

ETHNOMEDICINAL USES OF PLANTS BY THE PEOPLE OF KADHI AREAS OF KHUSHAB, PUNJAB, PAKISTAN

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Abstract

The present research work was designed to gather indigenous knowledge of medicinal plant species, which are being utilized by the local inhabitants of arid (*Kadhi*) areas of Khushab, Punjab, Pakistan. A total of 48 plant species belonging to 45 genera and 32 families have been recorded which are being used for treating 45 different diseases/ailments during February-March, 2010. Most of the species (10 spp., 6.71%) were used for treating digestive ailments i.e. constipation and flatulence, followed by jaundice (9 spp., 6.04%), abdominal worms & blood purifier (7 spp., 4.70% each), whereas, 6 species were used as antilice, anticancer, anti-inflammatory and tonic, 5 species were used for treating acidity, flue and skin allergy. Fruits of plants were highly employed for the preparation of indigenous recipes (24.04%), followed by leaves (23.08%), seeds (11.54%), whole plant (10.85%) and roots (8.65%), while remaining nine parts were occasionally used.

Introduction

The main objective of ethnobotanical research is to record the indigenous knowledge about plants. Reviews of ethnobotanical studies have reflected that it is widely accepted field of sciences and a lot of work has been reported (Kumar *et al.*, 1980; Leporatti & Paresi, 1990; Bhattacharai, 1992; 1993; Padhye *et al.*, 1992; Yang & Walter, 1992; Singh & Mheshwari, 1994). In the last 100 years, the science of ethnobotany has progressed and the trend is shifting from mere documentation process to a more practical one, which emphasize on conservation and sustainable use of plant resources.

In Pakistan, ethnobotany is introduced recently. Although, the country has about 6,000 species of wild plants of which about 400 to 600 are considered to be medicinally important (Hamayun *et al.*, 2003). But this field of plant science is virgin in Pakistan in its scientific study point of view. Hence, the information about valuable plants is meager. A series of papers on medicinal and indigenous uses of plants of Pakistan has been published from various areas of the country (Hocking, 1958-62; Shinwari & Malik, 1989; Malik *et al.*, 1990; Goodman & Ghafoor, 1992; Leporatti & Lattanzi, 1994; Bhatti *et al.*, 2001; Qureshi & Bhatti, 2008; Qureshi *et al.*, 2002; 2009; 2010; Ahmad *et al.*, 2010).

Plants are customarily used for fulfilling daily life requirements of the inhabitants of Khushab. No reference exists on the ethnobotany of Tehsil Khushab. Therefore present study was designed to record valuable information regarding multifarious medicinal uses of native plant species. This work will serve as baseline information for carrying out detailed survey in future.

Materials and Methods

Study area: Khushab is situated between Sargodha and Mianwali, near the river Jhelum. Khushab is full of natural beauty containing Jhelum River, fields, mountains (Skaisar) and Thal desert. Parts of the Thal desert touch the district and the Jhelum runs alongside making it highly fertile for agriculture. The soon valley Sakasir has a very biggest forest and one of the beautiful area of Khushab, Punjab, Pakistan (Anon., 2009).

Field study: Study area was visited to record ethnobotanical information from the different sites of Khushab during February-March, 2010. Ethnobotanical information was obtained through oral interviews and designed questionnaire from local herbalists (*Hakeems*) and the elderly people. Females were also interviewed. During the survey, plant specimens were also collected from the study area. The plant specimens were pressed, dried and mounted on herbarium sheets. The collected specimens were identified with the help of floristic literature (Nasir & Ali, 1970-1989; Ali & Nasir, 1990-1991; Ali & Qaiser, 1993-2009; Qureshi, 2004) and deposited in the herbarium of Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi for record.

Results

A total of 48 plant species belonging to 45 genera and 32 families have been recorded which are being used for different purposes. The ethnobotanical uses are described in the format: botanical name followed by specimen number in parenthesis, local name, parts used and medicinal uses. The detail uses of native species are given as under:

1. Amaranthaceae

Botanical name: *Achyranthus aspera* L. (313)

Common name: Puth kanda

Parts used: Whole plant

Medicinal uses: Ash of the plant is given to treat asthma and cough. Decoction of plant is used for skin diseases.

