

A Reason to Season: The Role of Spices in Health



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Spices

Tropical or subtropical plant, or some part of it, valued for providing color, aromatic flavoring or stimulating odor for use in cooking.



Culinary Herbs



Herbaceous plants valued for their aromatic flavorings in foods and beverages.

- Basil
- Thyme
- Oregano
- Rosemary
- Sage



- Antioxidant
- Antimicrobial
- Stimulate salivation
- Promote digestion
- Carminative

Chilli or Chili (*Capsicum spp*)

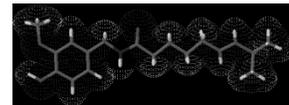


- Eaten in Americas since 7500 BC - one of first cultivated crops.
- Often used in soups for colds & sinusitis - their pungency increases mucus secretion in lungs and nose.
- Rich in vitamin C.

- Capsaicin & relatives are powerful topical analgesics.
- Studies confirm effectiveness for nerve pain and shingle pain.
- 0.025 and 0.075% strengths available. Must apply 3 x day. Can cause burning sensation. Avoid contact with eyes.



PLoS Med. 2005 Jul;2(7):e164



Chocolate (*Theobroma cacao*)

- Exotic, aromatic, medicinal spice.
- “Food of the gods”
- Mayans combined with vanilla and chilli (mole)



Chocolate



- Flavonoids highest in cocoa powder and dark chocolate.
 - Antioxidant
 - Mild hypotensive
 - Cough suppressant
 - Look for chocolate at least 70% cocoa.

Cinnamon

(*Cinnamomum verum*; *C. aromaticum*)

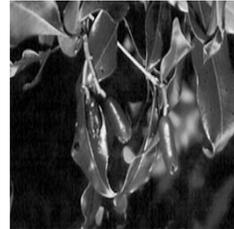


- German health authorities approve for “loss of appetite, dyspepsia, bloating and flatulence.”
- Effective anti-emetic.
- 1/2 tsp/day reduced fasting blood glucose in people with type 2 diabetes.

Khan, Diabetes Care 2003
Altschuler, Diabetes Care 2007

Cloves

(*Syzygium aromaticum*)



- From Latin “clavus” meaning nail.
- Worth more than weight in gold during 16th-17th centuries.
- Used in spice cakes, vindaloo, pickles, Worcestershire sauce.
- Smoked in aromatic cigarettes in Indonesia.

Clove Bud



- Was prized as a flavoring agent, digestive aid, anti-emetic and aphrodisiac.
- Contains eugenol, an effective local anesthetic, and salicylic acid.
- Essential oil - as effective as benzocaine for dental pain
- Apply a few drops of clove bud essential oil on q-tip and apply to toothache.

Fennel Seed

- German health authorities approve for “dyspepsia and upper respiratory infection.”
- Used in children for colds and colic.
- Clinical trial found chamomile, fennel and lemon balm reduced crying time in colicky infants.

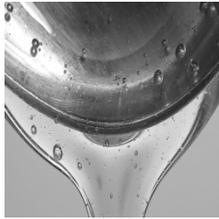


Savino, Phytother Res 2005

Fennel Honey Syrup

- 2 Tbsp fennel seed
- 1 tsp lemon juice
- 1/2 cup water
- 1/2 cup organic honey

Simmer on low heat for 15 minutes. Strain. Refrigerate up to 1 week. For coughs and colds kids 2 and up.



Fenugreek (*Trigonella foenum-graecum*)

- Popular spice in Middle East, India and Far East.
- Component of curry.
- Used as artificial maple flavoring.



- The seeds contain mucilaginous fiber that is good for the bowel.
- Modest effects on serum glucose and cholesterol.
- Commonly used to stimulate breast milk.
- Eases sore throat and cough.



Table 1. Summary of Fenugreek Studies for Diabetes

Condition/Study Patient or Secondary Outcome	Evidence/Study Type	Author, Year	n	Statistically Significant Results?	Quality of Study (0-20-point Scale) (1=poor, 5=excellent)	Magnitude of Benefit (how strong is the effect?)	Adverse Side Effects	Number of Patients Needed to Treat for One Outcome	Comments
Type 2 diabetes, hyperlipidemia	Randomized, controlled, double-blind study	Gupta, 2001	25	Yes	3	None	NA	NA	Improved fasting glucose and C-peptide levels, without differences between groups. Reduced HbA1c and insulin resistance with fenugreek.
Type 2 diabetes	Randomized, crossover study	Rafiqzain, 1994	10	Yes	1	Large	NA	NA	Improved postprandial glucose utilization with fenugreek seed supplementation.
Type 2 diabetes	Randomized, crossover study	Charms, 1990	15	Yes	1	Small	NA	NA	Improvement in impaired glucose tolerance.
Type 2 diabetes	Cross-over study with matched controls	Neeraj, 1998	12	Yes	1	Medium	NA	NA	Improvement of acute plasma glucose, most notable with raw fenugreek seed powder.
Type 1 diabetes, hyperlipidemia	Randomized, crossover study	Charms, 1990	10	Yes	1	Large	NA	NA	Fasting blood glucose levels and C-peptide improved, serum insulin levels unchanged.

