

## University of Kansas School of Pharmacy Medicinal Garden

Plant list with informational text from individual plant signs.

### Plants in the genus *Echinacea* (purple coneflower)

#### **Narrow-leaved purple coneflower                      Native**

##### ***Echinacea angustifolia***

Asteraceae

This historically is the most important of all *Echinacea* species, with documented use by at least 16 Native American tribes (for specific uses, find this plant in the U.S.

Pharmacopeia/National Formulary bed). It was a cure-all and has been shown in some recent clinical trials to reduce cold and flu symptoms.

#### **Topeka purple coneflower                                      Native**

##### ***Echinacea atrorubens***

Asteraceae

Topeka purple coneflower has a very limited natural distribution that extends 100 miles wide from eastern Texas and Oklahoma into the Flint Hills of Kansas to Topeka. One wild population still occurs on KU's west campus. Touch, and you will find that this species is the only one with smooth leaves.

#### **Smooth purple coneflower**

##### ***Echinacea laevigata***

Asteraceae

This federally endangered species is known to occur only in 23 small, wild populations in the Piedmont of the southeastern U.S. It historically relied on fire and large herbivores to maintain the forest openings it needs for survival. It is nearly extinct due to habitat destruction and fire suppression, and is at risk for being harvested as a medicine in the wild.

#### **Pale purple coneflower                                      Native**

##### ***Echinacea pallida***

Asteraceae

The pale purple coneflower was mixed with beebalm and flowering spurge (also in the U.S. Pharmacopeia/National Formulary bed) by the Meskwaki (Fox) to treat stomachache and cramps. This is the most common *Echinacea* in far eastern Kansas, and it makes a graceful addition to sunny gardens.

#### **Bush's purple coneflower**

##### ***Echinacea paradoxa***

Asteraceae

*E. paradoxa* has a limited distribution on glades and prairies, extending from the Ozarks of Missouri and Arkansas into the Arbuckle Mountains of Oklahoma. Among all species in this genus, it is, paradoxically, the only yellow-flowered purple coneflower.

**Eastern purple coneflower                      Native**

***Echinacea purpurea***

Asteraceae

*E. purpurea* is the most commonly used cultivated source of *Echinacea* for herbal products. Large quantities of this species are grown in Germany and elsewhere in Europe, where it is commonly found on pharmacists' shelves. In the wild, this species grows in forest openings; it can tolerate moist soils and some shade, making it the easiest to grow in many gardens.

**Sanguin purple coneflower**

***Echinacea sanguinea***

Asteraceae

This species has a limited distribution, occurring on sandy, open pine woodlands and prairies in northeastern Texas, western Louisiana and several adjacent counties in Arkansas and Oklahoma. It is the southernmost *Echinacea* species. The specific epithet *sanguinea*, Latin for "blood," refers to the bright color of the petals.

**Wavyleaf purple coneflower**

***Echinacea simulata***

Asteraceae

This species occurs in glade habitats of Missouri, Arkansas, Illinois, Kentucky and Tennessee. Glades are dry, rocky forest openings. The name *simulata* refers to the fact that this species simulates *E. pallida*; the two species are conclusively distinguished only by pollen color.

**Tennessee purple coneflower**

***Echinacea tennesseensis***

Asteraceae

This is one of the rarest wildflowers in the U.S. Now known only from five natural populations within a 14-mile radius in central Tennessee, it was the second plant listed as endangered by the U.S. Fish and Wildlife Service in June 1979. One site was destroyed by the development of the Nashville Superspeedway, which opened in 2001.

**Plants in the genus *Asclepias* (milkweeds)**

**Antelopehorns (Spider milkweed) Native**

***Asclepias asperula***

Asclepiadaceae

The ground root is used by Hispanics and Native people of the Southwest, is prepared in tinctures and teas for use as a heart tonic and to treat labor pains, and as a bronchial dilator for the treatment of asthma and bronchitis. The Spanish name, "inmortal," reflects the plant's ability to regenerate from the root following harvest.

**Pallid milkweed**

***Asclepias cryptoceras***

Asclepiadaceae

This species is native to arid habitats of the western U.S. In traditional Native American medicine, the plant's milky latex was applied directly to the skin as a treatment for ringworm. Also, the roots were boiled in water to make a decoction used as a wash for treating headaches, and a poultice of the dried, powdered roots was applied to sores.

**Engelmann's milkweed                      Native**

***Asclepias engelmanniana***

Asclepiadaceae

This milkweed occurs in sandy or rocky limestone soils of the western Great Plains and the arid west. Although uncommon, it is distinguishable by its exceptional height of 3 to 4 feet. The Diné (Navajo) used this species as a respiratory aid to treat nasal congestion from a cold.

