

Phytotherapy

Lec. 7

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The list contains the plant found in Iraq and herbs common in the market as food supplement: -

Table 1: The gastrointestinal and biliary system

Natural products are still the most commonly used remedies in cases of constipation, diarrhea and flatulence.

Plant	Active constituent	Uses
Rice suspension	Polysaccharide (starch)	Diarrhoea
Opiates derivatives	Alkaloids derivatives	Diarrhoea
Acacia catechu, tea or coffee	Tannin	Diarrhoea
Linseeds (flax sees) The swelling factor 45	polysaccharides	polysaccharides
<i>Plantago ovate</i> (Ispaghula)	polysaccharides	Polysaccharides
Senna , cascara	Anthraquinone glycosides	Osmotic laxative
Liquorice (<i>G. glabra</i>)	Saponine glycoside	Ulcer
Chammomile (<i>Matricaria chamomilla</i>)	Flavonoids glycoside and terpene	Anti-inflammatory, spasmolytic,
Artichoke (<i>Cynarae folium</i>)	sesquiterpene lactone and flavonoids)	Dyspepsia
Mentha species (Mint family)	monoterpene	bloating

Table 2: Liver diseases

milk thistle (<i>Silybum marianum</i>)	Flavolignan (silymarin)	Antihepatotoxic (Jaundice)
Turmeric (<i>curcuma domestica</i>)	terpene	hepatoprotective

Cardiovascular system

<i>Digitalis purpurea</i> or <i>D.lanata</i>	Digoxin and lanatosides	Heart failure
<i>Ginkgo biloba</i>	Diterpene ginkgolides	Circulatory disorder
<i>Salvia miltiorrhiza</i> (Sage)	diterpene	Circulatory disorder
<i>Vitis vinifera</i> (red grape) leaves	Poly phenol mainly flavonoids	Treat CVI and prevent further CVI
<i>Allium sativa</i> (garlic)	Allin to allicine	Hypolipidaemic activity

The respiratory system

<i>Ephedra sinica</i>	Ephedrine alkaloid	decongestant
Theobroma cacao, coffee and tea	Theophylline	bronchodilator
<i>Cinnamomum camphora</i>	Camphor	Inhalation
<i>Eucalypti aetherleum</i>	cineole (eucalyptol)	Remedy for cough and colds
<i>Mentha</i> species	menthol	Decongestant for cold and in colic
<i>Ammi visnaga</i> Khella	Khellin, (furanocoumarins) semisynthetic, cromoglycate	Vasodilator

Cough preparations

A- Cough remedies

The purpose of these drugs is to reduce the viscosity of phlegm in cases of chest and throat infection.

<i>Thymus vulgaris</i> (Thyme)	Thymol and carvacrol	carminative, antiseptic, antitussive, expectorant
<i>Salvia officinalis</i> (Sage)	α and β -thujone, cineol	for chronic bronchitis, catarrh, asthma
<i>Hedera helix</i> (Ivy leaves)	Saponine (hederacosides)	Expectorant, mucolytic
<i>Myroxylon balsamum</i> (Tolu balsam)	Cinnamic and benzoic acid and their esters	Expectorant
Ipecac (<i>Cephaelis ipecacuanha</i>)	Alkaloid emetine	Expectorant
<i>Papaver somniferum</i>	codeine	Sedating and constipating. antitussive

B- Phytochemicals used in colds and Influenza

Some of these herbs have antiviral and anti-inflammatory activity, some are demulcents or stimulate the immune system

Pelargonium (<i>Pelargonium sidoides</i>)	hydrolysable tannins, catechin, gallic acid	Acute bronchitis
<i>Althea officinalis</i> (Marshmallow)	mucilage	coughs and bronchial complaints
<i>Echinacea pallida</i>	cichoric acid and caffeic acid derivatives (echinocoid)	Immunostimulant

Central nervous system

Drugs acting on the central nervous system (CNS) include the centrally acting (mainly opioid) analgesics, anti-epileptics and anti-Parkinson agents, as well as those for psychiatric disorders. Drugs of plant origin are important in all these areas.

<i>Humulus lupulus</i>	Oleo-resin	Sleep disturbances and restlessness.
<i>Melissa officinalis</i> (lemon balm)	Monoterpene (citronellal, geranial)	Sedative
<i>Piper methysticum</i> (Kava)	kavalactones	Potentiate GABA _A receptor activities
<i>Valeriana officinalis</i>	Volatile oil and the iridoid valepotriate constituents.	mild anxiety and to aid sleep
St John's wort (<i>Hypericum perforatum</i>)	Hypericin (binaphthoquinoid)	antidepressant
<i>Papaver somniferum</i> (opium)	morphine	Major analgesic
<i>Claviceps purpurea</i> (Ergot)	Ergotamine	Migraine
<i>Ginkgo biloba</i>	Diterpene ginkgolides	prevent memory deterioration
<i>Galanthus nivalis</i>	Galantamine	dementia.(Acetylcholines teraseinhibiting drugs)

