

State of plant genetic resources, related traditional knowledge and their protection in Turkey

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The high plateau of east of the Altai mountains, Mongolia is the original homeland of Turks. Mongolia was a starting point for the movement of nomadic tribes in search of new pastures.

For several reasons Turks moved from the mother land and scattered almost all around the World and arrived at Anatolia in 1071.



Over time, we mostly enjoyed a nomadic type of a life style cultivating crops and herding on fertile pastures.

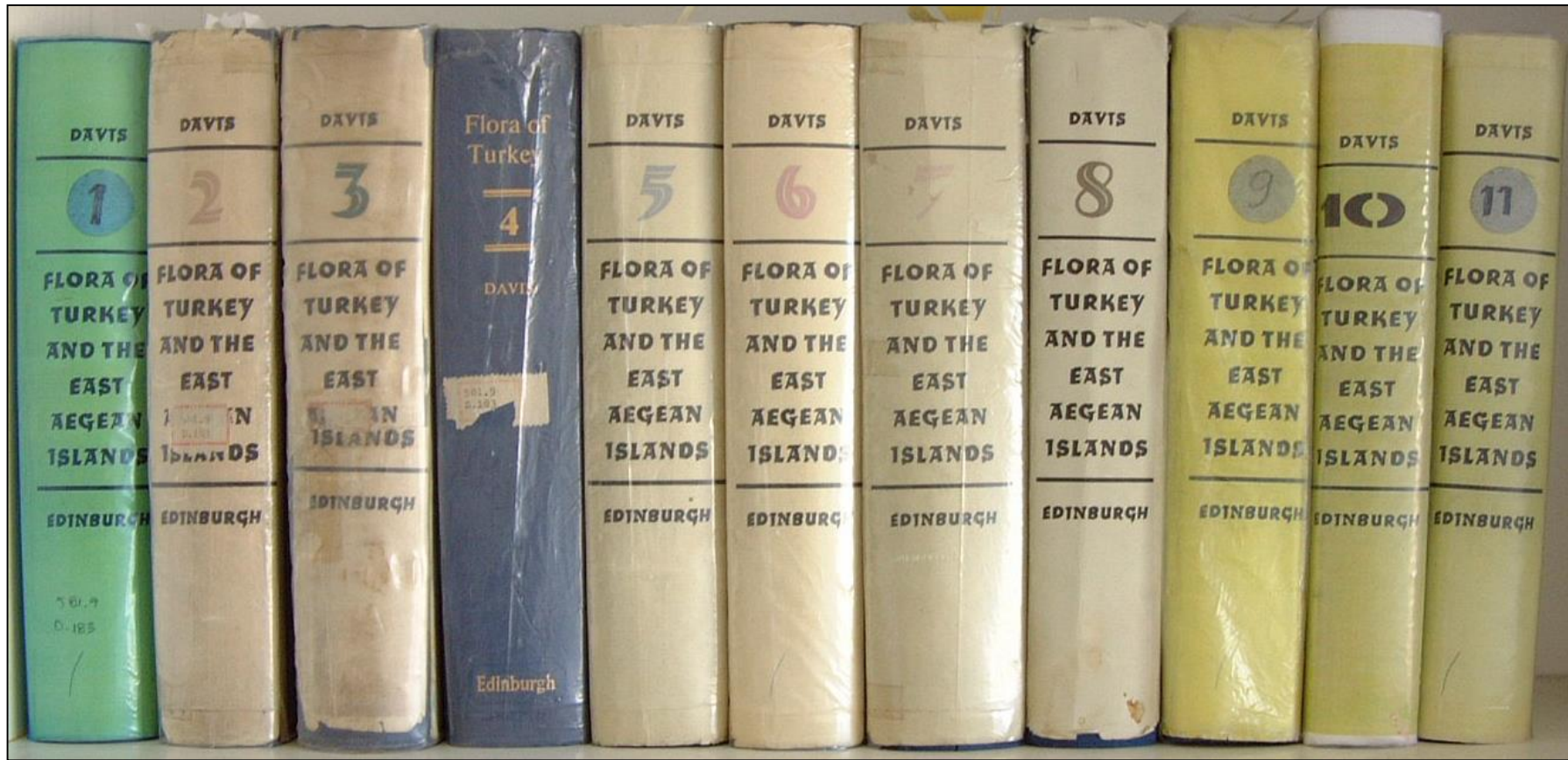
Even during the Ottoman Period we were not fully settled. We still kept living nature dependent, which helped us develop several types of information on various aspects of nature, plants and animals.

