

ETHNOBOTANY OF THE HAWRAMAN REGION OF KURDISTAN IRAQ

SAMAN A. AHMAD^{1,2} AND ALI A. ASKARI³

Abstract. An ethnobotanical survey was carried out in the Hawraman region, southern Kurdistan, Iraq. A total of 64 plant species belonging to 30 families are currently utilized in various traditional uses, including local foods, medicines, tools, gums, fodder, tanning, and dyes, among others. Data were gathered from local markets, where various plant parts were sold, as well as from interviewing elderly villagers. For each ethnobotanical entry, the species, plant family, and Kurdish names are given.

Keywords: Iraq, Kurdistan, Hawraman, Ethnobotany

Ethnobotanical studies involve the documentation, description, and interpretation of complex relationships among and within cultures, and ultimately how plants are utilized across human societies. Unfortunately, the ethnobotanical heritage of various ethnic groups, especially in undeveloped or developing countries, is rapidly disappearing before being recorded. Kurdistan Iraq is no exception.

During work on the flora of Hawraman Mountains in Kurdistan Iraq, Ahmad (2013) paid special attention to the ethnobotany of the Hawrami people. It had never been recorded before: many parts of the mountain have been isolated from the rest of the world for many centuries. Two ethnic-religious groups of Hawrami people, the Kakais (or Yarsane) and the Naqshbandi, have lived in the area since the sixth and twelfth centuries, respectively. Although their religious and social beliefs are well known (<http://en.wikipedia.org/wiki/Y%C3%A2rs%C3%A2nism>, <http://www.highbeam.com/doc/1G1-135732899.html>), hardly anything is known about their ethnobotanical heritage.

Hawraman Mountains are located between 35°05'–35°20'N and 45°53'–46°11'E and occupy a total area in Iraq of 660 km². They are part of the Zagros system, a massive range that extends from southeastern Turkey along the Iranian-Iraqi border into southwestern Iran. Hawraman region has a very diverse geology and topography that resulted in numerous micro-habitats and a rich botanical diversity (Jassim & Goff, 2006).

The ethnobotanical compilation presented here is based primarily on information from the local elderly via recorded interviews, the purchase and photography of artifacts from craftsmen shops, and documentation throughout the year of the native wild plants on sale in the markets of Hawraman towns and villages. Fruits, vegetables, cereals, and other economically important foods grown and consumed worldwide (e.g., grapes, apricots, pomegranates, apples, pears, plums, corn, rice, wheat, barley, walnuts, almonds, various legumes and mustards, etc.) are not dealt with

herein except in cases where they are used in Hawraman in ways not known elsewhere, or only used in other parts of Kurdistan Iran, Iraq, Syria, and Turkey.

The Hawraman plants below are arranged according to their uses, and species scientific names are followed in parentheses by family and Kurdish (hereafter K) names.

Foods

Leaves and bulbs of the wild onion *Allium akaka* Gmelin (Amaryllidaceae; K: lucha) are used in omelet preparation..

The young, immature fruits of *Pistacia eurycarpa* Yalt. (Anacardiaceae; K: daraban) are eaten fresh before the stony endocarp (inner fruit wall) hardens; the mature fruits are salted and the seeds are eaten.

The young basal leaves of *Hellenocarum amplifolium* Boiss. & Hausskn. (Apiaceae; K: Bareza) are used as a vegetable.

After treatment with sumac and straining, the leaves of *Arum italicum* Mill. (Araceae; K: karduw) are used either as a wrap in the preparation of dolma (a famous Middle Eastern dish) or chopped and mixed with eggs to prepare an omelet.

The leaves of *Melissa officinalis* L. (Lamiaceae; K: hallall perajenana) are also used as a wrap in dolma preparation.

The young plants of *Gundelia tournefortii* L. (Asteraceae; K: kinger) are eaten fresh or boiled or fried with eggs and onions to produce the Kurdish dish kinger kabab or kinger masie. The woody dry fruits are salted, roasted, and sold throughout Kurdistan for their edible seeds. Furthermore, in western and central Anatolia, the leaves are used in roasts, salads, and pickles (Dogan, 2004).