Botanical name: *Digera muricata* (Linn) Mart. (314)

Common name: Tandla

Parts used: Leaves, aerial parts

Medicinal uses: The foliage used as potherb for treating constipation.

2. Amaryllidaceae

Botanical name: *Agave americamum* L. (315)

Common name: Kanwar Phara

Parts used: Pulp

Medicinal uses: Pulp of plant is taken to treat jaundice. The same is also supposed as liver tonic. Pulp is processed into sweet dish commonly called as *Halwa* (mixed with sugar & flour and browned in oil) and is given for stomach problem (constipation and acidity). The same is used as blood purifier to remove boils and pimples. The pulp is externally used to the itching of skin.

3. Apiaceae

Botanical name: *Anethum graveolens* L. (316)

Common name: Soy

Parts used: Leaves, flowers, fruit

Medicinal uses: Seed are given to females to increase of milk secretion acting as lactagogue. Powder obtained from the seeds in combining *Terminalia chebula* and black salt commonly known as *Phakki* and is used for flatulence. The seeds are also used in making pickles acting as an appetizer.

4. Arecaceae

Botanical name: *Phoenix dactylifera* L. (317)

Common name: Khajoor

Parts used: Fruit

Medicinal uses: Dried hard dates (*Choohara*) are boiled in milk and used as an aphrodisiac and tonic.

5. Asclepiadaceae

Botanical name: *Calotropis procera* (Willd.) R. Br. (318)

Common name: Aak /Akra

Parts used: Leaves, flowers, latex

Medicinal uses: Latex is grinded with sugar in 1:10 ratio and is used to treat asthma. The latex is poured on the snakebite till stop to absorb. The powder of the leaves is dusted on wounds to heal. Flowers in 3-5 Numbers are given to the patients suffering from jaundice. If the person felt sweet taste, it authenticates the presence of jaundice and the same treatment is given to cure the disease. The leaves are warmed and are applied externally to remove pain and inflammation.

6. Asteraceae

Botanical name: *Carthamus oxyacantha* M.B. (319)

Common name: Kandiari

Parts used: Seeds

Medicinal uses: Seeds are supposed to prevent from cancer and for this purpose, these are slightly brown into fire and orally used.

7. Bombacaceae

Botanical name: *Bombax malabaricum* DC. (321)

Common name: Sumbul

Parts used: Root and gum

Medicinal uses: The decoction of root is used orally to kill the abdominal worms.

8. Brassicaceae

Botanical name: *Brasica campestris* L. (322)

Common name: Sarsoon

Parts used: Leaves, oil

Medicinal uses: Leaves are used as potherb to expel abdominal worm and to treat constipation. The same is supposed as good appetizer and mild laxative. The oil obtained from the seed is applied to the body as antimicrobial and anti lice agent. The *Brassica* oil mixed with *Lawsonia alba* (*Mehndi*) is applied to athlete foot to relieve. The oil is poured

in brass pot and kept on head of jaundice patient. The oil is mixed/shaken with the leaves of *Saccharum grifithii* and prescribed to treat the jaundice.

Botanical name: *Eruca sativa* Miller (323)

Common name: Taara Mira / Jamahoon

Parts used: Leaves, flowers, seeds, oil

Medicinal uses: Leaves are used as potherb for treating constipation. Flowers are used as potherb especially by *Rajput* tribe. The oil of the seed is applied to the body as antimicrobial and anti lice agent. The seeds are taken in one gram dose early morning before breakfast to cure bleeding piles. The oil is slightly warmed over fire and poured into ears to relieve pain.

9. Capparidaceae

Botanical name: *Capparis decidua* (Forssk.) Edgew. (325)

Common name: Karinh

Parts used: Fruit, twig

Medicinal uses: Fruit is supposed to be a blood purifier and producer. Ripened fruit is used in making *Murabbah* (fruits preserved in sugar solution) and unripe fruits are used in pickle/potherb to alleviated gas trouble and constipation. The twig is used as a tooth stick (*Miswak*) to relieve toothache and pyorrhea.

