UCF Arboretum’s Herbal Guide
A health guide of medicinal herbs, culinary herbs, and super foods too!

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Table of Contents

Page 3: Western Herbalism

Page 4-6: Herbal Vocabulary Section

Page 7-116: Herb Guide including:

- Aloe: Pages 8-9
- Arnica: Pages 10-11
- Ashwagandha: Pages 12-13
- Asparagus: Pages 14-15
- Burdock: Pages 16-17
- Calendula: Pages 18-19
- Camphor: Pages 20-21
- Catnip: Pages 22-23
- Chamomile: Pages 24-25
- Chaste Tree Berry: Pages 26-27
- Clove: Pages 28-29
- Corn Silk: Pages 30-31
- Cramp Bark: Pages 32-33
- Dandelion: Pages 34-35
- Echinacea: Pages 36-37
- Elderberry: Page 38-39
- Evening Primrose: Page 40-41
- Fennel: Page 42-43
- Feverfew: Page 44-45
- Ginger: Page 46-47
- Ginseng (Asian): Page 48-49
- Goldenseal: Page 50-51
- Gotu Cola: Page 52-53
- Holy Basil: Page 54-55
- Hops: Page 56-57
- Horsemint: Page 58-59

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Table of Contents

• Lavender: Page 60-61
• Lemon Balm: Page 62-63
• Licorice: Page 64-65
• Milk Thistle: Page 66-67
• Marshmallow: Page 68-69
• Moringa: Page 70-71
• Mullein: Page 72-73
• Neem: Page 74-75
• Stinging Nettle: Page 76-77
• Oat Straw: Page 78-79
• Olive: Page 80-81
• Peppermint: Page 82-83
• Plantain: Page 84-85
• Red Clover: Page 86-87
• Red Drop Hibiscus: Page 88-89
• Red Leaf Raspberry: Page 90-91
• Rosehips: Page 92-93
• Sage: Page 94-95
• Sarsaparilla: Page 96-97
• Saw Palmetto: Page 98-99
• Slippery Elm: Page 100-101
• St. John’s Wort: Page 102-103
• Stevia: 104-105
• Tea Tree: Page 106-107
• Valerian: Page 108-109
• White Willow: Page 110-111
• Wild Yam: Page 112-113
• Witch Hazel: Page 114-115
• Yarrow: Page 116-117

Page 118-122: Orlando Herb Guide

Page 123-149: Conservation & Medicinal Plants

Page 150-158: References

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What is Western Herbalism, and how should I interpret this guide?

- Western Herbalism mainly focuses on herbs that are native to North America and herbs that were brought here by Europeans. Many of these herbs have been used by Native Americans and folk healers alike. This handbook was created with extensive research, in addition to our own personal experiences, as a guide to herbs in Central Florida. Our guide is meant to be a supplemental tool. *It is always important to educate yourself and consult a medical practitioner, pharmacist, or similar health care professional when concerning matters of the body.* UCF and all contributors of this guide are not responsible for any negative consequences or effects. We thank you for your understanding and for having an independent and open mind.
Herbal Vocabulary

- **Alkaloids**: Any one of the many nitrogen-containing organic bases derived from plants; bitter and physiologically active.

- **Alterative**: Tending to restore normal health.

- **Amino Acids**: Chemical substances that form the building blocks of proteins or that function as chemical messengers.

- **Anti-pyretic**: A substance that relieves fever.

- **Anti-spasmodic**: A substance that reduces muscular spasms and tension.

- **Antibiotic**: A substance that kills or inhibits the growth of bacteria.

- **Antiemetic**: A substance that prevents vomiting.

- **Antiseptic**: A substance that stops or inhibits infection.

- **Aquaretic**: A class of drug that is used to promote the excretion of water without electrolyte loss.

- **Astringent**: A substance (often tannins) that reacts with proteins in wounds, on the surface of cells.

- **Bitters**: Extracts of herbs, spices, roots, and bark, steeped in, or distilled with spirits.

- **Demulcent**: A substance that soothes the mucous membranes.
• **Carbohydrates:** Any group of organic compounds that includes sugars, starches, celluloses, and gums serving as a major energy.

• **Diaphoretic:** A substance that increases sweating.

• **Diuretic:** A substance that increases the volume of urine.

• **Emmenagogue:** A drug or agent that induces or hastens menstrual flow.

• **Expectorant:** A substance that increases mucous secretion or its expulsion from the lungs.

• **Fomentation:** A substance or material used as warm, moist medicinal compress; a poultice.

• **Glycosides:** A chemical substance that yields at least one simple sugar upon hydrolysis.

• **Liniment:** A liquid preparation (having camphor, alcohol, etc.) for rubbing into the skin to relieve stiffness of a joint.

• **Lipids:** A substance soluble in non-polar solvents; insoluble in water.

• **Nervine:** A substance with a calming effect, easing tension and anxiety, and relieving mild depression.

• **Minerals:** Inorganic, nutrient materials found in foods that are essential for bodily growth and health.

• **Poultice:** A soft, moist mass of bread, meal, clay, or other adhesive substance that is usually heated, spread on a cloth, and applied on the body.

• **Resins:** Amorphous, brittle substance resulting from plant secretion.

• **Sedative:** A substance that calms the nerves.

• **Starch:** A naturally abundant carbohydrate, found chiefly in seeds, fruits, tubers, roots, and stems.
- **Stimulant:** Any drug that excited the bodily function; usually one that stimulates the central nervous system.

- **Sugar:** Edible crystalline substance, mainly sucrose, lactose, and fructose, characterized by a sweet flavor.

- **Tannins:** Various soluble, astringent, complex phenolic substances of plant origin. Used in medicine, beer, wine, and tanning leather.

- **Trichome:** A hair-like or bristle-like outgrowth, as on the tip ends of roots through which the plant absorbs water and dissolves.

- **Vitamins:** Organic components in food that are needed in small amounts for bodily health and maintenance.

- **Volatile/Essential Oils:** Various terpenoids that evaporate easily (they add taste and smell to many plants).

**Preparation's**

- **Tisane:** An herbal tea (often made from flowers) that is not as strong as an infusion.

- **Infusion:** A preparation made by pouring boiling water over herbs and allowing it to steep; a tea.

- **Decoction:** A watery extract obtained by boiling.

- **Tincture:** An extract of medicinal plant material made with alcohol (ethanol) or a mixture of alcohol and water.

- **Solute:** Substance dissolved in solvent.

- **Solvent:** A substance in which another substance is dissolved.
Aloe

_Aloe barbadensis_

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Aloe

*Aloe barbadensis* (formerly known as *Aloe vera*)

- **Parts used:** The gel, which can also be turned into a drink.

- **Constituents:** Has aloin (an anthrone C-glucoside) as main laxative compound (up to 38%). The gel contains 0.5-2% solids, including complex polysaccharides (glucomannans), glycoproteins, amino acids, minerals, salicylic acid, and enzymes. An acetylated mannan is used in wound therapy. (Van Wyk & Wink, 2004)

- **Uses:** In the African Congo, the Slukari hunters rub the gel of aloe over their bodies to remove the human scent before they stalk their prey. In many countries people use the Aloe gel on their faces to keep their skin fresh and supple. All over the world men and women apply the gel of aloe on burns to heal skin. (Kowalchik & Hylton, 1987) Aloe juice has been said to cure all kinds of allergies. Rub the sap on topically, or use the sap as a juice. (UCF Arboretum).

- **Cultivation in our region:** Will grow in a container in colder regions, but usually does well anywhere south of Central Florida. It takes full sun to partial shade, but do not switch from sun to shade too abruptly. It needs very little feeding and watering, however will need more water in a container. It tolerates Florida’s summer rain and humidity. Propagates easily from it’s own off shoots or pups. (Brandies, 1996)

- **Dosage:** For aloe juice, begin with 2 tsp. twice a day, an hour before meals. If you do not experience stomach discomfort slowly build up your dosage to 4 tbsp. twice a day, an hour before meals. Do lower dosages for children, and do refrigerate the juice. (Baldwin)

- **CAUTION:** Aloe vera gel should never be used on staph infections. It can lock in the infection and make it worse (Gladstar & Hirsch, 2000). Also, the green portion of the plant should be avoided when making juice, as it can act as an intense laxative.
Arnica

*Arnica montana*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Arnica
Arnica montana

- **Parts used:** Flower heads.

- **Constituents:** Main active principles (0.2-0.5%) are helenalin and related sesquiterpene lactones. Also has flavones and flavanols, a volatile oil (with thymol, thymol methylether, and azulene), triterpenoids, phenolic acids and polysaccharides. (Van Wyk & Wink, 2004)

- **Uses:** Anti-inflammatory, counter irritant and wound-healing. Traditionally used to treat bruises, hematomas, sprains, burns, sunburns, diaper rashes, and as a counter-irritant to treat rheumatism. (Van Wyk & Wink, 2004) Extracts, tinctures for compresses, ointment, and oil are all used externally on the effected area.

- **Cultivation in our region:** Never tested at the Arboretum but not suitable for cultivation here.

- **Dosage:** There is no standard dosage or any particular dose that is most recommended; there are many different doses for different uses. Appropriate doses must first be discussed with your health care professional, and you should always read the product's label carefully before taking anything.

- **CAUTION:** Safe and effective for external use ONLY. (Kowalchik & Hylton, 1987)
Ashwagandha

*Withania somnifera*

Fig. 4

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Ashwagandha
-Withania somnifera-

- **Parts used:** Berries, leaves, and roots.

- ** Constituents:** The main constituents of Ashwagandha are alkaloids and steroidal lactones. Among the various alkaloids, withanine is the main constituent. The other alkaloids are somniferine, somnine, somniferinine, withananine, pseudo-withanine, tropine, pseudo-tropine, cuscohygrine, anferine and anhydrine. Two acyl steryl glucoside viz. sitoindoside VII and sitoindoside VIII have been isolated from root. The leaves contain steroidal lactones, which are commonly called withanolides. The withanolides have C28 steroidal nucleus with C9 side chain, having six membered lactone ring.

- **Uses:** It is claimed to possess aphrodisiac, sedative, rejuvenative, and life prolonging properties. The berries and leaves are traditionally used as a topical treatment for tumors and tubercular glands, carbuncles and ulcers. While Ashwagandha is claimed to have a wide variety of health benefits, there have been few clinical trials to test these claims.

- **Cultivation in our region:** Grown as a late, rainy season (kharif) crop. The semi-tropical areas receiving 500 to 750 mm rainfall are suitable for its cultivation as a rain-fed crop. If one or two winter rains are received, the root development improves. The crop requires a relatively dry season during its growing period. It can tolerate a temperature range of 20 to 38 °C and even such low temperature as 10 °C. The plant grows from sea level to an altitude of 1500 meters above sea level.

- **Dosage:** Root powder: 2-5 g. or half to one teaspoonful. **Leaves powder:** 2-5 g. or half to one teaspoonful. **Extract of Root:** 250-500 mg (5:1), 200-300mg(10:1), two or three times daily.
Asparagus Root
*Asparagus officinalis*

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Asparagus
Asparagus officinalis

- **Parts used:** Dried rhizomes, known as asparagus root. (Asparagi radix)

- **Constituents:** Asparagus root contains numerous steroidal saponins (derivatives of sarsasapogenin and diosgenin), together with flavonol glycosides (rutin and others), and unusual sugars (inulin-like fructans). The shoots contain high levels of the amino acid asparagine, together with tyrosine, arginine, and methylsulfonium derivative of methionine. Ingestion of asparagus leads to characteristic strong odor in the urine because of the metabolic transformation of S-methyl-3-(methylthio) thiopropionate to methyl mercaptane. (Van Wyk & Wink, 2004)

- **Uses:** Used since ancient times as a diuretic to increase urine flow and to treat urinary tract inflammation and kidney stones. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Start from seed in the spring, provide full sun, daily watering and minimally nutritious soil. Once established it is a hardy perennial in our region and harvest can begin after two years.

