

Herbs: Lab 1

Digestive herbal helpers
Infusions (chpt 8)
Water as a solvent
Decoctions (chpt 9)

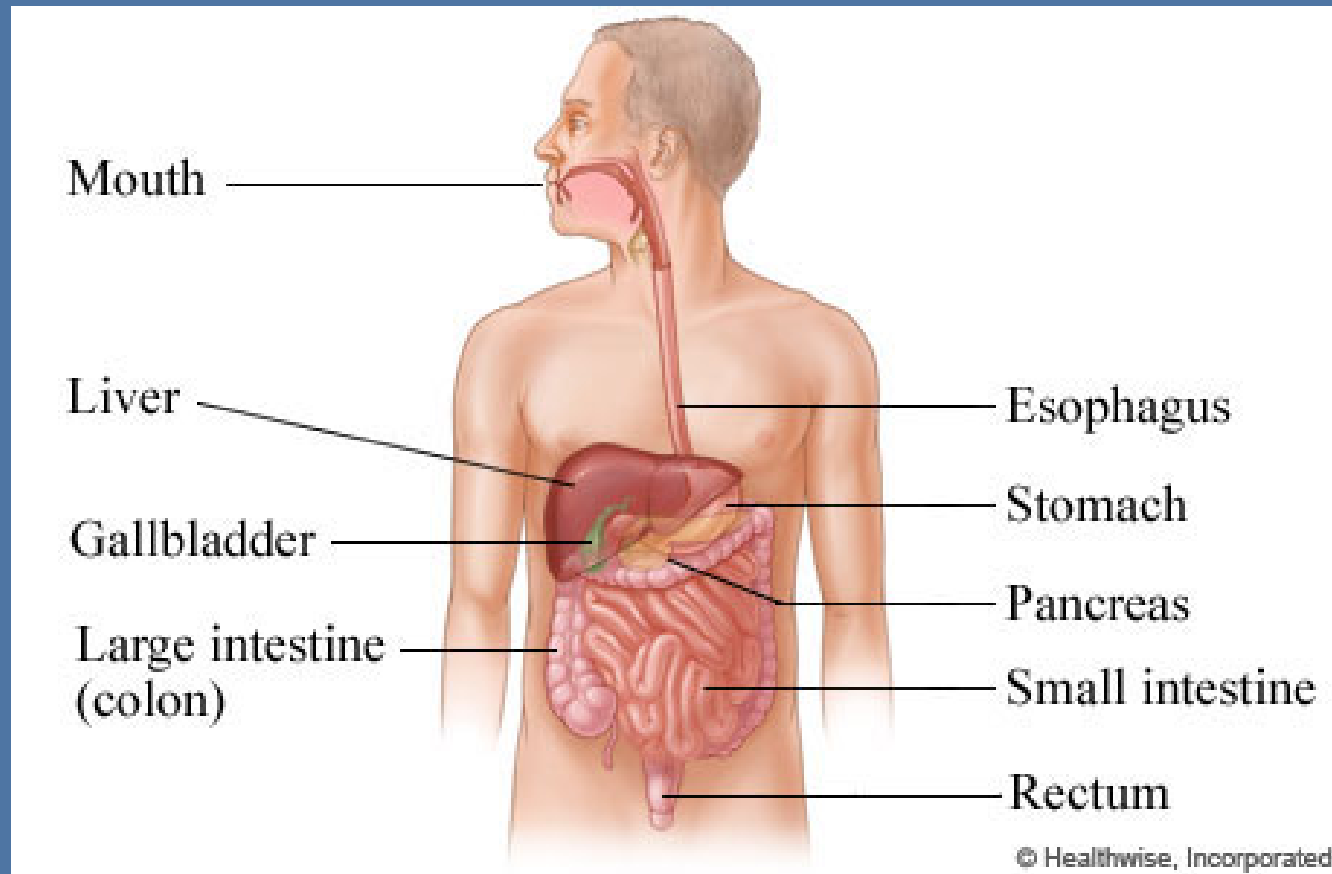


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Disclaimer

- The information in this lab is introductory. It is not meant to take the place of medical assistance or information from an experienced herbalist. The USDA, FDA and other regulatory bodies have not verified the information presented here.