Most of the time nomadic people are far away from education, medical care, have limited (if none) access to tools of modern times. They have to develop their own methods to substitute their basic needs.

Anatolia is a pathway between Asia and Europe. Hundreds of communities past through or remained in Anatolia for short or long terms. There has always been an interaction between those communities.

Each of them left a part of their culture, plants and animals. We did also develop huge amount of TK.



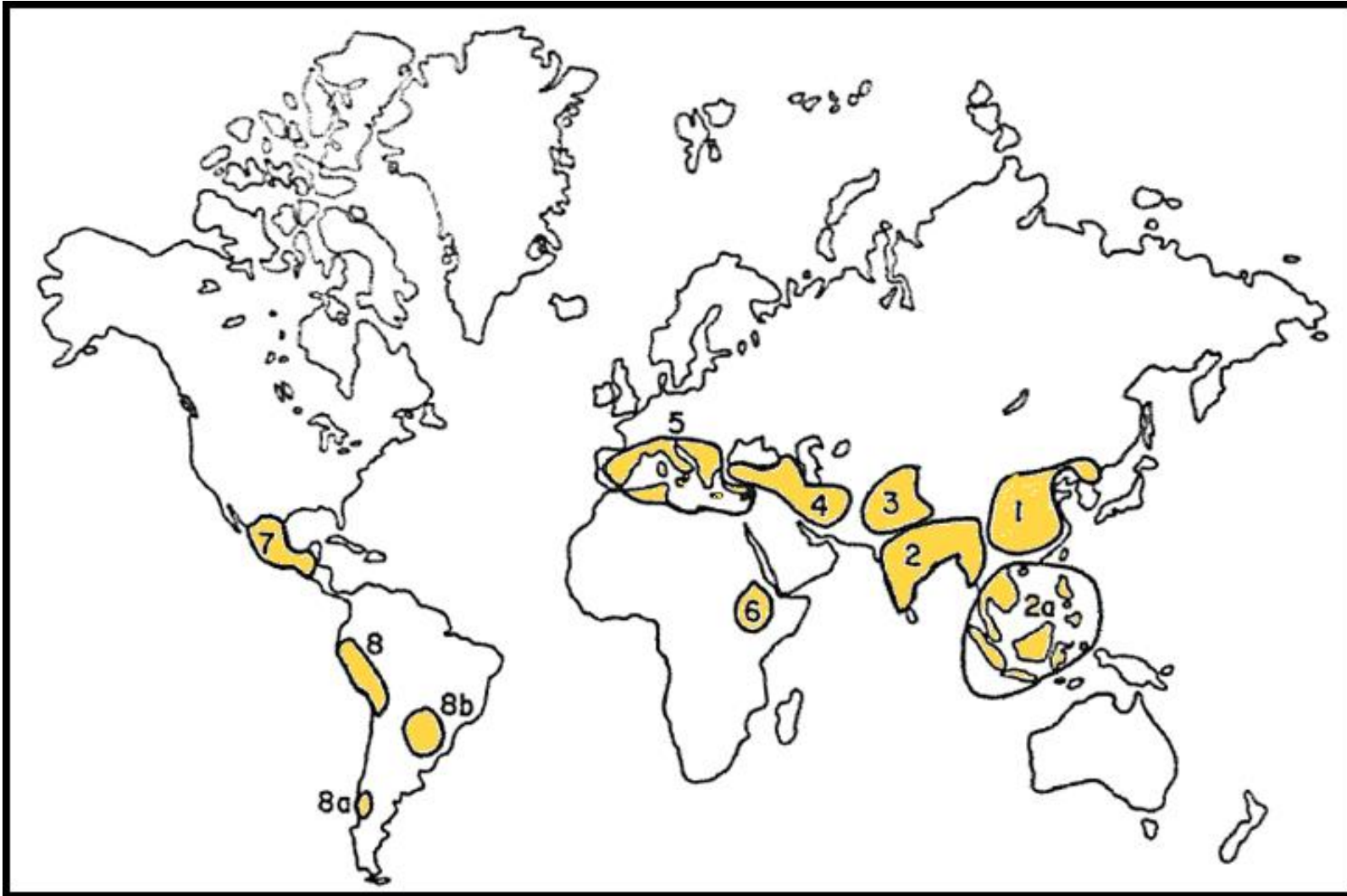


Flora of Turkey and East Aegean Islands

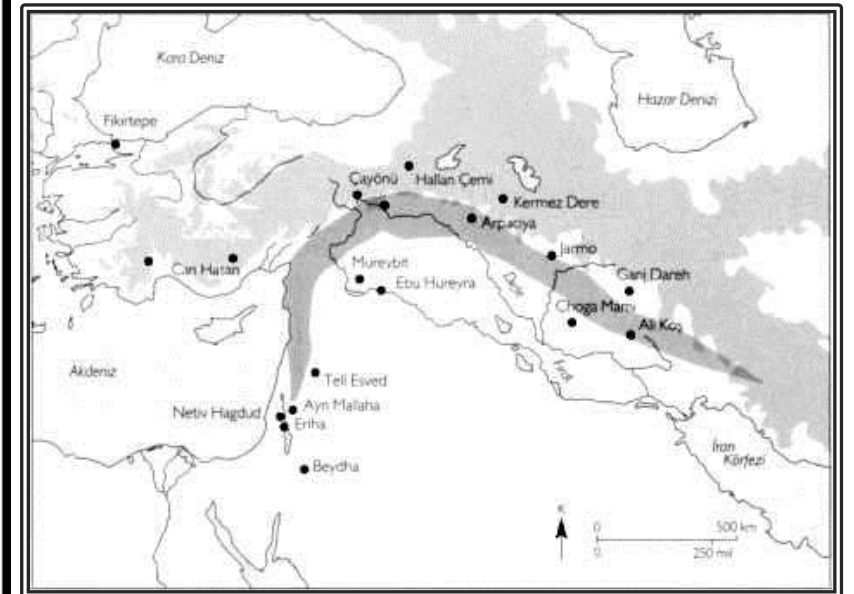


Illustrated Flora of Turkey (in Turkish)

Vavilov's centers of origin



Fertile Crescent



<http://www.futureoffood.ox.ac.uk/food-security-forum/blog/crop-wild-relatives>

Alptekin Karagöz, TPE WIPO 13.04.2013

Phyto-geographic regions of Turkey



Important endemism centers of Turkey



Plant diversity of Turkey (Güner et al., 2012)

	Natural	Endemic	%	Alien	Cult.	TOTAL
Family	154	0	0,00	10	3	167
Genera	1.220	14	1,15	76	24	1.320
Species	9.753	3.035	31,12	164	69	9.996
Taxa	11.466	3.649	31,82	171	70	11.707

Activities for agro-biodiversity protection

Turkey's Seed Gene Bank, Ankara	(63.269 accessions)
Aegean Agric. Res. Ins. Gene Bank Izmir	(57.726 accessions)
Field gene banks for vegetatively propagated plants	(18.490 accessions)
Domestic animal genetic resources conserved <i>In Vitro</i>	[Horse (6), Goat (5), Sheep (14), Water Buffalo (Cattle (6)]
Fisheries genetic resources conserved at several institutes	

Starting from PGR, all genetic resources will be barcoded and registered.
Two projects are on the way.