- **Dosage:** A typical infusion dose uses 45-60 g of cut herb in 150 mL of water and is taken daily by mouth. In other cases, a 45-60 mL dose of fluid extract has been taken daily by mouth, and a 225-300 mL dose of alcoholic extract (1:5 g per mL) has also been taken daily by mouth. (Van Wyk & Wink, 2004)
Burdock

Arctium lappa

Fig. 6

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Burdock

*Arctium lappa*

- **Parts used:** Dried or fresh roots, dried seeds, and leaves.

- ** Constituents:** Various types of polyacetylenes are present in the roots. Roots also contain essential oil, large quantities of inulin, triterpenes, and numerous minor constituents. Leaves contain a bitter germacrnanolide type sesquiterpenoid lactone, arctiopicrin.

- **Uses:** Can be used internally and externally for treatment of skin conditions like eczema, psoriasis, acne, and other skin related imbalances. (Gladstar & Hirsch, 2000). Should be used only lightly over time. Fresh roots can be added to foods like soups and stir fried dishes. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** There is not much information available on cultivating this biannual in Central Florida. If you choose to grow it, sow seeds in August to grow it throughout the cold season.

- **Dosage:** For the dried root preparation in capsule form, some herbalists recommend 1-2 g three times per day. When making a cup of burdock tea, steep 2-6 g of dried root in 500 mL of water, taken three to four times daily. Take 8-12 mL of tincture (1:5) three times a day.

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Calendula

*Calendula officinalis*
Calendula
*Calendula officinalis*

- **Parts used:** Flowers.

- ** Constituents:** Triterpenoids, flavonoids, anti-inflammatory, immunostimulating, antibacterial, anti-viral, anti/protozoal, anti-neoplastic, and numerous other pharmacological properties. (Leo, 2004)

- **Uses:** It is a powerful vulnerary, healing the body by promoting cell repair, and acts as an antiseptic, keeping infection from occurring in injuries. Most often used externally for bruises, burns, sores, and skin ulcers. Also used internally for fevers and for gastrointestinal problems such as ulcers, cramps, indigestion, and diarrhea. (Gladstar & Hirsch, 2000) The infusion was used to soothe watery, irritated eyes, and for relief in bronchial complaints. Frequently used as a home remedy in liver disorders and also thought to induce perspiration in fever. (Weiner, 1994) Sap of flower stems applied frequently is said to cure skin cancer! Can also be used as a medicinal tea.

- **Cultivation in our region:** Calendula is easy to grow in full sun during the cold season. Start from seed in late summer and plant in early fall. Use plenty of water and fertilizer. As long as you pick flowers they will continue to bloom. Responds well to soil enrichment and watering, but not too much water. It is susceptible to nematodes. (Brandies, 1996)

- **Dosage:** Steep a few (4 or so) flowers in hot water for 5-10 minutes. (UCF Arboretum)
Camphor Tree
*Cinnamomum camphora*
Camphor Tree
*Cinnamomum camphora*

- **Parts used:** Essential oil

- ** Constituents:** Contains volatile chemical compounds in all plant parts, and the wood and leaves are steam distilled for the essential oils.

- **Uses:** Colds, influenza, fever, pneumonia, inflammation, and diarrhea. Externally, the oil is used for rheumatic conditions of the muscles; internally, for circulatory disorders. It is used both internally and externally against inflammation and congestion of the respiratory tract. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Not cultivated at the Arboretum. However, one would propagate by seed. Camphor trees grow in full sun to partial shade. They tolerate clay, loam, sand, slightly alkaline to acidic soils, and drought. They need to be well drained or they may suffer from root rot.

- **Dosage:** Use externally as rubs, ointments, and inhalants. (Van Wyk & Wink, 2004)

- **CAUTION:** Camphor is toxic in large dosage and should not be taken orally without professional supervision. High doses applied to the face or nose may cause respiratory arrest in children under two years of age. (Van Wyk & Wink, 2004)

- **Conservation concerns:** This is an invasive species in our region, so **DO NOT CULTIVATE IT!**
Catnip
*Nepeta cataria*

Fig. 9

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Catnip

*Nepeta cataria*

- **Parts used:** Leaves and flowers.

- **Constituents:** Volatile oil (constituted of carvacrol, nepetol, thymol, nepetalactone, citronellol, geraniol) and tannins (Mabey & McIntyre, 1988).

- **Uses:** Colds, flu, and children's illnesses (Mabey & McIntyre, 1988). It is also an effective insect and rodent repellent (Van Wyk & Wink, 2004).

- **Cultivation in our region:** Catnip is a perennial that likes rich, slightly acidic, well-drained soils with full sun and ample moisture (Tilford, 1998). It is drought resistant but is more lush with some watering. Aroma is strongest in full sun but leaves are larger and more tender in partial shade. Sow seeds in fall or spring. It takes 7 to 10 days to germinate. Roots easily from cuttings, and clumps can be divided. Slow to flower, but the more mature plants will bloom in spring (Brandies, 1996). Pick in full sun during the hottest part of day to maximize potency! (UCF Arboretum)

- **Dosage:** There is no standard dosage for daily use, although a larger portion of leaves and flowers will strengthen the flavor. Steep desired amount for 10-15 minutes. Drink 2–3 cups per day. Catnip is also available in tincture form to take by mouth or apply topically. For children with coughs, 1 tsp. (5 mL) of tincture three times per day can be used. Adults may take twice this amount.
Chamomile
*Matricaria chamomile*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Chamomile

*Matricaria chamomilla or M. recutita*

- **Parts used:** Flowers.

- **Constituents:** Azulenic compounds, volatile compounds (sedative effects), and sesquiterpenoids (antitumor effects). The volatile oil has antimicrobial properties (Van Wyk & Wink, 2004) and it has bacteria fighting compounds. (Leo, 2004)

- **Uses:** The Medline Plus database lists over 100 separate ailments and conditions which chamomile has been traditionally used. It is an anti-inflammatory, antispasmodic, carminative, and antiseptic. (Van Wyk & Wink, 2004) Promotes general relaxation and relieves anxiety. In some people it may alleviate insomnia and has been used to heal sores and gum diseases, skin rashes, burns, sunburn, or treat bowel inflammations, digestive upset, and heartburn. (Leo, 2004)

- **Cultivation in our region:** Grows as an annual from September to May. It grows easily from seed sown shallowly in pots during late summer with germination taking 10 to 12 days. Plants should be separated by six inches to a foot. Provide full sun in cooler months, but requires shade during the hottest months (Brandies, 1996) For maximum potency, pick opened flowers after sunrise until the heat of midday. (UCF Arboretum)

- **Dosage:** Use a spoonful of flowers in your tea/infusion and let steep for 5-10 min, then enjoy! Great before going to sleep!

- **History:** In Egypt this herb was used to cure malaria chills and in Spain to flavor sherry. (Kowalchik & Hylton, 1987)

- **CAUTION:** Although some red flags have been raised about possible allergic reactions, which cause bronchial tightness or skin rashes, these appear to be so rare that most need not worry about them. (Leo, 2004)
Chaste Tree

_Vitex agnus-castus_
Chaste Tree

*Vitex agnus-castus*

- **Parts used:** The berries.

- **Constituents:** Bacteria-fighting compounds, may speed the healing of infections as well. *(Gladstar & Hirsch, 2000)* Contains a volatile oil, glycosides, flavonoids, a bitter principle (castine), and possible alkaloids. *(Mabey & McIntyre, 1988)*

- **Uses:** Menstrual and menopausal disorders. *(Mabey & McIntyre, 1988)* Vitex has uses as a reproductive tonic, for balancing hormones, and for relieving the depression and anxiety associated with midlife crisis. Has a stimulating effect on the pituitary gland, which regulates and normalizes hormone production in both men and women. In normalizing and balancing hormone production, *Vitex* will either stimulate or suppress sexual expression as necessary. Through its effect on the endocrine system, *Vitex* restores and balances our stores of energy. *(Gladstar & Hirsch, 2000)*

- **Cultivation in our region:** Grow from seed in spring, or take cuttings from the dormant plant. Best grown in full to partial sun with semi-moist soil. Use a lot of organic matter. It is a native of Eurasia (Mediterranean) but is widely used in Florida. Also a wonderful butterfly attractor! *(UCF Arboretum)*

- **Dosage:** Use about a teaspoon of berries in your tea/infusion and let steep for 5-10 min. Can be taken daily for desired effects.

- **History:** Monks and priests used Vitex to suppress libido; from this tradition came its folk names "monk's pepper" and "chaste berry". However by all accounts, it wasn't very successful. *(Gladstar & Hirsch, 2000)*

- **CAUTION:** Chaste berry should be used cautiously when taking medications used to treat certain psychiatric disorders, including Schizophrenia and Parkinson's disease. *(Leo, 2004)* Don't use if on hormone replacement therapies or birth control pills. Generally not recommended for use during pregnancy, except in cases of progesterone deficiency under medical supervision to prevent miscarriages. *(White & Foster, 2002)*
Clove

_Eugenia caryophyllus, Caryophyllus aromaticus, or Syzygium aromaticum_
Clove

*Eugenia caryophyllus, Caryophyllus aromaticus* or *Syzygium aromaticum*

- **Parts used:** The flower buds to derive essential oil

- ** Constituents:** Volatile oil (15%), gallotannic acid (13%), caryophyllin. (New Age 88) Eugenol comprises 72-90% of the essential oil extracted from cloves.

- **Uses:** The clove has antiseptic properties, and when taken internally is excreted by the kidneys, skin, liver, and bronchi, thereby stimulating and disinfecting each. (Rose, 1983) It has long been employed as an effective remedy for toothache. Oil of cloves is highly antiseptic due to the high percentage of phenols (84-95%).

- **Cultivation in our region:** Clove is a tropical plant and requires warm, humid climate. Generally it is believed that clove requires proximity to sea for proper growth and yield, however, experiences in India have shown that the trees do well in the hinterland conditions too. Thrives in all situations ranging from sea level up to an altitude of 1000 m. (India Net Zone) Deep, loamy soil with high humus content found in the forest region is best suited for its’ cultivation. Grows satisfactorily on laterite soil, loamy, and rich black soil that has good drainage. (Global Healing Center)

- **Dosage:** The oils are often used for toothaches and can be used as an insect repellent. Clove can also be powdered and used as a spice.

- **History:** Centuries ago in China, cloves were taken in the courts like mints. During the middle ages, Europeans brought cloves from the east and used them as a food preservative and flavoring. In the early 1600’s, the Dutch eradicated all clove trees, save a few varieties, to create scarcity and thus to sustain high prices. (Rose, 1983)
Corn (Silk)

*Zea mays*
Corn (Silk)
*Zea mays*

- **Parts used:** The styles and stigmas, harvested before fertilization. (Van Wyk & Wink, 2004)

- **Constituents:** Maize stigmas contain some essential oil (with carvacrol and other terpenes) and unidentified saponins, flavonoids, bitter substances, polyphenols, sugars, mucilage, and potassium salts. (Van Wyk & Wink, 2004)

- **Uses:** Used to treat oedema (dropsy) (Van Wyk & Wink, 2004) and urinary tract infections.

- **Cultivation in our region:** Corn and its silk are very easily grown. Corn can be direct sown into raised beds of fertile, organic soil in August or again in February.

- **Dosage:** Infusions of stigmas (0.5 g in 150mL of water) is taken several times a day. (Van Wyk & Wink, 2004)

- **History:** It was cross bred by humans from being a grass that is native to the Americas into an edible food source.
Cramp Bark
Viburnum opulus

Fig. 14
Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Cramp Bark
_Viburnum opulus_

- **Parts used:** Stem bark.

