

## Ethnobotanical Properties of Akçakoca District in Düzce (Turkey)

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### Article Info

#### Article history:

Received  
August 26, 2009

Received in revised form  
October 27, 2009

Accepted  
November 25, 2009

Available online  
April 15, 2010

### Abstract

Turkey has a rich flora because of its geographical and climatic properties so traditional names and uses of plants as medicine, food and for the other aims have improved in Anatolia. Some Turkish local plant names and their uses were collected during the floristic excursions about Akçakoca's flora from 2000 to 2003. In Akçakoca, 46 taxa have 48 Turkish local names and all of them are used for various purposes by local people. 21 of them are traditional medicine for human treatments, 19 are edible green or cooked and 4 are fuel. 19 usages are firstly recorded in this study.

### Key Words

Akçakoca,  
Ethnobotany,  
Local names,  
Traditional medicines

## INTRODUCTION

Turkey has a rich flora because of its geographical and climatic properties. Anatolia (Asia Minor) is a bridge between continentals of Asia and Europe. A lot of people have moved to Turkey from various lands, cultures, religions and customs along centuries. As a result of the cultural diversity and the richness of flora, traditional names and uses of plants as medicine, food and for the other aims have improved in Anatolia.

The study area is located at the northwest of Turkey, on the coast of Black Sea. Kaplandede Mount (1168 m) which lies parallel to the sea is the highest mount in the district [1]. The most significant feature of study area is its wet climate which continues all the year. The whether rains intensively in Autumn, then winter, summer and spring. Kaplandede Mount is Hersinyen solid and included sandstones and schists. Akçakoca's soil is consist of black and brown soil, alluvion and sand at the seashore [2].

The most of the study area is covered deciduous forest. *Fagus orientalis* (kayın), *Carpinus betulus* (gürgen), *Castanea sativa* (kestane) and *Quercus* sp. (meşe) *Rhododendron ponticum* (orman gülü) are dominant species in the forest. The other area is commonly covered with fields in where *Corylus* sp. (hazelnut, fındık) is cultivated by the local people

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(Figure 1). Hazelnut is the most important crop to the economy of Akçakoca [2].

There are some ethnobotanical research on Blacksea Region [3-5] but there is only one study on North-West area [6]. These are related to medicinals, not wild edibles or other uses. The present study is focused on a relatively limited area and obtain more detailed information on their various uses would be available.



Figure 1. A view from a *Corylus* sp. field in Akçakoca.

## MATERIALS AND METHODS

This research was carried out from 2001 to 2003



Figure 2. A view from a bazaar in Akçakoca.

during the project named “*Flora and Ethnobotany of The Akçakoca District (Düzce)*” [7]. Informations of usage were collected via interview with people in Akçakoca centrum, bazaar and villages (Figure 2).

During the field excursions a lot of questions were asked to people and their answers recorded via tape

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recorder. The plant specimens were identified according to Flora of Turkey and East Eagean Islands [8-10] and Flora of Europeae [11,12].

The cited plant specimens are kept in HUB and Hb. Yıldırım. The family, plant species (Turkish local name) ethnobotanical properties and locality are aligned respectively. The abbreviations are given as following: ADK, Aslı Doğru Koca; ŞY, Şinasi Yıldırım. The photographs were taken by Aslı Dogru Koca.

## RESULTS AND DISCUSSION

**AMARANTHACEAE *Amaranthus lividus* L.** (Hoşguran, kızılca mancar) Leaves and stems are cooked with or without race. A3 Düzce: Akçakoca, centrum, 5 m, 05.7.2003, ADK 2377.

**APIACEAE *Oenanthe pimpinelloides* L.** (Kaz ayağı, kişkiş otu, kalçak mancarı) Leaves and stems are cooked with onion. Sometimes race is added into this meal. Leaves are used preparing salad. A3 Düzce: Akçakoca, Gebekese village, under cultivated *Corylus*, 75-90 m, 09.6.2001, ADK 1314.