The digestive system



Chinese medicine also includes the spleen as part of the digestive system

Illustration from Web MD.

Herbal medicine focuses on the stomach

What are typical symptoms:

upset, bloat, pain, nausea, diarrhea

(Liver is part of “de-toxing” and general wellness rather than a focus of the symptoms above.)

Herbs To Sooth The Tummy

Parsley



Fennel &
cardamom seeds



MINTS



Ginger

Infusion Lab 1

1. Infusions - Hot water = Tea

Cold water = nourishing infusion

Chewing – small bits for digestive aid

 Digestions – continual heating but below boiling – medicated oil in Lab 2

 Percolation – water run thru a packed column

Percolation

- Plant material is packed in a column or tube and the solvent (water) drips through it
- In herbology – this is a tightly packed column and a slow drip.
- We will not practice percolation in lab.

Lab 1. Decoction

- Not technically an infusion. We will demonstrate in this lab (at the end) because we will use water as a solvent.

Methods of preparation for this lab- maceration

Softening or breaking into pieces using a liquid. Raw, dried, or preserved herbs are soaked to soften and extract the active ingredients

1. Infusions

– in water

- Hot
- Cold

2. Eating 'small bits'

Lab 1. Herbal remedies to help digestion

herb	Prep method	notes	Plant part
Spearmint/ peppermint	Tea – hot water infusion	Locally grown, collect for herbarium	leaf
Fennel	Eat seeds	Locally grown, collect for herbarium	seed
Ginger	Candied root		root
Cardamom	Eat seeds		seed
Parsley	Eat the fresh plant	Locally grown, collect for herbarium	leaf
Nettle	Nourishing infusion	Locally grown, collect for herbarium	leaf
		Nettle is not necessarily for digestive upset – it is a wellness tonic	
ginger	decoction		root

Infusion

- From the Latin – *to pour in*.
- From Jim Green – *a liquid preparation made by treating fresh or dried vegetable substances with either hot or cold water to extract the medicinal and nutritional principles.*

Extraction

- “purpose is to draw out an herb’s unique..... Soluble components (and energetic components) and put them into a form that can be more easily absorbable.....maybe
 - ✓ More concentrated
 - ✓ More palatable
 - ✓ More convenient to administer

What is a soluble component?

- **Soluble** =
- That which dissolves or melts into a liquid solution.
- Sugar dissolves completely in water
- Plants do not dissolve completely, but some of the important medicinal compounds do dissolve.

What is a solvent?

- Water – the universal solvent
- Given enough time, the whole world could dissolve in water.
- Jim Green lists seven solvents:
 1. Water
 2. Alcohol
 3. Glycerin
 4. Vinegar
 5. Wine
 6. Oil
 7. Combinations of water & alcohol

Lab 1. Water as a solvent

- Consistent
- Reliable
- Broadest range of what it dissolves
- “Forever dissolving our planet”
- “Water, in its passionate promotion of change is a near antithesis (opposite) to a preservative.”

water

- Once initial components dissolve then the “new” liquid can dissolve even more stuff.
- “Water may ultimately be able to dissolve water insoluble substances.”

water

- Water extracts a soup of nutrients and components that encourages molds, yeasts and bacteria to grow and unleash their enzymatic assault on the status quo.
- So refrigerate your water extracts, use them up in a few days, freeze them, or add something else to them to preserve them.

Distilled water

- Because it is derived from condensed steam all the minerals have been “left behind”.
- Distilled water is more “hungry” and has more capacity to dissolve things into it than a hard water or a mineral water.

Cold water infusion

- Use cold water when:
- We want to retain volatile oils
- The target is readily soluble in cold – slippery elm, marshmallow root, wild cherry bark
- To keep out undesirable components
- We will practice cold water infusion in Lab 5

Hot water infusion

- By any other name is called.....

TEA

Tea

How do we define tea in this course?

An infusion of hot water and an herb

It is not tea made from the tea plant leaf (Camillia senensis). This type of tea naturally contains caffeine.



