MEDICINAL VALUES OF INDIAN SPECIES & HOME REMEDIES
• **Botanical name:** *Ferula Asafoetida*, etc.
• **Used part:** Oleo-gum Resin from rhizome and thickened root.
• **Remedy for:** Indigestion and used as antibiotic.
• **Home remedies:** A pinch of asafoetida dissolved in water can be taken before going bed for any indigestion problem.
  • It is effective in destroying intestinal worms, treatment of parasite-induced malnutrition, swelling pain in stomach and abdomen, abdominal mass, cold, malaria, diarrhea, and prevention of measles, but its strong odor has limited its usage
• **Medical:** Opioid addiction—positive phase I clinical
• **Botanical name:** *Elettaria cardamomum* (Green cardamom) and *Amomum subulatum* (Black cardamom).

• **Used part:** fruit

• **Remedy for:** Digestive Disorder, Bad Breath and depression.

• **Home remedies:** Ground Cardamom with Ginger, Cloves and coriander relieves indigestion problem.

• Cardamom chewed regularly removes bad breath.

• **cardamom** effectively reduces blood pressure, enhances fibrinolysis and improves antioxidant status, without significantly altering blood lipids and fibrinogen levels in stage 1 hypertensive individuals.

• May be useful for nausea (1 small human study)
- **Botanical name:** *Cinnamomum verum, Cinnamomum zeylanicum, Cinnamomum cassia* and *Cinnamomum burmannii*.
- **Used part:** Stem Bark.
- **Remedy for:** Pimples, common cold, Bad breath and Digestive Disorders.
- **Home remedies:** Paste of Cinnamon powder with fresh lemon juice applied on pimples cures it.
- Powdered and boiled Cinnamon in water with a pinch of pepper and honey cures digestive disorder and symptoms of colds.
- To avoid Bad breath, chew Cinnamon or gargle cinnamon water.
• Blood sugar stabilization
  • 1 g of CCE lowered the area under the curve of glycemia between 0 and 120 min by 14.8% \( (P = 0.15) \) and between 0 and 60 min by 21.2% \( (P < 0.05) \) compared to the placebo.

• A meta-analysis of clinical studies of the effect of cinnamon intake on people with type 2 diabetes and/or prediabetes that included three new clinical trials along with five trials used in previous meta-analyses was done to assess cinnamon's effectiveness in lowering FBG:
  – 8 studies, RDBPC (Davis & Yokoyama, 2011)
  – Cinnamon intake, either as whole cinnamon or as cinnamon extract, results in a statistically significant lowering in FBG

• Europe: loss of appetite, digestive disturbances with mild spasms of the GI tract, weakness, flatulence (Wichtl)

• Dose: 1 gram of bark infused, 2-3 times daily

• Caution, allergic reactions of the skin and mouth possible
Cassia vs. “true” cinnamon

- Cassia is the strong, spicy flavour associated with cinnamon rolls and other such baked goods, as it handles baking conditions well.

- Chinese cinnamon (cassia cinnamon, C. cassia, rougui tea) is generally a medium to light reddish brown, hard and woody in texture, and thicker (2–3 mm (0.079–0.118 in) thick), as all of the layers of bark are used.

- Ceylon cinnamon (C. verum), using only the thin inner bark, has a lighter brown colour, a finer, less dense and more crumbly texture, and is considered to be subtler and more aromatic in flavour than cassia, losing much of its flavour during cooking.

mg of coumarin/kg cinnamon:
*Cassia = 100 mg to 12 grams!
*C. verum = < 100 mg/kg

Safe level (TDI) of coumarin = 0.1 mg/kg

cassia has low safety level = < 1-40 g/day
cinnamon = 50 g/day or more likely ok

Contra: pregnancy (BSH)
• **Botanical name:** *Syzygium aromaticum*.
• **Chemistry:** EO w eugenol (9-14%)
• **Used part:** Buds.
• **Remedy for:** Eye Stye (an infection of the sebaceous glands at the base of the eyelashes), Dental problems.
• **Home remedies:** Apply clove oil on the eye lids to get relief from pain and infection in a week.
• Gargle diluted clove oil daily to ease the throat and relieves from any dental problem.
• **Studies:** antioxidant, antimicrobial, antinociceptive, antiviral (herpes, also w/Acyclovir more effective (Cortes-Rojas *et al.*, 2014))
• **Botanical name:** *Coriandrum sativum*.

