

Ethnomedicinal Cucurbits of Ajmer District with Special Reference to Raoli-Todgarh Wildlife Sanctuary of Rajasthan



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Abstract

Ever-growing population, climate change and poverty are causing havoc to the population of underdeveloped countries. There are approximately 1600 plant species (including 200 species of cucurbits) identified as rural food. The cucurbits include edible, wild, semi cultivated and inedible, wild medicinal plant. These cucurbits are treasure trove of highly medicinal and physiochemical compounds and rich in micronutrients. Cucurbits are very useful in daily dietary supplements such as – *Citrullus lanatus* linn *Momordica balsamina* and *Cucumis callosus*.

On the other hand certain cucurbits are of pharmaceutical and medicinal values such as *Corallocarpus epigaeus* (anti oxidant properties) and *Citrullus colocythis* (linn) schrad (Anti diabetic properties). Explored plant diversity of Cucurbitaceae includes the plant which are of medicinal and economic values found across the valleys & hills of Ajmer district Rajasthan.

Keywords: Dietary Supplements, Evergrowing Population, *Citrullus Lanatus*, Sustainable Food Supply, Indigenous Medicines.

Introduction

Traditional and Indigenous cucurbits are used as vegetables and fruits by the rural communities. They are backbone of rural economy and easily available as fruits and vegetables in the remote areas such as hilly tracts and deserts (such as Thar desert) Most cucurbits are dried, preserved and kept for unfavorable seasons in Rajasthan and are used as "dry vegetables" in rural areas. The Cucurbits are very useful and provide food security and sustainable supply of food items as well as are used as traditional indigenous medicines.

According to survey of Food and Agriculture Organisation, approximately 1 billion people in the world use wild foods in their daily diet. There are approximately 1400 species in South Africa and 200 species in Indo-Malayan region and Thailand identified as emergency and famine foods. The knowledge of the medicinal properties and usefulness of many traditional indigenous cucurbits is confined to the traditional vanders and vaidyas in the rural areas and has not been much explored by the modern pharmacological institutions and other scientific-urban communities.

Cucurbits are widespread in their distribution as they are found in hills, mountains, plains and deserts of the globe. Cucurbits are rich in their phenolics and flavonoids which are responsible for their antioxidant properties. The roots and fruits of few cucurbits possesses anti-diabetic properties. At the same time they are also rich in Vitamin C, Vitamin E and Carotenoid content.

Review of Literature

Botanical explorations in Rajasthan were initiated by Jacquemont who was a naturalist visited Aravali during his journey from Delhi to Bombay via Ajmer and Neemuch. His work was published in his "Sketches of Ajmer Merwara" Later it was Sir George King published his paper "Sketch of Flora of Rajputana", (1878). Later Duthie's (1886) report on botanical tours in Rajputana were published, followed by Macadam who published "List of Plants of Mt. Abu" (1890). Many Floras were published following these works such as "Flora of upper gangetic plain, (including Rajputana) by Duthie (1929) and "Flora of Indian desert" by Bhandari M.M. (1978). "Flora of Rajasthan" Vol. I, II and III by B.V. Shetty and V. Singh, published by Botanical Survey of India in 1988.

Recent works specially on Cucurbitaceous vegetation is carried out by a number of workers such as "Ethnobotanical aspects of some plants of Aravali hills in North Gujrat" (2002) published in Ancient Science of Life, "A Review on the Economic Uses of Species of Cucurbitaceae and their sustainability in Nigeria (2017) published in American Journal of Plant Biology, "Cucurbitaceae The family that nourishes and heals" (2018) published by Stephen O.F., Aderiike A.A., Devid O.J. in Micro Medicine.

Aim of Study

The current work deals with the study of ethnobotanical cucurbits of medicinal importance. The objective of the study was to make botanical explorations and tours to investigate the cultivated, semi-cultivated and wild cucurbits of the Raoli-Todgarh Wildlife Sanctuary, Ajmer (Rajasthan). At the same time attempts were made to find out distributional pattern of the cucurbitaceous vegetation across the Raoli-Todgarh Wildlife Sanctuary, and adjoining area of the Ajmer District, Rajasthan.

Material and Methods

Botanical exploration and taxonomical tours were frequently made in the years of 2014, 2015, 2016, 2017–18 to explore the cucurbit diversity of the medicinally and Ethno botanically important species. The plants were photographed, the plant material and specimens were collected and dried up for herbarium preparation and they were later preserved and kept in the Herbarium of Samrat Prithviraj Chauhan Govt. College, Ajmer.

A checklist of the wild and semi domesticated cucurbits were made. The species were identified and studied by authentic references such as 'Flora of the Indian Desert' (1990), M.M. Bhandari, 'Flora of Rajasthan' Singh V and Shetty B.V., Volume I, II & III. The photo sheets of the identified ethnomedicinal cucurbits enlisted is given in the Table.

Ethno Medicinal Cucurbits of Raoli-Todgarh Wildlife Sanctuary

Cucurbits are very important rural and famine foods in remote areas of the Indian sub-continent. Ajmer district and Raoli-Todgarh wildlife sanctuary has a variety of cucurbits dominated by cucurbit vegetables and wild medicinal cucurbits.