Figure 3. *Petasites hybridus* which is called “kabalak” is very common under the forest (ADK 2252).

**ARALIACEAE Hedera helix L.** (Sarmaşık) Leaves are boiled with water and juice is drunk as abortifacient. A3 Düzce: Akçakoca, around Doğancılar, opposed the hazelnut factory, scrub and groves, 1-50 m, 30.9.2001, ADK 2046.

**ASTERACEAE Petasites hybridus (L.) Gaertn.** (Kabalak) (Figure 3). Petioles are rinded and boiled than cooked like a vegetal meal. In addition petioles are cooked and eaten against constipation. A3 Düzce: Akçakoca, entrance of Deredibi village, roadsides, 40-75 m, 10.5.2003, ADK 2252.

**BETULACEAE Corylus avellana L. & C. maxima Mill.** (Fındık) “Dolma” is cooked by leaves with race or parched crushed wheat (turkish bulgur) while leaves are fresh. In addition, stems are used as a fuel and burning in the traditional oven. A3 Düzce: Akçakoca, Uğurlu village, 50-75 m, 22.7.2002, ADK 1755; Kurukavak village, 550-590 m, 23.7.2002, ADK 1988.

**BORAGINACEAE Trachystemon orientalis (L.) G. Don** (Galdirik) (Figure4). All parts of plant are used various aims. Leaves, petioles and stems are roasted with onion and egg. In addition, petioles are boiled than pickled named “galdirik turşusu”. A meal which is known “dolma” is cooked by young “galdirik” leaves with meat. A3 Düzce: Akçakoca, Armutlu village, under cultivated *Corylus* and *Fagus orientalis* forest, 75 m, 18.5.2001, ADK 1105.



Figure 4. *Trachystemon orientalis*' local name is “galdirik” (ADK 1105).

**BRASSICACEAE Brassica oleracea L.** (Karalahana) Leaves are heated a few minutes than compressed on the rheumatological area. But these are not compressed on injury. A3 Düzce: Akçakoca, Kurugöl village, towards Sarıyayla village, hedges, 450-550 m, 26.10.2002, ADK 2016. **Brassica rapa L. var. rapa** (Kırmızı çükündür) Roots are boiled and water is drunk. Also roots are pickled named “çükündür turşusu”. Leaves are roasted with onion and egg. “Dolma” is cooked from leaves. A3 Düzce: Akçakoca, bazaar, cultivated area, 1-10 m, 23.7.2002, ADK 2386. **Brassica vulgaris var. cicia** (Pazı, Pezük) Leaves are cooked like a vegetal meal. “Dolma” is cooked from leaves with parched crushed wheat (turkish bulgur). A3 Düzce: Akçakoca, bazaar, cultivated area, 1-10 m, 23.7.2002, ADK 2387. **Nasturtium officinale R. Br.** (Çorçola) (Figure 5). Tubers and leaves are cooked with race as a vegetal meal. Leaves are used preparing salad. A3 Düzce: Akçakoca, Koçullu village, roadside, 100-125 m, 09.6.2001, ADK 1297. **Raphanus raphanistrum L.** (Leşli turp) Leaves and stems are boiled than cooked with onion, also prepared salad. In addition, roots are boiled and water is drunk for cleaning the blood. A3 Düzce: Akçakoca, Alaplı's border, around Kocaman, roadsides, meadow, 1-40 m, 10.6.2001, ADK 1395.

**CAPRIFOLIACEAE Sambucus ebulus L.** (Şahmelik) Leaves are compressed on the rheumatological area. Also roots are boiled and water is



Figure 5. *Nasturtium officinale* which is called “çorçola” is used as a meal and salad (ADK 1297.).



drunk against earache. In addition, fruits are eaten against constipation while they are fresh. A3 Düzce: Akçakoca, Gebekese village, under cultivated *Corylus*, 75-90 m, 09.6.2001, ADK 1321.