Protected Areas

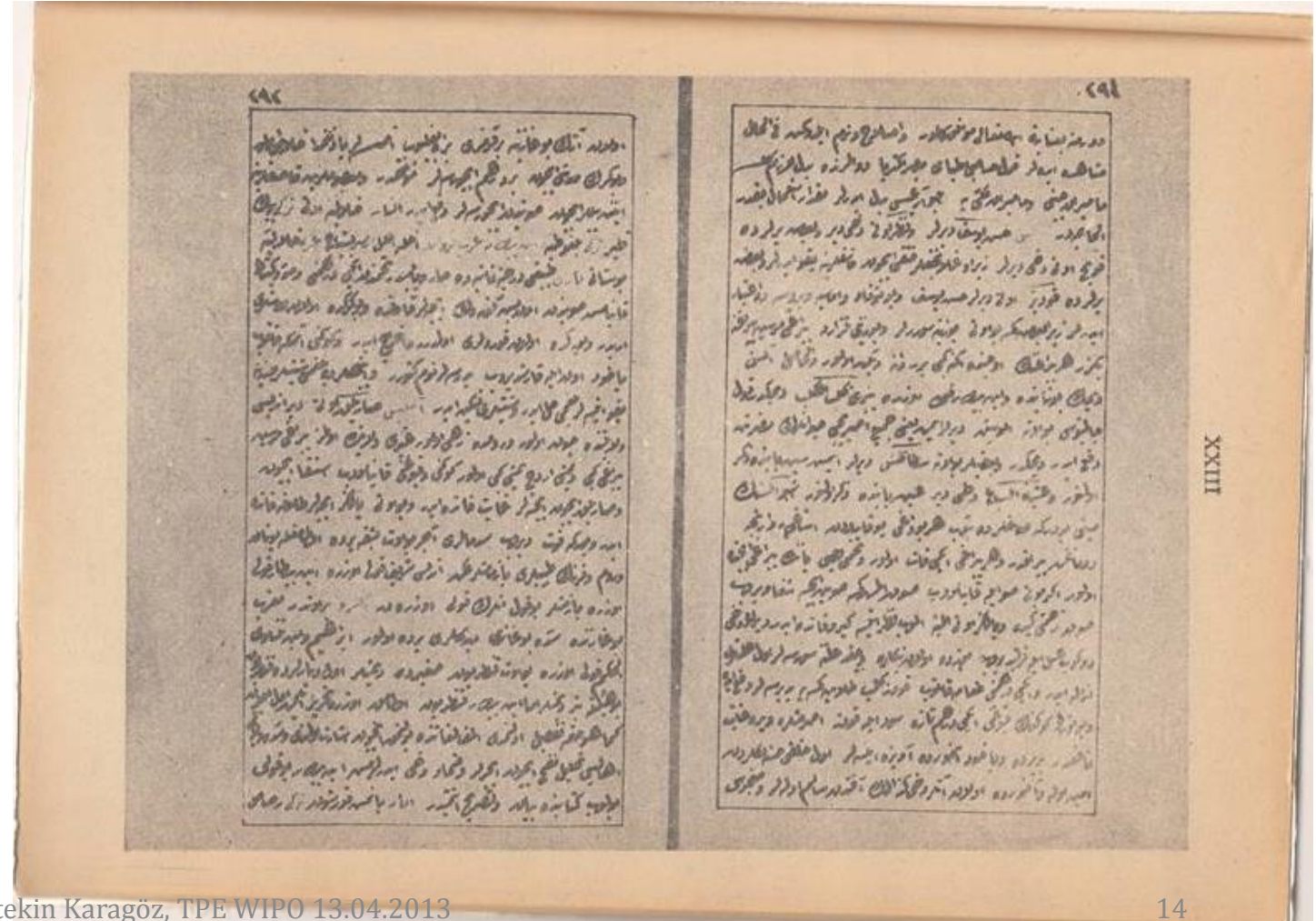
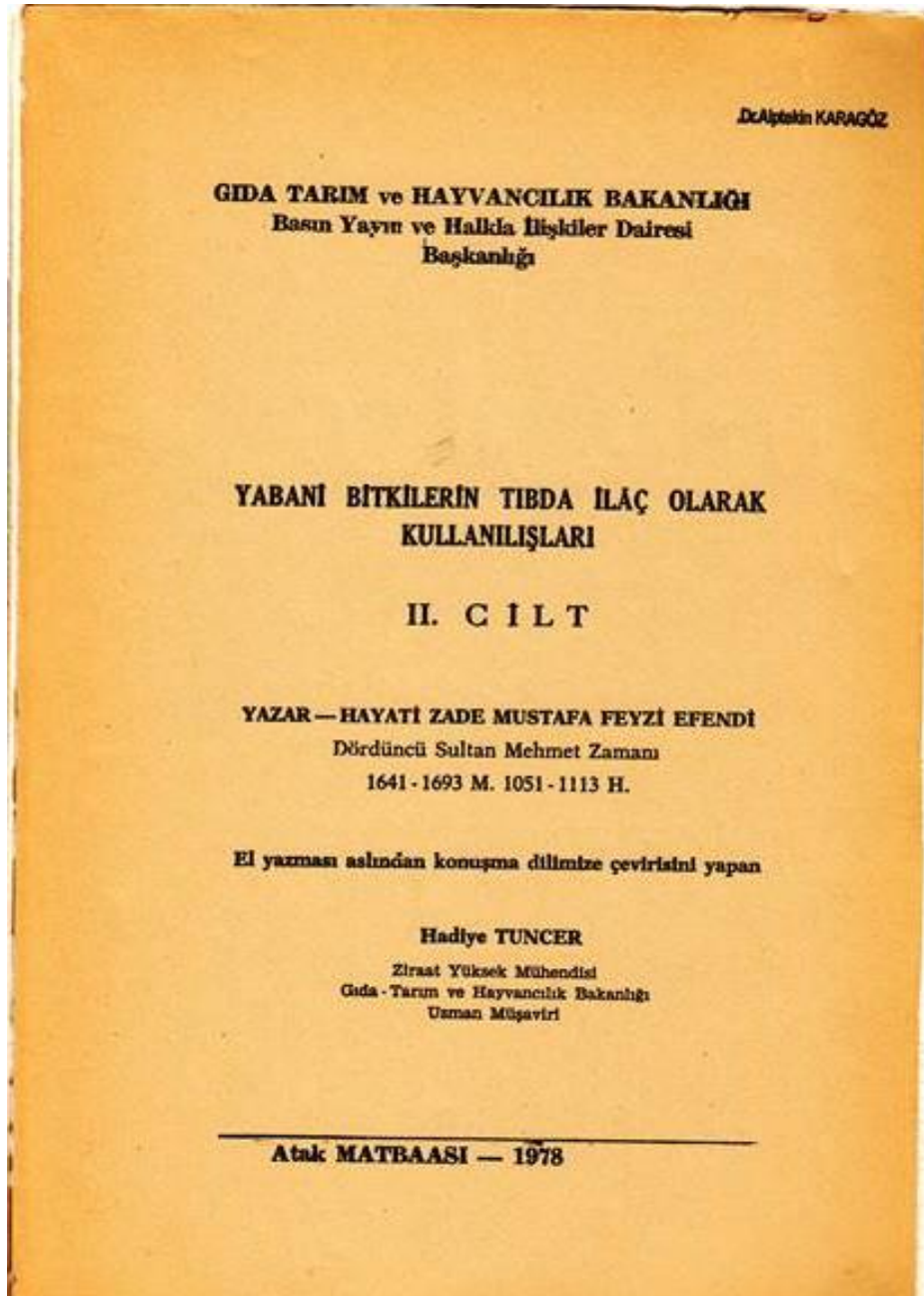
5.647.568 ha (out of 78.000.000 ha), 7,24% has protection status.