10. Cannabinaceae

Botanical name: *Cannabis sativa* L. (326)

Common name: Bhang

Part used: Leaves

Medicinal use: Paste made from fresh leaves is used to kill lice.

11. Cucurbitaceae

Botanical name: *Citrullus colocynthis* (L.) Schrad. (328)

Common name: Kor tummah

Parts used: Roots, fruit, pulp, seeds

Medicinal uses: Roots are used as tooth sticks to relieve toothache. The constipation is treated by giving 3-5 seeds. The fruit is given to cattle for gas trouble and better growth. The fruit is processed into a sweet dish (Locally called as *Murabba*) which is prescribed to the patients of constipation, gas troubles and liver diseases and to removes abdominal worms. Fruits are crushed by the people by bare footed to relieve the white spotted skin problem.

Botanical name: *Momordica balsamica* L. (327)

Common name: Jangli Kareela

Parts used: Fruit and seeds

Medicinal uses: Fruit (*Karaila*) is prescribed as a potherb to sugar patients. The same is suggested as stomachic used to treat gas trouble and constipation. The juice of fruit is used in flatulence and obesity. It is given as blood purifier to treat boils and pimples. It is also supposed that by using its extract or as a vegetable it improve the liver functioning and kill the abdominal worms.

12. Cuscutaceae

Botanical name: *Cuscuta reflexa* Roxb. (329)

Family: Cuscutaceae

Common name: Akash Bail

Parts used: Whole plant

Medicinal uses: The fresh plant is made into paste and applied to hairs as shampoo and as anti dandruff agent.

13. Convolvulaceae

Botanical name: *Convolvulus arvensis* L. (330)

Common name: Hiran Khuri/Lehli

Parts used: Vegetative parts

Medicinal uses: The whole plant is dried under shade and made into powder (*Phakki*) and is given to domestic animals to increase appetite.

14. Euphorbiaceae

Botanical name: *Chrozophora tinctoria* (L.) Juss. (332)

Common name: Neeli Booti

Parts used: Leaves

Medicinal uses: The leaves are boiled in water and the obtained juice is given orally to relieve chest burning acting as stomachic.

Botanical name: *Ricinus communis* L. (331)

Common name: Harnoli

Parts used: Leave, oil

Medicinal uses: Oil obtained from seeds is used orally to treat constipation. This practice is done by the female after a few days of delivery. The same is given to the newborn baby. Leaves coated with sesame oil are warmed over fire and applied to pain and inflammation.

15. Fabaceae

Botanical name: *Alhagi maurorum* Medic. (335)

Common name: Jawanha

Parts used: Whole plant

Medicinal uses: The decoction of plant is given for skin allergy acting as blood purifier.

Botanical name: *Dalbergia sissoo* Roxb. (333)

Common name: Tahli

Parts used: Twig

Medicinal uses: The fresh twig is set into fire and the obtained exude from the opposite side is externally applied to remove the ringworm (*Dhaddar*) and athlete foot (*Chambal*).

Botanical name: *Pongamia pinnata* L. (334)

Common name: Sukh Chain

Parts used: Fruit, leaves

Medicinal uses: Equal quantity of fruit and leaves are boiled in water and decoction used to remove the gas trouble from the stomach.

16. Lathyraceae

Botanical name: *Lawsonia alba* Lam. (336)

Common name: Mehndi

Parts used: Leave, fruit

Medicinal uses: Leaves ground and made into powder applied for hair dying. The powder of leaves mixed with milk is orally given to cattle after mating and is supposed to act as cooling agent. Leaves are mixed with the *Brassica* oil and made into paste which is externally applied to athlete foot to relieve.

17. Liliaceae

Botanical name: *Aloe vera* (L.) Burm.f (337)

Common name: Kanwar Gandal

Parts used: Pulp

Medicinal uses: Pulp of plant is kept open in earthen pot at night and given orally to treat jaundice. The same is given as a liver tonic.

Botanical name: *Asphodelus tenuifolius* Cav. (338)

Common name: Bhokaat/Piazi

Parts used: Whole plant, roots, seeds, juices

Medicinal uses: The powder of seeds is given with milk of cow to cure piles. The paste of leaves is applied to scorpion bite. The juice obtained from root and leaves is given in jaundice.