**Desert milkweed**

***Asclepias erosa***

Asclepiadaceae

Desert milkweed is native to the southwestern U.S. and Baja California. It occurs, as the name implies, primarily in desert habitats. Native Americans collected the sap from the stem, allowed it to dry, and heated it over a fire to make chewing gum. Desert milkweed and several closely related species are known to have high cardiac glycoside contents.

**Swamp milkweed                      Native**

***Asclepias incarnata***

Asclepiadaceae

The pulverized root of this species was used by the Meskwaki (Fox) to expel tapeworms and by the Lakota to make a salve applied to lymphatic swellings associated with tuberculosis. The fibrous stem was used to make cord. As the name implies, the plant occurs in wetlands and other moist areas. (U.S. Pharmacopeia 1820-1863 and 1873-1882; diuretic and emetic.)

**Dwarf milkweed                      Native**

***Asclepias involucrata***

Asclepiadaceae

Dwarf milkweed is native to the arid regions of the southwestern U.S. and has been documented historically in Stevens County in southwestern Kansas. Native Americans traditionally used a tea made from the plant to treat upset stomach and a warm poultice of the root to relieve toothache.

**Broadleaf milkweed                      Native**

***Asclepias latifolia***

Asclepiadaceae

A powder of the ground leaf and stem of this plant was inhaled by the Isleta (a Pueblo tribe) to treat inflammation of mucous membranes associated with the common cold and sinus infections. This species occurs in the western Great Plains and the arid west. The

Latin name “latifolia” means “wide leaves”; this plant has the largest leaves of any shortgrass prairie plant.

**Plains milkweed                      Native**

***Asclepias pumila***

Asclepiadaceae

This species is aptly named, as its distribution is limited to the Great Plains. A tea made from the leaves of this plant was used in traditional Lakota medicine to treat diarrhea, particularly for children.

**Showy milkweed                      Native**

***Asclepias speciosa***

Asclepiadaceae

The Shoshoni applied the milky, white latex of this plant as an antiseptic and healing agent for sores, cuts, ringworm and wounds. Recorded Anglo folk uses of this and other species include consumption of tinctures and teas to stimulate perspiration, to dilate bronchi and as an expectorant. The flowers and flower buds were a prized food used by many Plains tribes to flavor stews.

**Common milkweed                      Native**

***Asclepias syriaca***

Asclepiadaceae

Traditional Native American uses include a tea of the leaves to treat upset stomach; roots for constipation; and latex for warts, bee stings and cuts. Young seedpods and tender leaves and shoots still are cooked as greens and used in soup by the Potawatomi, Winnebago and other tribes. (U.S. Pharmacopeia 1820-1863 and 1873-1882; root; diuretic and to destroy parasites.)

**Butterfly milkweed                      Native**

***Asclepias tuberosa***

Asclepiadaceae

Native American names for this plant include “makan saka” (raw medicine) and “kiu makan” (wound medicine), Omaha and Ponca; and “astiste’i” (knob on the roots), Meskwaki (Fox). The plants here include both the orange and yellow color morphs, or variants, in the species. (Also in the U.S. Pharmacopeia/National Formulary bed.)

**Green comet milkweed                      Native**

***Asclepias viridiflora***

Asclepiadaceae

The Blackfoot chewed the root of this plant to relieve sore throat, and they applied the chewed root to swellings and rashes; it was very effective for diarrhea rash and for nursing babies’ sore gums. The Lakota gave the pulverized roots to children with diarrhea. The Lakota name for the plant, “hu cinska,” means “spoon-shaped,” for the shape of the leaf.

**Great Plains plants in the U.S. Pharmacopeia and National Formulary**

**Yarrow** **Native**

***Achillea millefolium***

Asteraceae

Yarrow occurs in much of the Northern Hemisphere and has extensive use in Asia and Europe. Native Americans used it to stop bleeding, as an antibiotic and pain reliever in treating wounds, and for fevers, colds, headaches and toothaches. Among its many compounds is salicylic acid, a pain-relieving component of aspirin. (USP 1863-1882; dried leaves and flowers; tonic or stimulant.)

**Calamus (Sweetflag)** **Native**

***Acorus calamus***

Acoraceae

Calamus was among the plants most widely used by Native Americans. The root was chewed, smoked or made into tea for fevers, colds, coughs, sore throat, toothache, headache, nausea and constipation. Calamus was a common remedy 2,000 years ago in India and also among the early Greeks. (USP 1820-1916, NF 1936-1950; unpeeled, dried rhizome; tonic, relief from flatulence.)