**CARYOPHYLLACEAE *Stellaria media* (L.) Vill.** (Circimik) Overground part are roasted with onion and prepared "pide" which is a Turkish meal. In addition, overground parts are infused and drunk against pneumonia. A3 Düzce: Akçakoca, Tahirli village, mouth of stream, along the streams, under *Fagus orientalis*, 1-25 m. 19.5.2001, ADK 1202.

**CHENOPODIACEAE *Chenopodium album* L.** (Sirken otu, sirkence) Leaves and stems are cooked with or without rice. A3 Düzce: Akçakoca, around Fakilli cavern, groves, scrub, 50 m, 27.10.2002, ADK 2041.

**CORNACEAE *Cornus mas* L.** (Kızılcık) Fruits are eaten while they are fresh and cooked a kind of soup named "kızılcık tarhanası". Also fruits are boiled and juice is drunk against diarrhea. A3 Düzce: Akçakoca, around Doğancılar, pasture slopes, 5-10 m, 15.3.2003, ADK 2121.

**CUCURBITACEAE *Cucurbita moschata* Dach.** (Kabak) "Dolma" is cooked by flowers with olive oil. A3 Düzce: Akçakoca, Çayağzı stream, hedge of cultivated *Corylus*, 0-25 m, 23.7.2002, ADK 1967.

**ERICACEAE *Rhododendron ponticum* L.** (Orman gülü, kuma yaprağı) Stems are used for fuel. A3 Düzce: Akçakoca, Armutlu village, south slopes, under *Fagus orientalis* forest, 75 m, 18.5.200, ADK 1162.

**FABACEAE *Phaseolus vulgaris* L.** (Fasulye) "Dolma" is cooked by young leaves. A3 Düzce: Akçakoca, bazaar, cultivated area, 1-10 m, 23.7.2002, ADK 1968.

**FAGACEAE *Fagus orientalis* Lipsky** (Kayın) Stems are used as a fuel and construction. A3 Düzce: Akçakoca, Tepe village, 45-75 m, 10.6.2001, ADK 1441. ***Quercus cerris* L., *Q. petraeae* (Matt.) Liebl., *Q. pubescens* Willd.** (Meşe) Stems are used as a fuel and construction. A3 Düzce: Akçakoca, between Doğancılar and Çiçekpınar villages, south slopes, scrub, 20 m, 10.5.2003, ADK 2238; Çiçekpınar village, water depot pathsides, hedges and pathsides, 150-200 m, 29.9.2001, ADK 1483, ŞY; Çayağzı stream, hedge of cultivated *Corylus*, 0-25 m, 23.7.2002, ADK 1946A.

**JUGLANDACEAE *Juglans regia* L.** (Ceviz) The green rind of fruits is boiled and diluted juice is drunk against headache. A3 Düzce: Akçakoca, Esmahanım village, along the road, 100-125 m, 22.7.2002, ADK 1775.

**LAMIACEAE *Mentha longifolia* (L.) Huds. & *M. spicata* L.** (Eşek nanesi, köpek nanesi) Leaves are boiled and juice is drunk against haemorrhoids while you are hungry. A3 Düzce: Akçakoca, Kurukavak village, along the road, 500-575 m, 22.7.2002, ADK 1871; Uğurlu village, roadsides, under *Fagus orientalis* forest, 200-225 m, 22.7.2002, ADK 1818.

**Satureja hortensis** L. (Cibris) Leaves and stems are dried, crushed and deposited for using as spice in the winter and added into "Tarhana" which is a kind of soup, "Acıka" which is a kind of appetizer, "Salça" that is prepared based tomato and added mostly Turkish meals. A3 Düzce: Akçakoca, Sarıyayla village, along road, 150-200 m, 500-550 m, 26.10.2002, ADK 2035.

**LILIACEAE *Smilax excelsa* L.** (Dikenucu, Melülcan, kuş mancarı) The terminal parts of shoots are boiled than roasted with onion and egg. Fruit is eaten while it is fresh. In addition, fresh shoots are boiled and juice is drunk against diabetes. A3 Düzce: Akçakoca, Çiçekpınar village, water depot pathsides, hedges and pathsides, 150-200 m, 29.9.2001, ADK 1463, ŞY.