Herbal Teas

- Do not contain caffeine ****
- Steep by pouring hot water over the plants.
- The solvent is water.
- Never place the plant in boiling water – that is not a tea.
- Always use a closed vessel so that all the volatile oils are retained.

Menstruum

Jim Green uses the word in two ways

1) the solvent

2) the liquid solvent with extracted material in it.

I prefer the 2nd “definition”. Mostly we won’t use the word at all. We’ll just call it “tea”.

Herbal Tea

- Tisane is an old-fashioned word for herbal tea
- *Use of most herbal teas as medicinal remedies remains unproven and no health claims can be made on labels.
- Herbal teas do have effects on the body - pregnant women are warned away from some.

Herbal Tea

- *liang cha*, means "cooling tea" in Chinese and it is used to cool down the body when it was overheated due to weather or sickness
- Chai is just another word for tea

Spearmint or peppermint tea

- Steep dried leaves in hot water for 2-3 minutes.
- Or steep fresh leaves 3-5 minutes.
- Use cloth bags, 'tea-spoons', or strain after steeping.
- For stronger taste, use more plant material rather than a longer steeping time.



Spearmint:

“Most individuals are able to tolerate spearmint well. It is excellent for the gastrointestinal tract. One of its best helps is in soothing an upset stomach by soothing the stomach and intestines. Spearmint increases circulation in the stomach. It also helps to control vomiting that is a result of morning sickness during pregnancy. The oil that is found in spearmint leaves is responsible for working on the salivary glands to aid digestion. It also stimulates gastric secretions. The herb is a gentle and effective remedy for babies with colic.” Darrell Miller, Vita-net

mint & digestion

- I could not find any published research articles definitively 'proving' that spearmint improved tummy aches.
- Some articles talked about peppermint and show that is an effective help for digestion upset.
- But I could not find original research about spearmint as a digestive upset remedy
- Some articles talked about new research on women's hair growth, a hormone effect.