**Dogbane** **Native**

***Apocynum cannabinum***

Apocynaceae

Though considered toxic to animals, dogbane has been regarded as a cardiac stimulant in medical practice. Native Americans used its roots to make a tea for constipation, coughs and asthma, and chewed them to treat syphilis. Another name, Indian hemp, refers to the use of the stem fibers for cordage. (USP 1831-1916, NF 1916-1960; cardiac stimulant.)

**Butterfly milkweed** **Native**

***Asclepias tuberosa***

Asclepiadaceae

Another common name for this plant, “pleurisy root,” derives from the practice of the Omaha and Ponca, and, later, doctors, using a decoction of boiled roots to treat pleurisy, an inflammation of the lining of the lungs. This medicine acts to increase fluid circulation, lymphatic drainage and bronchial dilation. (USP 1820-1905, NF 1916-1936)

**Wild indigo**

***Baptisia tinctoria***

Fabaceae

A decoction of wild indigo was washed on the skin for healing cuts, bruises, sprains and other wounds. It should not be confused with *Indigofera tinctoria* (“true indigo”), the Old World plant used for blue dye. Wild indigo leaves and stems, which turn blue-black when damaged, also have been used for dye. (USP 1831-1842, NF 1916-1936; root or extract; typhoid fever or similar symptoms.)

**Narrow-leaved purple coneflower** **Native**

***Echinacea angustifolia***

Asteraceae

This species had many uses among Plains tribes, including: chewing the root to treat colds (Crow, Kiowa, Cheyenne); application of freshly scraped root to wounds and inflamed areas (Dakota); chewing the root as a stimulant during night travel (Hidatsa warriors). (Also in the *Echinacea* species bed. NF 1916-1950; root and rhizome; infections and inflammation.)

**Rattlesnake master**                      **Native**

*Eryngium yuccifolium*

Apiaceae

This plant's root was used by several Native American tribes to treat snakebite. A tea of the root also was used to treat kidney, bladder, stomach and pulmonary ailments. Cordage made from the yucca-like fiber of the leaves has been found in 10,000-year-old sandals in Ozark caves. (USP 1820-1873; rhizome; expectorant and to induce sweating.)

**Boneset**                                      **Native**

*Eupatorium perfoliatum*

Asteraceae

Eastern North American tribes used boneset for ailments including colds, sore throat, fever, flu and chills. These treatments, adopted by Euro-Americans, made boneset one of the most common 19<sup>th</sup>-century U.S. medicines. Its name refers to its use in treating the "bone-breaking" fever of influenza. (USP 1820-1916, NF 1926-1950; dried leaves, flowering tops; emetic, induce sweating.)

**Flowering spurge**                      **Native**

*Euphorbia corollata*

Euphorbiaceae

Native Americans used the root of flowering spurge to make a tea for the treatment of constipation, rheumatism, pinworms, gonorrhea and urinary diseases. The white sap from the plant was used to treat skin eruptions. (USP 1820-1882; root; emetic and expectorant.)

**Curlycup gumweed**                      **Native**

*Grindelia squarrosa*

Asteraceae

Native Americans made gumweed teas for colds, coughs, bronchitis and asthma, and boiled the flowering heads for a poultice for sores and skin lesions. The sticky resin was used by 19<sup>th</sup>-century physicians for poison ivy treatment and still is used in commercial remedies. (USP 1882-1926, NF 1926-1960; dried leaves, flower heads: asthma, bronchitis, whooping cough; resin: poison ivy.)

**American alumroot**                      **Native**

*Heuchera americana*

Saxifragaceae

Native Americans made a tea from this plant's roots to treat dysentery, diarrhea, stomach pain and hemorrhoids. Alumroot also was regarded as a powerful astringent in both



**Eastern pasqueflower****Native*****Pulsatilla patens***

Ranunculaceae

Native Americans ground the leaves of this plant and inhaled the powder to treat nosebleeds, colds and headaches. The fresh leaves also were used as a poultice for injuries, rheumatism and neuralgia (intermittent pain along a nerve, especially of the head or face). This is the South Dakota state flower. (USP 1882-1905, NF 1916-1947; herb after flowering; to calm nerves.)

**Plants from the 1920s KU Drug Garden planted in honor of L.E. Sayre****Marsh mallow*****Althea officinalis***

Malvaceae

Marsh mallow is native to Africa. It is widely used to treat digestive ailments such as constipation, gastritis and peptic ulcers. The flowers soothe inflamed skin. The name *Althea* is derived from the Greek *altheo*, to cure. A confection made from the root since ancient Egyptian times has evolved into the modern sugary treat.