- **Constituents:** Bitter resin (viburnin), Valeric acid, salicosides, and tannin. (Mabey & McIntyre, 1988)

- **Uses:** Good for muscle and nervous relaxant. Also helps with menstrual pains, and the contractional pains of pregnancy. (Mabey & McIntyre, 1988)

- **Cultivation in our region:** Cramp Bark grows best in moist, moderately-alkaline soils, though tolerates most soil types well.

- **Dosage:** Decoction: 1 heaping tsp. per cup of water; or 1:5 dry strength liquid extract: 20-75 drops 1-4 times per day. For spasms: 1 tsp. per hour, or 15 drops every 15 minutes, as needed, for several hours.

- **CAUTION:** The fresh berries are poisonous! (Mabey & McIntyre, 1988) Cramp Bark should not be taken with blood thinning agents because of the coumarin constituents of the plant.
Dandelion
Taraxacum officinale

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Dandelion  
*Taraxacum officinale*

- **Parts used:** Leaves, roots, and flowers.

- **Constituents:** Leaves: lutein, violaxanthin, and other carotenoids; bitter substances; vitamins A, B, C, D (the vitamin A content is higher than that of carrots). Root: the bitter principle taraxacin, triterpenes (including taraxol and taraxasterol), sterols, inulin, sugars, pectin, glycosides, choline, phenolic acids, asparagine, vitamins, and potassium. (Mabey & McIntyre, 1988)

- **Uses:** Folk healers have long prescribed it for liver and digestive problems. If you have hepatitis B, it can help improve liver function. Sometimes used as a diuretic. One study suggests that dandelion root medicines may help treat chronic pain associated with colitis (inflammation and pain in large intestine). (Leo, 2004) The German over the counter preparation "Hepaticol", which contains Dandelion and other herbs, has proven effective against gallstones. Dandelion has also proven effective in relieving chronic arthritis. (Weiner, 1994)

- **Cultivation in our region:** Dandelion is a perennial that grows in full sun to light shade. Can be started from seed, in moist sand. (Brandies, 1996) Prefers light shade in the summer time. (UCF Arboretum)

- **Dosage:** No standard dosage of use; can be freely used at desired quantity in medicinal teas or in a salad!

- **History:** Introduced to the New World by English settlers who grew it in window boxes and herb gardens. Hudson's Bay Company, founded in 1670, exported dandelion roots to its' Canadian outposts to supplement the high-meat diet of its' overseas employees. (Leo, 2004)
Echinacea

Echinacea purpurea

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Echinacea

Echinacea purpurea

- **Parts used:** Fresh plant juice (pressed from the aerial parts), the dried (whole) herb, or root. (Van Wyk & Wink, 2004)

- **Constituents:** Contains polysaccharides, Caffeic acid derivatives are present, such as Chicoric acid. The plant also contains lipophilic polyacetylenes and alkylamides. (Van Wyk & Wink, 2004)

- **Uses:** Fresh juice of 6-9mL. Can also be used topically. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Can be propagated either vegetatively or from seeds. Useful vegetative techniques include division, root cuttings, and basal cuttings. Clumps can be divided, or broken into smaller bunches, which is normally done in the spring or autumn. Cuttings made from roots that are "pencil-sized" will develop into plants when started in late autumn or early winter. Cuttings of basal shoots in the spring may be rooted when treated with rooting hormone.

- **Dosage:** Daily dosage of 6-9mL of fresh plant juice is recommended. (Van Wyk & Wink, 2004)
Elderberry

*Sambucus simpsonii*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Elderberry
*Sambucus simpsonii*

- **Parts used:** Flowers and berries.

- ** Constituents:** Flowers: up to 3% flavonoids, phenolic acids, triterpenes, Triterpene acid, sterols, the hydrocyanic glycoside sambunigrine, traces of semi-solid yellow volatile oil, mucilage and tannins, sugar, 8-9% minerals, and small quantity of essential oil. Berries: Invert sugar, fruit acids, pectin, tannin, vitamin C, vitamin A, bioflavonoids, anthocyanin pigments, traces of essential oil. Leaves: triterpenes, cyanogenetic glycosides, flavonoids, fats, fatty acids, sugars, alkanes, tannins, vitamins, resins. Bark: phytohaemagglutinin, alkaloid, resin, Viburnic acid, volatile oil, fat, wax, chlorophyll, tannic acid, gum, starch, and pectin.

- **Uses:** Diaphoretic, diuretic, expectorant, an effective laxative, and possible antiviral qualities. (Tilford, 1998)

- **Cultivation in our region:** When starting from seed, sow in early fall as it may take some time to grow into a good size. Germination takes 12 to 15 days, and space the plants 12 to 18 inches apart. It roots easily from cuttings. Needs deep shade to survive summer, but likes sun in winters. (Brandies, 1996)

- **Dosage:** Use the flowers either fresh or dried in tea, or in culinary recipes. Cook and strain fresh elderberries for jams. The flowers and berries can be dried for future medicinal use, but shelf life is limited to six months or less. Dry them on a nonmetallic screen, butcher papers, or in paper bags with the tops left open. (Tilford, 1998)

- **CAUTION:** Species of Elderberry may be toxic. The seeds and bark of the entire *Sambucus* genus contain hydrocyanic acid, a substance that may be toxic if ingested in large quantities. (Tilford, 1998) **MAKE SURE THAT THE BERRIES HARVESTED ARE FULLY RIPENED;** flowers can be harvested when in full bloom.
Evening Primrose

*Oenothera lamarckiana* and *O. biennis*
Evening Primrose
*Oenothera lamarckiana* and *O. biennis*

- **Parts used:** The extracted oil.

- ** Constituents:** Essential fatty acids, especially gamma-linoleic acid (GLA). (Mabey & McIntyre, 1988)

- **Uses:** The New Age Herbalist sites several medical studies of helpful results from patients with premenstrual syndrome (PMS), ectopic eczema, dry eyes and brittle nails, liver damage by alcohol, alcohol withdrawal, and rheumatoid arthritis. When combined with zinc the oil may be used to treat acne. Oil of evening primrose is also effective in guarding against coronary artery disease. Its active ingredient, gamma-linoleic acid (GLA), is a powerful anti-blood clotter. (Mabey & McIntyre, 1988)

- **Cultivation in our region:** Not cultivated at the Arboretum but it is a biennial that comes to seem as a perennial once it is established, and is seen throughout most of the United States. It will bloom in late spring/summer and will reseed itself freely. It can tolerate a variety of soils though it prefers well-drained soil. (Growing Instructors)

- **Dosage:** 3-5g oil per day. Can also be bought in capsule and other forms.

- **CAUTION:** Side effects of headache, skin rashes, and nausea have been reported. Use for epileptics is not recommended. (Mabey & McIntyre, 1988)
Fennel

*Foeniculum vulgare*

Fig. 19

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Fennel
_Foeniculum vulgare_

- **Parts used:** Seeds, leaves, roots, and the essential oil.

- ** Constituents:** The best varieties of Fennel yield from 4% to 5% of volatile oil, 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.

- **Uses:** Carminative, expectorant, and aromatic. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** When starting from seed sow in early fall. It may take a while to grow into a good size. Germination takes 12 to 15 days, and space the plants 12 to 18 inches apart. It roots easily from cuttings. Needs deep shade to survive summer, but likes sun in winters. (Brandies, 1996)

- **Dosage:** Daily dose of 5-7 g of fruits, or 10-20g of fennel syrup. (Van Wyk & Wink, 2004)
Feverfew
*Tanacetum parthenium*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Feverfew  
*Tanacetum parthenium*

- **Parts used:** Leaves and flowers

- **Constituents:** Sesquiterpene lactones (including parthenolide and santamarine), volatile oil, tannins. Researchers believe that Sesquiterpene lactones in the plant may inhibit prostaglandins and histamine released during the inflammatory process, so preventing spasms of blood vessels in the head that trigger migraine attacks. (Mabey & McIntyre, 1988) Parthenolide, Feverfew’s active ingredient, controls chemicals in the body responsible for producing allergies. (Gladstar & Hirsch, 2000)

- **Uses:** Recent pharmacological studies have proved this plant’s remarkable value in alleviating migraine headaches, common headaches, inflammation, and stress-related tension. It also inhibits production of prostaglandins that are implicated in inflammation, swelling, and PMS. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Divide into clumps or start seeds in early spring, with plantings a foot apart. Needs occasional watering but thrives on dry places. Foliage is often larger when put into partial shade. Plants may not last more than a year so keep seedlings and cuttings. Can often times detract bees. (Brandies, 1996) Do not apply additional water during rainfall season! Needs air circulation in high humidity. (UCF Arboretum)

- **Dosage:** Throw a spoonful of flowers in your hot tea/infusion and let steep for 5-10min!

- **History:** Physicians dating back to Dioscorides have considered Feverfew to be especially valuable for its action on the uterus. It is said to stimulate menstruation, childbirth, and expulsion of the placenta. (Weiner, 1994)

- **CAUTION:** May stimulate the menstrual cycle unnecessarily or promote cramping and painful menstruation. Not recommended for pregnant women or for people taking anticoagulant drugs. (Gladstar & Hirsch, 2000)
Ginger

*Zingiber officinale*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Ginger  
*Zingiber officinale*

- **Parts used:** Fresh or dried rhizome.

- **Constituents:** Volatile oil contains: monoterpenoids (e.g. camphene, B-phellandrene, neral and geranial), diterpene lactones (e.g. galanolactone), and sesquiterpenoids (e.g. A-zingiberene, and ar-curcumene). Gingerol produces the pungent taste. (Van Wyk & Wink, 2004)

- **Uses:** Antibacterial, antifungal, molluscicide, antiparasitic and anthelmintic. Hypoglycemic cholesterol lowering, immune-stimulant, and especially anti-inflammatory properties have been recorded. Ginger has anti-ulcer and cholagogue effects. It stimulates peristalsis and the secretion of saliva and gastric juices. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Take a plump piece of Ginger at least 1 inch in size and place in a tray of water until it sprouts, then press into the soil and cover with two inches of rich moist soil. Plant one foot a part in partial shade. Gingers are heavy feeders so feed with rich soil. (Brandies, 1996)

- **Dosage:** The usual daily ginger intake is 2 to 4g per day. For prevention or treatment of motion sickness, take 500–1000 mg of dried ginger powder before travel. For the treatment of nausea associated with pregnancy, women can take up to 1 g daily. To relieve arthritis pain, take fresh ginger juice, extract, or tea, 2 to 4 g daily. To prevent vomiting, take 0.5 to 2 g daily.

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Ginseng (Asian)

*Panax ginseng*
Ginseng (Asian)

Panax ginseng

• **Parts used:** Fresh or mostly dried root.

• **Constituents:** About eleven hormone-like saponins, volatile oil, sterols, starch, sugars, pectin, vitamins B1, B2 and B12, choline, fats, and minerals (including zinc, copper, magnesium, calcium, iron, manganese, vanadium). (New Age 28)

• **Uses:** Adaptogenic tonic. (Van Wyk & Wink, 2004)

• **Cultivation in our region:** Ginseng is best grown in the forest, or similar cool, shaded areas. It relies on the trees for nutrients. It can be grown in an artificial environment but will not yield a true representation of its nature. Never add manure, compost, phosphorus or any type of nitrogen fertilizer to a ginseng planting. A one to two inch layer of well-rotted or shredded hardwood leaves (preferably sugar maple) from the forest floor may be tilled in the soil.

• **Dosage:** Standardized extracts are often taken at a rate of 100 to 200 mg daily. As a dried root, 500 to 2000 mg daily should be taken. For recovering from an illness, the elderly should take 500 mg twice daily for three months. As an anti-stress/anti-fatigue agent, 200-600 mg/day of standardized extract, preferably in divided doses, or 0.5-2 g/day of powdered root. Ginseng is commonly taken for long periods.
Goldenseal
*Hydrastis canadensis*
Goldenseal

*Hydrastis canadensis*

- **Parts used:** Dried rhizome and root.