18. Meliaceae

Botanical name: *Azadirachta indica* (L.) A. Juss. (339)

Common name: Nim

Parts used: Leave, fruit,

Medicinal uses: Leaf extract is used for blood purification and as cooling agent. Fruit extract and pulp are supposed to a tonic for liver and stomach. The paste of leaves is externally applied to remove skin allergy and itching. The same is applied on heads acting as antilice agent.

Botanical name: *Melia azedirach* L. (340)

Common name: Dharek/Bakain

Parts used: Leave, fruit

Medicinal uses: Leaf extract is used for blood purification, cooling agent to remove pimples and boils. The juice of leaves is extensively used for jaundice, allergies (*Mallibadi*) acting as *Musaffi-e-Khoon*. The fruit extract and pulp is supposed to be a tonic for liver and stomach. The paste of leaves is externally applied to remove skin itching and allergy acting as an antimicrobial agent. The paste is externally applied to kill lice.

19. Mimosaceae

Botanical name: *Acacia nilotica* (L.) Deliled. (341)

Common name: Desi kikar

Parts used: Fruit and seeds

Medicinal uses: The juice of roots/bark mixed with sugar is given to cure jaundice. Leaves, bark of young ranches, flowers, gum and unripe pods are taken in equal quantity and made into powder and is given to treat spermatorrhoea and premature ejaculation. The branches are used as tooth stick to strengthen the gums.

20. Moraceae**Botanical name:** *Morus alba* L. (342)**Common name:** Shehtoot**Parts used:** Leave, fruit

Medicinal uses: Fruit is used for sour throat. The decoction of fruit is used in cough due to throat pain. The leaves are boiled in water (*Joshanda*) and given for the same purpose. Extract of root and bark is given to kill abdominal worms.

Botanical name: *Morus nigra* L. (343)**Common name:** Toot**Parts used:** Leave, fruit

Medicinal uses: As previous species. However the effect of *Morus nigra* are stronger than the *Morus alba* reported by the local people.

21. Myrtaceae**Botanical name:** *Eucalyptus camaldulensis* Dehnh. (344)**Common name:** Sufaida**Parts used:** Leaves

Medicinal uses: Leaves are boiled in water and used as *Joshanda* to relieve flue. Leaves are used as condiment.

Botanical name: *Psidium guajava* L. (345)**Common name:** Amrood**Parts used:** Leaves, fruit

Medicinal uses: Fruit is use as a general tonic. A good amount is orally given to infants to expel abdominal worms. The powder of the dried leaves is used as an appetizer for human and livestock.

Botanical name: *Syzygium cumini* (L.) Skeels (346)**Common name:** Jaman**Parts used:** Leave, bark, fruit, nut

Medicinal uses: The decoction of bark is used to relieve fever (*Taap*). The powder of seeds is used to stop motion and vomiting and to treat diabetes. Ripened fruit is used as an iron supplement. The decoction of bark is used to relieve painful swellings in cattle.

22. Nyctaginaceae**Botanical name:** *Boerhavia procumbens* Banks ex Roxb. (347)**Common name:** Itsit**Parts used:** Whole plant, roots

Medicinal uses: Roots are boiled in water to obtain extract which is used as liver tonic. Roots are made into pieces and tied as necklace to cure jaundice. The paste of the plant is externally applied to treat paralysis.

23. Poaceae**Botanical name:** *Cymbopogon javarancusa* (Jones) Schult. (349)**Common name:** Khavi**Parts used:** Whole plant

Medicinal uses: The matrices made up of stem are prescribed to the patient of typhoid fever. The smoke of plant is supposed useful to treat measles.

Botanical name: *Cynodon dactylon* (L.) Pers. (348)

Common name: Khabal

Parts used: Root, leaves

Medicinal uses: The person having burning sensation of feet is recommended to walk early morning on the lawn of *Cynodon dactylon* having dewdrops. Dewdrops are used remove pimples of the face. Root decoction is given to treat fever. Morning walk with barren feet is suggested to those patients who are suffering from burning sensation in feet.