• **Used part:** Leaves, fruits and Root.

• **Remedy for:** Skin Disorders, Menstrual Disorders

• **Home remedies:** Coriander juice with pinch of Turmeric powder cures Pimples, Black Heads and Dry Skin.
Coriander with boiled rice water or coriander powder boiled with water till it remains half amount checks excessive bleeding during menses.

• **Chemistry:** EO (linalool, 60-80%; camphor 1-5%)

• **Historical:** dyspeptic complaints, loss of appetite, convulsion, insomnia and anxiety

• **Study:** improves blood glucose control and thus it held promise for use as an anti-hyperglycemic agent

Note: disgust for coriander, cilantro smell is genetic
• **Botanical name:** Cuminum cyminum (Apiaceae)

• One of the oldest-known minor spices

• **Used part:** Fruits.

**Remedy for:** hoarseness, jaundice, dyspepsia, diarrhea, stomachic, diuretic, carminative, stimulant, astringent and abortifacient properties

  • Paste of cumin and dried ginger applied on insect bites counteracts any toxins.

• In Iranian traditional medicine, to ease gastro-intestinal, gynecological and respiratory disorders

  • treatment of toothache, diarrhea and epilepsy. The seeds were also documented as stimulant, carminative and astringent.

• Science: antimicrobial, insecticidal, anti-inflammatory, analgesic, antioxidant, anticancer, antidiabetic, antiplatelet aggregation, hypotensive, bronchodilatory, immunological, contraceptive, anti-amyloidogenic, anti-osteoporotic, aldose reductase, alpha-glucosidase and tyrosinase inhibitory effects, protective and central nervous effects (Al-Snaﬁ, 2016).
• **Botanical name**: *Foeniculum vulgare*.

• **Used part**: Fruits

• **Remedy for**: indigestion, gas, intestinal spasms, nausea

• **Home remedies**: When Fennel paste is applied over the scalp it acts as an insecticide

• **TCM**: excellent in small doses to adjust the qi of the middle burner and dispel lower burner cold (B)

• **Review** (He & Huang, 2011)
Fennel
TCM Indications (Bensky et al.)

• dispenses cold, warms the Liver and Kidneys, and stops pain
• used to warm and encourage movement in the Liver channel or the lower burner, as in cold bulging disorders, or
• any kind of lower abdominal pain due to cold
• Dose: 3-9 grams
• Comments: “aromatic and warm, Foeniculi Fructus (xiao hui xiang) is excellent in small doses to adjust the qi of the middle burner and dispel lower burner cold. It enters the Spleen and Stomach to enhance the appetite, settle nausea, and alleviate abdominal pain and distention”

• Xiao hui xiang, which was recommended by Ministry of health of China
• TCM
  – treatment of infants suffering from dyspeptic disorders
  – bronchitis
  – chronic coughs
  – kidney stones
  – dysmenorrhea
  – vomiting and diarrhea
  – Poor sperm quality
  – diuretic, stomachic and galactogogue properties due to its volatile compounds
**Fennel Chemotypes**

- Vulgare and Piperitum were two important subspecies of F. vulgare
- Piperitum, with bitter seeds, is characterized by the presence of rotundifolone, while vulgare, with sweet seeds, varied with estragole, trans-anethole, limonene and fenchone (Muckensturm et al., 1997)
- Vulgare variety is usually used as flavorings in baked goods, meat and fish dishes, ice cream, and alcoholic beverages, due to its characteristic anise odor.
- However, according to others botanists, F. vulgare has two varieties. One is sweet fennel (F. vulgare var. dulce), which is annuals or biennials with small sweet-tasting fruits.
- The other is bitter fennel (F. vulgare var. vulgare), which is a perennial with fruits having a bitter taste (Cosge et al., 2008; Miraldi, 1999)