Infectious disease

<i>Arctostaphylos uva-ursi</i> (Uva Ursi)	Glycoside arbutin.	Treat cystitis and urethritis
Cranberry juice	proanthocyanidins	have the ability to affect the binding of the E.coli, which is a major causative agent of UTI
<i>Cannabis sativa</i>	tetrahydrocannabinol and cannabidiol	Active against Gram-positive bacteria such as S.aureus and its methicillin-resistant (MRS)
<i>Artemisia annua</i>	Sesquiterpene lactone	Treat malaria
Cinchona bark	Quinine alkaloid	Treat malaria
<i>C. marshallii</i> (Pyrethrum)	Pyrethrins ester	Insecticidal, kill lice and house flies

Endocrine system

Phytomedicines are often used in the treatment of hormonal disorders. In diabetic patients, many foods and herbs can help to reduce blood glucose levels and may assist in controlling hyperglycaemia in milder cases of non-insulin dependent diabetes.

<i>Gymnema sylvestre</i>	saponine	antidiabetic
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Phytoestrogen: There are many plants that contain oestrogenic substances (phytoestrogens), and pharmacological and epidemiological evidence suggests that they act as mild oestrogens or, in certain circumstances, as anti-oestrogens (by binding to oestrogen receptors and preventing occupation by natural oestrogens). They generally have beneficial effects, including chemopreventive activity.

soya	Isoflavones, including genistein and daidzein	phytoestrogen
Red clover	isoflavones genistein	phytoestrogen
<i>Vitex agnus</i>	diterpene	menstrual cycle disorders
<i>Urtica dioica</i>	Lignans present in the root, including pino-resinol, secoisolariciresinol,	Therapy in rheumatic ailments.

Reproductive tract

Ergot	Ergotamine	Induce child birth
<i>Papaver somniferum</i>	Papaverine alkaloids	Male impotence
Yohimbe bark	Yohimbine (indole) alkaloid	Sexual stimulant

The musculoskeletal system

<i>Ananas comosus</i> (Bromiline)	proteaseinhibiting enzymes	Anti-inflammatory
The rhizomes of turmeric	Curcumin terpenoid	Anti-inflammatory and hepatotoxicity
Salix spp.,(willow bark)	The glycoside salicin	for osteoarthritis and lower back pain
<i>Colchicum autumnale</i>	Colchicines alkaloid	Antigout

Topical Anti-inflammatory Agents: -

Most topical antirheumatics are rubifacients, which act by counter-irritation. They are used for localized pain or when systemic drugs are not appropriate. Many contain salicylates, and capsaicin is used for severe pain. They should not be used in children, pregnant or breastfeeding women or with occlusive dressings.

<i>Capsicum frutescens</i>	Capsaicin (oer-resin)	Local analgesic
<i>Betula lenta</i> (Wintergreen oil)	methyl salicylate (about 98%),	anti-inflammatory and antirheumatic
<i>Cinchona</i> spp.	Quinine alkaloid	Night cramp

The skin

Arachis oil or peanut oil	a fixed oil consisting mainly of glycerides of oleic and linoleic acids.	emollient creams
<i>Avena sativa</i> , (oats)	Protein, polysaccharide and linoleic acid	Emollient
<i>Aloe vera</i> (<i>Aloe barbadensis</i>)	Polysaccharide and anthraquinone glycoside	antibacterial, anti-inflammatory, emollient and moisturizing effects
Evening primrose oil	70% cis-linoleic acid	treatment of atopic eczema

The eye

<i>Pilocarpus microphyllus</i>	pilocarpine	meiotic
<i>Atropa belladonna</i>	atropine	Mydriatic and in Anterior uveitis
<i>Hamamelis virginiana</i>	tannin	soothe the eye and clear redness

The ear and nose and orthopharynx

<i>Olea europea</i>	Olive oil	Removal of wax
<i>Prunus amygdalus</i>	Almond oil	Removal of wax
Thymus spp	thymol	Oral and throat irritation
Mint and spearmint	Peppermint oil (menthol and menthone)	Antiseptic in dental product
<i>Salvia officinalis</i> (sage)	α - and β - thujone	Used as gargle
<i>Eugenia caryophyllatas</i> or <i>Syzygium aromaticum</i>	Clove oil mainly eugenol	Dental preparation as tooth remedy

Miscellaneous supportive therapies

Preventive medicines are used to strengthen the immune system, improve memory and alertness, enhance sexual performance, promote healing and stimulate the appetite. The most important herbs are ginseng, ginkgo, astragalus, mushroom and tea.

<i>Acia berry (Euterpe oleracea)</i>	Polyphenol (flavonoids)	Antioxidant in USA slimming agent
<i>Withania somniferum</i> (ashwagandha)	Alkaloids and steroidal lactone	Antioxidant and immunomodulatory
<i>Panax ginseng</i>	Saponin glycosides	Relief stress and tonic
Magnolia	Lignans	Increase energy and sexual tonic
<i>Camellia sinensis</i>	Xanthines alkaloids and epigallocatechin	Stimulant and diuretic