24. Punicaceae

Botanical name: *Punica granatum* L. (351)

Common name: Anaar

Parts used: Bark, leaves, fruit, fruit bark

Medicinal uses: Fruit is used for enhancement of blood secretion, blood purifier and as general tonic. The dried bark of fruit mixed with old pickles is given to the sheep and goat to remove digestive problem as antiflatulence (*Uphara/Bandish*), a condition in which their belly is swollen like balloon and animals cry with pain due to stoppage of excretory system. The powder of bark is given for treating diarrhea and dysentery.

25. Rhamnaceae

Botanical name: *Ziziphus mauritiana* Lam. (362)

Common names: Beri

Parts used: Leaves, fruit

Medicinal uses: The fruit is highly palatable. The same is prescribed for sugar patients. The leaves mixed with turmeric, wheat flour and oil is slightly warmed over fire to get poultice and is applied externally to remove spines. The leaves are boiled in water and applied on hairs for long, healthy and shining hairs.

26. Rutaceae

Botanical name: *Citrus grandis* (L.) Osbeck (354)

Common name: Chakotra

Part used: Fruit

Medicinal uses: Fruit is used as a tonic, blood purifier and appetizer and given to the constipating patients. The fruit pericarp is mixed in sweet dishes due to their fragrance. The smell of pericarp is supposed to prevent vomiting during road journey.

Botanical name: *Citrus medica* var. *acida* Brandis (353)

Common name: Gilgan

Part used: Fruit

Medicinal uses: Fruit is given to diabetic patients. The same is given to animals to treat their digestive problem.

Botanical name: *Citrus sinensis* (L.) Osbeck (352)

Common name: Kinno/Malta

Parts used: Fruit

Medicinal uses: Fruit is used as a tonic and appetizer and given to the constipating patients. The fruit pericarp is cooked for the preparation of sweet dishes (*Mutanjan/Zarda*), due to their fragrance. The pericarp of fruit is rubbed and snuffed to stop vomiting, a common complaint happened during road journey.

27. Salvadoraceae

Botanical name: *Salvadora oleoides* Decne. (355)

Common name: Peelu

Part used: Fruit, root, seed

Medicinal uses: Fruit is supposed to be a blood enhancer. The ripened fruit is used preparing *Murabbah*, a sweet dish. The unripe fruits are pickled and used for gas trouble especially for constipation. The root is used as a tooth stick (*Miswak*) which relieves pyorrhea. The oil obtained from seeds is externally applied on ringworm (*Chambal*).

28. Solanaceae

Botanical name: *Datura alba* Nees (357)

Common name: Dhatura

Parts used: Whole plant, leaves

Medicinal uses: Leaves are smoked to relieve asthma. The paste of leaves is applied to hairs to expel lice (antilice). Slightly warm leaves are applied externally for removing swellings. The plant is boiled in water and is applied in home to expel insects (insecticide) and the juice is used in insect bite.

Botanical name: *Solanum nigrum* L. (358)

Common name: Kach Mach

Parts used: Whole plant, fruit

Medicinal uses: Fruit is used for digestive and liver disease. The juice obtained from plant is used to remove obesity and jaundice.

Botanical name: *Withania somnifera* (L.) Dunal (356)

Common name: Asghand

Parts used: Whole plant, root, fruit

Medicinal uses: The powder of roots is mixed with sugar and is given to treat spermatorrhoea, general debility and backache. The same is given as an aphrodisiac. The powder of whole plant is used to remove swellings of testes and kidney stones. Few fruits are soaked in water in earthen pot at night and orally taken early morning before breakfast to treat diabetes.

29. Tamaricaceae

Botanical name: *Tamarix aphylla* (L.) Karst. (359)

Common name: Khaggal

Part used: Leaves

Medicinal uses: The smog of leaves is given to relieve typhoid fever.

30. Vitaceae

Botanical name: *Vitis vinifera* L. (360)

Common name: Angoor

Parts used: Fruit

Medicinal uses: Fruit is used as a general tonic and laxative. The fresh fruit is given to patients suffering from typhoid fever.