Protected Areas	Number
National Parks	40
Nature Conservation Areas	31
Nature Parks	184
Nature Monuments	107
Wildlife Development Areas	80
Protection Forests	58
Natural Sites	1.273
Specially Protected Areas	16
Ramsar Sites	14
Biosphere Reserves	1
World Heritage Sites	11





Utilization of wild plants as pharmaceuticals
By Hayatizade Mustafa Feyzi Efendi (1641-1693)
Translated by: Dr. Hadiye Tuncer



HARDAL

- Arapça adı : Hardal Ebyaz, Keber Ebyaz
Hardal
Türkçe adı : Beyaz Hardal, İngiliz Hardalı
Farsça adı : İsfend
Latince adı : Sinapis Alba L.
Cruciferae 3204



3204

İyisi bostani cinsi yani ekimi yapılan taze ve kırmızıya çalılık renkli olanıdır. Tabiatı dördüncü derecede sıcak ve kurudur. Döğülmüşü üzüm suyuna konulsa onu çabuk ihtimardan meneder. Dumanı aksırma yapar. Guta, saç kırana yakı yapılsa faydalıdır. Bilhassa siyatige, dalak hastahklarına yakı yapmak için iyidir. Dumanı haşerati öldürür. Yenilmesi balgamı keser. Bal ve mum ile eritip yüze sürülse yüzü güzel ve berrak yapar. Keza kibrit, bal ve sirke şerbeti ile yüze hergün sürülse yüzü güzelleştirir. Eski urları, sıracayı iyi eder. Uyuza, temreye sirke ile karıştırılıp sürülse derhal faydası görülür. Döğülmüş hardal diş ağrıları için ağızda tutulsa ağrıyı hemen geçirir. Diş etlerindeki şişlere, baras (Vücuttaki cerahatli lekeler) ve daimi baş ağrılarına yakı yapılsa faydalıdır. Dimag tutukluklarını açar. Döğdükten sonra suda kaynatıp balla göze çekilse görme kuvvetini artırır. Şarap ile karışımı içilirse solucanları öldürür. Suyu kulağa, dişlere damlatılrsa ağrıları hemen keser. Şehveti artırır ve eski sıtmalara iyi gelir. Kullanılışı iki miskal kadardır.

HARDAL BERRİ

- Arapça adı : Hardal Berri, Harşa, Keber
İfrit Lapsan, Kirillah
Türkçe adı : Yabani Hardal
Latince adı : Simapis Arvensis L.
Cruciferae 3205



3205

Tek başına yenilmesi baş ağrısı yapar ve dimağa zararlıdır. Badem ve sirke ile halletmeli, yenildiği vakitte, Milhi Hindi (Hind Tuzu) katmalıdır. Takvim sahibine göre sandal, gülsuyu ve kâfur muslihidir. Bedeli yarısı kadar hab Erreşat bazıları da yarısı ka-

BARSİM AHMAR

- Arapça adı : Rıdbah, Barsim Ahmar
Türkçe adı : Üç kulak otu, kırmızı yonca
Farsça adı : Espest
Latince adı : Trifolium pratense L.
Leguminosae 3463



3463

Tıbda tohumu kullanılır. Onun için buzur rıtbah diye anılır. İyisi sarı olanıdır. Tabiatı sıcak ve nemlidir. Erkeklik kuvvetini artırır. Emzikli kadına verilse hemen faydası görülür. Sütü çoğaltır. Bedeli şalgam tohumudur.