Peppermint

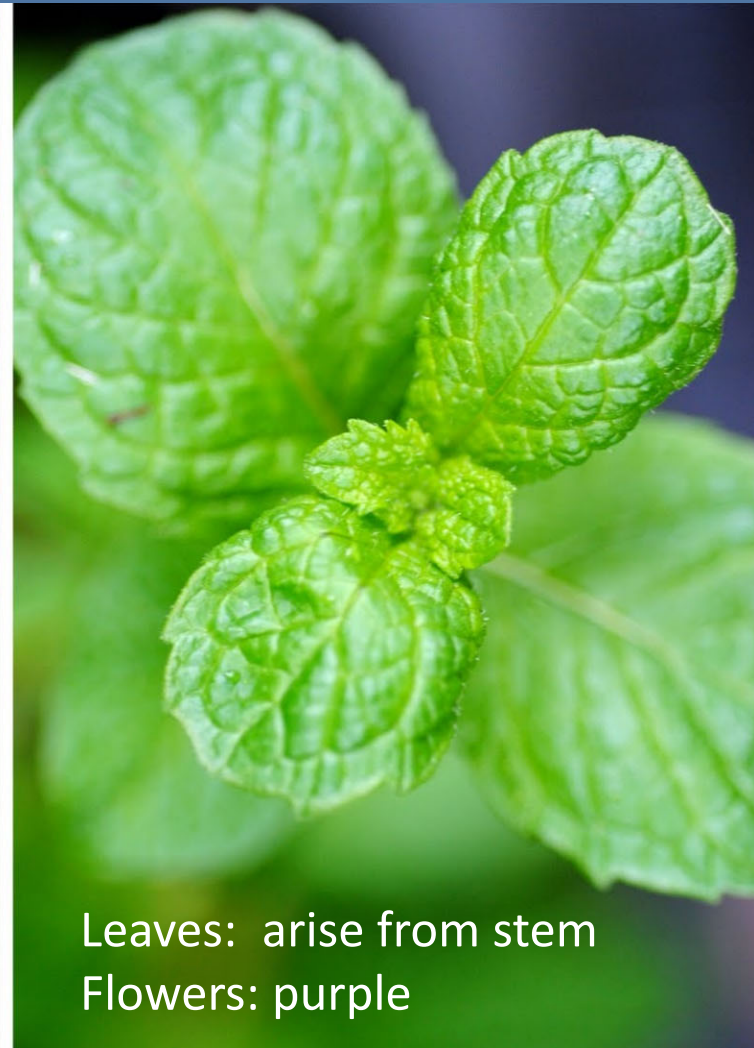
Species: *Peperta*



Leaves: arise from branches
Flowers: blueish or pink

Spearmint

Species: *Spicata*



Leaves: arise from stem
Flowers: purple

Peppermint has “sharper” leaves and spearmint has rounder leaves.

Peppermint

Spearmint

http://herbs.lovetoknow.com/Slideshow:Types_of_Mint#R



Cooling, stronger flavor, oil is menthol



Milder, oil is carvone

Peppermint

Fresh & Dry

Erika's notes



Anti- Spasmodic

Stomach Tonic

Increases circulation
to stomach

Settle stomach

Nausea, vomiting

Smooth muscle spasms

Gas/Indigestion

Good For:

Children & babies

Colic

Morning Sickness

mints

- Grow well in cool, moist, shady areas
- Can also do well in full sun
- Spreads aggressively by rhizomes
- Consider placing it where it can be blocked from spreading.

All kinds of herbal teas

- There are all kinds of teas.
- Sleepy time – chamomile - nerves
- Cold remedies – echinacea - immune
- Throat coat – marshmallow, licorice root
- Energy – ginseng - nerves
- Teas are a great way to deliver herbal medicine to aid a body system in trouble

Maceration

- A hot water infusion - Tea
- Chewing – small bits for digestive aid
- Decoction
- Cold water infusions

Digestive Aids

- Eating small bits is maceration. You chew the bit and add saliva (water and enzymes) to break down the plant material and extract the active ingredients.
- Your stomach acids also help dissolve more components.
- Dissolved components are absorbed into the blood stream at the small intestine.
- Undissolved material is pooped out.

Eat small bits of 'aids' or remedies

- Fennel seed
- Ginger root
- Cardamom seed
- Parsley leaf

Lab 1. Herbal remedies to help digestion

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ginger	decoction		root
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Fennel



- Latin name: *Foeniculum vulgare*
- Of the celery family Apiaceae (formerly Umbelliferae).
- It is the only species in the genus *Foeniculum*.

fennel



Photo from wikipedia

- Perennial
- Licorice or anise taste
- Grows in sunny locations - it is a native Mediterranean
- It's seed gives Italian sausage it's characteristic taste
- Seed was used in Absinthe liquor but is no longer used that way.

Fennel Plant & Seed



Antacid
Anti Inflammatory
Anti Spasmodic

Improves
Digestion -Protein
Gas
Vit A

Cleanser Gall Bladder, Liver,
Kidneys
Clears Mucus

Good For Children
Babies & Colic

CAUTION:
Avoid heavy use in
pregnancy.

Fennel as medicine

- Fennel is used for various digestive problems including heartburn, intestinal gas, bloating, loss of appetite, and colic in infants. It is also used as a respiratory remedy.

How does it work? :

- Fennel might relax the colon and decrease respiratory tract secretions.

Source - WebMD

Fennel – the seed oil is the medicine

The best varieties of Fennel yield from 4 to 5 per cent of volatile oil (sp. gr. 0.960 to 0.930), the principal constituents of which are Anethol (50 to 60 per cent) and Fenchone (18 to 22 per cent). Anethol is also the chief constituent of Anise oil.



Botanical.com
A Modern Herbal
By Mrs. M Grieve

Fennel – the seed oil is the medicine

Fenchone is a colourless liquid possessing a pungent, camphoraceous odour and taste, and when present gives the disagreeable bitter taste to many of the commercial oils. It probably contributes materially to the medicinal properties of the oil, hence only such varieties of Fennel as contain a good proportion of fenchone are suitable for medicinal use



Botanical.com
A Modern Herbal
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Fennel as medicine

- The Saxon, Galician, Roumanian and Russian varieties all yield 4 to 5 per cent of volatile oil, and these varieties are alone suitable for pharmaceutical use. In the ordinary way they furnish some of the best Fennel crops, and from their fruit a large portion of the oil of commerce is derived.

