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Cucurbitaceae: A Ethnomedicinally Important Vegetable Family

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Medicinal plants have been used for centuries, and numerous cultures still rely on plants for their primary health care needs. In the recent past there has been a tremendous increase in the use of plant based health products in developing as well as developed countries resulting in an exponential growth of herbal products globally. Herbal medicines have a strong traditional or conceptual base and the potential to be useful as drugs in terms of safety and effectiveness, leads for treating different diseases. The present article gives an account of such a medicinally important family cucurbitacese which comprise both wild and cultivated species and is consumed in different ways like sweet, vegetable and salads, but less is known about its medicinal importance. Thus a survey was carried out, to record the traditional health care remedies currently practiced by the local people.

Keyword: Cucurbitaceae, Ethnomedicine, Herbal Medicine.

1. Introduction

Plants are used medicinally in different countries and are source of potent and powerful drugs[1]. Over the centuries, the use of medicinal herbs has become an important part of daily life despite the progress in modern medical and pharmaceutical research[2]. A wide range of medicinal plant parts are used as raw drugs as they posses varied medicinal properties thus herbal drugs constitute a major part in all traditional systems of medicines. Plants above all other agents have been used for medicine from time immemorial because they have fitted the immediate personal need, are easily accessible and inexpensive[3].The different parts used include root, stem, flower, fruit, twigs and modified plant organs.

While some of these raw drugs are collected in small quantities by local communities and folk healers for local use, many other raw drugs are collected in large quantities and traded in the market as the raw material for many herbal industries[4]. In many countries the use of medicinal plants ranges from 4 to 20 percent about 2500 species of medicinal plants are being traded globally[5]. World Health Organization has made an attempt to identify all medicinal plants used globally and listed more than 20,000 species[6]. According to the WHO more than 80 percent of the world's population relies on traditional herbal medicine for their primary health care[7]. Plants continue to serve as possible sources for new drugs and chemicals derived from various parts of plants[8].

Cucurbits are vegetable crops, belonging to the family cucurbitaceae, which primarily comprised species consumed as food worldwide. Cucurbits are an excellent fruit in nature having composition of all the essential constituents required for good health of humans[9,10]. But still this family is not considered much important medicinally and taken as vegetables and salads for daily consumption also because of its availability at low cost. During the last half century, only few studies have been carried out to

document the ethnomedicinal uses of the plant species growing in the region, particularly in the remote and difficult terrians[11].

The present research is to work on medicinal uses of plants belonging to the family cucurbitaceae from the local people. A preliminary survey was done along with the local person about the different species of the family that are being used in that area to treat different diseases.

2. Material and Methods

The method employed during the study were designed with the sole purpose of eliciting the precious wealth of information on the ethnomedicinal uses of plants practiced by the local people. Detailed survey has made in gathering information regarding use of medicine has been documented. Usually, the survey in each locality started with the interview of elderly and experienced members, locally known as *hakims*. Besides, this the common people of the surveyed localities who themselves have used these plant-based for health treatments were interviewed to prove veracity of the curative features of plants. The plants were identified by using standard monographs and flora and also submitted to the herbarium of Botany Department, University of Rajasthan, Jaipur for identification. Ethnomedicinal uses and data about the treatment of various alignments based on the information gathered by using questionnaires are given subsequently.

3. Result and Discussion

The present research work is based on the indigenous knowledge of most commonly used medicinal plant of cucurbitaceae family. Each medicinal plant species is provided with its scientific name, local name, chromosome number (general information gathered from literature), parts (such as leaves, seeds, fruits, roots, etc.) mostly used and uses.

These plant species through different mode of preparation are used to heal external burns, abrasions and wounds, orally taken to cure respiratory diseases, diabetes, skin disorders, and also used as diuretic, antipyretics, anti-inflammatory, antiseptic.

In essence, the ethnomedicinal knowledge about the biodiversity reflects many generations of experience and problem solving by the indigenous communities. It represents an immensely valuable database that provides the baseline information for the commercial exploitation of bioresources. Also the information could be useful for the industry, pharmacologists, physicians, phytochemists, botanists, and alike interested in the development of alternative therapies[12,13].