The tender stems of the Asteraceae Syrian thistle *Notobasis syriaca* (L.) Cass. (K: chawbaza) and milk thistle *Silybum marianum* L. (K: chawbaza) and the fleshy roots of several species of *Scorzonera* (K: gulla bahara) are eaten fresh as vegetables.

The seedlings of *Bongardia chrysogonum* (L.) Spach (Berberidaceae; K: Gablla) are chopped and mixed with eggs to make a special type of omelet.

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¹ Department of Field Crops, Faculty of Agricultural Sciences, Sulaimani University, Sulaimani, Kurdistan, Iraq.

² Author for correspondence: samanchnaraye@gmail.com

³ Kurdistan Botanical Foundation, Sulaimani–Kirkuk Main Road, Raparin, Sulaimani, Iraq–The American University of Iraq–Sulaimani.

The young rosettes of *Anchusa italica* Retz. (Boraginaceae; K: gozrwan) are boiled, and fried with eggs, and flavored with sumaq and eaten as an omelet. The dried leaves and flowers of this *Anchusa* species are used to prepare a tea taken as a tonic (Chakravarty, 1976).

The acorns of *Quercus aegilops* L. (Fagaceae; K: dar baroo, mazo, mazi) are sold in the local markets, roasted and eaten in winter.

The seed of *Juglans regia* L. (Juglandaceae; K: guez) are eaten raw or used in making cakes.

The chopped and boiled parts of various *Malva* species (Malvaceae; K: tollaka) are mixed with eggs and fried to prepare a traditional dish.

The very young inflorescences of *Imperata cylindrica* (L.) P.Beauv. (Poaceae) are eaten fresh.

The spikes of wheat, *Triticum* spp. (Poaceae; K: ganme sawar) are harvested before the seeds are dry and mixed with hay and set on fire. After roasting, the kernels are dried and crushed and later cooked like rice in the preparation of a typically Kurdish dish called qarakhman. Fig. 1.

The fresh leaves of *Rumex crispus* L. (Polygonaceae; K: trshoka) are eaten raw or used for preparing dolma, whereas the young petioles of wild rhubarb, *Rheum ribes* L. (Polygonaceae; K: rewass), are peeled and eaten as a fresh vegetable.

The aboveground parts of common purslane, *Portulaca oleracea* L. (Portulacaceae; K: Pallpena), are used as a fresh vegetable in salads, or mixed with lentils to prepare a special soup (Pallpena Batrsh).

Several wild members of the rose family (Rosaceae), such as hawthorn, *Crataegus monogyna* Jacq. and *C. azarolus* L. (K: goezh), *Prunus microcarpa* (C.A.Mey.) Boiss. (K: ballaluk), and wild blackberry *Rubus* spp. (K: tutrik) have edible fruits sold in the local markets. The fresh or dried fruits of *Ficus carica* L. (Moraceae; K: hanjer) are utilized to make a jam (Chakravarty, 1976), and they are also eaten as a demulcent and laxative (Al-Rawi & Chakravarty, 1964).

Medicines

The leaves and rhizomes of *Adiantum capillus-veneris* L. (Pteridaceae) are used as pectoral expectorant, sudorific, tonic, stimulant, astringent, emollient, soothing, diuretic, and in the treatment of chronic cough and cold (Al-Rawi & Chakravarty, 1964). The Rhizomes and leaves are also used as antilithic tea (Ali, 2009), whereas in eastern Anatolia the herbs and leaves are used for Kidney stones, tonic, intestinal disorders, and as an orexigenic (Altundag & Ozturk, 2011).

A decoction mash of the fresh fruits of *Ammi majus* L. (Apiaceae; K: danpakrawa) is used for vitiligo or as an emollient in small concentrations (Al-Douri, 2000).

The decoction of the root, leaves, and flowers of *Alcea kurdica* (Schlecht.) Alef. and *Althaea officinalis* L. (both Malvaceae) are used to cure irritation and inflammation of the mucous membrane (Al-Rawi & Chakravarty, 1964). Also, in east Anatolia, *Althaea officinalis* L., and *A. cannabina* L. are used as a diuretic and treatment of kidney stones (Altundag and Ozturk, 2011).

