
Crude Fat	Kolayat	1.12	2.23	3.25	2.98	3.10	4.19	2.10	3.12	4.58
		$\pm 0.74$	$\pm 0.49$	$\pm 0.41$	$\pm 0.36$	$\pm 0.54$	$\pm 0.40$	$\pm 0.28$	$\pm 0.22$	$\pm 0.38$
	Ratangarh	0.86	1.80	4.10	2.40	2.89	4.25	1.88	2.68	3.66
		$\pm 0.28$	$\pm 0.22$	$\pm 0.32$	$\pm 0.26$	$\pm 0.18$	$\pm 0.15$	$\pm 0.40$	$\pm 0.15$	$\pm 0.46$
	Suratgarh	1.14	1.12	3.18	2.86	3.92	4.14	2.32	3.24	3.34
		$\pm 0.58$	$\pm 0.17$	$\pm 0.59$	$\pm 0.09$	$\pm 0.34$	$\pm 0.41$	$\pm 0.38$	$\pm 0.54$	$\pm 0.26$
Total Carbohydrate	Kolayat	84.13	82.46	75.57	79.27	74.78	75.31	76.70	74.12	76.39
		$\pm 0.08$	$\pm 0.47$	$\pm 0.24$	$\pm 0.28$	$\pm 0.29$	$\pm 0.70$	$\pm 0.38$	$\pm 0.65$	$\pm 0.54$
	Ratangarh	82.89	82.84	76.70	68.47	76.85	76.43	67.20	73.70	76.31
		$\pm 0.36$	$\pm 0.26$	$\pm 0.27$	$\pm 0.12$	$\pm 0.12$	$\pm 0.28$	$\pm 0.24$	$\pm 0.44$	$\pm 0.35$
	Suratgarh	84.22	84.70	76.46	79.13	75.18	76.18	78.40	73.73	77.65
		$\pm 0.46$	$\pm 0.24$	$\pm 0.32$	$\pm 0.26$	$\pm 0.44$	$\pm 0.28$	$\pm 0.28$	$\pm 0.32$	$\pm 0.45$

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Maximum (84.70%) total carbohydrate contents was found in the shoots of *Capparis decidua* collected from Suratgarh area and minimum (67.20%) in the roots of *Cleome viscosa* collected from Ratangarh area.

### Conclusion

The present study indicates that these capparidaceous plant species growing in the arid zone of Rajasthan have sufficient amount of nutritive contents, which may be useful as feed and fodder for the livestock.

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