- ** Constituents:** Main active ingredients are isoquinoline alkaloids: hydrastine and berberine, canadine, and some other minor compounds. (Van Wyk & Wink, 2004)

- **Uses:** Haemostatic, stomachic, and laxative. Mainly used to stop bleeding (after birth) and is employed as a substitute for ergot alkaloids. It is used also as an antibacterial remedy to stop diarrhea, and as a bitter tonic, digestive stimulant, mild laxative, antihemorrhagic and general medicine for numerous other complaints. It is used externally to treat stomatitis. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** The best conditions for the cultivation of Goldenseal are said to be a well-drained soil, rich in humus, in a partially shaded situation. Lath blinds (placed overhead on wires and light runners) are used by American cultivators - as with Ginseng - and these are considered to be preferable to the shade of trees, the roots of which interfere with operations. The plant requires from 60% to 75% shade. The root-stocks are divided into small pieces and then planted about 8 inches apart in rows. Seeds are not considered reliable. Fresh plantations are made in autumn, after the plants have died down, or earlier, if they are lifted for a supply of marketable rhizomes.

- **Dosage:** An infusion of 0.5-1g of dried herb is taken 3 times daily. Liquid extracts and tinctures are also popular. (Van Wyk & Wink, 2004)
Gotu Kola

*Centella asiatica*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Gotu Kola
Centella asiatica

- **Parts used:** Whole plant.

- **Constituents:** Triterpene glycoside asiaticoside: accelerates healing of wounds. There are indications that asiaticoside are useful for infectious diseases such as tuberculosis and leprosy. It is thought that asiaticoside acts to dissolve the waxy coating on the microbes that cause both of these diseases. The waxy coating prevents the body's own defense mechanisms from killing the organisms so the dissolving allows the normal defense mechanisms of the body to destroy the causative microbes. Further work must be carried out in animals and in humans to determine whether or not this is the case. (Weiner, 1994)

- **Uses:** Gotu Kola is primarily used as a sedative, diuretic, tonic and to accelerate healing of wounds. The mode of action appears to be mainly on the cholinergic mechanism in the central nervous system. It is claimed to strengthen and energize the brain. It has been employed to alleviate bowel complaints and to treat syphilis and tubercular inflammation of the cervical lymph nodes. Its ability to aid in these and urinary-tract disorders has been attributed to its demulcent properties. (Weiner, 1994)

- **Cultivation in our region:** Likes moist soil and partial shade. Sprout seeds in spring. (UCF Arboretum)

- **Dosage:** In adults, the recommended daily dose of standardized extracts of asiaticoside, Asiatic acid, and Madecassic acid is 60-120mg. The recommended daily dosages of crude herb and 1:5 tincture are 0.5-6 g and 10-20 mL, respectively.

- **CAUTION:** In large doses, it is said to act as a narcotic, causing stupor, headache and sometimes coma. (Weiner, 1994)
Holy Basil (Tulsi)

*Ocimum tenuiflorum* or *O. sanctum*
Holy Basil (Tulsi)

\textit{Ocimum tenuiflorum} or \textit{O. sanctum}

- **Part used:** Leaves.

- **Constituents:** Essential oil, tannins, flavonoids. (Van Wyk & Wink, 2004) A rich source of essential oil, containing eugenol, nerol, camphor, and a variety of terpenes and flavonoids. (Chopra)

- **Uses:** General medicine, tonic, wound-healing. (Van Wyk & Wink, 2004) According to Ayurveda, tulsi promotes purity and lightness in the body, cleansing the respiratory tract of toxins and relieving digestive gas and bloating. Tulsi oil has antioxidant properties that may explain its effectiveness in reducing the damaging effects of stress on the body. A number of studies of animals have shown that tulsi protects healthy cells from the toxicity of radiation and chemotherapy. In addition, tulsi seems to influence the neurochemistry of the brain in a way similar to antidepressant medications.

- **Cultivation in our region:** An annual in Florida that lasts surprisingly long. Can be started in fall for Central Florida and South Florida, and in early spring for North Florida. It is easy to start from cuttings, and can root in a glass of water or moist soil. Basil likes enriched soil and mulch. Frequent dead heading will keep them bushy. Purple is more resistant to pests, but the green holds the wind better. (Brandies, 1996)

- **Dosage:** Tincture (1:5 or 1:2): 40–60 drops, three times per day. Tea: Add 1 tsp. dried leaf to 8 oz. hot water, steep, covered, 5–10 minutes. Take 4 oz. up to three times per day. (Maimes and Winston, 2007)

- **History:** Often referred to as Holy Basil, Tulsi is a potent herb that has been used in India for thousands of years to treat colds, coughs, and flu. (Chopra) Tulsi has spiritual as well as medicinal significance in Ayurveda. In Hindu mythology, the plant is an incarnation of the goddess Tulsi, offering divine protection. Many Indian families keep a living tulsi plant in their homes – tending to it with great care and reverence. The plant’s woody stalks are often made into beads used in meditation malas or rosaries. (Chopra)

- **CAUTIONS:** One precaution: Studies from the 1970s suggest that Holy Basil might have a mild anti-fertility effect in animals. Although this effect hasn’t been demonstrated to occur in human beings, if you are pregnant or are trying to become pregnant, don’t take medicinal doses of this herb. (Chopra)
Hops

*Humulus lupulus*

Fig. 26

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Hops
*Humulus lupulus*

- **Parts used:** Hops- the dried, cone like female flower clusters or hops grains.

- ** Constituents:** Volatile oil, up to 1% (comprising mostly humulene, myrcene, B-caryophyllene and farnesene, plus over 100 other compounds including geraniol, linalool, citral, linionene and serolidol; also a bitter resin complex (3-12%) which includes valeronic acid, lumulone, and lupulone.

- **Uses:** A sedative, and bitter tonic. Hops has a long history of use as a traditional bitter tonic and diuretic. In modern times the main use is as a sedative and for its calming effects. It is used to treat sleep problems, anxiety, and restlessness. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Not easily grown in Central Florida due to humidity.

- **Dosage:** A dose of 0.5g taken as an infusion, is recommended. (Van Wyk & Wink, 2004)
Horse Mint/ Lemon Bergamot

Monarda punctata or Mentha fistulosa

Produced by: Sarah Parker, Summer Singletary, & Tina Richards

Fig. 27
Horse Mint/ Lemon Bergamot  
*Monarda punctata* or *Mentha fistulosa*

- **Part of the plant used:** Flowering tops and leaves.

- **Constituents:** Thymol and other monoterpenes. (Van Wyk & Wink, 2004)

- **Uses:** Used as a stimulant, carminative, diuretic and is taken for flatulent colic, nausea, rheumatism, and diarrhea. (Rose, 1983) Rubefacient, stimulant, carminative. The infusion is used for flatulent colic, sickness, and as a diaphoretic and emmenagogue, or as a diuretic in urinary disorders. The principal use is external, and in its pure state it may be a vesicant. It should be diluted with olive oil or soap liniment, two or four parts of either being added to one of oil of Monarda. It may be employed in chronic rheumatism, cholera infantum, or whenever rubefacients are required. It may be taken like Hedeoma, or American Pennyroyal. (Botanical.com)

- **Cultivation in our region:** Wonderful bee attracter! (UCF Arboretum) Needs ample water. Grows in full sun to partial shade. Grown as annuals in most of Florida, but in the north it is a perennial. Set plants 2 feet apart and mulch. (Brandies, 1996)

- **Dosage:** Use sparingly in combination with other herbs as the taste is very strong.
Lavender

*Lavandula angustifolia*
Lavender

*Lavandula angustifolia*

- **Parts used:** Flowers or essential oil.

- **Constituents:** An essential oil that contains monoterpenoids and linalool. Leaves contain rascalnic acid and other tannins, courmarins, triterpenes, and phenolic acids. [The chemical compound] monoterpenes interact with biomembranes and modify the activity of ion channels, transporters and receptors. This can explain the sedative, spasmodic and antibacterial properties of the oil. (Van Wyk & Wink, 2004)

- **Uses:** Use internally for stress. Use the essential oil externally as a local antiseptic for scrapes, burns, insect bites, sore muscles and headache.

- **Cultivation in our region:** Very hard to grow in Florida, works best with French lavender. It is slow to start from seeds or cuttings, but not hard to root. It does well in full sun in winter, but needs shade in summer. Mulch it, and don’t forget to check on it. It has medium drought tolerance and low salt tolerance. (Brandies, 1996) Needs air circulation during hot and humid summer nights. No additional water during rainy season! (UCF Arboretum)

- **Dosage:** Take internally once tbsp. per cup; externally the pure essential oil can be used, but can be diluted in a carrier oil in a 50/50 ratio.

- **History:** Lavender derives from the Latin verb "to wash" and both the Romans and Greeks scented their soaps and bathwater with the herb. (Kowalchik & Hylton, 1987)

- **CAUTION:** Lavender is safe but should be used in moderation. One teaspoon of flowers to a pint of water is safe for infusions to be used as a mild sedative. (Kowalchik & Hylton, 1987)
Lemon Balm

*Melissa officinalis*
Lemon Balm  
*Melissa officinalis*

- **Parts used:** Leaves and stems, picked just before flowering.

- **Constituents:** Volatile oil (up to 0.2%, comprising citral, citronellal, eugenol acetate, geraniol and other components), polyphenols, tannin, flavonoids, rasmarinic acid, triterpenoids. (Mabey & McIntyre, 1988)

- **Uses:** The oil of lemon balm also seems to inhibit bacteria and viruses. (Kowalchik & Hylton, 1987) For colds, flu, depression, headache and indigestion. (Mabey & McIntyre, 1988)

- **Cultivation in our region:** When starting from seed sow in early fall. Germination takes 12 to 15 days, and space plants 12 to 18 inches apart. It may take a while for Lemon Balm to grow into a good size, but will root easily from cuttings. Needs deep shade to survive summer, but likes sun in winters. (Brandies, 1996)

- **Dosage:** Lemon balm is also an excellent infusion (steep in hot water for 5-10 minutes) to take after meals, easing the digestion and relieving flatulence and colic. (Mabey & McIntyre, 1988)

- **CAUTION:** Best to use fresh or frozen!
Licorice

*Glycyrrhiza glabra*
Licorice  
_Glycyrrhiza glabra_

- **Part used:** Roots.

- ** Constituents:** Glycyrrhizin, plant estrogens and flavonoids. Glycyrrhizin, which stimulates the adrenal glands, reduces inflammation, and increases the levels of interferon (a virus-fighting substance manufactured by the immune system). (Leo, 2004)

- **Uses:** Effective for relieving adrenal exhaustion, which is so prevalent in those who suffer from depression. A remedy for the respiratory system—used as a soothing demulcent and anti-inflammatory remedy for respiratory problems including bronchial congestion, sore throat, coughs, and inflammation of the digestive tract (such as ulcers or non-specific sores). (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Difficult to grow in Central Florida.

- **Dosage:** An infusion with 1-1.5 g of chopped rhizome in 150 ml of boiling water. (Van Wyk & Wink, 2004)

- **CAUTION:** Not recommended for people with high blood pressure due to water retention, those taking heart medication, children suffering from hypertension, kidney/bladder problems, or those youngsters on steroid therapy. (Gladstar & Hirsch, 2000)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Marshmallow

*Althaea officinalis*
Marshmallow
Althaea officinalis

- **Parts used:** Primarily the roots, but the leaves and flowers are also useful.

