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Kachra (*Cucumis melo*)

An under Utilised Gift of Nature

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Kachra (*Cucumis melo*): An under Utilised Gift of Nature

Commonly known as *Snap melon* in English, *Phoot kakdi* in Hindi and *Kachra* in Rajasthani/ Marwari, *Cucumis melo* belongs to the family Cucurbitaceae. It is an annual creeper type of plant, which is cultivated or grown during monsoon season. The species is drought tolerant to a large extent and thrives well in the regions experiencing low rainfall and hot climate conditions. It is monoceous plant and during early stage of flowering male flowers are produced in abundance, however with passage of time both male and female flowers are produced in more or less equal proportion.

In arid western Rajasthan, commonly referred as Thar Desert plants of *C. melo* come out of the soil with onset of monsoon season from the existing soil seed bank on agricultural fields, field boundaries and at and around houses and dhanis. The farmers also cultivate the plant as a mixed crop with other prominent crops of kharif season viz., pearl millet, mung bean, moth bean, seasemum, cowpea, clusterbean, etc. Being a cross pollinated species and specific attribute to hybridize easily with other Cucurbitaceous crop of cucumber group, it exhibits tremendous diversity in fruit size, shape, colour, quality and taste. However, such important crop like *C. melo* lose importance as farmers give maximum attention to accumulate companion staple crops. The crop of *C. melo* is extremely short duration and its ripening period is also too short, consequently swarm of fruits come in local market with no buyers at all. Moreover, keeping quality of the fruits is strikingly short due to high pulp and moisture content. However the fruits are rich source of carbohydrates, vitamins, minerals, antioxidants and dietary fiber.

CAZRI Initiatives

CAZRI initiated work on *C. melo* three years back with a view to find its production – processing potential, which is hither to scientifically unknown or even if attempted was very fragmentary in nature. Low and abrupt rainfall and droughts followed by consecutive food scarcity among human population is a commonly occurring phenomenon in hot arid regions. Over the last decades nutritional surveys conducted in these regions have indicated that food basket has limited food variety and quality, especially in rural setting. People get marginal income from agricultural fields, therefore, restrict themselves to what is available on their fields. Continuous low availability of nutritious food have thrusted population into chronic malnutrition conditions leading to permanent nutritional dwarfing of population. Lack of knowledge is another important cause of malnutrition. Many nutritious fruits such as *C. melo*, *Ziziphus* spp. are available in arid western Rajasthan but have limited utility among people.

Development of *C. melo* Value Chains

- To develop the value chain for this poor man's fruit for elite class, we started intervention by utilizing ITK of *Barani Bari* of Bikaner area. Ten demonstrations on farmers fields at village Birai, Jhinjhinyala, Rajabundh, Belwa, Chaupasani and Khudiyala around Jodhpur were laid. As no standard variety of the fruit was available, seeds of selection AHS-82 procured from CIAH, Bikaner were used for raising crop. At first instance we motivated farmers to take risk of sowing seeds in early spring i.e. second fortnight of February on *limited irrigated ber orchards and mustard fields to take advantage of residual moisture.* The risk taken paid dividends and after 45 days of sowing, average yield obtained by the farmers per hectare was 40 kg day^{-1} continuously for next 30 days. As no other fruit crops

of arid zone was available during the season, it was sold at high price of Rs. 15-20 per kg, resulting an additional average gross income per hectare to the tune of Rs. 21,000. These fruits generally found the way as a table fruit for salad in households of elite classes and restaurants during hot month of April.

The traditional crop of *C. melo*, available in throw away prices during kharif season was used for processing. The pulp of fruit was used to prepare squash, jam, cussar, laddoo and melo sip (ready to drink preparation).