- The main fennel seed compound estragole (especially in the sweet variety) ranges from 34 to 89%
- Bitter fennel fruits is characterized by relatively high concentrations of α-pentene and fenchone, and low concentrations of trans-anethole and estragole, unlike sweet fennel oils (Akgül and Bayrak, 1988)
- Chemistry: terpenes (EO), phenolics (flavonoids), fatty acids
- Pharmacology
  - Spasmolytic effects
  - Antioxidant
  - Antimicrobial, ascaricidal
  - Hepatoprotective
  - Fennel oil was reported to exhibit estrogenic activity, promote menstruation, alleviate the symptoms of female climacteric, and increase libido (Albert-Puleo, 1980)
  - Estragole has shown hepatocarcinogenic activity in vitro, in vivo
• **Botanical name:** *Trigonella foenum-graecum* (Fabaceae)

• **Used part:** Leaves and Seeds

• **Remedy for:** Dandruff

• **Home remedies:** After softening them in water apply it to the scalp. After an hour wash with soap nut.

• **Traditional Uses:** cooking (contains soluble and insoluble dietary fiber)

• **Review:** (Srinivasan, 2006)
• About 30% of fenugreek seed (w/w) is gel-forming soluble fiber similar to guar gum, oat bran, and psyllium husk. The insoluble fiber, which constitutes 20% of fenugreek seed, is bulk-forming like wheat
• Mild laxative effects because of fiber, shortens transit time, improves regularity, reduces flatulence, reduces risk of hemorrhoids, diverticulosis, anal fissures
• Main saponin, diosgenin
  – Relieves intestinal cramps, anti-inflammatory, likely does not have, or only weak estrogenic, progesterone-like or testosterone-like activity
• Blood sugar regulation
  – Besides many animal studies, several human trials have unequivocally demonstrated the beneficial hypoglycemic potential of this spice in both type-1 and type-2 diabetes (Table 3)
  – 11 clinical trials show hypoglycemic, improved glucose tolerance
• 5 human studies show antilipidemic effects
• Dose in studies: 10 to 100 grams/day

Source: Srinivasan, 2006
- **Botanical name:** Allium sativum.
- **Other names:** Lahsun, poondu
- **Used part:** The underground head called bulb.
- **Remedy for:** Asthma, Cholesterol, cancer, heart disease prevention
- **Strong antimicrobial synergistic with antibiotics**
- **In ancient times garlic was used as a remedy for intestinal disorders, flatulence, worms, respiratory infections, skin diseases, wounds**
Garlic—Human studies

- Based on numerous epidemiological, *in vitro* and *in vivo* studies garlic is most likely a powerful anticancer agent and inclusion of garlic in the diet should be considered to be mandatory to maintain good health (Thompson & Ali, 2003)
- Several clinical reports, including meta-analyses, have revealed a cholesterol-lowering effect of garlic in humans, increased awareness about the cholesterol-lowering effects of garlic
- Epidemiological study shows an inverse correlation between garlic consumption and reduced risk of cardiovascular disease progression
- The wealth of scientific literature supports the proposal that garlic consumption have significant cardioprotective effect, which include both animal and human studies.
- But certain issues regarding the proper use of garlic, i.e use of different preparations available, dose, duration and interaction with generic drugs should be optimized.
Garlic vs. streptomycin against *S. Aureus* and *E. coli*  

(Palaksha *et al.*, 2010)
• **Botanical Name:** Zingiber officinale.
• **Other names:** Adrak and Inji.
• **Used part:** Fleshy Rhizome.
• It is also available in sun dried form.
• **Remedy for:** Nausea, Vomiting, Diarrhea and Cold.
• **Home remedies:** Ginger Juice mixed with lime and mint juices and honey is a remedy for Nausea and vomiting.
• Ginger Tea and hot ginger juice with honey are good for cold and cough.
Chemistry of Ginger

By: Reem Talib
Chemistry of Ginger

- The characteristic odor and flavor of ginger is caused by a mixture of zingerone, and gingerols, volatile oil that compose 1-3% of the total weight of fresh ginger.