- **Constituents:** Marshmallow root contains about 37% starch, 11-35% mucilage (consisting largely of xylan and glucose), 11% pectin, flavonoid glycosides, phenolic acids, sucrose, asparagine, oil, pectin, tannins, sugar, phosphate of lime, glutinous matter, cellulose, polysaccharides, phytosterols, fatty acid esters and a lecithin. (MDidea)

- **Uses:** Marshmallow’s highest medical acclaim is as a demulcent. Internally it has a soothing effect on inflammation and irritation of the alimentary canal and of the urinary and respiratory organs. (Kowalchik & Hylton, 1987)

- **Cultivation in our region:** Given moist soil and full sun, Marshmallow will flourish. It can be propagated by: seed, cuttings, and root division. (Kowalchik & Hylton, 1987) Will die if shaded too much (UCF Arboretum).

- **Dosage:** Serve Marshmallow as a tea for treating sore throats, diarrhea, constipation, and bronchial inflammation. Mix it into a paste with water and apply topically to soothe irritated skin. Marshmallow can also be used in the bath as a soothing wash; combine it with oatmeal for maximum effect. (Gladstar & Hirsch, 2000) The raw young top and tender leaves of Marshmallow can be added to spring salads. The roots have more substance and can be prepared for the table by boiling and then frying in butter with onions. (Kowalchik & Hylton, 1987)
Milk Thistle
*Silybum marianum*
Milk Thistle
*Silybum marianum*

- **Part used:** Seeds; wild-food enthusiasts enjoy the leaves as food (Gladstar & Hirsch, 2000)

- ** Constituents:** Silymarin (Flavonoid complex made up of three liver protecting compounds), which constitutes 4% to 6% of the ripe seeds. (Leo, 2004)

- **Uses:** Fortify the liver (processes nutrients, including fats and other foods. In addition, it breaks down and neutralizes, or detoxifies, many drugs, chemical pollutants and alcohol. Prevents depletion of glutathione, an amino acid-like compound that is essential to the detoxifying process. Effective gatekeeper, limiting the number of toxins that the liver processes at any given time. Powerful antioxidant (more potent than vitamins C and E) - helps prevent damage from highly reactive free radical molecules promotes the regeneration of healthy liver cells. (Leo, 2004) Rebuilds liver cells that have been damaged by illness, rich food, hepatitis, or alcohol consumption. It is helpful for gallbladder and kidneys. Only known substance to provide any relief from poisoning by death cap mushroom, the most virulent liver toxin known. (Gladstar & Hirsch, 2000).

- **Cultivation in our region:** Blooms from June through August, and the shiny black seeds used for medicinal purposes are collected at the end of summer. Will grow wonderfully during the spring months; seed after last frost. (Leo, 2004)

- **Dosage:** Daily dose of about 12-15g of dry fruits. (Van Wyk & Wink, 2004)

- **CAUTION:** Milk thistle may interact with medications broken down by the liver, medications used to control blood sugar, phenytoin (Dilantin), and herbs and supplements with similar effects. Caution if you are allergic to plants in the aster family, have a medical condition, are pregnant or nursing, or are taking prescription medications consult your doctor first. (Leo, 2004)

- **History:** Scientists, taking a lead from these and other early uses of the plant, began researching Milk Thistle in the 1970's and discovered that it contained one of the most valuable chemicals for damaged liver tissue. (Gladstar & Hirsch, 2000)
Moringa

*Moringa oleifera*
Moringa
Moringa oleifera

• **Parts used:** Seed, leaves, pods, and flowers.

• **Constituents and Uses:** In Haiti the flowers are used in a tea to fight off colds. They are high in calcium and potassium. (ECHO 9) Moringa seeds can also be used for water treatment. It works as a coagulant. (ECHO 11) Moringa leaf extract (juice) can be used to produce a plant growth hormone that increases yields by 25-30% for most crops. (ECHO 7) In many warm-climate countries today, health workers are now treating malnutrition in small children and in pregnant and nursing women with Moringa leaf powder. (ECHO 2) For pregnant and breast-feeding women, Moringa leaves and pods can do much to preserve the mother’s health and pass on strength to the fetus or nursing child. One 100 g portion of leaves could provide a woman with over a third of her daily need of calcium and give her important quantities of iron, protein, copper, sulfur and B-vitamins." (ECHO 3) The leaves are outstanding as a source of vitamin A and, when raw, vitamin C. They are a good source of B vitamins and among the best plant sources of minerals. The calcium content is very high for a plant. The content of iron is very good). They are an excellent source of protein and a very low source of fat and carbohydrates. (Van Wyk & Wink, 2004)

• **Cultivation in our region:** Purchase plants from local nursery, or try and grow from a cutting or seed. Plant after last frost, and give plenty of water when transplanted. Once the tree is established it does very well in drought conditions, and with little or no extra watering. (UCF Arboretum)

• **Dosage:** Use in cooking in sauces, salads, or make into a porridge.
Mullein

*Verbascum phlomoides*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards

Fig. 34
Mullein

*Verbascum phlomoides*

- **Parts used:** Dried flower petal, including the corolla and stamens, but rarely the leaves.

- ** Constituents:** The saponins are secretolytic and expectorant, the mucilage demulcent, the flavonoids thought to be weakly diuretic and the iridoid glycosides anti-inflammatory. Antiviral effects have also been demonstrated, but clinical studies are needed to confirm the traditional indications. (Van Wyk & Wink, 2004)

- **Uses:** Widely used to treat coughs, influenza, and bronchitis, and is included in herbal tea mixtures. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** This cold whether plant can survive and will reseed itself; try to optimize a cooler micro-climate under a larger tree.

- **Dosage:** A daily dosage in a cup of tea is recommended.
Neem

*Azadirachta indica*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Neem
Azadirachta indica

- **Parts used:** Bark, leaves, twigs, and seeds.

- **Constituents:** The medicinal activity of Neem is due mainly to bitter triterpenoids (limonoids) of which azadirachtin is one of the main compounds; also tannins and flavonoids are present. (Van Wyk & Wink, 2004)

- **Uses:** Skin infections, wounds, and stomach ailments. Also used in soaps and toothpastes. (Van Wyk & Wink, 2004) The pressed oil can be used as a spermicide; men can also take it internally as a natural birth control.

- **Cultivation in our region:** Neem will grow in our region, but is sensitive to frost. Try to establish the tree in a pot, then transplant once the tree is two years or older.

- **Dosage:** Infusions are most common.

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Stinging Nettle

_Urtica dioica_
Stinging Nettle
*Urtica dioica*

- **Parts used:** The aerial parts or roots.

- **Constituents:** Nettle leaf contains minerals, (especially silicic acid; up to 5%), amines (histamine, acetylcholine, serotonin), flavonol glycosides, phenolic acids, scopoletin, B-sitosterol and tannins. Roots contain polysaccharides, a lectin (UDA), several phenolics (including lignans, coumarins) and different sterols. (Van Wyk & Wink, 2004)

- **Uses:** Antirheumatic (herb and leaf); urological (roots). Leaves and roots are used in supportive treatment of rheumatic complaints, inflammation of urinary tract, and the prevention and treatment of kidney gravel. Dried roots are used for enlarged prostate. The leaves are rich in minerals and vitamins and have been used as a nutritional supplement. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Not cultivated at the Arboretum but is hardy perennial in our region. It prefers Humus-rich soils, rich woods, and disturbed areas. It is commonly found around farm yards. (IFAS)

- **Dosage:** Daily doses of 8-12g (leaf) and 4-6g (roots) are recommended. (Van Wyk & Wink, 2004)
Oat Straw
*Avena sativa and A. fatua*
Oat Straw  
*Avena Sativa and A. fatua*

- **Parts used:** Ripe dried stems.

- **Constituents:** Oats herb and straw contains high levels of soluble silica and minerals (iron, manganese, and zinc). The presence of amino acids, vitamins (especially B-group), minerals, trace elements, and polysaccharides are important in nutrition. Of interest is the presence of triterpene saponins (avenacin A and B; avenacosides A, B) scopoletin and a simple indole alkaloids (gramine). (Van Wyk & Wink, 2004)

- **Uses:** Relief for inflammation and seborrhoeic skin disease.

- **Cultivation in our region:** Oats can be grown successfully in our region, but do best in the spring time; seed after the last frost.

- **Dosage:** 100g of Oat Straw added to one full bath. (Van Wyk & Wink, 2004)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Olive Leaf

*Olea europaea*

Fig. 38

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Olive Leaf
*Olea europaea*

- **Part used:** Dried leaf and fruit oil.

- **Constituents:** (Van Wyk & Wink, 2004) It is known that oleuropein lowers blood pressure by increasing coronary flow; furthermore a recent study has shown that oleacein inhibits the angiotensin converting enzyme (ACE). The German Commission E does not recommend olive leaves or olive oil to treat hypertension. Oleuropein has significant antispasmodic, antioxidant, and lipid-lowering activities.

- **Uses:** Leaf is used in Mediterranean countries as a traditional remedy for a wide variety of ailments, mainly as an antihypertensive and diuretic. It is also used for its hypoglycemic, antipyretic, and antispasmodic activities, to name only a few. In addition to its use as a cholagogue and laxative, the oil is useful as a solvent for some drugs and in refined form for parenteral preparations. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Certain varieties of olive that are less sensitive to the humidity can be grown successfully.

- **Dosage:** 1-2g of Olive Leaf has been recommended as infusion, tincture, or tablet. For internal use, 15-30mL of oil is taken with meals, and for external use just apply close to body temperature to the effected area. (MEDICAL)
Peppermint
*Mentha piperita*

Fig. 39

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Peppermint
*Mentha piperita*

- **Parts used:** Leaves, flowers, and essential oil.

- **Constituents:** Volatile oils: made up of more than 40 different compounds. Menthol (therapeutic) aids in digestion because it stimulates the flow of natural digestive juices and bile (35-55%), Menthone (15-30%), and Mentyl Acetate (3-10%). (Leo, 2004)

- **Uses:** Digestive soother for easing indigestion, Irritable Bowel syndrome, and other conditions. (Leo, 2004)

- **Cultivation in our region:** Mint will happily grow in the wettest part of your garden. Mint makes a wonderful ground cover.

- **Dosage:** Use 1 tbsp. of dried herb or 3 tbsp. of fresh herb to one cup of water. One drop of essential oil can be used internally if diluted in water.

- **CAUTION:** Leaves produce no side effects, but peppermint oil by mouth may cause headache, dizziness, heartburn, and burning, slow heart rate or muscle tremor. Avoid large doses when pregnant and peppermint oil should not be applied to the nostrils or chest of infants and children under five because it causes a choking sensation. Never ingest pure menthol. (Leo, 2004)
Plantain

*Plantago major* and *P. lanceolata*

Fig. 40

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Plantain

*Plantago major and P. lanceolata*

- **Parts used:** Seeds, roots, and leaves.