From Basch E. et al. Therapeutic applications of fenugreek. Alt Med Rev 2003; 8(1): 20-7

Garlic (*Allium sativum*)



- Dietary garlic and onions reduce the risk of GI cancers.
- Protects GI mucosa
 - Studies show prevents GI toxicity from methotrexate
- Antimicrobial
 - *Entamoeba histolytica*
 - *Giardia lamblia*
 - *Salmonella*
 - *H. pylori*
- Anti-inflammatory

Hsing, et al. JNCI 2002; 94:1648-51

Ginger (*Zingiber officinale*)



- Most widely cultivated spice
- Anti-inflammatory
 - Solid basic science, arthritis studies conflicting.
- Prokinetic agent – as part of getting patients off PPI; gastroparesis
- For coughs, congestion, colds
 - In vitro activity against a variety of rhinovirus.

Ginger

- Review of six studies found 1-1.5 g/d dried ginger was effective for nausea and vomiting of pregnancy with little risk of harm.

Borrelli, *Obstet Gynecol.* 2005

- Some studies show that it is effective for motion sickness and chemotherapy related nausea and vomiting.

Chrubasik, *Phytomedicine* 2005



- Antagonist at ileal 5-HT₃ receptors
- A study in 24 healthy human volunteers found that 1200 mg dried ginger accelerated gastric emptying and stimulated antral contractions greater than placebo (Wu 2008).
- Both the acetone extract of ginger and ginger juice effectively reverse cisplatin-induced delay in gastric emptying.

J Ethnopharmacol. 1998
Eur J Gastroenterol Hepatol. 2008

Licorice Root (*Glycyrrhiza glabra*; *G. uralensis*)



- Gastroprotectant effects of licorice root known for centuries.
- Compounds in licorice increase local prostaglandin levels that promote mucus secretion and cell proliferation in the stomach.
- Licorice often found in herbal formulations for cough, colds, sore throat, GERD, gastritis or IBD.

Krausse, *J Antimicrob Chemother* 2004
Rees, *Scand J Gastroent* 1979; 14:605-7

Licorice



- Limit to 3 g/d root for short duration or 1 g/d long term.
- Deglycyrrhized licorice DGL (~400-800 mg before or between meals) is safe.

Peppermint for Colds



- Peppermint is an effective expectorant, decongestant and is soothing for a sore throat.
- Mentholated rub on chest.
- Peppermint tea compress for headache/congestion.

Peppermint Oil for IBS



- Review: 16 trials (651 patients IBS)
- 8/12 studies showed it was superior to placebo.
- 3/3 studies equivalent to smooth muscle relaxants.
- Adverse effect: heartburn & perianal burning.
- Dose 0.2 ml TID

Grigoleit, *Phytomedicine* 2005

Sage (*Salvia officinalis*)

- German Comm E and ESCOP approve for excessive sweating.
- Small 8-week trial showed greater reduction hot flashes than placebo; extract equiv 1 g fresh sage.

Bioforce 2001



Sage

- Long history of use as remedy for sore throats and cough.
- Phase II/III trial found 15% sage spray > placebo for relief of acute viral pharyngitis

Hubbert Eur J Med 2006



Thyme (*Thymus vulgaris*)



- German Commission E approves for bronchitis and upper respiratory infection.
- Inhibitor of 5-LOX
- Studies demonstrate thyme reduces bronchitis symptoms

Gruenwald, Arzneimittelforschung 2005
Buechi, Forsch Kompl Klass Natur 2005
Prieto, Fitoterapia 2005

Thyme



- Wide spectrum anti-bacterial activity in antibiotic resistant strains.

Hersch-Martinez, Fitoterapia 2005

- Potent anti-fungal - especially oral candidiasis.

Giordani, Phytother Res 2004

Turmeric (*Curcuma longa*)



- Used as spice (curry) and medicinal agent at least 2000 years.
- Traditionally used for minor respiratory complaints, asthma and arthritis.
- Curcumin considered major active component.

Turmeric



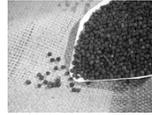
- Curcumin has potent anti-inflammatory activity.
 - COX and LOX inhibition.
- Doses of 760 mg – 2.0 g/day curcumin beneficial in preventing relapse in ulcerative colitis and Crohn's disease.
- 480 mg curcumin + 20 mg quercetin taken orally T1D reduced number and size of ileal and rectal adenomas in patients with FAP.

Hanai. Clin Gastroenterol Hepatol 2006

Turmeric Safety

- The average daily intake of turmeric in India is approximately 2–2.5 grams/day, which corresponds to an intake of 60–100 mg of daily dietary curcumin (Goel 2008).
- Phase I clinical trials demonstrate that curcumin is safe at doses as high as 12 grams/day (Anand 2007).

Mol Pharm. 2007
Nutr. Food Res. 2008.



Absorption

- *When curcumin was given to humans at doses of 2 grams – it yielded very low or undetectable serum levels.*
- *Concomitant administration of 20mg/kg piperine, a primary alkaloid in black pepper, increased bioavailability by 2000% (Shoba 1998).*

Planta Med. 1998

Conclusion

Spices and culinary herbs have a vast array of valuable antioxidant, antimicrobial, anti-inflammatory, and cancer protecting compounds - making them an excellent addition to the diet.

There is a “*reason to season*”!

Thank you !!!



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