- [6]-gingerol (1-[4'-hydroxy-3'-methoxyphenyl]-5-hydroxy-3-decanone) is the major pungent principle of ginger.

- The chemopreventive potentials of [6]-gingerol present a promising future alternative to expensive and toxic chemotherapeutic agents.
Ginger contains up to three percent of a fragrant essential oil whose main constituents are sesquiterpenoids, with (-)-zingiberene as the main component. Smaller amounts of other sesquiterpenoids (β-sesquiphellandrene, bisabolene and farnesene) and a small monoterpenoid fraction (β-phelladrene, cineol, and citral) have also been identified.

The pungent taste of ginger is due to nonvolatile phynylpropanoid-derived compounds, particularly gingerols and shagols which form from gingerols when ginger is dried or cooked.
Cultivation:

adaptation of the plant to warm climates, ginger is often used as landscaping around subtropical homes. Traditionally, the rhizome is gathered when the stalk withers; it is immediately scalded. Ginger is indigenous to southern China from whence it spread to the Spice Islands and other parts of Asia, and subsequently to West Africa and the Caribbean. Ginger appeared in Europe, via India, in the first century.

Description: It is a perennial reed-like plant with annual leafy stems, about a meter (3 to 4 feet) tall. to grow in warm climates, produces clusters of white and pink flower buds that bloom into yellow flowers.

Chemistry: a fragrant essential oil whose main constituents are sesquiterpenoids, with (-)-zingiberene.

Smaller amounts of other sesquiterpenoids (β-sesquiphellandrene, bisabolene and farnesene) and a small monoterpenoid fraction (β-phelladrene, cineol, and citral).

The characteristic odor and flavor zingerone, shogaols and gingerols, volatile oils.

Pungent taste of ginger is due to nonvolatile phenylpropanoid-derived compounds, particularly gingerols and shogaols,
### Nutritional value per 100 g

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>333 kJ (80 kcal)</td>
</tr>
<tr>
<td>Carbohydrates</td>
<td>17.77 g</td>
</tr>
<tr>
<td>Sugars</td>
<td>1.7 g</td>
</tr>
<tr>
<td>Dietary fiber</td>
<td>2 g</td>
</tr>
<tr>
<td>Fat</td>
<td>0.75 g</td>
</tr>
<tr>
<td>Protein</td>
<td>1.82 g</td>
</tr>
<tr>
<td>Thiamine (B1)</td>
<td>(2%) 0.025 mg</td>
</tr>
<tr>
<td>Riboflavin (B2)</td>
<td>(3%) 0.034 mg</td>
</tr>
<tr>
<td>Niacin (B3)</td>
<td>(5%) 0.75 mg</td>
</tr>
<tr>
<td>Pantothenic acid (B5)</td>
<td>(4%) 0.203 mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>(12%) 0.16 mg</td>
</tr>
<tr>
<td>Folate (B9)</td>
<td>(3%) 11 μg</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>(6%) 5 mg</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>(2%) 0.26 mg</td>
</tr>
</tbody>
</table>

Source: Sukanta Das, Vidyasagar University (Slide Share)
Trace metals

- Calcium: (2%) 16 mg
- Iron: (5%) 0.6 mg
- Magnesium: (12%) 43 mg
- Manganese: (11%) 0.229 mg
- Phosphorus: (5%) 34 mg
- Potassium: (9%) 415 mg
- Sodium: (2%) 27 mg
- Zinc: (38%) 3.64 mg
In vivo, in vitro, human studies

**Medicinal Properties:**

- antiemetic/antinausea
- antispasmodic
- antifungal
- anti-inflammatory
- antiseptic
- antibacterial
- antiviral
- antitussive
- analgesic
- circulatory stimulant
- carminative
Medicinal use:

**Vomiting & morning sickness:**

Pregnancy-related nausea and vomiting & morning sickness were given beverages with ginger during the first trimester of pregnancy, some studies on motion sickness.