BÜZUR CERCER - BAKİLÂ ŞANI

- Arapça adı : Turmus, Bakilâ Şami
Türkçe adı : Acı Bakla, Yabani Bakla Ker-
düme Tohumu, Yabani Tere
Tohumu
Farsça adı : Kebgeç
Latince adı : Lutipinus termis
Leguminosae 2158



2158

Tıbda tohumu kullanılır. Tabiatı üçüncü derecede sıcak ve kurudur. İdrar zorluğuna vücuttaki benek ve leke (Ca't) hastahkları için kullanılır. İncik ağrılarına yakı gibi konulur. Fazla yenilirse meniyi artırır. İçilecek miktarı 1 dirhemdir. Sirke ve bal şerbeti karışımı ve sıcak su ile karıştırılarak içilse balgam söker. Döğdükten sonra 1 yumurta sarısını tuz yerine ekilip yenirse erkeklik kudretini artırır. Fakat fazlası baş ağrısı verir. Mesaneye zararlıdır. Bedeli kesira olup Razi sahibine göre ise kendi yaprağıdır.

BÜZUR SARMAK

- Arapça adı : Kataf, Sarmak, Sarmaç
Türkçe adı : Koyun Sarmaşığı, Karapazı
Latince adı : Atriplex hastata L.
Chenopodiaceae 574



574

Altogether
around 400 plants
and
recepies

After scanning large areas, Ekrem Sezik and Erdem Yeşilada have contributed alot for creation of an archive on ethno-medicine in Turkey.

(Gürkan and Tuzlacı, 2000; Ertuğ, 2015).

Various uses of plants

(Ertuğ, 2015. in: Illustrated Flora of Turkey)

Adhesive

Poison

Ornament

Tooth paste

Fodder

Food

Get rid of evil eye

Drive away evil spirit

Shading

Fishing

Aroma

Dye

Medicine

Construction material

Remove bad luck

Tea



Fencing

Fuel

Soap

Cosmetic

Ethnomedicine

Handcraft

Incense



People develop TK based on their daily needs

Anderson and Ertuğ-Yaraş (1998) describe 9 different types of dung fuel preparation and use in Central Anatolia.

Anderson, S., Ertuğ-Yaraş, F. 2009. Fuel Fodder and Faeces: An Ethnographic and Botanical Study of Dung Fuel Use in Central Anatolia. *Environmental Archaeology* I: 99-109

Sources of landraces + TK



Sources of landraces + TK



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Sources of landraces + TK



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Sources of landraces + TK



Alptekin Karagöz, TPE WIPO 13.04.2013



TK is generally related to landraces, native plants, local animal races or a culture.

Good quality bulgur is made of wheat landraces such as, *Kundur*, *Sarıbursa*, *Karakılçık*,, best bulgur is made of *Cultivated einkorn (T. monococcum var. monococcum)*



Herbal ingredients (Allium spp., Thymus spp., Ferula spp., Prangos spp., Eremurus spectabilis, Ocimum basilicum) are used for cheese making in Van province.



Authentic Horizontal Döner Kebab is made of Morkaraman (sheep race) mutton, cooked with Scots Pine flame



Landraces

Altogether total cereal landraces cultivation area is estimated to be 801.849 ha which is 3,37% of all cultivation area.

Karagöz, A. 2014. Wheat landraces of Turkey. *Emirates Journal of Food and Agriculture*, 26 (2), 149-156



Einkorn (*Triticum monococcum* var. *monococcum*) and emmer (*Triticum dicoccon*) that are both primitive forms of wheat are still grown at northern and eastern Anatolia.



For **TRADITIONAL KNOWLEDGE** to be kept alive,

- it must remain **relevant to a culture,**
- **be regularly practiced, and**
- **learned within communities and between generations.**

Relevance of **TRADITIONAL KNOWLEDGE** to a culture

*A **culture** is a way of life of a group of people the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next.*

Are we keeping our culture?

Culture is generally related to lifestyle.

Are we keeping our lifestyle?



Are we keeping TK properly?

Not much progress world wide (there are exceptions).

Finally CBD was able to issue The Nagoya Protocol on ABS in 2010

Turkey is not a party to The Nagoya Protocol yet.

Legislative and institutional arrangements are on the way.