**MALVACEAE Malva sylvestris** L. (Ebegümeç)

Leaves are heated a few minutes than compressed injury against inflammatory. Leaves are also boiled and juice is drunk as an uretic. A3 Düzce: Akçakoca, Alaplı's border, around Kocaman, roadsides, meadow, 1-40 m, 10.6.2001, ADK 1384.

**MORACEAE Morus alba** L. & **M. nigra** L. (Dut)

Leaves are boiled and juice is drunk against diabetes. A3 Düzce: Akçakoca, centrum, 5 m, 05.7.2003, ADK 2383; ADK 2384.

**POACEAE Hordeum murinum** L. (Arpa)

Overground part is boiled with water and water used as a bath while still warm to treat rheumatic pain. A3 Düzce: Akçakoca, to Alaplı, around Karayolları, banks of road, 10 m, 08.6.2003, ŞY 28764, ADK. **Zea mays** L. (Mısır) Fruits are boiled, deposited for add to soup and bread in winter. In addition, corn silk is boiled and juice is drunk against enuresis. A3 Düzce: Akçakoca, Melenağzı village, along Melen stream, marshy area, grassland, 1-40 m, 30.6.2002, ADK 1715.

**POLYGONACEAE Rumex conglomeratus** Murray

(Efelek, üfelek, labada) Leaves are squashed and compressed on the pain. A3 Düzce: Akçakoca, Uğurlu village, roadsides, under *Fagus orientalis* forest, 200-225 m, 22.7.2002, ADK 1803.

**PRIMULACEAE Primula vulgaris** Huds. (Dağ menekşesi, yabani menekşe)

Leaves are roasted in oil than filtrated via clothe and pomaded on the injury. Besides, flowers are dried and deposited for winter. They are boiled with water and juice is drunk against cough. A3 Düzce: Akçakoca, Kurukavak village, under cultivated *Corylus*, 550-600 m, 15.3.2002, ADK 1620.

**ROSACEAE Cerasus avium** (L.) Moench (Kiraz)

The fruits peduncules are boiled and juice is drunk against enuresis. A3 Düzce: Akçakoca, Esmahanım

village, along the road, 100-125 m, 22.7.2002, ADK 1772. **Cydonia oblonga** Miller (Ayva) Leaves are boiled and juice is drunk against haemorrhoids. A3 Düzce: Akçakoca, Subaşı village, under cultivated *Corylus*, roadsides, 40-50 m, 10.5.2003, ADK 2263.

**Laurocerasus officinalis** M. Roem. (Taflan) The dried leaves are compressed on the ached area for the headache. The leaves are also heated than compressed the throat against inflammation. A3 Düzce: Akçakoca, between Melenağzı and Nazımbey villages, under cultivated *Corylus*, edge of hedges, 1-50 m, 07.4.2001, ADK 1159. **Mespilus germanica** L. (Töngel, muşmula) Fruits are boiled with water and juice is drunk sugarless and while you are hungry against diarrhea and stomache. A3 Düzce: Akçakoca, around Kale, slopes, scrub, pasture, 15-20 m, 23.7.2002, ADK 1907. **Rubus sanctus** Schreb., **R. hirtus** Waldst. & Kit., **R. tereticaulis** P. J. Müll., **R. discolor** Weihe & Nees (Böğürtlen diken) Leaves are masticated and compressed injury as an astringent. Roots are boiled and juice is drunk against stomache. A3 Düzce: Akçakoca, Çiçekpınar village, water depot pathsides, hedges and pathsides, under cultivated *Corylus*, 150-200 m, 29.9.2001, ADK 1472, ŞY; Kaplandede mount, Kestanebayırı forest, along the road, 150 m, 27.10.2002, ADK 2060, ŞY; Melenağzı village, Melen stream banks, marshy area, 0-10 m, 07.4.2001, ADK 1009; Gebekese village, under cultivated *Corylus*, 75-90 m, 09.6.2001, ADK 1325.