**Nausea caused by chemotherapy:**

Ginger supplements administered alongside anti-vomiting medications can reduce chemotherapy-induced nausea symptoms by 40%.

**Inflammation of the colon:**

Reducing inflammation in the colon a person reduces their risk of developing colon cancer. To prevent cancer that are nontoxic, and improve their quality of life.

**Muscle pain caused by exercise:**

Daily ginger supplementation reduced exercise-induced muscle pain by 25% significantly attenuated in those who, after exercising, have daily two grams of powdered ginger.

**Ovarian cancer:**

Exposing ovarian cancer cells to a solution of ginger powder resulted in their death in every single test.
• **Diabetes complications:**
  Ginger can help increase circulation, thin blood, and lower both blood pressure and cholesterol, reduce urine protein levels, decrease water intake and urine output, and reverse proteinuria.

• **Dysmenorrhea (painful menstruation):**
  Ginger can help reduce the symptoms of pain in primary dysmenorrhea.

• **Cold and flu:**
  The root acts as an antihistamine and decongestant, two cold-easing effects that can help with symptoms.

• **Arthritis:**
  Osteoarthritis Cartilage found patients with painful arthritis in the knee who were given ginger vs. a placebo.

• **Beautify skin:**
  Substances contained in ginger stimulate blood circulation and help to fight fatigue, have a refreshing and antioxidant action, helping to regenerate the skin.
• **Botanical name**: *Ocimum tenuiflorum, Ocimum sanctum*

• **Other names**: Tulsi

• **Used part**: Leaves

• **Remedy for**: Cold, Cough, Teeth Disorders, Skin diseases.

• **Home remedies**: Applying basil and lemon juice in equal proportion cures any kind of skin diseases.

• Dried and powdered Basil leaves can be used to brush teeth. It avoids Bad Breath and disorders.

• Ginger and Basil juice with honey cures cold and cough.
Uses of Tulsi

It is rich in antioxidant. It has several routines:

- Relieves stress
- Enhances Stamina
- Promotes Healthy Metabolism

A natural immuno-modulator
Tulsi—Holy Basil

- Tulsi tastes hot and bitter and is said to penetrate the deep tissues
  - dry tissue secretions
  - normalize kapha and vata
- Daily consumption of tulsi is said to prevent disease, promote general health, well-being and longevity and assist in dealing with the stresses of daily life
- Tulsi is also credited with giving luster to the complexion, sweetness to the voice and fostering beauty, intelligence, stamina and a calm emotional disposition.
- Other common uses: anxiety, cough, asthma, diarrhea, fever, dysentery, arthritis, eye diseases, otalgia, indigestion, hiccups, vomiting, gastric, cardiac and genitourinary disorders, back pain, skin diseases, ringworm, insect, snake and scorpion bites and malaria.
Tulsi—Ayurvedic Adaptogen

- Adaptogen—amphoteric, promotes homeostasis
- Anti-stress
- Pharmacological actions help the body and mind cope with a wide range of chemical, physical, infectious and emotional stresses and restore physiological and psychological function
- Other adaptogens: eleuthero, schisandra,