Flowers of *Anchusa italica* (Boraginaceae; K: gozrwan) are used in a tea-like tonic to lower pulse rate (Al-Rawi &

Chakravarty, 1964) and as an analgesic, sedative, sudorific, and diuretic (Al-Douri, 2000).

The Juice and peel of *Punica granatum* L. are used for the treatment of diarrhea (Lev & Amar, 2000).

Freshly crushed stems of the native wild pistachio, *Pistacia eurycarpa*, exude a bitter gum (K: bneshta tall) used to cure gastrointestinal problems. A mixture of this gum with finely shredded soap made from pistacia oil is used as a dressing to clean old wounds or to erupt boils. A tea made from the dried fruit is used as antidiarrheal medicine. The gum collected from plants growing in the Kurdish towns Çuar qurne, Zaxo, and Ranya, is sold in the Qaysari, Market, Erbil, Kurdistan Autonomous region Iraq for the treatment of gastric ulcers, stomach pain, sour eructation, poor appetite, catarrhal inflammation, dry cough, diarrhea, diabetes, stomach problem, gastric ulcers, hypertension, cancer, and diabetes, (Rivera et al., 2012).

The fresh or dried leaves of *Ferulago abbreviata* C.C. Towns. (Apiaceae; K: chnur) are used as foot deodorant by placing them inside footwear.

After boiling and straining the leaves and roots of *Arctium lappa* L. (Asteraceae), the liquid is drunk for the treatment of gastrointestinal problems and chest pain. The root is used in the treatment of skin diseases, burns and gout, and strengthening hair, (Al-Rawi & Chakravarty, 1964). Similarly, a decoction of all plant parts of *Artemisia haussknechtii* Boiss. (Asteraceae; K: barzaling) is drunk for the treatment of diabetes, weight loss, and as a carminative.

The roots and basal parts *Tragopogon longirostris* Bisch. (Asteraceae; K: shing) are eaten fresh and allegedly believed to be aphrodisiac.

A tea prepared from fresh or dry bulbs of *Iris reticulata* M.Bieb. (Iridaceae) is used to cure tonsillitis.

The roots of *Aristolochia bottae* Jaub. & Spach (Aristolochiaceae; K: marska) are used as an antiseptic to treat cuts, wounds, and leprosy (Al-Rawi & Chakravarty, 1964).

All plant parts of *Equisetum ramosissimum* Desf. (Equisetaceae; K: klka rewe) are used for stop bleeding and help in kidney troubles (Al-Rawi & Chakravarty, 1964).

The dried aboveground parts of *Hymenocrater longiflorus* Benth. (Lamiaceae; K: surahallalla) are boiled with water and used as a compress against scorpion stings; whereas a tea from the upper parts of *Prunella vulgaris* L. (Lamiaceae) is used in the treatment of colds and asthma.

The aboveground fresh parts of various species of *Malva* (Malvaceae; K: tollaka) are chopped and boiled in water and eaten to treat constipation; and flowers and leaves are particularly suitable for coughs and colds (Al-Rawi & Chakravarty, 1964).

Although eaten fresh or dried, the fruits of white mulberry *Morus alba* L. (Moraceae; K: twa spee) and black mulberry *M. nigra* L. (K: twa rasha) are soaked and consumed for the treatment of constipation.

The leaves of *Plantago lanceolata* L. and *P. major* L. (Plantaginaceae; K: ragakesha, guebarkha) are compacted together and used as a compress to alleviate pain associated with rheumatism and bruises. Furthermore, in Hawraman and other parts of Iraq, the decoction of the areal parts is used for treatment of chest infections and as an aperitive (Al-Douri, 2000).



FIGURE 1. Roasting the spike and kernels of *Triticum* spp. (Poaceae; K: ganme sawar) in the field prior to preparing a typical Kurdish dish called qarakharman.

The unripe fruits of almond *Prunus amygdalus* Batsch. (Rosaceae; K: badam, chwala) are eaten fresh before becoming bitter. They are allegedly useful for weight loss and as a hypotensive agent.

The crushed ripe seed of *P. microcarpa* C.A.Mey. cause severe diarrhea, and small amounts of it are used as a laxative.

The underground parts of various wild blackberries of the genus *Rubus* are chopped to prepare a tea used for alleviating intestinal cramps.