The result obtained in the investigation need to be rigorously subjected to pharmachemical analysis in order to validate their authenticity and future prospects. The paper has only documented the herbal health remedies presently in vogue in the region and does not prescribe or recommend for their use till further determination by pharmacologist.

1. *Citrullus colocynthis*

- **Common name:** Colocynthis, Bitter apple.
- **Chromosome number (2n):** 26
- **Parts used:** Pulp of peeled fruit, leaves, seeds and the roots.
- **Uses:**
- **Fruit:** Ripe fruit is rubbed by the bare foot by the people suffering from severe head ache and arthritis. Seeds of pomegranate are left overnight in the fruit of citrullus and taken empty stomach by the patients of diabetes. Fruit is used in Moroco for the purpose of protecting woolen clothing from moths.
- **Leaf:** The leaves exhibit antiflammatory activity and are diuretic. Leaves are used in painful mansturation, and in the treatment of asthma and jaundice.
- **Roots:** Root is useful in jaundice, urinary diseases, reheumatism etc. in reheumatism 180 gram of a mixture of equal parts of the roots; long pepper and gur are taken daily. Root is given in abnormal enlargement of breast and in cough and asthamatic attacks of children. For intestinal inlfamation, tumors etc. a powder of root is given for three days in doses of 45 grains well mixed with caster oil.

A poultice of root is useful in inflammation of breast of nursing mother.

2. *Citrullus lanatus*

- **Common name:** watermelon.
- **Chromosome number (2n):** 22
- **Part used:** Fruit and seeds.
- **Uses:**
- **Fruit:** it is consumed world wide as it contain 90 percent water content, it thus act as natural diuretic that cleanses kidney and bladder. Specially recommended for women who retain fluids during menstruation and pregnancy. Fruit consumed is believed to reduce asthma attack, improves digestion, cholesterol, relives from symptoms of arthritis, strengthen immunity and heal wounds. Fruit juice act as beauty aid, to reduce skin blemishes, simply rubbing skin by small piece of applying juice and rinsing after 10 min.
- **Seed:** Seeds are believed to be great source of protein, magnesium as well as calcium and potassium, salted and roasted watermelon seeds are consumed as snacks.

3. *Cucumis sativus*

- **Common name:** Cucumber
- **Chromosome number (2n):** 14
- **Parts used:** Seed, Leaf and fruit.
- **Uses:**
- **Fruit:** Regular intake of cucumber fruit promotes healthy hair growth. It is useful in skin problems, sunburn and also for curing swelling under the eye. Its juice is also effective to soften the skin texture. Placing the two slice of cucumber on eyes for 10 minutes can reduce the puffiness considerably. It is also known to be beneficial for curing skin diseases like eczema. In sun stroke piece of cucumber are placed on the head so that the patient may breathe moistened air in order to neutralize heat of his body. Fruit is also considered important for weight loss.
- **Seed:** Traditionally been used to expel the intestinal worms and tapeworms. The remedy is carried out when mashed seeds mixed with sugar that should be taken before any meal.
- **Leaf:** Leaves are boiled and mixed with cumin seeds, roasted and powdered, are administrated in throat inffections in the doses of 30 grams or more.

4. *Cucurbit pepo* L.

- **Common name:** Pumpkin
- **Chromosome number (2n):** 40.
- **Parts Used:** Fruit pulp, seeds and leaves.
- **Uses:**
- **Fruit:** soften skin dryness, pimple, spots by applying pulp.
- **Seed:** Seeds help in getting rid of pinworms from human body, by eating peeled seeds in a desired amount. For tapeworms, 50 grams of fresh seeds mixed sugar or honey, then taken as the only food for a day in the main meal.
- **Leaf:** Decoction of leaves reduces fever, by boiling handful of leaves per lit of water for 10 min, left for half an hour then taken four cups a day.

5. *Luffa cylindrica*

- **Common name:** Sponge gourd
- **Chromosome number (2n):** 26
- **Part used:** Seeds, fruit (as dried sponge), stem.
- **Uses:**
- **Seed:** Seeds have an emetic action when dried removed from cover and powdered and taken orally in the treatment of asthma, sinusitis and fever.
- **Stem:** Juice extracted from the stem has been used in the treatment of respiratory disorder.

