

Food and Biodiversity

The present day crops and vegetables originated from different ecosystems. However, over the years due to the movement of human beings, animals, weather and wind currents, vegetable crops have moved into a variety of ecosystems. Agriculture changed from nomadic to subsistence and then to agribusiness and sophisticated 'pharming'. In the past decade or two, due to the rapid advances in science and technology, particularly in food, nutrition, health and biochemistry, human beings are more aware of health and longevity.

Just three crops – maize, wheat and rice - account for about half of the world's consumption of protein and calories. 95% of the world's food needs are provided for by just 30 species of plants. In stark contrast, an estimated 7,500 species are considered edible in the world today. Presently the world is primarily concerned with conserving the biodiversity preservation of major food crops. It is extremely important to focus also to preserve the biodiversity of indigenous vegetables, which may not stand a chance to survive the onslaught of human development.

Rich biodiversity in perennial plants for vegetable purposes exists worldwide. Southern part of Rajasthan is predominantly a tribal dominated area having harsh climate, hence, only indigenous crops which are hardy, drought resistant and have short duration grow well. Some of them namely *kachari* (*Cucumis melo* var. *agrestis*), snap melon (*Cucumis melo* var. *momordica* Duthie and Fuller), spine gourd (*Momordica dioica* Roxb. ex Wild.), bitter melon (*M. balsamina* L.) and hill colocynth [*Cucumis hardwickii* (Royle) Gabaev, grow naturally during rainy season and generate good source of income for the locals. These vegetables possess very good nutritive and medicinal value with resistance to biotic and abiotic stresses.

Indigenous perennial plants that are used for vegetables can be grouped into three broad categories based on fruits used as vegetables, plant parts used as vegetables and traditional perennial vegetables.

The important plants whose fruits are in general used as vegetables are *Madhuca longfolia* (mahua), *Capparis decidua* (kair), *Carissa carandas* (karonda), *Cordia myxa* (lasora), *Embllica officinalis* (aonla), *Prosopis cineraria* (khejri), etc. Similarly some important perennial plants whose plant parts are predominantly used for vegetable purposes are *Moringa oleifera* (drumstick), *Murraya koenigi* (karri patta) and *Sesbania gradiflora*. Indigenous perennial plants that are traditionally cultivated only for vegetable purposes are *Coccinia indica*/ *C. cordifolia* (tindori), *Momordica dioica* (kinkora) and *Trichosanthes dioica* (parmal). Even though the current exploitation of many plants by the rural and tribal populations is restricted in the areas of their origin, some of them have shown equal acceptability among the urban population. Many of the above plants are known for high nutritional and medicinal values.

Mewar Cuisine and Biodiversity

Some of the most popular dishes of southern Rajasthan are dal, bati and churma, with an assortment of spices, besan ki misi puri, lachha parantha. The tastiest curries are based on the use of pulses or gram flour. Dry fruits, spices and yogurt are used in many delicacies. The region is also popular for the chutneys that are made out of local spices such as coriander, mint, garlic and turmeric. This region of Rajasthan is also known for their fancy sweet dished like ladoos and besan chakki. The pulses flour are used for the snacks in form of papad, mangodi, gatta etc.

Overall, the main ingredient of the dishes includes all the major cereals such as wheat, maize and bajra. Gram flour is yet another main constituent of the curries and sweet recipes. Further, chutneys formed by different formulation of onion, garlic, mint, coriander, pepper etc. are among other major part of regional cuisine. Turmeric and tamarind are among the most widely used ingredients in many recipes. Kair, Aonla, Cordia and Mango are among the major fruits used in the food habits in form of dry and preserve food items as pickles.

Important Ingredients of Mewari Cuisine

Cereal and Legumes: Wheat, Maize, Bajra, Jowar, Urd Bean, Moong Bean, Chickpea, etc.

Fruits, Vegetables and Tubers: Cucumber, Radish, Garlic, Onion, Tamarind, Carissa, Cordia, Kair, Emblica, etc.

Spices: Pepper, Coriander, Mint, Turmeric, Asafoetida, Clove, etc.

Maize (*Zea mays*) is a staple crop for the Bhil tribes in the Aravallis. In northern Rajasthan, maize is a delicacy eaten with butter and the green leaf of the mustard plant.

Wheat (*Triticum* sp.) is cultivated on irrigated land.

Bajra (*Pennisetum typhoideum*) is consumed by the rural poor, particularly the nomads.

Jowar (*Sorghum vulgare*) is an important pulse crop during the monsoon.

Barley (*Hordeum vulgare*) is the second largest crop in Rajasthan.

Gram (*Cicer arietinum*) is another major pulse crop grown in rabi.

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Present Status

Rajputana Society of Natural History (RSNH) - Advisor & Manager - Project Boond

Experience

Paid work: **WWF-India Bharatpur Field Office** (Water School Program and other Field Office Scientific Research in Conservation/Wildlife Sciences), **WWF-India Mt Abu field Office** (Biodiversity assessment and Mass Conservation Programs), **BNHS, Mumbai** (Scientific surveys and documentation of IBAs, surveys of threatened avifaunal status and distribution), **TigerWatch** (Trapping of Man-eater Panthers in Pratapgarh), **Vishwas Sansthan** (Environmental Specialist for DPIP), etc.

Honorary/ Freelance work: **Environmental Writer** (The Viewpaper/ National Magazines/ Regional Newspapers etc.), **Member (Environmental Expert)** of Committee of Renovation, Reparation of Urban Structures on Abu Hills instituted by CEC, Honorable Supreme Court of India, **Scientific Advisor** of regional NGO – Rajputana Society of Natural History (RSNH), **District Convener – Udaipur** of National Environmental Science Academy (NESA), **Resource Person** for Dept. of Science & Technology and Dept of Forest (Wildlife Wing: Bharatpur, Udaipur and Mt Abu)/ (Territorial Forests: Sirohi), **Environmental Scientist** for INTACH, **North India Coordinator** for Proact Campaign International Network

Research Work: Working on the aspects of anurans, birds and conservation issues related to youth, water, climate change, eco-tourism in southern Rajasthan.

Academic Qualifications: Ph.D. (on submission), M.Sc (Environmental Sciences)

Other Qualifications: **Certificate Courses** in Climate Change & Disaster Management (2009)/ Ornithology (2000)/ Computers (1999)/ Urdu Script (2001)/ French Language (2001)/ English Language (1999); **The Viewpaper Internship** in Journalism (2008); **Regional Training Course** on Science Writing & Journalism (2002); **National Training Program** on Role of Educational Institutions in Renewable Energy Technology Transfer (2001); **Entrepreneurship Development Programme** (1999)

Awards: **Environmental Award** (5 June 2008) for the contribution in the field of Environment and Nature Conservation in Mewar by Dept of Environmental Sciences, M L Sukhadia University, Udaipur, Rajasthan, India and Paaniram Society. **Life Membership of PETA** for the contribution in the activities related to animal welfare since 2002.

Papers Presentation: International- 10, National- 15, Regional- 09

Publications: **Research Articles: 05, Short Communications: 06, Unpublished Reports: 03, Books: 01**

