

SHORT COMMUNICATION

## Traditional vegetables and their use pattern among the farming communities of western Rajasthan.

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In Rajasthan, the hot arid zone covers 12 district of whole western Rajasthan. It covers the 61 % area of the Rajasthan State and characterized by an annual rainfall between 100-500 mm with a coefficient of variation (CV) varying from 40 -70 per cent. low and erratic rainfall combined with extremes of temperature (450-500 cal/cm<sup>2</sup>/day); low relative humidity; high potential evapo-transpiration value ranging from 1600 mm in eastern part and 1800 mm in western part of the region (Yadav and Soni,2008 ). The relative humidity (RH) is highest during monsoon season (July August) and may go upto 60-80 %. Other important characteristics of hot arid zones of the country are, hot and high wind velocity ; poor soil condition, ground water is poor, brackish and saline in reaction; high sunshine and abundant solar energy leading to high rate of evapotranspiration (average 05-10 mm; poor vegetation; frequent occurrence of drought and frost; difficult to execute agro-techniques; difficulty in post harvest handling and marketing owing to limited and inefficient transportation and marketing facilities. In such harsh and hard climatic conditions, the local farmers grow several traditional vegetables for their own use and surplus for earning money and livelihood. These vegetables are used not only as fresh in current season but also through out the year after converting them in some preservation form of in the form of value addition. They are the major rich source nutrition and daily food staff. The farmers/farming communities prepare various traditional value added products of above vegetables using their own talent/traditional knowledge for their own consumption and selling surplus to local people/markets to earn money too. Thus, the present study was conducted to evaluate the traditional vegetables and their use pattern among the farming communities in hot arid region of western Rajasthan.

The present study was conducted during 2012-2014 in two districts of hot arid zone of western Rajasthan namely; Bikaner and Churu. These districts were selected purposively because they are presently major district of hot arid zone and majority of the farmers of these districts grow various traditional vegetables for their consumption and value addition purpose of the same. Further, two Tehsil were selected randomly from each so selected districts for study purpose. Thus, a total of 04 Tehsils were selected randomly amongst all above districts. Further, 05 villages (one big, one medium and one small village to avoid sampling biasness) were selected from each so of selected Tehsils for the study point of view. Thus, a total of 20 villages (including big, medium, and small) were selected for the study. Further, 09 farmers (03 big, 03 medium and 03small farmers were selected to avoid sampling biasness) were selected randomly amongst each of so selected 30 villages. In this way, a total of 180 farmers (respondents) were selected for the present study to get their targeted responses and inferences of the study. The farmers/ respondents were individually contacted and interviewed. In addition, to strengthen the individual response and clarification about some facts, group discussions with respondents were also held as per need. The data/ responses of farmers/ respondents were recorded on a semi-structured specially prepared for this study. At the end, the targeted data/information so collected were coded, decoded, compiled, tabulated and analyzed with help of reliable statistical tool and techniques like average, percentage, frequencies, etc. to get final inferences of the study.

### Traditional vegetables grown :

During the study, it was found that *kankora*, *kundru*, pods of *khinp* (*Leptadeia pyrotechnica*), amaranth( *chandlai*), fenugreek, drumstick, chenopod (*bahtua*), spiny brinjal, sangari of khejri, indian aloe, spinach, carrot, brinjal, bottle gourd, radish, sangari of radish, onion, fog flower buds, clusterbean pods, mothbean pods and products, cowpea pods and products, green gram pods and products, land caltrops, mustard leaves, gram leaves, black nightshade(*makoa*), *giloy*, etc. are the major traditional vegetables which are

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grown in hot arid regions and used as fresh in current season or throughout the year after converting them in the form of value addition. Except these, *kachari*, *mateera*, snapmelon, round melon, etc. are the other major traditional vegetables which used by the farmers/ local peoples of the hot arid region as afresh in current season or in the form value added vegetables through the year. Similar type of finding were reported by Meena, *et.al*, 2009 that the major arid vegetables grown and consumed in different forms by the farmers of hot arid environment on small scale (0.10 ha) to large scale (2.50 ha) in different cropping systems during Karif were: *mateera* (*Citrullus lanatus*), snapmelon, *kachari* (*cucumis callosus*), brinjal, bottle gourd, ridge gourds, clusterbean, round melon, Indian aloe, okra, tomato, chilli, etc. The use pattern as observed/reported during the study by the respondents/user is presented in nutshell in Table 1. The local people of the hot arid regions have a lot of experiences and ancestral

knowledge through which they prepare various value added products arid fruits and vegetables for earning money and for their own consumption in future. Such kind of major value added products as reported by the local peoples are as follows.