WIPO



WIPO/GRTKF/IC/11/5(c)

ORIGINAL: English

DATE: April 26, 2007

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WORLD INTELLECTUAL PROPERTY ORGANIZATION
GENEVA

**INTERGOVERNMENTAL COMMITTEE ON
INTELLECTUAL PROPERTY AND GENETIC RESOURCES,
TRADITIONAL KNOWLEDGE AND FOLKLORE**

Eleventh Session
Geneva, July 3 to 12, 2007

REPRODUCTION OF DOCUMENT WIPO/GRTKF/IC/9/5 "THE PROTECTION OF
TRADITIONAL KNOWLEDGE: REVISED OBJECTIVES AND PRINCIPLES"

Relevant national, regional and international activities have been addressing the same issues to those set out in the draft objectives and principles. The Committee itself has examined these issues over a number of sessions. The recurring issues include the following:

- (a) nature of the subject matter of TK, and possible descriptions or definitions;
- (b) criteria for protection of subject matter;
- (c) identity of owners, bearers or custodians of TK, or other beneficiaries of protection;
- (d) nature of protection, including the possible need for formalities and the possible role of registration and other forms of official notice;
- (e) scope of rights and exceptions;
- (f) duration of protection;

Relevant national, regional and international activities have been addressing the same issues to those set out in the draft objectives and principles. The Committee itself has examined these issues over a number of sessions. The recurring issues include the following:

- (g) role of government agencies or other authorities;
- (h) relationship with conventional IP protection, and international and national legal measures concerning the recognition of farmer's rights and the in situ conservation of biodiversity, including the preservation, promotion and protection of biodiversity related TK, and legal frameworks regulating access to genetic resources and [benefit sharing](#);
- (i) transitional measures, retroactivity of protection and the role and status of the public domain;
- (j) international and regional protection;
- (k) recognition of foreign right holders and other foreign beneficiaries of protection.

Demographic information and status of ethnobotany studies (as of 2012)

Region	Area (km ²)	Population (2012)	Number of Provinces	Rural Population	% of Rural Population
East	161.932	6.137.144	14	2.531.078	41.24
Central	160.335	12.080.428	13	1.904.889	15.76
Blacksea	135.000	7.547.841	18	3.040.191	40.27
Medit.	109.447	9.611.007	8	2.681.444	27.80
Aegean	85.000	9.779.502	8	2.569.693	26.27
Marmara	67.300	22.743.453	11	2.030.932	8.93
Southeast	59.576	7.958.473	9	2.420.726	30.41
TOTAL	779.452	71.517.100	81	17178.053	22.70

Demographic information and status of ethnobotany studies (as of 2012)

Region	Ethnobotany Studies	Ethnobotany Dissertation Thesis
East	(3) 146	11
Central	(1) 192	26
Blacksea	(5) 134	20
Medit.	(6) 124	17
Aegean	(4) 138	20
Marmara	(2) 147	25
Southeast	(7) 59	8
		(General) 29
TOTAL	1.420	156

Majority (66,3%) of the ethnobotany studies conducted in Turkey are about the plants species used in a region for several reasons (medicinal, dye, edible etc.)

Problems concerning TK and conservation,

1. Value of TK is not fully recognized and appreciated,
2. TK is being lost very rapidly,
3. TK has not been fully collected yet,
4. Collection hasn't been done in a systematic manner,
5. Collected TK has not been compiled in a data base yet,
6. ABS system unclear (will Nagoya Protocol help?),
7.

Conclusion,

1. A Gap Analyses is needed for TK,
2. Based on Gap Analyses, TK needs to be collected urgently,
3. A data base and a registry system should be established, to compile and register all TK; experiences and case studies of foreign countries to be included in database ,
4. Legislative and institutional arrangements for ratification of Nagoya Protocol should be completed ASAP,
5. An ABS system for TK needed. System should be established in harmony with Nagoya related legislation and institutions. Foreign models to be examined.

Thank you very much for your attention

