

A Reason to Season: The Role of Spices of Health



Tieraona Low Dog, MD
Director of Education
Program in Integrative Medicine

Clinical Asst Professor
Department of Medicine
University of Arizona

Objectives

- Participants will be able to identify common spices used in the diet.
- Participants will be able to discuss the evidence of safety and benefit for commonly used spices.

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



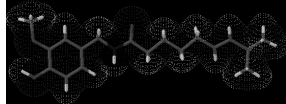
- Antioxidant
- Antimicrobial
- Stimulate salivation
- Promote digestion
- Carminative

Chilli or Chile (*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 neuropathic pain and postherpetic neuralgia.
- 0.025 and 0.075% strengths available. Must apply 3 x day. Can cause burning sensation. Avoid contact with eyes.



Capsaicin

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.
 - Moderation is key!

Cinnamon



- “True” cinnamon versus Cassia.
- Cinnamon, cassia and myrrh used for embalming.
- Flavoring agent.
- Antibacterial
- Antifungal

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



- Pilot study of 15 women with polycystic ovary syndrome showed significant reductions in insulin resistance with cinnamon versus placebo over 8 week period.

Wang, Fertili Steril 2007

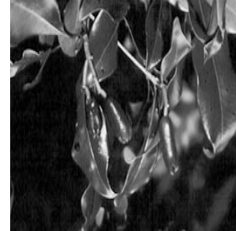
Cinnamon Smoothie



- 1 cup frozen peaches
- 1/4 cup nonfat yogurt
- 1/2 cup soymilk
- 1/2 tsp cinnamon

- Blend and drink.

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.

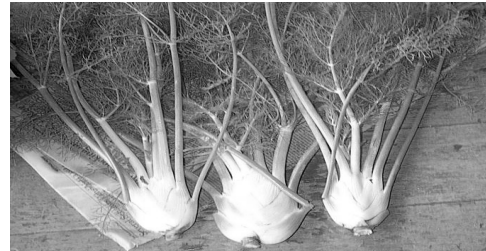


Clove Bud



- 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. See dentist.

Fennel (*Foeniculum vulgare*)



Fennel Seed

- German health authorities approve for "dyspepsia and upper respiratory infection."
- Used in children for colds and colic.
- DBPCT chamomile, fennel and lemon balm reduced crying time in colicky infants.

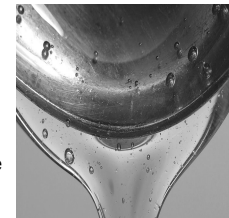


Savino, Phytother Res 2005

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 syrup flavor.



- 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 (Target Primary or Secondary Outcome)	Endpoints/ Study Type	Author, Year	N	Statistically Significant Result?	Quality of Study (0=poor to 4=excellent)	Magnitude of Benefit (How strong is the effect?)	Absolute Risk Reduction	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 CDT with fenugreek seeds at 100 mg/day. No difference in weight, lipids, glucose tolerance test and insulin resistance with fenugreek.
Type 2 diabetes	Randomized, crossover study	Hughes, 1984	10	Yes	1	Large	NA	NA	Improved peripheral glucose utilization with fenugreek seed supplementation.
Type 2 diabetes	Randomized, crossover study	Sharma, 1993	15	Yes	1	Small	NA	NA	Improvement in hyperlipidemic symptoms.
Type 2 diabetes	Care series with matched controls	Nairagi, 1988	12	Yes	1	Medium	NA	NA	Improvement of acute diabetic symptoms, need to insulin with few fenugreek seed powder.
Type 1 diabetes, hyperlipidemia	Randomized, crossover study	Sharma, 1993	10	Yes	1	Large	NA	NA	Reduced blood glucose levels and CDT. Improved serum insulin levels unchanged.

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

Fenugreek

- Safety is good. Can cause loose stools.
- Urine may smell like maple syrup - discuss with nursing mothers.
- Cross reaction with chickpea allergy.
- Tea: simmer 2 tsp. seeds in 2 cups water for 10 minutes. Strain. Add lemon and honey.

Garlic (*Allium sativum*)



- Studies confirm protective effects of *Allium* vegetables against gastrointestinal and prostate cancer.
- Garlic and onions very high in selenium.

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

Garlic



German health authorities and WHO recognize garlic as adjunctive therapy to dietary measures for elevated lipids and endorse garlic as a preventive measure for atherosclerosis.

Garlic



- Doses > 4 grams day may interact with anticoagulants.
- Fresh superior to cooked garlic: 1-2 cloves per day.

Ginger (*Zingiber officinale*)



- Cancer prevention
 - Colorectal cancer?
- Anti-inflammatory
 - COX and LOX inhibitor
 - Studies mixed for osteoarthritis

Ginger (*Zingiber officinale*)



- Most widely cultivated spice
- Anti-inflammatory
 - Solid basic science, arthritis studied conflicting.
- Digestive aid
- 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



Ginger Tea for Colds

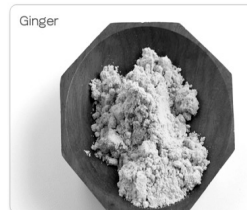


- 2 inch piece of peeled fresh sliced ginger
- 4 cups water
- Honey and lemon

Simmer ginger for 15 minutes. Strain. Add honey and lemon for children older than one year of age.

For gut: use candied ginger to make tea - already sweetened with cane sugar.

Ginger



- Heartburn most common adverse effect.
- Under 4 g/d - no known interaction with warfarin or increased bleeding.

Licorice (*Glycyrrhiza glabra*)



- Long valued as medicine and flavoring agent.
- Popular for peptic ulcer disease.
 - Protects against aspirin, NSAID mucosal damage
 - Bactericidal to *H. pylori*, including clarithromycin antibiotic resistant strains.
- Krausse, J Antimicrob Chemother 2004
- Rees, Scand J Gastroent 1979; 14:605-7

Licorice

- Animal studies confirm that licorice is effective for cough.
- Potent antiviral activity against herpes virus.



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 (*Mentha piperita*)



- Peppermint leaf popular for minor digestive and respiratory complaints.
- Rosmarinic acid is an effective anti-inflammatory.
- Topical analgesic

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

Thyme



- Reflex stimulation of saliva, gastric juices and bile - enhances appetite & digestion.
- Bronchial relaxant - increases mucociliary clearance.
- Fresh herb infusion gargle for sore throat.

Turmeric (*Curcuma longa*)

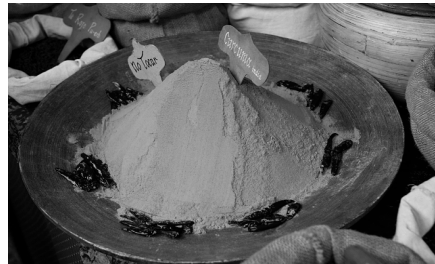


- Used as spice (curry) and medicinal agent at least 2000 years.
- Traditionally used for minor respiratory complaints, asthma and arthritis.
- Curcumin considered a major active component.

Turmeric



- Curcumin has potent anti-inflammatory activity.
 - COX and LOX inhibition.
- In vitro, animal data and limited research in humans suggest curcumin has protective effect against colorectal cancer, prostate and skin cancers.



- Beneficial in patients with inflammatory bowel disease with 1 gram curcumin 2 x day.

Hanai. Clin Gastroenterol Hepatol 2006; 4(12): 1502-6

Conclusion

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

There is a "*reason to season*"!

Thank you !!!



Tieraona Low Dog, MD

Director of Education
Program in Integrative Medicine
University of Arizona School of
Medicine

www.drLOWdog.com