Table: List of Cucurbits and their ethnomedicinal importance

S. no	Botanical Name	Comman Name	Locality	Ethnomedicinal importance
1	<i>Corallocarpus conocarpus</i> (Dalz ex & Gibs) Clarke & Hook.	Kadvi Mirch – bel	Raoli – Todgrah wild life sanctuary	Wound healing
2	<i>Corallocarpus epigaeus</i> (Rottle & wild) Clarke.	Nai/ Mirch – bel	Gaushala area MDS university Campus	Anti-inflammatory
3	<i>Ctenolepis cerasiformis</i> stocks syn: <i>Blastania fimbristipula</i> (Fenzl)	Chhoti Ankh Phutani	Gaushala area MDS university Campus	Cattle feed
4	<i>Dactyliandra welwitschii</i> Hooks	Ankh phod ki bel	Gaushala region Lohagal	Cattle feed
5	<i>Citrullus colocynthis</i> (Linn) Schard	Indrayan or Tumbo	Pushkar sand dunes	Highly medicinal plant
6	<i>Citrullus lanatus</i> (Thumb) Matsumara & Nakai	Matiro	Pushkar	Cultivated for fruit in desert, rich in water content.
7	<i>Coccinia grandis</i> (Linn) J.O. Voigt.	Golenda or Bari-shivlingi	Pushkar Kayad village	Used for fertility improvement.
8	<i>Cucumis propheterum</i> Linn	Adak Kachario	MDS University campus	Wound healing
9	<i>Cucumis callosus</i> (Rottl) Cong.	Khati Kachri	Pushkar	Dry Vegetable
10	<i>Cucumis melo var agrestis</i>	Fut-Kachari	Pushkar	Eaten as a fruit on ripe
11	<i>Cucumis melo var mardica</i> (Roxb) Duthie & Fuller	Kachari	Raoli-Todgarh/MDS	Vegetable
12	<i>Luffa acutangula</i> (Linn) Roxb. Var amara	Kadvi-Toru Rantorai	Raoli Todgarh	Cattlefeed
13	<i>Luffa acutangula</i> (Roxb) Hort Beng	Dutar toru	Mayapur village Tabiji	Cattle feed
14	<i>Momordica balsamina</i>	Bar-Karelo	Bujarel village (Raoli) Todgarh	Used as vegetables anti-diabetic
15	<i>Momordica dioica</i> Linn ex Willd	Kankero or Kikoro	Javaja	Used as vegetables (Antidiabetic)
16	<i>Mukia maderaspatana</i> (Linn) M Roem syn: <i>Melothria maderaspatana</i>	Aunkharo (Linn) Cogn	Gouridham, Raoli Todgarh	Cattle feed

PHOTO PLATES



Corallocarpus epigaeus (Rottle & Wild) clarke



Dactyliandra welwitschii Hooks



Cucumis melo var mordica (Roxb) Duthie & Fuller



Mukia maderaspatana (Linn) M Roem syn:
Melothria maderaspatana

PHOTO PLATES



Cucumis prophetorum Linn



Ctenolepis cerasiformis Stocks syn:
Blastania fimbristipula (Fenzl)



Cucumis callosus (Rottl) Cong



Citrullus colocynthis (Linn) Schard

Result & Discussion

Cucurbitaceous flora of Ajmer district studied in the area include total 16 semi domesticated and wild species of plants.

Wild cucurbits include mainly the pharmaceutical and medicinal plant species are :

1. *Corallocarpus epigaeus* (Rottle and Wild) Clarke, Hook Common name, Mirch-bel.
2. *Citrullus colocynthis* (Linn) Schards, Indrayan.
3. *Coccinia grandis* (Linn) J O Vogit, Golendo.
4. *Melothria maderaspatana* (Linn) M Coen, Aukharu.
5. *Momordica dioica* Linn ex Wild, Kikora.
6. *Ctenolepis cerasiformis* Stocks, Ankh – phutani.

At the same time there are few species studied and explored are basically semi – cultivated and escapers include the rural emergency and famine food in India, South Asia and Africa. These species are used as food items and supplements in rural world are:

1. *Momordica balsamina* Linn, Karela.
2. *Momordica dioica* Linn ex Wild, Kikoro.
3. *Cucumis callosus* (Rottle) Cogn., Kachari.
4. *Cucumis melo var momordica* (Roxb) Duthie & Fuller, Karela.
5. *Cucumis melo var agrestis*, Futkachari.
6. *Citrullus lanatus* (Thumb) Matsumara & Nakai, Matiro.

Conclusion

The explored plants of the cucurbitaceous group belongs to few cultivated species including *Momordica balsamina*, *Momordica dioica*, *Cucumis callosus*, *Cucumis melo var momordica*, *Cucumis melo var agrestis* and *Citrullus lanatus*.

Other plant species which are semi-cultivated or wild species include *Corallocarpus epigaeus*, *Citrullus colocynthis*, *Coccinia grandis*, *Melothria maderaspatana*, *Momordica dioica* and *Ctenolepis cerasiformis*.

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