- **Constituents:** It contains many bioactive compounds, including allantoin, aucubin, ursolic acid, flavonoids, and asperuloside. Plantain also contain high levels of beta carotene (A), along with levels of ascorbic acid (vitamin C) and vitamin K. Plantain also contain silica which makes it high in calcium. This herb is high in mucilage especially the seeds. (Ahlborn)

- **Uses:** Plantain is a common weed across almost all of North America and is a highly nutritional food. It is one of the best poultice herbs and is often referred to as the "green bandage. (Gladstar & Hirsch, 2000) Effective as an emollient when used as a fresh poultice on insect bites, minor burns, and other skin irritations. Herbalists use the juice of the plant to soothe intestinal irritations, hemorrhoids, and even stomach ulcers. (Tilford, 1998)

- **Cultivation in our region:** Easy to grow from seed, sprout in spring. Will easily propagate itself through seed dispersal (UCF Arboretum)

- **Dosage:** This herb is best used fresh. For bites, stinging nettle attacks, and first-degree burns, a first-aid poultice can be made quickly by chewing some leaves and applying the green goo directly to the affected area. The plant is entirely edible and quite tasty. At home, use a blender or juicer to make topical poultices or purees for internal uses. (Tilford, 1998)

- **CAUTION:** Inhaling psyllium powder can cause asthma. Unsoaked seeds can cause gastrointestinal problems.
Red Clover

*Trifolium pratense*
Red Clover
*Trifolium pratense*

- **Parts used:** Flowering tops and leaves, or dried flowerheads. (Mabey & McIntyre, 1988)

- ** Constituents:** Phenolic glycosides, flavanoids, salicylates, cyanogenic glycosides, coumarins. (Mabey & McIntyre, 1988)

- **Uses:** Alterative, nutritive, and anti-tumor. (Tilford, 1998) Red Clover is one of the best detoxification herbs and respiratory tonics, and is useful for easing chronic chest complaints such as coughs, colds, and bronchitis. Red Clover is rich in minerals, most notably calcium, nitrogen, and iron. It is used for all skin conditions, as it is an excellent detoxifier or blood purifier. (Mabey & McIntyre, 1988) Good for respiratory system, skin disorders, blood purifier, laxative, and female tonic. Said by folklore to be good for cancers, especially of the stomach. (Kloss, 1984)

- **Cultivation in our region:** Harvest Red Clover when it is in full bloom, usually between early June and mid-August. The blossoms contain the heaviest concentration of medicinal constituents. (Tilford, 1998) Good and rich soil with ample water. Red Clover will contribute nitrogen and minerals to the soil when the soil is tilled after harvesting in mid summer. (Tilford, 1998) Start seeding in early spring in Central Florida. Cut back in summer for regeneration! (UCF Arboretum)

- **Dosage:** Up to 500 mg capsules a day; Up to 3 cups of tea per day- 1 tbsp. dried herb in 1 cup of hot water and let steep for 5-10 min. (White & Foster, 2002)

- **CAUTION:** Hemophiliacs or people with "thin" blood should not used red clover regularly, as the herb can exacerbate the condition. (Gladstar & Hirsch, 2000)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Red Drop Hibiscus

*Hibiscus sabdariffa*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Red Drop Hibiscus

*Hibiscus Sabdariffa*

- **Parts used:** Dried flowers, the calyces, and epicalyces.

- **Constituents:** High in vitamin C and bioflavonoids, hibiscus has slightly astringent properties.

- **Uses:** It is useful for treating mild colds, flues, bruising, and swelling. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Very easy to grow. Start from seed in spring. Plant will die off during the freezes. It likes warm weather. (UCF Arboretum)

- **Dosage:** Use a couple flowers (to taste) to your tea and drink whenever you like through our the day!
Red Raspberry Leaf

*Rubus idaeus*
Red Raspberry Leaf

*Rubus idaeus*

- **Parts used:** Leaves, roots, and berries.

- ** Constituents:** Rich source of iron, niacin, and manganese (mineral for healthy connective tissues/energy metabolism). (Gladstar & Hirsch, 2000)

- **Uses:** As a tea or tincture, invaluable in treating diarrhea and dysentery. Helps reduce excessive menstruation and astringent (good for mouthwash for sore or infected gums). Use as a nutritive tonic when energy is low, when recovering from illness, and at times when an endocrine tonic is needed. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Not cultivated at the Arboretum but it is a hardy perennial in our region that flowers in late spring and fruits in summer or early autumn. Typically grows in forested areas or if in southern regions at higher altitudes such as in the mountains. Raspberries are tolerant of a wide range of soil pH and texture but do require adequate soil moisture. Red Raspberry grows on imperfectly to well-drained sandy loam to silty clay loam, but best growth occurs on moderately well-drained soils. (Index)

- **Dosage:** One tsp. of dried herb per cup of hot water.

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Rose Hips

*Rosa canina*
Rose Hips
*Rosa canina*

- **Parts used:** Dried, ripe fruit.

- ** Constituents:** Rose hips contain ascorbic acid (up to 2.4% vitamin C), pectin, carotenoids (mainly rubixanthin, lycopene and B-carotene), flavanoids, tannins, organic acids (malic and citric acid) and sugars. Seed are rich in y-linolenic and linolenic acid. Petals contain tannins.

- **Uses:** Diuretic. Also used for ailments of the digestive tract, and nowadays to enhance tea flavor. Seeds are a traditional diuretic and used against various disorders of the urinary tract. Dried petals are used for mild inflammation. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Varieties that are resistant to humidity and fungi do the best in our region. Be sure to use only the medicinal species of *Rosa canina*.

- **Dosage:** Infusion made of 2-2.5g crushed rose hips (with or without seeds), 1-2g of powdered seeds and 1-2g of rose flowers. (Van Wyk & Wink, 2004)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Sage
Salvia officinalis

Fig. 45

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Sage
*Salvia officinalis*

- **Parts used:** Leaves and flowering tops.

- ** Constituents:** Essential oil (up to 3.6%) rich in A-thujone (usually the major compound) and B-thujone (together up to 60%) with smaller amounts of camphor, 1,8-cineole and other monoterpenes. Also present are phenolic acids (6%) such as rasmarinic acid, various flavanoids, diterpenoids such as carnosol and rasmanol, together with triterpenes (oleanic acid and derivatives. (Van Wyk & Wink, 2004)

- **Uses:** The mint-like Asian variety of this herb is classified as a 'blood regulator' in Chinese medicine and is said to 'facilitate blood circulation, dissolve clots, and keep the blood vessels soft and supple.' (Weiner, 1994)

- **Cultivation in our region:** Sage can be grown successfully from cutting all throughout the year. It is not fond of the summer heat, so look to keep it under a tree during the summer months.

- **Dosage:** One tsp. of the dried herb can be added to one cup of hot water.

- **CAUTION:** Do not use internally in large amounts or for prolonged periods of time. (Van Wyk & Wink, 2004)
Sarsaparilla

*Smilax aristolochiaefolia*
Sarsaparilla

*Smilax aristolochiaefolia*

- **Parts used:** Roots.

- **Constituents:** Root contains 1-3% steroidal saponins. These are used as starting materials for the synthesis of cortisone and other steroids. Also present are organic acids, flavanoids and phytosterols (sitosterol, stigmasterol). (Van Wyk & Wink, 2004)

- **Uses:** Traditionally used to treat psoriasis and various other skin conditions. It has been used as a diuretic against rheumatism, rheumatoid arthritis, leprosy, and venereal disease. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** As a native to America, this herb can be grown in Central Florida successfully.

- **Dosage:** Decoctions of 1-4g of dried root are taken three times per day. Extracts and tinctures are also used. (Van Wyk & Wink, 2004)

- **History:** Was once popular amongst gym enthusiasts, because it was believed to increase lean body mass. In Mexico it has been used as a tonic and aphrodisiac. Root extracts are a traditional ingredient of root beer and are included in herbal teas. (Van Wyk & Wink, 2004)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Saw Palmetto

*Serenoa repens*
Saw Palmetto

*Serenoa repens*

- **Parts used:** Berries.

- **Constituents:** A green volatile oil, fixed oil, steroidal saponins, resin, tannins. (Mabey & McIntyre, 1988)

- **Uses:** Reproductive disorders, colds, catarrh, and urinary diseases. (New Age 92) Eases frequent nighttime urination, weak urine flow, and other symptoms of an enlarged prostate. Relieves prostate inflammation and may prevent male, pattern hair loss. (Leo, 2004)

- **Cultivation in our region:** A Florida native that is easy to grow. Get your starters at a local nursery, or try your luck at seed germination. It enjoys sandy soil, full sun, and a lot of water for initial establishment. Will grow very rapidly during the rainy season, and will bear fruit in late summer. (UCF Arboretum)

- **Dosage:** Use 3-4 dried berries per cup of hot water.

- **History:** Native Americans consumed this herb often as a food and as a tonic. Its medicinal properties are derived from the blue-black berries, which are harvested in late summer/early fall. This process is sometime dangerous; the plant is sharp and is sometimes home to snakes. The plant has a life span of nearly 700 years; it is a resilient plant that tolerates drought well. (Leo, 2004)

- **CAUTION:** Be careful when harvesting, the plant is very sharp!
Slippery Elm

_Ulmus rubra_

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Slippery Elm

*Ulmus rubra*

- **Parts used:** The inner bark, which is harvested in spring.

- **Constituents:** A mucilage (slime) is the main constituent. It consists of pentose, methylnpentose, and hexose sugars, together with two polyuronides. When hydrolysed, glucose, galactose, galacturonic acid and rhamnose are released. The product also contains substantial quantities of tannins and phytosterols. (Van Wyk & Wink, 2004)

- **Uses:** A demulcent and emollient. It is highly mucilaginous and is used to treat inflammation and ulceration of the mucous membranes of the mouth, throat, stomach or duodenum. It works well against colitis, heartburn, gastritis and diarrhea. It can also be used externally as a poultice to wounds, burns, and abscesses. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Not cultivated at the Arboretum but it is a hardy perennial in our region. It grows best on moist, rich soils of lower slopes, stream banks, river terraces, and bottom land but it is often found on much drier sites, particularly those of limestone origin. (Cooley and Sambeek)

- **Dosage:** Make a medicinal tea of the bark or use in tincture form. Take three times a day.

- **History:** Origin in central and southern parts of the USA. Indian women used the drug to ease birth. (Van Wyk & Wink, 2004)
St. John’s Wort

*Hypericum perforatum*
St. John’s Wort
*Hypericum perforatum*

- **Parts used:** Dried flowers.

- **Constituents:** Hypericum is rich in phenolic compounds and various terpenoids but the most notable chemical constituents are hyperforin (a phloroglucinol derivative) and hypericin (a dianthrone). (Van Wyk & Wink, 2004)

- **Uses:** St. John’s Wort was used to soothe nerves and to help the healing of wounds, burns and snakebites. St. John’s Wort may also be helpful for many conditions associated with depression, such as anxiety, obsessive-compulsive disorder, premenstrual syndrome (PMS), and menopause. This herb promotes sound sleep and may be especially valuable when depression occurs because of fatigue, sleepiness, and low energy levels. (Leo, 2004)

- **Cultivation in our region:** If you cannot get a potted plant, start with seed in the ground. It does not like to be disturbed. Start seeding in March. Likes sandy soil and full sun. Water deeply as needed, and give love! (UCF Arboretum)

- **Dosage:** Dry herb should be used 2-4g in an medicinal tea/infusion (steep for 5-10min). When used on wounds, use a olive oil that has been infused with the herb for at least a few weeks.

- **History:** It was named for Saint John the Baptist because it blooms around June 24, the day celebrated as his birthday; "wort" is an Old English word for plant. Ancient Greeks and Romans believed that this herb could deter evil spirits. (Leo, 2004)

- **CAUTION:** Avoid prolonged exposure to sunlight when using St. John's Wort. People with a history of thyroid disorders should use St. John's Wort cautiously. Pregnant or breast-feeding women should not take St. John’s Wort. (Leo, 2004)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Stevia

*Stevia rebaudiana*
Stevia

Stevia rebaudiana

- **Parts used:** The leaves.

- **Constituents:** Stevioside (diterpenoid glycoside). (Van Wyk & Wink, 2004)

- **Uses:** It is indicated for pancreatic imbalances and high blood sugar levels and is the type of sugar that diabetics can tolerate. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Stevia will grow very well, but is frost sensitive, so be sure to protect during the cold months.

- **Dosage:** Take the leaves and steep in teas for a sweet flavor, and grind into a powder to sweeten anything like sugar. Make sure to use it sparingly, it is much sweeter than any other sweeteners!