**SAXIFRAGACEAE Ribes alpinum** L. (Çalı çileği) Fruits are eaten while they are fresh. A3 Düzce: Akçakoca, around Şifalısu, to Kaplandede mount, mixed forest (*Fagus orientalis*, *Carpinus betulus*, *Quercus petraea*), 250-500 m, 06.6.2003, ŞY 28607, ADK.

**SOLANACEAE Lycopersicon esculentum** Mill. (Domates) Leaves are added all the vegetal meals especially kızılca mancar's meal. A3 Düzce: Akçakoca, centrum, 5 m, 05.7.2003, observation.

**Solanum tuberosum** L. (Patates) Tuber is cut and compressed on forehead against the headache. A3 Düzce: Akçakoca, centrum, 5 m, 05.7.2003, observation.

**URTICACEAE Urtica dioica** L. (Isırgan, cibirgen) Leaves and petiols are boiled than squashed and cooked with corn flour or only onion as a meal or soap. In addition, leaves and petiols are cooked and eaten or drunk as a tea against cancer. A3 Düzce: Akçakoca, Gebekese village, under cultivated *Corylus*, 75-90 m, 09.6.2001, ADK 1324.

**All trees.** Granulated wood which is occurred by woodborer is powdered on the injury for pouncing.

## CONCLUSIONS

Some uses as food and treatments as medicine are recorded for the first time according to literature [3-6,13-23]. *Hedera helix* is reported by Baytop [13] as toxic plant. To treatment as abortifacient is a first record. *Brassica oleracea*'s leaves are used for inflammatory eyelid and hordeolum [6] but in Akçakoca these are treated rheumatic pain. *Raphanus raphanistrum* is used as green from many literature like in Akçakoca [13-14,18]. But there is not any data about use the roots for cleaning the blood. *Stellaria media* is used as food in central and south-west Anatolia commonly [13,17,18] but use as medicine is the first record. Also, as a medicine, *Cornus mas*' fruits are the first record. Seeds of *Phaseolus vulgaris* is known as food but leaves are not. In Akçakoca the people cooked "dolma" with them traditionally. Similarly leaves of *Corylus* species are cooked like dolma. In addition, *Lycopersicon esculentum* whose fruits are used in worldwide are put on many vegetal meal in Akçakoca interestingly. The use of *Petasites hybridus* as a food and medicine are recorded first time. Pericarp of *Juglans regia*'s fruits are used for eczema from Yeşilada et al. [6], variously it is treated

against headache in Akçakoca. *Smilax excelsa* is known as greens commonly [13,14,18] and as a medicine to treat breast cancer [6] but using against diabetes is the first record. *Malva neglecta* is used for injury [5] and as a food. In Akçakoca, people drink *M. sylvestris*' leaves juice as a uretic besides food. *Morus* species are known as a food and medicine for the many diseases but use for diabetes is the first record. Uses of *Zea mays* and *Cerasus avium* against enuresis is recorded first time. According to Baytop [13], roots of *Primula veris* is used as expectorant, similarly flowers of *P. vulgaris* are used against cough. *Sambucus ebulus* is used medicinal treatments but use for constipation is the first record.

In Akçakoca, 46 taxa have 48 Turkish local names and all of them are used for various purposes by local people. 21 of them are traditional medicine for human treatments, 19 are edible green or cooked and 4 are fuel. 19 usages are firstly recorded in this study.

As a result, in Akçakoca District (Düzce), 48 local names of 46 plant taxa, 21 uses as traditional medicine and 19 uses as food are obtained. 19 usages are firstly recorded in this study.

## ACKNOWLEDGEMENTS

Specimens were collected during the research named "Flora and Ethnobotany of The Akçakoca District (Düzce)" between 2001-2003. This research supported by Hacettepe University Research Unit (Project Number: 01.01.004.601). The authors thank Hacettepe University Research Unit for financial support.

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