Botanical.com

A Modern Herbal

By Mrs. M Grieve

Culpepper says:

- 'One good old custom is not yet left off, viz., to boil fennel with fish, for it consumes the phlegmatic humour which fish most plentifully afford and annoy the body with, though few that use it know wherefore they do it. It benefits this way, because it is a herb of Mercury, and under Virgo, and therefore bears antipathy to Pisces. Fennel expels wind, provokes urine, and eases the pains of the stone, and helps to break it.

Culpepper says:

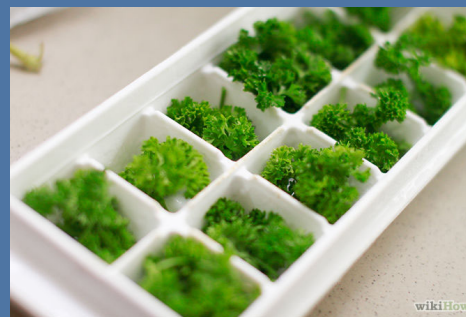
- The leaves, or rather the seeds, boiled in water, stayeth the hiccup and taketh away nausea or inclination to sickness. The seed and the roots much more help to open obstructions of the liver, spleen, and gall, and thereby relieve the painful and windy swellings of the spleen, and the yellow jaundice, as also the gout and cramp.

Culpepper says:

- The seed is of good use in medicines for shortness of breath and wheezing, by stoppings of the lungs. The roots are of most use in physic, drinks and broths, that are taken to cleanse the blood, to open obstructions of the liver, to provoke urine, and amend the ill colour of the face after sickness, and to cause a good habit through the body; both leaves, seeds, and roots thereof, are much used in drink, or broth, to make people more lean that are too fat.'

Parsley

Fresh or Frozen



Erika's notes

Tonic:

Kidney / Bladder (Leaf)

Liver / Spleen (Roots - Stronger Action)

Blood Cleanser & Builder

More Vitam C than Citrus

High in Iron, Potassium

Diuretic –Slow / Gentle

Lower Blood Pressure

Calcium Solvent Kidney Stones

CAUTION:

Use Sparingly in Pregnancy

Stimulates Uterus

Will Dry Lactation

Other Digestive Herbs To Note



Cardamom (India) Related to ginger. Digestive problems, nausea, acidity, bloating, gas, heartburn, loss of appetite, constipation cramps, detox kidneys, diuretic, anti –oxidant, depressant, inflammatory, cancer.



Turmeric Related to ginger. Indigestion, heartburn, lowers cholesterol, rid parasites, anti –oxidant, inflammatory, cancer

Other Digestive Herbs To Note



Dill Digestive health, hiccups, gas, balance blood sugars, prevents cramps.



Cumin Stimulate pancreas secretions, digestive aid, gas, increases insulin sensitivity, reduce cholesterol.

Other Digestive Herbs To Note

Cinnamon Slow digestion, gas, bloating, protect form bacterial food poisoning. Inner bark of “sapplings”.



Caraway Seed Gas, colic, digestive aide, faster digestive travel, nutrients, minerals, vitamins, anti- oxidants, high fiber.



Ginger

Fresh, Raw, Crystalized, Dried



Erika's notes

Antacid

Anti-Inflamitory

Anti-Spasom

High in minerals

Alkalizer

Tonic Stomach & Spleen

Stimulates Digestion

Blood Thinner

Treats Vomiting

Gas, Diarrhea, Indigestion

Reduces 'Bad' Cholesterol

Blocked by Aspirin

CAUTION:

Not for use in Pregnancy

Ginger (*Zingiber officinale*)



A monocot – related to grasses & corn!

The rhizome (underground stem) is harvested when the stalk wilts

The rhizome is scalded and so it will not be likely that you can grow it from a rhizome bought at the grocery store.