- Hundreds of scientific studies including *in vitro*, animal and human experiments
- Demonstrated biological effects
  - antimicrobial (including antibacterial, antiviral, antifungal, antiprotozoal, antimalarial, anthelmintic), mosquito repellent
  - anti-diarrheal, anti-oxidant, anti-cataract, anti-inflammatory,
  - chemopreventive, radioprotective
  - hepato-protective, neuro-protective, cardio-protective
  - anti-diabetic, anti-hypercholesterolemia, anti-hypertensive, anti-carcinogenic
  - analgesic, anti-pyretic, anti-allergic, immunomodulatory, central nervous system depressant,
  - memory enhancement

Source: Cohen, 2014. Tulsi
**Botanical name**: Piper longum

**Other names**: Thippali

**Used part**: Fruits.

**Remedy for**: Flu

Home remedies: Half a teaspoon of Long Pepper and ginger juice with two teaspoons of honey taken thrice daily during initial stages of flu will help greatly.
Trikatu, made from Long Pepper (*Piper longum*), Black Pepper (*Piper nigrum*), and Ginger (*Zingiber officinale*), is traditionally used to support digestion and the overall gastric function.

Trikatu translates to "three pungents" referring to the sharp taste of these herbs. It has been used in the ayurvedic tradition to stimulate "agni" or digestive "fire."

- Famous and ancient “bio-enhancer”
- Enhances absorption of beneficial active constituents from turmeric, milk thistle, and food constituents
- Especially useful with elderly people—low digestive fire (declining levels of HCl, pepsin, pepsinogen
**Botanical name**: *Mentha arvensis, Mentha asiatica*

**Used part**: Leaves

**Remedy for**: Skin diseases, Hiccups

**Home remedies**: Fresh Mint juice and papaya juice cures many skin disorders including spots, insect stings, eczema, scabies or other skin infections.

Mixture of Fresh lemon juice, Mint leaves, common salt and lukewarm water reduces Hiccups immediately.
**Botanical name**: Brassica nigra (Black), Brassica juncea (Indian), Brassica hirta/Sinapis alba (white).

**Used part**: Seeds

**Remedy for**: Wheezing.

**Home remedies**: Mustard plaster is very famous in stopping wheezing. Mix a half teaspoon of mustard powder and 1 teaspoon of flour with water. Warm the mixture. Spread this mixture in a cotton towel and place the pack on the patient’s chest. Remove this when the skin becomes red. It provides good first aid for any respiratory disorders.
Mustard Seed

- Isothiocyanate and indole products formed from glucosinolates may regulate cancer cell development by regulating target enzymes, controlling apoptosis and blocking the cell cycle.

- More than 120 distinct glucosinolate (S-beta-thioglucone Nhydroxysulfate) structures (Figure 1a) have been described, with most isolated from cruciferous (Brassicaceae) plants.

- Sulforaphane, an isothiocyanate from broccoli, potently induces mammalian cytoprotective proteins through the Keap1–Nrf2–ARE pathway.

- Mustard contains glucosinolates—compounds that contain sulfur and nitrogen defense compounds.

- The cancer-protective properties of Brassica intake are mediated through glucosinolates.

- Many human studies, also in vitro, in vivo.

- Protection against cancers, heart disease, central nervous system, diabetic neuropathy, skin integrity, Helicobacter balance.
• **Botanical name**: *Myristica argenta, Myristica fragrans, Myristica inutilis, Myristica malabarica, Myristica macrophylla, Myristica otoba, Myristica platysperma*

• **Used part**: Nutmeg-Kernel of the fruit. Mace-Aril part, leathery tissue between the stone and the pulp

• **Remedy for**: Skin diseases

• **Home remedies**: Nutmeg paste prepared by rubbing it on a stone slab can be applied on the infected area.