6. *Lagenaria siceraria*

- **Common name:** Bottle gourd
- **Chromosome Number (2n):** 22
- **Part Used**: fruit and leaf
- **Uses:**
- **Fruit:** Gourd juice when consumed with lime juice treat burning sensation in the urinary passage. Raw juice of fruit when taken daily

it help fight constipation, as it is fiber rich, because of its fiber and low fat content, ayurveda highly recommend this food for diabetic patient and young children. Juice is taken in the treatment of acidity, indigestion and ulcers as it serves as alkaline mixture. Bottle gourd is considered one of the best weight loss foods since it is 96 percent water and provide just 12-13 calories per 100 grams.

- **Leaf:** Juice from the leaf helps in curing baldness and aid in preventing tooth decay.

7. *Luffa acutangula*

- **Common name:** Ridge gourd
- **Chromosome number (2n):** 26
- **Part used:** Fruit, seeds, leaves and roots.
- **Uses:**
- **Fruit:** Used in enlargement of spleen, helpful in blood purification. Fruit is boiled in water and then adequate salt is added, mixture is taken twice daily to kill stomach worms. Fruit is chopped in small pieces along with ribbed skin and completely dried in sun, powdered and used to premature graying of hair.
- **Seed:** Oil extracted from seed is used in skin treatment.
- **Leaf:** The fresh leaves are used as dressing in the diseases such as enlargement of spleen, ringworm, piles and even leprosy. Powdered leaves are mixed with garlic and applied locally for relief in leprosy. Leaves are also useful in the treatment of dysentery conditions.
- **Roots:** Roots added to milk or water is helpful in the removal of kidney stone.

8. *Momordica charantia*

- **Common name:** Bitter gourd
- **Chromosome number (2n):** 22
- **Part used:** Leaves, dried or fresh fruits and fresh juice of fruit.
- **Uses:**
- **Fruit:** Fruit juice of bitter gourd has been used as traditional medicine for diabetes as it have been found to have a reparative effect on the cells of pancreas while helping the organ increase the secretion of insulin as well as increasing the tolerance of the body to sugar. The ripe fruit (which is orange red) when mashed in olive oil with or without seeds, is effective when applied to wound, burns, itching skin as well as for leprosy.
- **Seed:** Seeds taken in vegetable are powerful antihelminthics and help to expel intestinal and parasitic worms by stunning or killing them.
- **Leaf:** A teaspoonful of extract of leaf juice is given to children for cough, as extract exhibit antiviral and antibiotic properties.

9. *Trichosanthes dioica*

- **Common name:** Pointed gourd, Parwal
- **Chromosome number (2n):** 24
- **Part used:** Fruit and Leaf
- **Uses:**
- **Fruit:** Extract of fruit taken helps in lowering cholesterol activity and blood sugar. Also it helps in treating alcoholism and jaundice.
- **Leaf:** Juice of leaves is used as tonic for febrifuge and in sub acute case of enlargement of liver, spleen and in oedema. Leaves extract or juice is also used in skin disorder. Leaves of *T. dioica* when mixed with herbal crude drugs in dise of 20 ml to 40 ml empty stomach with hot water and honey for 4 to 6weeks found useful in skin treatment.

4. Conclusion

The herbals occupied a distinct place in the life right from the primitive period till date and provided information on the uses of plant or plant products and products as medicine[14]. The use of medicinal plants in the management of various illnesses is due to their phytochemical constituents and date back antiquity[15]. The main goal of research on cucurbitaceae is to highlight its ethnomedicinal importance and to improve productivity on sustainable basis as it comprises both wild and cultivated variety and consumed as vegetable and salads is much not valued thus general information of its medicinal importance

and unani uses help many species of cucurbitaceae family to be conserved and further research in the direction of breeding program for the development in biotic and abiotic resistant variety/ hybrids coupled with quality attributes. The yield potential of cucurbits could be increased by adopting the standardized agrotechniques and plant protection measures.

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