A tea made of the petals and rosehips of *Rosa canina* L. (K: shelan) is used as hypotensive and a weight-loss medication. In east Anatolia, leaves of this species are used for colds, tonic, asthma, kidney stones, whereas the fruits and roots are used as an anti-hemorrhoidal, tonic, immunostimulant, antitussive, and diuretic, as well as for the treatment of cough, stomachic disorders, constipation, bronchitis asthma (Altundag and Ozturk, 2011).

The burned branches of Jerusalem thorn, *Paliurus spinachristi* Mill. (Rhamnaceae; K: zee) give greasy material used for the treatment of eczema.

The leaves of *Urtica urens* L. (Urticaceae; K: gazna) are used Kurdistana, Israel, and other parts of SW Asia for the treatment of fever, blood cleansing, heart diseases, rheumatism (Lev & Amar, 2000; Ali, 2009).

A decoction of fresh plant of *Fumaria parviflora* Lam. (Papaveraceae; K: shatara) is used as a diaphoretic, tonic, diuretic, anthelmintic, aperient, laxative, and alterative (Chakravarty, 1976).

The leaves of *Juglans regia* are used as an astringent, tonic, and anthelmintic. The leaves and bark are used as alterative and detergent and are given to treat herpes, eczema, scrofula and syphilis. The fruits are considered alterative in rheumatism. Vinegar of the pickled young fruits is used as gargle in sore throat. The green hull and unripe shell are considered useful in syphilis and are vermifugal. The oil is used against tapeworm and as a laxative (Chakravarty, 1976). In east Anatolia the leave are used as antihemorrhoidal, anthelmintic, and hemostatic, and treatment of fungal infection, eczema and abscess (Altundag and Ozturk, 2011).

The whole plants of *Mentha longifolia* (L.) Hudson (Lamiaceae; K: pounge) are used as a carminative, antiseptic, stimulant (Al-Rawi & Chakravarty, 1964). Also in east Anatolia the species is used for colds, flu, cough, abdominal pain, menstrual pain, stomachic disorders, bronchitis, headache, pulmonic disorders, diarrhoea, asthma, and as an antihemorrhoidal (Altundag and Ozturk, 2011).

The root decoction of *Euphorbia helioscopia* L. (Euphorbiaceae; K: sherkhwshelk) is used as an anthelmintic and laxative, whereas leaf decoction is used as an anthelmintic for treatment of anasarca, antimalarial, and antifever (Al-Douri, 2000).

The flower decoction or infusion of *Matricaria chamomilla* L. (Asteraceae; K: gwlla hajela) is used as an antipyretic, antirrhumatic, and depurative; for treatment of common cold and colpitis; and as gargle for treatment of sphagitis, gingivitis, uloglossitis, gingivostomatitis (Al-Douri, 2000).

Tools

The fine wood of native maple *Acer monspessulanum* L. (Aceraceae; K: kawit) is used in the manufacture of several household utensils such as pina (K: darxona) used for spreading dough in preparing traditional Kurdish bread (K: nani Hawrami and nani Teeri), large spoons for drinking buttermilk (K: mastaw), combs (K: shana), and smoking pipes (K: qulda).

The dry ripe fruits of *Pistacia eurycarpa* are bored from two opposite ends and converted into necklaces and prayer worry beads (K: tazbeh). The full mature fruits of *Pistacia khinjuk* Stocks are used for making necklaces (K: tazbeh) in Kurdistan (Qazi, 1990).

Walnut, *Juglans regia*, is the most commonly cultivated tree in Hawraman, both for its fruits and wood. In addition to its extensive use in the manufacture of furniture, doors, and windows, the wood of walnut is used for making a tool locally called "terok," used for spreading dough in the preparation of local bread, and also for making "blwer," used to drain urine from children during their night sleep in the cradle (K: beshka, lank).

The young branches of the native ash, *Fraxinus syriaca* Boiss. (Oleaceae; K: bnaw), are used for making canes (K: gochān).

As in many other parts of the world, the locals use the stems of common reed, *Phragmites australis* (Cav.) Trin. ex Steud. (Poaceae; K: qamish) in making flutes (K: blewer).

The young branches of *Prunus microcarpa* are used for making canes, and the woody inner fruit wall is used for making worship beads (K: tazbeh).