Table 1, reveals that several kind of traditional vegetables are consumed by the farming communities grown by the farmers in study area (Bikaner and Nagaur district) of the hot arid region of western Rajasthan. The majority of the farmers/ local people of the study areas use the vegetables as fresh or after dehydration or value addition in their daily diet throughout the year. They convert them in form of value addition in different forms and use them as preserved fruits/ vegetables as their daily dietary food stub. The farmers of the study area, had a lot of own wisdom and experiences through which they prepare various value added products of arid fruits and vegetables for earning money and for their own consumption. The major value added products as

Table 1. Use pattern of major traditional vegetables among the farming communities.

Sr. No.	Vegetable	Mode of conversion and consumption	consumers (%)
1	Mateera loaia	Vegetable, chutney, <i>rayata</i>	62-89
2	<i>Kachri</i>	Vegetable (pure and mixed both), pickle, powder, <i>chatuney</i>	92-100
3	Snapmelon	<i>Vegetable</i> (pure and mixed both), <i>pickle</i> , <i>shek</i> , <i>Jam</i>	88 -100
4	Brinjal	Vegetable, <i>bhurita/ chatuney</i>	55 -78
5	Bottle gourd	Vegetable, <i>bhurita/ chatuney</i> , <i>rayata</i>	54 -74
6	Round melon (Local)	Vegetable, <i>chatuney</i> , <i>rayata</i>	76-86
7	Indian aloe	Vegetable, pickle, <i>chatuney</i>	27-38
8	Clusterbean (veg. - local)	Vegetable (pure and mixed both), pickle	96 -100
9	Khejri sangari	Vegetable(pure and mixed both),, p ickle, matur e <i>Khokha</i> powder	91 - 100
10	Ker	Vegetable, pickle, <i>chatuney</i> , <i>powder</i> ,	51-71
11	Fogala (dried flowers buds of Phog)	Vegetable(pure and mixed both),, <i>rayata</i>	45-61
12	Fenugreek	Vegetable(pure and mixed both), <i>rayata</i> , spice, mixed forms	38 - 58
13	Moth bean	<i>Vegetable/ dal</i> (pure and mixed both), <i>papad</i> , <i>mangodi</i> . <i>kari</i> , <i>rayat</i> , <i>chapati</i>	68-82
14	Green gram	<i>Vegetable/ dal</i> (pure and mixed both), <i>papad</i> , <i>mangodi</i> . <i>kari</i> , <i>rayat</i> , <i>chapati</i>	49 - 69
15	Cow pea	<i>Vegetable/ dal</i> (pure and mixed both), <i>mangodi</i> . <i>Kari</i> , <i>chapati</i>	48 - 70
16	Khinpoli (pods of Khinp)	Vegetable, pickle <i>Rayata</i> , <i>Chauney</i>	39 - 58
18	Local mashroom	Vegetable, pickle	35-57

prepared by farmers/ local peoples by using their own indigenous technological knowledge (ITKs)/ traditional technological knowledge were: pickles of *sangari* of khejri, kachri, ber, ker, lasora, tumba, clusterbean, local mushroom, carrot, chilli, round melon, Indian aloe, karonda, aonla, brinjal, etc. The dehydrated products like dehydrated pods (*sangari*) of *khejri*, clusterbean, khinp, mothbean, green gram; dehydrated kachri, snapmelon( fofalia), round melon, local mushroom, bottle gourd, carrot, *ker*, *lasora*; dehydrated leaves of gram, fenugreek, bathua, mustard, carrot, spinach, flower buds of Phog (*fogle*); *shek*/ juice of mattera, kachri, snapmelon, bottle gourd, bitter gourd, ber, aonla; jam/ jelly of karonda, ber, aonla, snapmelon, kachri, bottle gourd; dry powder of kachri, ker, lasora; roused seeds, *magaj*, *laddu*, cold drinks, oil, sweets of mateera seeds; *rayata* and other recipes of fog, bathua, bottle gourd, fenugreek, round melon, spinach, kinpoli, etc. were prepared by farmers/ local peoples regularly as per season and availability of the above fruits and vegetables. Meena *et. al.*, 2012, also found during his research study that there was high demand and consumption of value added products of *kachri* in localities/ local markets/villages of the hot arid regions of western Rajasthan. Immature fruits of snapmelon are generally used as salad, while ripe fruits are consumed as dessert. In recent times, the juice of snapmelon is gaining

popularity as a refreshing drink due to its cooling effects (Pareek *et al.*, 1999). Snapmelon is rich in nutritional attributes; 100 g edible fruit of snapmelon contains 15.6 g carbohydrates, 18.6 mg vitamin C, and provides 74.0 kcal energy (Goyal and Sharma, 2009).

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