- **CAUTION:** Very, very sweet!
Tea Tree

Melaleuca alternifolia

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Tea Tree
Melaleuca alternifolia

- **Parts used:** Essential oil

- **Constituents:** Extracted through a steam distillation process, quality tea tree oil contains at least 40% terpinen-4-ol (the active ingredient responsible for its healing effects) and less than 5% cineol, a substance believed to counteract the medicinal properties of the oil. (Leo, 2004)

- **Uses:** Disinfects and promotes the healing of cuts and scrapes. May treat acne, certain bacteria infections, genital herpes, and vaginal yeast infections. May fight athlete's foot, fungal nail infections, and thrush (caused by *Candida albicans*). (Leo, 2004)

- **Cultivation in our region:** This species should not be grown in our region, as another species in this genus has proven to be an intensive invasive in the Florida Everglades.

- **Dosage:** If the essential oil is used internally, oil one drop should be used and diluted in another solution. For use topically use as much of the pure essential oil that is needed.

- **History:** For centuries, Australian aborigines relied on the leaves of a native tree to fight infections. Dubbed the "tea tree" by English explorer Captain Cook, its leaves produce an oil that is valued throughout the world as a potent antiseptic. Studies have also confirmed its powerful ability to combat bacteria and fungal infections. (Leo, 2004)

- **CAUTIONS:** Keep Tea Tree oil away from eyes and mucous membranes. If you accidentally ingest the oil, call a doctor or poison control center immediately. People who are allergic to tea tree oil or to plants of the myrtle family, have a history of eczema, or are pregnant or breastfeeding should not use tea tree oil. (Leo, 2004)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Valerian

*Valeriana officinalis*
Valerian
Valeriana officinalis

- **Parts used:** Root. The upper parts of the plant are used too, but make weaker medicine.

- ** Constituents:** Important compounds: valepotriates, valeric acids, and volatile oils. (Leo, 2004)

- **Uses:** A sedative, antispasmodic, carminative, and hypotensive. (Tilford, 1998) Effective for insomnia, pain, restlessness, headaches, digestive problems due to nerves, and muscle spasms. (Gladstar & Hirsch, 2000) Calming agent in stressful daytime situations, treating anxiety disorders, and conditions worsened by stress such as diverticulitis and irritable bowel syndrome. Unlike other drugs, valerian is not addictive and does not make you feel drugged. Rather than inducing sleep directly, valerian calms the brain and body so sleep can occur naturally. (Leo, 2004)

- **Cultivation in our region:** Valerian is a perennial that can be started from young transplants. It likes rich soil with moderate amounts of organic matter and plenty of water, though it will survive drought conditions. It tolerates a wide range of pH levels and prefers partial shade to full sun. (Tilford, 1998)

- **Dosage:** This herb can be used fresh or dried. The roots' potency increases as they dry, and they will keep for a year or more if properly stored. Used this herb as a tea or tincture. (Tilford, 1998)

- **CAUTION:** It is used as a relaxant, but it can have the opposite effect on people who are particularly sensitive to it. If you become further agitated and restless after taking Valerian, discontinue use and consider yourself in that rare 5% of the population that cannot tolerate this herb. (Gladstar & Hirsch, 2000) Avoid alcohol while taking Valerian. (Leo, 2004) People taking benzodiazepines, barbiturates, narcotics, antidepressants, beta-blockers, loperamide (Imodium), St. John's Wort, anti-seizure medication, or herbs and supplements with similar effects should not take Valerian. People with liver disease should avoid Valerian. If you are pregnant, or breast feeding, do not use Valerian.
White Willow

*Salix alba*

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
White Willow
*Salix alba*

- **Parts used:** The bark, and for less effect the leaves.

- **Constituents:** Contains salicin, a salicylic acid-bearing glycoside that acts as an analgesic. Salicylic acid was a precursor to aspirin. (Tilford, 1998)

- **Uses:** Analgesic, anti-inflammatory, antipyretic, astringent, and antiseptic. (Tilford, 1998)

- **Cultivation in our region:** Not cultivated at the Arboretum but it is a hardy perennial in our region. Is fast growing but may be short lived due to its susceptibility to certain diseases and fungi. Enjoys full sun, and average watering. (Dave’s Garden)

- **Dosage:** Make a decoction using the bark to release the chemical constituents.

- **CAUTION:** Like aspirin, Willow may irritate stomach ulcers and other disorders where aspirin is specifically contraindicated. Willow will not thin the blood, as aspirin does, so it is not an effective alternative for preventing cardiovascular disease. In my experience, a headache will usually go away before one can ingest enough of this herb to be of remedial value. Further, Willow bark is not 100 percent reliable in its painkilling activity. Because the salicylate content of willow varies from plant to plant, I can’t help but weigh the advantage of harvesting a plant that is critical to its environment against a better alternative in a little white tablet. (Tilford, 1998)
Wild Yam

*Dioscorea villosa*
Wild Yam
*Dioscorea villosa*

- **Parts used:** Tuber or rhizome.

- **Constituents:** Dioscorea species contain saponins such as dioscin, a useful starting material in the semi-synthesis of steroidal hormones and oral contraceptives. (Van Wyk & Wink, 2004)

- **Uses:** Contraceptive, steroidal therapy. (Van Wyk & Wink, 2004) Rheumatoid arthritis, colic, threatened miscarriage, and menstrual cramps. (New Age 56)

- **Cultivation in our region:** Wild Yam can be grown in our region, but since it is a tropical plant, grow it in the same manner you would grow sweet potato—during the hot summer months.

- **Dosage:** Two tbsp. per cup of water can be decocted for a beverage to drink 2-3 times per day.

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Witch Hazel

*Hamamelis virginiana*
Witch Hazel
*Hamamelis virginiana*

- **Parts used:** Bark and leaves.

- **Constituents:** The leaves, twigs, and bark all contain tannic acid, gallic acid, and volatile oils. (Kowalchik & Hylton, 1987). Iridoid glycosides (or their metabolites) inhibit cyclooxygenase, which explains the slight analgesic and anti-inflammatory activity. The bitter taste is due to the iridoid glycosides. (Van Wyk & Wink, 2004)

- **Uses:** Bitter tonic, anti-inflammatory, anti-rheumatic, and weak analgesic. (Van Wyk & Wink, 2004)

- **Cultivation in our region:** Hard to grow in Central Florida. Prefers cool winters and does not like excessive heat. (Arboretum)

- **Dosage:** A daily dose of up to 9g of the dried root, taken as an infusion (1-3g at a time) is recommended. (Van Wyk & Wink, 2004)

- **History:** Witch Hazel’s spooky name, by the way, has nothing to do with witches. The name instead derives from the Old English word for "pliant" and in fact the limber branches were used as archery bows. (Kowalchik & Hylton, 1987)
Yarrow

*Achillea millefolium*

![Yarrow plant](image-url)
Yarrow

*Achillea millefolium*

- **Parts used:** Flowering tops and the leaves.

- **Constituents:** Azulenes and sesquiterpenes in the flowers. (Weiner, 1994)

- **Uses:** Known as a diaphoretic, often used in teas to promote sweating and reduce fevers. It is great to stop bleeding externally and internally. Yarrow is a good herb for stomach and menstrual cramps. (Gladstar & Hirsch, 2000)

- **Cultivation in our region:** Planting yarrow in an herb garden will help neighboring plants resist disease, but keep the roots within bounds. Also seems to deepen the fragrance and flavor of nearby herbs. (HB41) Cultivates in cream, peach, burgundy available. Pick the flowers during sun and heat for the highest potency! (UCF Arboretum)

- **Dosage:** Add on tbsp. of Yarrow in one cup of hot water to make a tisane to help with colds and cramps. The powdered or freshly crushed leaf can be used directly on wounds to disinfect and stop the bleeding. (Gladstar & Hirsch, 2000)

- **History:** The genus name, *Achillea*, is derived from the Greek hero of the Iliad, Achilles, who according to mythology healed the wounds of his comrades-in-arms with a relative of this plant. Yarrow was known to the Greeks as a styptic, vulnerary, and astringent, and hence was utilized in hemorrhagic complaints. Both the ancient Greeks and Native Americans used this plant to heal wounds. Native American warriors used yarrow to treat cuts, bruises, and other minor injuries. The Ute name for yarrow is translated as "wound medicine". The Zuni used it to treat burns. (Weiner, 1994)
Local Orlando Herbal Guide

Fig. 57

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Herbal Learning and Workshops

- **Florida School of Holistic Living**: A 501c3 non-profit located in Downtown Orlando that offers classes that helps to build a more sustainable and holistic community. It was first founded in 1999 as the Florida School of Herbal Studies and focuses primarily on herbalism, and they still teach workshops today! [http://www.holisticlivingschool.org/](http://www.holisticlivingschool.org/)

- **Orange County Extension Education Center**: Orange County educational center that focuses on community gardens and personal gardens. Contact them Monday through Friday 8am to 5pm at (407) 254-9200. [http://ocextension.ifas.ufl.edu/](http://ocextension.ifas.ufl.edu/)

- **Simple Living Institute**: A 501c3 charity started to help build a stronger community that values the environment, personal health, and more self-sufficient lifestyle. The Institute has plant sales, seed exchange events, workshops on their Econ Farm, volunteer opportunities around town, and monthly growers meetings every third Wednesday of the month at Harry P. Leu Gardens! [http://www.simplelivinginstitute.org/](http://www.simplelivinginstitute.org/)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Local Herbal Stores

- **Leaves and Roots**: Retail Herb store in East Orlando that supplies hundreds of medicinal and culinary herbs in bulk. The store sells both conventional and certified organic herbs, essential oils, incense, aromatherapy products, body care, containers, and books. Store hours are Monday through Friday 10am to 7pm and Saturday 11 to 5pm. Contact them at (407) 823-8840 [http://www.leavesandroots.com/](http://www.leavesandroots.com/)

- **Orlando Homegrown Cooperative**: Local food co-op that also serves as a second shop for Leaves and Roots in the downtown Orlando area. Homegrown “exists to ensure convenient access and consistent supply of locally grown foods that are ethical, organic, and sustainable in production to the communities of Central Florida”. Open to non-members to shop surplus as well! Check website or call for seasonal hours. (407) 895-5559 [http://homegrowncoop.org/](http://homegrowncoop.org/)

- **Orenda Herbal**: Medicinal teas, salves, skincare, spices and more made by local herbalists! Can be bought at Homegrown Co-op and Leaves and Roots. Also can be enjoyed socially at Stardust Coffee and Video [http://www.orendaherbal.com/](http://www.orendaherbal.com/)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Grow Your Own Herbal Garden

- **Orange County Solid Waste:** Residents of Orange County may get free compost from local yard waste everyday from 8am to 5pm at the Orange County Landfill and transfer stations. Bring your own shovel and containers. You may fill up to one truckload of compost. The solid waste hotline is (407) 836-6601.  
  [www.orangecountyfl.net/YourLocalGovernment/CountyDepartments/Utilities/Compost/tabid/622/Default.aspx](http://www.orangecountyfl.net/YourLocalGovernment/CountyDepartments/Utilities/Compost/tabid/622/Default.aspx)

- **Seminole Springs Antique Rose and Herb Farm:** A family run nursery in Eustis, Florida that specializes in antique roses and potted herbs. Tours are available by appointment and the store is open Thursday through Saturday from 10am to 4pm. The farm may be contacted at (352) 357-2643 [http://www.rosesandherbs.com/](http://www.rosesandherbs.com/)

- **South Seminole Farm and Nursery:** A environmentally friendly farm in Casselberry that uses no harmful fungicides or insecticides on their plants. They also grow and sell organic fruits and vegetables that are available seasonally. Contact the farm at (407) 695-3247 [http://sseminolefarmandnursery.com/](http://sseminolefarmandnursery.com/)

- **My Yard Farm:** My Yard Farm specializes in creating edible urban landscapes for your home or business. The business offers consultations, instillations, and even maintenance. [http://myyardfarm.com/](http://myyardfarm.com/)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Local Cafes With Herbal Teas