The young branches of willow, *Salix acmophylla* Boiss. (Salicaceae; K: bee) are used for making baskets (K: barchina), beehives (K: zambila meshhang), and bread baskets (K: tilyana).

The young branches of hackberry, *Celtis australis* L. (Ulmaceae; K: dara rash), are used for making canes.

Gums

The local chewing gum (K: bnesht) is made from the fresh gummy exudate (bneshtatal) from the stems of *Pistacia eurycarpa* (see above) by boiling the exudate in water and discarding the water after cooling to obtain the chewing gum.

Several shrubby species of *Astragalus* (Fabaceae; K: katera or gawan) are used as a source of gum tragacanth, which was sold in Kurdistan markets until about the mid 1960s. Gillett recorded on the herbarium sheets that the gum (K: Gazu) of *A. carduchorum* Boiss. & Hausskn is eaten by the local Kurdish people but not sold in the markets (Chakravarty, 1976).

Condiments

The fresh or dried fruits of *Pistacia eurycarpa* are used as a condiment mixed with yogurt.

The seeds and fruits of wild sumac, *Rhus coriaria* L. (Anacardiaceae; K: trsha sumaq, smaq), are used in flavoring many traditional dishes in Kurdistan and as a spice in Anatolia (Dogan, 2004).

The dried leaves of *Mentha longifolia* and *Satureja laxiflora* C. Koch (K: hezba), both Lamiaceae, are used in the flavoring local dishes, and their flowers are used in hot drinks (Dogan, 2004).

Fodder

The aboveground parts of *Ferulago angulata* (Schlechtl.) Boiss. (Apiaceae; K: low) are harvested when green, dried in the sun, and piled for use in winter as hay (K: Gzra).

The aboveground green parts of the mature plant of *Gundelia tournefortii* are cut, dried, and crushed into coarse pieces and used as fodder for animals.

The young oak branches (K: shakhal) of *Quercus infectoria* Oliv. and *Q. aegilops* L. (K: dar baroo, mazo, or mazi) are piled either under a heavy pile of stones or among the major branches of oaks (K: gull) and are kept as feed for goats and sheep in the winter (Rivera et al., 2012).

During its flowering period, the locals collect *Phalaris arundinacea* L. (Poaceae; K: zhazh) as forage.

Oil-cake of *Juglans regia* is used for cattle feed, and the cake contains protein (35%), fatty oil (12.5%), carbohydrates (27.6%), fiber (6.7%), and ash (5.1%) (Chakravarty, 1976).

Tanning

The acorn cups (K: gawit) and insect galls of the native oaks *Quercus infectoria* and *Q. aegilops* are used for leather tanning in Kurdistan. The fruit rind of pomegranate, *Punica granatum* (Lythraceae; K: hanar), is also used locally in tanning, though the plant is widely cultivated for its fruits and syrup (K: rubahanar), which is extensively used for juice and countless local cuisines and salad dressing.

The bark, leaves, and green shells of *Juglans regia* are also used for tanning (Chakravarty, 1976).

Dyes

The green outer fruit wall of walnut is macerated in water, and the aqueous part is used for dyeing local textiles a permanent dark brown. The bark of the fully grown walnut tree is peeled, dried, soaked in water, and used as a lipstick, especially by villagers outside of Kurdistan.

Construction

The trunk of the oriental plane tree, *Platanus orientalis* L. (Platanaceae; K: swra chnar), is used as the main beam in the roof construction of local housing.

The stems of common reed, *Phragmites australis* (K: qamish), are used in the construction of fences, partitions in village homes, and roofs.

The dry, peeled stems of white poplar, *Populus alba* L. (Salicaceae; K: spedar, chnar), are extensively used in the construction of roofs of traditional houses in Hawraman and the rest of Kurdistan.

Miscellaneous

The trunks and thick branches of native oaks (*Quercus infectoria* and *Q. aegilops*) are used for making charcoal, and the thick and straight branches are used in roofing.

The rays of the Umbles of *Ammi majus* Linn. when dry are used as tooth picks (Chakravarty, 1976).

The oil of walnuts (*Juglans regia*) is used in paint by artists, and it is also utilized for printing ink, varnishes, and in the soap industry (Chakravarty, 1976).

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