- Nutritive value of *C. melo* (per 100 g referred values)

	Dry Weight basis	Fresh Weight basis
Carbohydrate	77.66 g	15.66 g
Protein	1.84 g	0.37 g
Fat	5.60 g	1.12 g
Fiber	6.72 g	1.34 g
Ash	8.18 g	1.64 g
Energy	395.28 K. cal	79.29 K. cal

Process Technology for Melo Sip

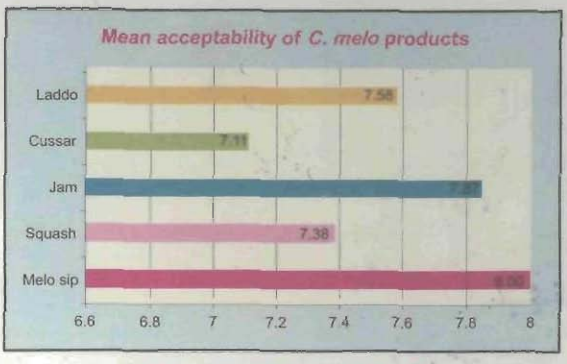
Carbohydrate: 104 g, Protein: 0.56 g, Fat: 1.71 g, Energy: 440 K. cal per 550 ml

Organoleptic Evaluation of *C. melo* Food Products

A panel of judges evaluated the food products prepared from *C. melo* for acceptability. All products ranged in good to very good category.

Organoleptic evaluation of *C. melo* food products on a 9 point hedonic scale.

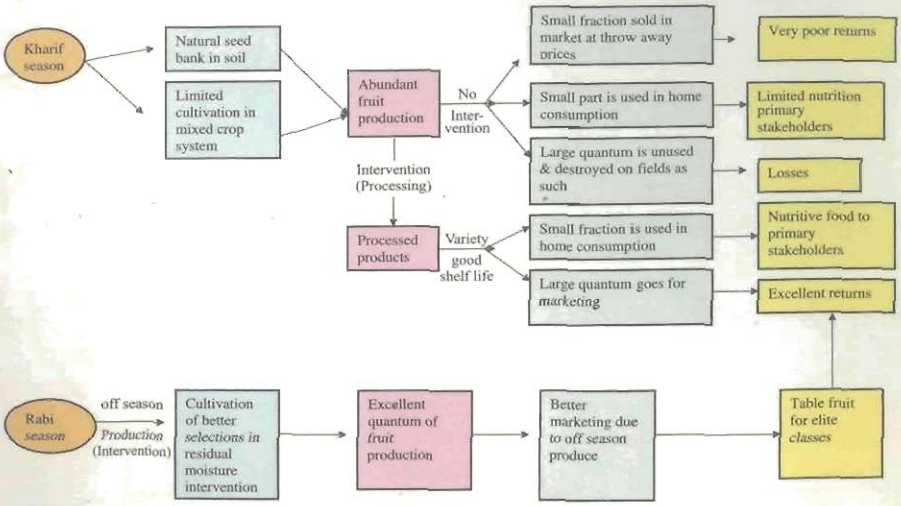
Organoleptic character	Squash	Jam	Cussar	Laddoo	melo sip
Colour	7.55	8.36	7.73	7.73	8.84
Flavour	7.27	7.18	7.45	7.45	7.92
Taste	7.55	7.91	6.64	6.64	8.00
After taste	6.91	7.82	6.64	7.09	8.61



Mean acceptability of *C. melo*

Future Thrusts

- To use *C. melo* as a major kharif crop by better breeding options for more pulpy and seedless varieties with high intensity of coloring pigments and standardization of agro-techniques with complete package of practices for higher fruit production of desired traits
- Training of farm women through self help groups for participatory processing with partial assistance from CAZRI for product processing and marketing
- Complete mechanization of product processing with indigenous low cost machines and then transferring the developed mechanized technology to farmers so that they can develop community product processing units in a cluster of villages
- Insight under the whole concept is that farmers can be empowered in production-processing-marketing value chain of *C. melo* at their own door steps



Existing and after Intervention value chains

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