31. Zingiberaceae

Botanical name: *Elettaria cardamomum* Maton. (361)

Common name: Ilaichi

Part used: Seeds and fruit

Medicinal uses: Fruit is boiled in water and given to treat nausea and vomiting.

32. Zygophyllaceae

Botanical name: *Tribulus terrestris* L. (363)

Common name: Bakhra

Part used: Fruit

Medicinal uses: The powder fruit mixed with honey is given as an aphrodisiac. Fruit is crushed in water and taken orally to treat painful urination and spermatorrhoea.

Discussion

The present study provides information about some therapeutic uses of 48 plant species. Forty five ailments/diseases were investigated from the study areas which are being treated using 48 plant species. Most of the species were used for treating constipation and flatulence (10 spp., 6.71% each), followed by jaundice (9 spp., 6.04%), abdominal worms & blood purifier (7 spp., 4.70% each). Six species were used as antilice, anticancer, anti-inflammatory and tonic, whereas, five species were used for treating acidity, flue and skin allergy (Table 1).

Overall, 14 plants parts were used for preparing recipes. Of them, fruits were highly employed (24.04%), followed by leaves (23.08%), seeds (11.54%), whole plant (10.85%) and roots (8.65%), while remaining nine parts were occasionally used (Fig. 1). This reveals that most of the active ingredients are lying in highly utilized parts.

Most of the plants were used singly (*Mufrid*), however, combination (*Murakkab*) with some other plant parts are also in common practice by the herbal practitioner (*Hakeems*). Some plant species are claimed to be quite effective remedies for diarrhea, malarial and typhoid fevers, cough and cold, and stomach troubles. Since the uses are based on empirical knowledge, the scientific studies of all these herbal drugs are highly desirable to establish their efficacy for safe use. The survey indicates that there is high potential for ethnobotanical uses of the existent flora so there is dire need for its protection and conservation that can only be achieved through the involvement of local communities. Many of the important medicinal species are facing the danger of extinction in the area. Rapid urbanization and unplanned exploitation have resulted in loss of such medicinally important species. It is therefore, imperative to find ways to encourage practices for promoting conservation. There is need of coordination and cooperation among various agencies such as forest department and the pharmaceutical firms interested in the utilization of these medicinal plants and to initiate regeneration work in degraded or areas devoid of vegetation. By doing so, we can change the economic and social conditions of the local inhabitants positively.

Table 1. Major diseases treated using 48 medicinal plants from the study area.

S. No.	Diseases treated	Spp. #	Percentage
1.	Constipation	10	6.71
2.	Flatulence	10	6.71
3.	Jaundice	9	6.04
4.	Abdominal worm	7	4.70
5.	Blood purifier	7	4.70
6.	Antilice	6	4.03
7.	Cancer	6	4.03
8.	Inflammation	6	4.03
9.	Tonic	6	4.03
10.	Acidity	5	3.36
11.	Flue	5	3.36
12.	Skin allergy	5	3.36
13.	Athlete foot	4	2.68
14.	Diabetes	4	2.68
15.	Pimples	4	2.68
16.	Aphrodisiac	3	2.01
17.	Asthma	3	2.01
18.	Boils	3	2.01
19.	Diarrhea	3	2.01
20.	Pyorrhea	3	2.01
21.	Spermatorrhoea	3	2.01
22.	Typhoid fever	3	2.01
23.	Vomiting	3	2.01
24.	Antimicrobial	2	1.34
25.	Appetizer	2	1.34
26.	Cough	2	1.34
27.	Fever	2	1.34
28.	Obesity	2	1.34
29.	Pain	2	1.34
30.	Piles	2	1.34
31.	Throat pain	2	1.34
32.	Toothache	2	1.34
33.	Antidandruff	1	0.67
34.	Earache	1	0.67
35.	Hair dye	1	0.67
36.	Hair tonic	1	0.67
37.	Insect bite	1	0.67
38.	Lactagogue	1	0.67
39.	Measles	1	0.67
40.	Nausea	1	0.67
41.	Paralysis	1	0.67
42.	Ringworm	1	0.67
43.	Snakebite	1	0.67
44.	White spotted skin	1	0.67
45.	Wound healing	1	0.67