I have grown ginger from organic ginger root. Find one with buds.



(photos from Wikipedia)

Decoction

- The act or process of boiling, usually in water, so as to extract the flavor or active principle – compare to infusion. (From Merriam-Webster dictionary)
-
- Be careful of too high of heat for extraction. It can drive off essential oils and disrupt enzymes and coagulate proteins which will then gum up extraction.

Decoctions:

- Almost always with water as the solvent
- Make with harder, woodier materials like roots, seeds, or bark
- Start with cold water so we don't accidentally coagulate or gum up the extraction.
- Soak beforehand if possible.
- Slowly bring to a boil, simmer 10-15 minutes
- Press the pulp, strain.

Ginger root extract

- We use the extract to make ginger beer in cheese making class.
- Keep the extract on hand and add a little to your water to give it flavor.
- Freeze and keep on hand for times when tummy trouble strikes.

Green's guide to successful extractions

1. Start with the best. “My extracts can never be any better than the quality of the herbs I begin with.” Clean, organic, well **garbled**, rich in color, aroma and flavor.
2. Prepare your solvent
3. Make the extraction
4. Use your senses to evaluate. Cloudy at start, then clear. Taste, smell, color, clarity.
5. Does it work the way you wanted it to?
6. Take notes. Record your process. Pg 354 form

Chapter 7

- Open to Page 101
- What preparations will we do in lab?
- Underline the following.....

Chapter 7

- Open to Page 102
- What plant parts do we use in lab?
- Underline the following.....

Next week

- Lab 2.
- Infusions
- Using solvents other than water
- A focus on herbs to aid the immune system

nourishing infusions

A water-based infusion

Nourishing Infusions

Natural Vitamins, Trace Elements, Minerals, Anti –Oxidants, “Supper Nutrients”

Made Fresh Every Day / Used in 3 days

Using Only Tonic Herbs

Hot Water Based

Long Steep Time 4 to 12 hours

Store Cold

These are high in NUTRITION ...a tincture (alcohol) is not.



Red Raspberry

Dried or Fresh Leaf



Tonic

High in Trace Minerals

High in Vitamins

Vit C, E, A, B complex,
magnesium,

potassium,

phosphorus, very high
manganese, selenium,

silicon, sulfur, tannins,
easily assimilated

calcium and iron

Cleans & Purify Blood

Woman's Tonic

Pregnancy Tonic

Children's Tonic

Nettle

Dry Leaf



Tonic
Alkalizing
High in Trace Elements
High in Minerals
90%–100% of vitamin A (including vitamin A as β -carotene) calcium, iron, silicon, potassium and protein.
Enrich the Blood
Rebuild Adrenals
Restore energy
Purifies Blood
Neutralize Uric Acid
Helps with Anemia
Stimulates Thyroid

Good Children
Good For Pregnancy

Red Clover

Flower & Leaf Caution possible blood thinner



Tonic
Highly Nutritious
Vitamins
Trace Elements & Minerals
(Molybdenum Detox Nitrogen,
Blood Hemoglobin) calcium,
chromium, magnesium, niacin,
phosphorus, potassium, thiamine,
and vitamin C. isoflavones
(chemicals that act like estrogens
and are found in many plants).

Blood Purifier & Cleanser
Cleans Body of Uric Acid
Rebuild Immune System
Chronic Inflammation
Cancer Tumor Resistance

Good For Sick / Weak
Good For Children
Female Tonic(isoflavones)

How to make a nourishing infusion

Boil a quart of water.

Put 1 ounce dried herb in a quart jar

Pour the hot water over the herb in the jar.

Stir the dried herb down into the jar.

Cap tightly and let it sit. For about four hours or overnight.

Strain it

Use your hands to squeeze the herb so you get every bit of nourishment.

Store the liquid infusion, in the refrigerator.

Drink it hot or cold, with honey or miso, fruit juice or a shot of whiskey.

Water-based solutions extract the vitamins and minerals; they dissolve more readily in water than in alcohol (tinctures). Because you can't fit enough nourishment into a pill or capsule drink these tonics.



after Susun's Weed recipe