• **Dandelion Communitea Café:** A organic café located in Downtown Orlando. The café’s main features are their premium organic teas and their vegetarian cuisine. The cafe is open Sunday 12-5pm, Monday 11am-4pm, and Tuesday to Saturday 11am to 10pm. Contact Dandelion at (407) 362-1864 [http://dandelioncommunitea.com/](http://dandelioncommunitea.com/)

• **Infusion Tea Orlando:** A vegetarian cafe in College Park that also is home to a local produce only farmers’ market on Thursday evenings. The cafe has a wide variety of teas to choose from as well! The cafe is open Monday through Saturday 9am-9pm and Sunday 12pm-6pm. You can contact the cafe at (407) 999-5255 [http://www.infusionorlando.com/](http://www.infusionorlando.com/)

• **Austin’s Coffee:** Supplies some local foods and yummy herbals teas in the winter park area. Open 24/7. Phone: (407) 975-3364 Web: [http://www.austinscoffee.com/](http://www.austinscoffee.com/)

• **Stardust Coffee and Video:** Home to Orlando’s first local foods only market, “Audubon Park Market”, and serves locally made tea by Orenda Herbal. Come on Monday nights from 6-10pm and enjoy an herbal tea while shopping for your local and organic foods. Monday- Friday open from 7am-12pm, and Saturday and Sunday 8am-12pm [http://stardustvideoandcoffee.wordpress.com/](http://stardustvideoandcoffee.wordpress.com/)

Produced by: Sarah Parker, Summer Singletary, & Tina Richards
Conservation & Medicinal Plants

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Overview

• Definitions
• History of medicinal plants
• How supply and demand affects conservation
• Current regulatory practices: U.S. and globally
• State of wild medicinals globally
• Conservation concerns
• Specific examples: Echinacea, American Ginseng & Goldenseal
• Possible Solutions:
  • Individuals, Educators & Conservation Groups
  • Utilizing our invasive plants
Definitions

• Medicinal plant: A plant having healing properties

• Wildcraft: To gather herbs, plants, and fungi from the wild.

• Sustainable harvesting or “conscious collecting”: Harvesting no more than the additive growth increase of all the plants in a particular niche, some say no more than 10%.

• Bioregional abundance: Abundance of a particular species in a bioregion.
History

- Medicinal plants have been utilized by humans since “primitive” times.
- Even around the 1800’s most doctors were botanists.
- Modern American Herbalism has a foundation utilizing plants brought from both Europe and plants found in North America, used by Native Americans.
- Around the beginning of the 20th century, organic chemistry initiated an era of synthetic medicines.
A Global Perspective:

• Greece: Flourishing medicinals are limited to the highest mountain regions.

• England: It is illegal to harvest wild medicinal plants because they are threatened in their native landscapes.

• China: Due to over-harvesting, it is almost entirely devoid of its most important wild, medicinal plants. However, cultivation of medicinals on more than one million acres is under way.

• India: Large consumer and supplier.
Supply & Demand

• First World Congress on Medicinal and Aromatic Plants for Human Welfare (1992 Netherlands) found that 80% of the world’s population depends on traditional herbal medicine.

• Two-thirds of the 50,000 medicinal plants in use are still harvested from the wild, and research suggests that between 4,000 and 10,000 of them may now be endangered.

• High demand in developing countries: main form of medical treatment.

• Increasing demand in developed countries (USA) due to escalating costs of sophisticated medical care.

• India is the largest producer (cultivated and wild-crafted) of medicinal plants in the world, supplying plants not only for India, but for many other countries.
Regulatory Organizations

• The National Park Service hosts a Plant Conservation Alliance (PCA), which is a consortium of federal government agencies and Cooperators

  • PCA hosts the Medicinal Plant Working Group, which has a role of forging national and international partnerships to facilitate sustainable use and conservation of medicinal plants

• The World Health Organization (WHO) also has a strategy to produce guidelines for “Traditional Medicines” or “Complimentary & Alternative Medicine”
Current Regulatory Practices for Distribution

- In the United States medicinal plants are regulated by the FDA (Food and Drug Administration) as dietary supplements, which are subject to a different set of regulations than those for "conventional" foods and drug products.

- Dietary supplement manufacturers are responsible for ensuring that their product is safe before it is marketed and that the product label information is truthful and not misleading.

- Most products carry this message:
  - “These statements have not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.”
Current Regulatory Practices continued...

- Very few (plant derived) remedies have been subjected to controlled testing to verify their effectiveness.

- PRO: There are little-to-no restrictions on growing and purchasing medicinal plants for home-users.

- CON: They are not as scrutinized as synthetic medicines and are not commonly used by doctors.

- Mainstream regulation could lead to higher demand and/or more restrictions for the conservation of wild medicinals. For the U.S., this is yet to be seen...

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Global Regulation:

- CITES, Convention on International Trade in Endangered Species of Wild Fauna and Flora, was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN (The World Conservation Union).

  - It is an international agreement between governments whose aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

  - They work in conjunction with TRAFFIC, the wildlife trade monitoring network, who works to ensure that trade in wild plants and animals is not a threat to the conservation of nature.
Conservation Concerns

- Possibility of compromising known and unknown species due to **habitat loss** (mountain-top removal, etc.), fragmentation, unsustainable harvesting & poaching, overpopulation, and/or poor logging practices.

- Supply for global demand increases **over-exploitation and unsustainable harvesting** practices which increases the threat of extinction.

- Of the estimated 250,000 plant species on earth, only 2% have been thoroughly screened for chemicals with potential medicinal use.

- Each species lost to extinction represents the loss of a potential life-saving drug.

- For most medicinal plant species of concern no conservation action has been taken and little data on populations exists (for example: material in genebanks). Most information on use and population locations resides with indigenous cultures, whom are subjected to continued disruption and loss.

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Conservation Concerns continued...

• **Global Climate Change & Sea-level-rise:** Immediate concern for Arctic species due to predicted encroachment of Southern systems moving Northward.

• Some studies have demonstrated that temperature stress can affect some of the compounds that plants produce, which are usually the basis for their medicinal activity.

• **Genetic Erosion:**

  • Harvest of the largest and oldest plants for sale in the market **removes the strongest and most successful survivors** from the gene-pool.

  • Especially problematic for species, such as pink lady’s slipper (**Cypripedium acaule**), that have a very high mortality rate for individuals in the seed and seedling stages. Many juveniles don’t survive to reproductive age at all.

  • With the elders forgone in the harvest, less robust genes are reproduced into the remaining gene-pool of that population.
Example 1: *Echinacea sp.*

Fig. 61 (above)

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Echinacea sp. continued...

- All parts are used as an immune system booster; the root in particular is valued for harvest, which kills the plant.

- The nine species native to North America range throughout the prairie states, Oklahoma south to Texas, but can be cultivated from the Eastern seaboard to the Midwest.

- Two species, *E. tennesseensis* and *E. laevigata*, are protected under the Endangered Species Act, and their use is prohibited.

- Possible adulterant/substitute: Prairie dock (*Parthenium integrifolium*)

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Example 2: American Ginseng 
(Panax quinquefolius)

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Panax quinquefolius continued...

- Used as an adaptogenic tonic for stress and to enhance sexual vitality.
- This slow-growing, forest, perennial herb can take up to 5-7 years to produce seeds for reproduction, so harvesting young roots is unsustainable.
- Collected and sold for exportation (mostly to China) almost to the point of extinction in some areas.
- In commerce it typically ranks as one of the most widely used herbs in the North American market.
Panax quinquefolius continued...

- CITES Appendix II, for USA & Canada
  - Includes species that are not necessarily threatened with extinction, but may become so unless international trade is regulated in order to avoid utilization incompatible with their survival.
- It is now considered an endangered species in Canada and it is illegal to export.
- In 2000, the U.S. Fish and Wildlife Service decided that continued exportation would not be detrimental to the survival of the species.
Example 3: Goldenseal

(Hydrastis canadensis)

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Goldenseal (*Hydrastis canadensis*) continued...

- Rhizome and roots used for their antiseptic and anti-microbial actions, but all parts of the plant can be utilized.
- Native range is throughout the eastern United States.
- It can take three years for it to flower and reproduce.
- Has been over-harvested and will probably need protection to survive.
- Also listed in Appendix II for CITES.
- In the U.S., it is listed as endangered, threatened, vulnerable or of special concern in Connecticut, Georgia, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, North Carolina, and Vermont.

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Possible Solutions

• Individual Citizens
• Producers
• Suppliers
• Educators
• Regulatory Agencies
• & Conservation Agencies

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Possible Solutions: Individual Citizens

- Pay attention to “at-risk” and “to watch” lists provided by organizations like United Plant Savers and TRAFFIC to see what is currently in high demand and over-harvested.
- Cultivate medicinal plants in your yard if you plan to use them.
- Be a conscious consumer by purchasing certified organically cultivated.
- Substitute similar alternative and abundant species when possible.
- Adulterate with appropriate herbs when possible (i.e. herb of concern is used in conjunction with a substitutional equivalent that is abundant).
- If you do use species of concern, use them appropriately for acute, short-term treatment and not in excess.

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Possible Solutions: Individuals continued...

- If you do wild-harvest:
  - Leave plants that are unusual or rare to your area
  - Leave elders that possess successful genes for reproduction
  - Take what you need and no more the 10% of any given population
  - Always ask permission from the property owner
  - Harvest the plant at the correct time of year...
  - Always harvest bark from the branches and never from the main trunk
  - Use aerial parts when possible, as opposed to harvesting roots which kills the plant

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Possible Solutions: Producers, Suppliers & Educators

- Producers could explore alternative methods of production including tissue culture
- Suppliers can shift demand from wild-crafted medicinal plants to certified organically cultivated through their purchasing practices
- Educators should always emphasize growing these plants over wild-harvesting them

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Possible Solutions: Regulatory & Conservation Agencies

- Regulatory agencies:
  - ENFORCE minimum size restrictions for harvest of roots, similar to the harvest of lobsters and fish, or implement restricted permitting process (if non-existent)
  - Make it illegal to possess certain species
  - If necessary, implement a moratorium on the exportation of certain wild species

- Conservation organizations:
  - Strengthen relationships with Botanical Gardens and Arboreta to employ ex-situ conservation of wild, medicinal plants of concern to help in future reintroductions
  - Monitor and restore existing populations

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Possible Solutions: Putting our Southern invasive plants to work!

- Kudzu (*Pueraria lobata*): Category I invasive
  - Root and flower are traditionally used in Chinese medicine for IBS (irritable bowel syndrome), alcohol poisoning (hangovers), colds and flu with fever and headache
  - Animal fodder - leaves eaten by livestock
  - Food - root starch as a thickening agent
  - Fibers - used in industry and basket making

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Possible Solutions:
Putting our Southern invasive plants to work! ...continued

- Castor bean (*Ricinus communis*): Category II invasive
  - Used medicinally as a stimulant laxative
- *Melaleuca quinquenervia*: Category I invasive
  - Traditionally used by indigenous Australians
  - *Melaleuca* contains cajeput oil which is strongly antiseptic and has many medicinal uses

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Medicinal Plants: A valuable resource for all...

- “Medicinal plants are highly valued by communities all over the world. It is essential in the next decade that we work towards sustainable collection of this valuable resource, not only for nature conservation but for the well-being and livelihoods of indigenous, local communities who depend on those resources,” says Elizabeth Radford, Plantlife International, an IUCN Member.
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- Fig. 7: UCF Arboretum.
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• Fig. 19: UCF Arboretum

• Fig. 20: UCF Arboretum

• Fig. 21: UCF Arboretum


• Fig. 27: UCF Arboretum

• Fig. 28: UCF Arboretum

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• Fig. 29: UCF Arboretum


• Fig. 32: UCF Arboretum

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- Fig. 47: UCF Arboretum


- Fig. 49: UCF Arboretum

- Fig. 50: UCF Arboretum


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References


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