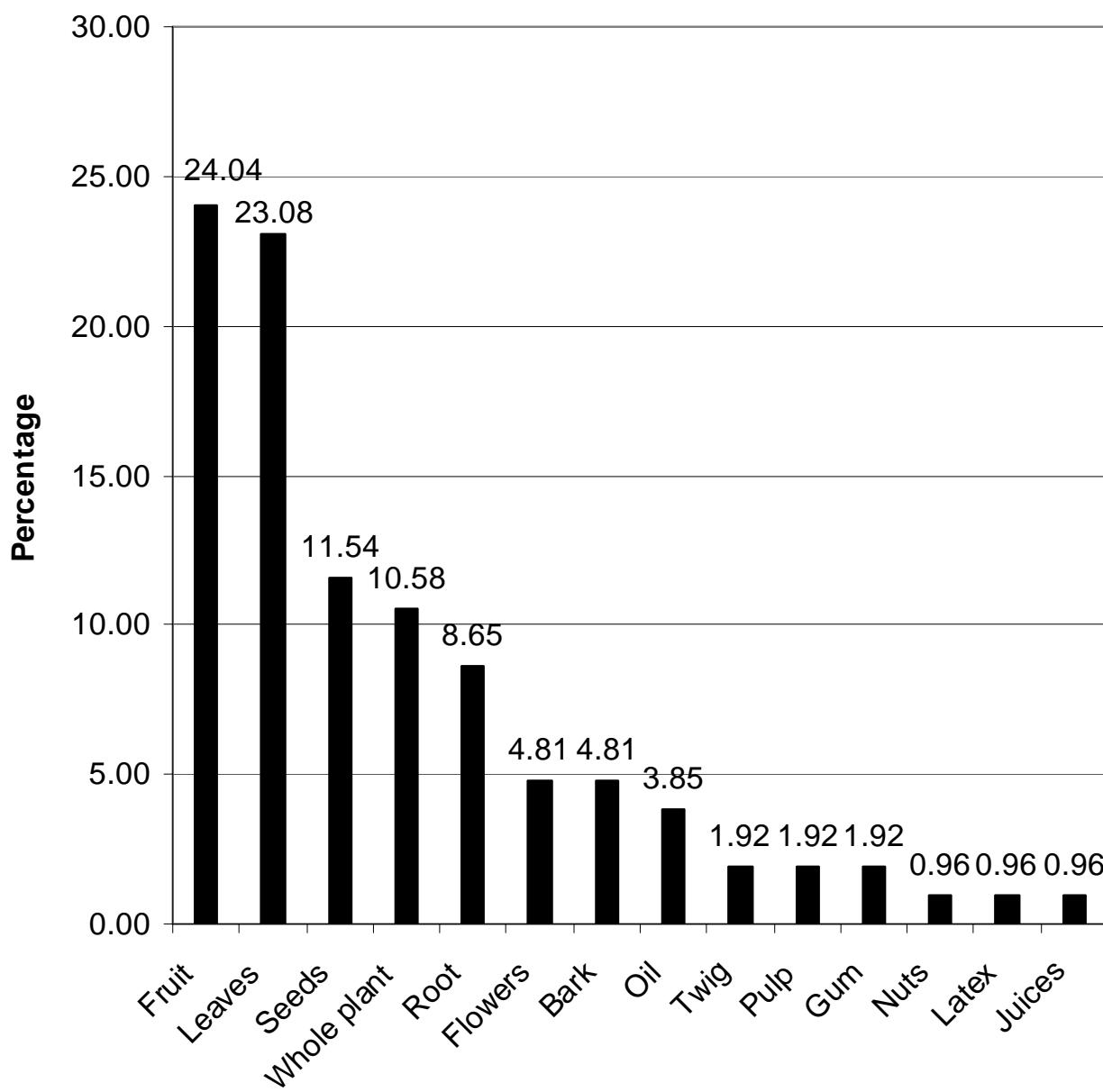


Fig. 1. Parts of plants used for the preparation of recipes.

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