The mind altering experience (a high) is usually achieved by the ingestion of 5-15 g of nutmeg (one to three whole nutmegs or two teaspoons of grated nutmeg)7. Toxic overdose can be seen with as little as 5 g. The structural similarities of the metabolized components of nutmeg to amphetamine-like compounds could be partly responsible for the activity of nutmeg. Myristicin is thought to be partly responsible.
• **Botanical name**: *Piper nigrum*.
• **Used part**: Dried fruits
• **Remedy for**: Toothaches, Digestive Disorders.
• **Home remedies**: A pinch of Pepper powder with clove oil can put directly to the cavity to stop toothache. Powdered pepper and salt mixture can be massaged over the gums to cure inflammation.
• Pepper powder mixed with Buttermilk can be taken during indigestion.
Black pepper
*Piper nigrum*

- Black pepper can be used for its antibacterial, detoxifying, antidepressant, antifungal, antidiarrheal, anti-inflammatory, antimutagenic, antioxidative, antispasmodic, antispermatic, antitumor, thyroid inhibitor
- Warming, dispersing herb
- Bioenhancer (piperidine) to increase bioavailability of lipophilic compounds like curcumin, silymarin, etc.
- Ingredient of Trikatu
• **Botanical name**: *Sesamum indicum*.
• **Other names**: Til, Ellu
• **Used part**: Dried Seeds
• **Remedy for**: Cracked heels, Menstrual Disorders.
• **Home remedies**: Three teaspoons of Beeswax and one teaspoon of sesame oil. Warm it and apply on the cracked heels. Expected result will show up in a month.
  Half a teaspoon of sesame seeds taken twice a day reduces spasmodic pain during menstruation.
- **Botanical name**: *Curcuma longa*
- **Other names**: Haldi, Manjal
- **Used part**: Rhizome
- **Remedy for**: Sprains, Measles
- **Home remedies**: Turmeric paste with lime juice and Salt applied over the sprain gives effective result. Dried turmeric powder with honey and bitter gourd leaf juice can be taken as treatment for measles.
Parts of turmeric plant
Source: Susan Anderson, East Branch Ginger
• Description of Medicinal properties are available in Ayurveda classics
• Bitter in taste, pungent and hot and dry in nature
• Effective to cure, Ayurvedic Tridosha: Vata and Kapha

Source: Dr. Desh Bandhu Bajpai (Ayurvedic Doctor with 25 years experience 
Kanak Polytherapy Clinic & Research Center, India)
Medicinal Properties -2

• It is used in the treatment of all Skin disorders, discoloration of skin, anomalies of Urine, Diabetes, anomalies of blood, Swellings, Hepatosplenomegaly, all nature of Wounds, Boils etc.

• Modern scientific evaluation shows the wide use of Turmeric in many ailing conditions like Cancer, Diebeties etc.
Ayurveda: about Turmeric

- Bitter in taste, pungent, warm effects,
- Aromatic
- Stimulent
- Tonic
- Carminative
Uses

- Catarrhal Irritating Cough
- Diarrhoea
- Intermittent Fever
- Dropsy
- Jaundice
- Liver Disorders
- Urinary Disorders
Uses-2

- Anthelmintic
- Bronchitis
- Diabetes
- Flatulence
- Weak state of Stomach
- Ophthalmic disorders
- Nasal disorders: Sinusitis, Fleshy growth
Allergy & allergic reactions

- Effective medication in all nature of Allergy and allergic reactions
- One gram to be taken three times a day with plain water
In Asthma & Bronchitis

• One / two gram powder should be taken 3 hourly, 5 times a day
External Applications

• Cleaning foul ulcers
• Dressing for sprains, bruises, contused wounds, black eyes,
• Inflammatory affections of the joints
Skin disorders

- Eczema
- Itches
- Ringworm
- Obstinate Itching
- Parasitic disorders
Recommended doses

- Adult: Fine Powder 1 – 4 gms
- Children: 100 mgs – 500 mgs
- Repetition: should be taken 3 or 4 times a day

Turmeric is a spice used for 2,000 years at least—safe with few side effects
Herbal Bioenhancers

- Black pepper extract (Piperidine)
- Phospholipid (Phosphatidylcholine)
- Quercetin (onion)
- Ginger
- Cumin
- Licorice
- Naringin (grapefruit only)

