

The Role of Faculty of Pharmacy as an Implementing Partner in Natural Active Ingredients for Food, Pharmaceuticals and Cosmetics

MO BABURY

***Professor of Pharmacognosy,
Faculty of Pharmacy, Kabul
University.***

Main points

- **Introduction**
- **Overview of the project**
- **Outlines for R & D**
- **The Role of Faculty of Pharmacy as an Implementing Partner**

Origin and habitat of medicinal plants used in Traditional Medicine of Afghanistan

Origin	Number species	%
Imported	62	22
Cultivated	75	26
Indigenous	43	16
Wild, arid, steppic	17	6
E and S subtrop stepes	16	6
Wild, humid region	28	10
Central high region	23	8
SW mediterranean	17	6
Total	281	100

MAPs in Public health and economy of Afghanistan

- Traditional Medicine(Unani &Folk medicine):
 - Legislation,
 - Complementary medicine,
- Export:
 - mainly regional
 - 18-45 products
 - Quality
- Pharmaceutical production:NMP, Law of Pharmacy, Essential Drugs List, Registered List of Medicines.

Traditional Medicine

- Unani Medicine: based on ancient systems and theories (Combination of Greek, Indian, Persian and Islamic Medicines)



- Folk Medicines: based on oral transmission and empiric knowledge and practiced by healers of all kinds and community.

Selected MAPs for the screening.

Rank	Selected products		Local name	Market	Ecol	Socec.	Techn.	Total
				18	14	12	12	56
1	<i>Glycyrrhiza glabra</i>	Licorice	Shireen Buya, Shireen Bayan	16	9	10	9	44
2	<i>Cuminum cyminum</i>	Cumin	Zire asel	13	7	10	8	38
3	<i>Pistacia vera L.</i>	Pistachio	Pista	13	7	9	8	37
3	<i>Ferula asa foetida</i>	Hing	Heng	14	7	9	7	37
5	<i>Carum carvi</i>	Caraway	Carabia, Zire kajak	12	7	10	7	36
5	<i>Artemisia cina Berg.</i>	Levant, Wormseed	Terkh	13	7	8	8	36
7	<i>Armeniaca vulgaris</i>	Apricot	Zardalu	12	7	8	8	35
7	<i>Ziziphus jujuba</i>	Beer	Onab	10	7	9	9	35
7	<i>Coriandrum sativum</i>	Coriander	Gashniz	11	7	9	8	35
10	<i>Carum copticum</i>	Bishops weed	Jawani, Sperghai, Aje gon	11	9	7	7	34
11	<i>Punica granatum</i>	Pome granade	Anaar	10	6	7	10	33
12	<i>Ephedra sp.</i>	Ephedra	Bandak	8	7	9	8	32
12	<i>Astragalus sp.</i>	Milk vetch, Tragagand	Katira	10	7	7	8	32
14	<i>Sysimbrium</i>	Hedge mustard	Khok Shir	8	6	8	8	30
14	<i>Hippohaë rhamnoides</i>	Seabuckthorn	Safid khar, Sya khar	11	7	7	5	30
14	<i>Juglans regia</i>	Walnut	Charmaghz	8	8	6	8	30
17	<i>Amygdalus communis var. dulcis</i>	Almonds sweet	Baddame-shireen	10	5	8	6	29
18	<i>Rosa spp.</i>	Rose	Gulab	7	7	7	7	28
19	<i>Pistacia khinjak</i>	Pistachio	Pisti khinjak	5	9	7	6	27
19	<i>Cichorium intybus</i>	Chicory	Qosni	10	4	7	6	27
21	<i>Amygdalus communis var. amara</i>	Bitter Almond	Baddame-talkh	8	5	6	4	23

Selected products:

- Glycyrrhiza sp. (Licorice)
- Cuminum sp.(Cumin)
- Ferula sp. (Devil's dung, hing)
- Carum sp.(Caraway)
- Artemisia sp. (levant wormseed)
- Ziziphus sp. (Ber, Indian jujube, jujube, Chinese date).

Geographical distribution

Province	Implementing Organisation	Products					
		<i>Artemisia</i>	<i>Caraway</i>	<i>Cumin</i>	<i>Hing</i>	<i>Liquorice</i>	<i>Jujube</i>
Khost	TLO	xx	xx	xx	x	X	
Paktia	TLO	Xx		x	x	x	
Badakshan	AKF	Xxx	xxx	xx		xx	
Baghlan	AKF	xxx	xx	x	xxx	Xxx	
Bamyan	AKF	Xxx	x	x	x	X	
Herat	CHA	Xxx	xx		xxx	Xxx	xx
Ghor	CHA	Xxx	xx	x	xxx	Xxx	X
Farah	CHA	Xxx			X	Xx	Xxx
Faryab	CHA	Xxx	Xx	X	Xxx	Xxx	Xx

Outlines for R & D (1)

- Resource assessment:
 - Botanical identification with development of herbarium,
 - Assessment of Geographical distribution,
 - Evaluation of traditional harvesting practices

- Quality analysis:
 - Anatomico- morphological evaluation
 - Identification of bioactive compounds
 - Assay of pharmacologically active and other interested substances: ecology and vegetation phase
 - Determination of physical parameters

- Resource management:
 - Training and Education ,
 - Economic mapping,
 - Organization (Rational use,Duties & responsibilities),
 - Technical issues (Rational collection, GACP, GMP),
 - Policy and legal framework (Policy, Law, regulations, Manual and guidelines),
 - Breeding and cultivation.

Outlines for R & D (2)

- Good collection practice/guidelines:
 - collectors manual
 - Plant monographs
- Development of National standards
 - Unani requirements, export requirements
 - collectors manual
 - plant monographs
- Technology development for local design and construction of harvesting and post-harvest technologies

Definition of RA questions:

- **What is the contents of plant flora?**
- **What is the capacity?**
- **Does the traditional harvesting affect the resources?**
- **What were the effects of war on plant population and their habitats?**

- **What are the effects of expanding human populations, urbanization on plant population?**

- **What conditions will be needed to maintain medicinal plants?**

- **Which kinds of policies, regulations and laws improve/ affect resources and their management?**

- **What role do medicinal plants play in employment and community economies of the country?**

- **What are the historical and projected future impacts of resource management on ecosystem?**

Resource Assessment

Pre-requisite
for
sustainable and controlled
wild collection

Resource management

- Economic mapping
- Organization (rational use, duties & responsibilities)
- Technical issues: Rational collection, GACP, GMP
- Policy and legal framework: Policy, regulations, Manuals and Guidelines
- Cultivation

Natural Resource Management



The Role of the Faculty of Pharmacy as an Implementing Partner

- Training and capacity building
- Resource assessment
- Development of SOPs
- Quality analysis
- Development of standards
 - **National standard (Unani requirements, export requirements)**
 - **collectors manual**
 - **plant monographs**
- Develops intermediate processing technologies that are suitable for community based processing.

The image features three bright orange gerbera flowers in the foreground, resting on a textured orange fabric. A white lace overlay is visible in the upper left and background areas. The stems of the flowers are green and extend towards the right. The overall composition is warm and celebratory.

THANK YOU