(Dudhatra et al., 2012)
Curcumin from Turmeric

- Curcumin is very poorly absorbed orally, and the liver metabolizes what is absorbed rapidly to a more inactive form.
- Products aim to increase absorption and slow liver metabolism:
  - Phospholipid complexes
  - Microencapsulation, nanoencapsulation
  - Complex with black pepper extract (piperidine)
Curcumin blood levels with nanoemulsion

![Graph showing Curcumin blood levels with nanoemulsion](image)
Curcumin and Bioperine (from pepper)

Curcumin blood concentration (in humans with oral administration)

Anand et al., 2007
Traditional delivery systems

- Traditional way to use turmeric and enhance absorption
- Curry!
- Stir-fry veggies, meat, and spices
- Heat, bio-enhancers (pepper, ginger), oil

Jim Duke:
“I’d rather enjoy my medicine!”
Most-Researched Herbs for Inflammation

- Turmeric (curcumin)
- Pineapple (bromelain)
- Papaya (papain)
- Frankincense (Boswellia)
- Hops (hops bitter acids)
- Buckeye (escin)
- Onions, apples, berries (quercetin)
- Anthocyanins (berries, etc.)
- Willow bark extract (salicin)
- Berberine-containing herbs
Curcumin

- Curcumin inhibits inflammation via 6 distinct pathways—most hotly researched ingredient
- Down-regulates activity of COX-2, lipoxygenase, iNOS enzymes, inhibits inflammatory cytokines TNF-alpha, interleukins (Jurenka, 2009)
- In vivo studies show benefits for models of ulcerative colitis, rheumatoid arthritis, osteoarthritis, cancer, etc.
- Pilot controlled studies and Phase III, IV clinical trials—many underway
  - Cancer prevention (many)
  - Arthritis (OA, RA), ulcerative colitis, IBS
- Liver metabolism limits bioavailability—piperine or phosphatidylcholine-curcumin complex
Nutrients: Calcium, Iron, Manganese, Phosphorus, Potassium, Zinc, Vitamins B₁, B₂, B₃, and C.

Actions: Aromatic, anti-inflammatory, antiarthritic, antiseptic

Uses: Turmeric has been linked to numerous biological activities, including antioxidant, anti-inflammatory, anticancer, antigrowth, antiarthritic, antiatherosclerotic, antidepressant, antiaging, antidiabetic, antimicrobial, wound healing, and memory enhancing activities.

Curcumin (diferuloylmethane) is a yellow pigment present in the spice turmeric (Curcuma longa) that has been associated with antioxidant, anti-inflammatory, anticancer, antiviral, and antibacterial activities as indicated by over 6,000 citations.

In addition, over one hundred clinical studies have been carried out with curcumin and another 100+ currently ongoing per clinicaltrials.gov

Source: Levolta Pharmaceuticals
10 Proven Health Benefits of Curcumin

1. Contains Bioactive Compounds with Powerful Medicinal Properties
2. Natural Anti-Inflammatory Compound
3. Natural anti-oxidant
4. Boosts Brain-Derived Neurotrophic Factor, Linked to Improved Brain Function
5. Lowers Risk of Heart Disease
6. Can Help Prevent (And Perhaps Even Treat) Cancer
7. May be Useful in Preventing & Treating Alzheimer’s Disease
8. Arthritis Patients Respond Very Well to Curcumin
9. Studies Show Incredible Benefits Against Depression
10. May Help Delay Aging and Fight Age-Related Chronic Diseases
Recent data from the *Nutrition Business Journal* puts turmeric in the **top 10 best-selling supplements in the U.S.**

The total U.S. dietary supplement market of curcumin is estimated at **several hundred tons.**

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**www.nutraingredients-usa.com/Suppliers2/Any-moment-now-Is-curcumin-momentum-building-towards-a-tipping-point**

* Nutrition Business Journal estimated sales of curcumin and turmeric-based supplements
Thank You

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