**Absinth (Wormwood)*****Artemisia absinthum***

Asteraceae

Perhaps best known as the primary herbal ingredient in the original French alcoholic drink absinthe, wormwood (hallucinogenic and now banned in the drink) has a long history of medicinal use. It was commonly used in the past for upset stomach, indigestion, and treatment of liver and gallbladder conditions. Its essential oil, though highly toxic, has strong antibiotic and antifungal effects.

**Lambsquarters****Native*****Chenopodium album***

Chenopodiaceae

Lambsquarters has been widely cultivated by traditional cultures throughout much of the world. The leaves are cooked much like spinach, which is in the same family. The leaves are high in vitamin C and were eaten as medicinal food by Native Americans to prevent and treat scurvy. It is unclear why the plant was included in the 1920s KU Drug Garden.

**Job's tears*****Coix lacryma-jobi***

Poaceae

Job's tears is native to Southeast Asia, where many cultural groups traditionally have boiled the large seeds to make a tea to treat pain, inflammation, cancerous tumors, warts, high blood pressure and other conditions. Its recorded use in Chinese medicine as an anti-inflammatory dates back to 100 A.D. The seeds have been used in cooking, distillation and vinegar production.

## **Foxglove**

### ***Digitalis purpurea***

Scrophulariaceae

Foxglove is native to Europe and was used for centuries to treat epilepsy and edema. In 1775, the English physician William Withering conducted clinical trials that pioneered the use of digitalis to treat congestive heart failure. Foxglove contains the cardiac glycosides digitoxin and digoxin, still used in the pharmaceutical treatment of heart conditions. **This plant is highly toxic.**

## **Cotton**

### ***Gossypium hirsutum***

Malvaceae

The international cotton trade is estimated at \$12 billion annually. Sayre likely wanted students to know where cotton swabs came from, but the plant has a long history of medicinal use. Tea from its roots has been used to ease childbirth by people of many cultures, including Native Americans, Anglo-Americans and African American slaves. (U.S. Pharmacopeia 1820-1875)

## **Rue**

### ***Ruta graveolens***

Rutaceae

Rue is native to the Balkan Peninsula in Europe. It has been used in Europe and by Hispanics in a topical ointment to treat gout, arthritis and rheumatism. Extracts have been used to treat sore eyes and as an insect repellent. It has been used internally as an antispasmodic and a treatment for menstrual problems. Skin contact with the leaves can sometimes cause irritation.

## **Tea and scented medicinal plants**

### **Wild chives**

#### ***Allium schoenoprasum***

Liliaceae

Chives were commonly used by both Europeans and Native Americans to flavor various culinary dishes, but they are lesser known as a mild substitute for garlic in herbal medicine. Chives are thought to be beneficial for reducing high blood pressure and strengthening the kidneys, and oil of chive is strongly antibacterial. They are among the first green foods available in spring.

### **Tarragon**

#### ***Artemisia dracunculus***

Asteraceae

Tarragon is native to much of the Northern Hemisphere. The leaves were used by many Native American tribes to treat arthritis and other joint pains, either by applying a poultice to the skin or steaming the leaves in a sweat bath. A smudge of leaves and

branches was also burned as an insect repellent, and some gardeners use tarragon as a companion plant to deter insects.

### **Sweet fennel**

*Foeniculum vulgare*

Apiaceae

Fennel is native to Eurasia. Its distinctive scent comes from anethole, an aromatic compound also found in anise and licorice, which has potent antimicrobial properties. The seeds have been used to aid digestion and in herbal cough syrups. In Chinese herbal medicine, a poultice of the powdered seeds has been used to heal snakebite. Fennel was used in the alcoholic drink absinthe.

### **Lavender**

*Lavandula angustifolia*

Lamiaceae

Though lavender is better known for its sweet aroma, its tradition of medicinal use dates back to ancient Greece. Lavender oil extract, which has sedative qualities, is rubbed on the skin to treat headaches, insomnia, neuralgia, arthritis and muscle spasms. The plant's name derives from the Latin *lavare*: "to bathe."

### **Lemon balm**

*Melissa officinalis*

Lamiaceae

Lemon balm is native to Southern Europe, where it was traditionally used in a lemony-tasting tea thought to aid longevity, relaxation and sleep. Native Americans adopted its use to treat fevers, chills and colds. The plant's extract has antibacterial and antiviral qualities. Its flowers attract bees, hence the genus name *Melissa*, Greek for "honeybee."

### **Peppermint**

**Native**

*Mentha arvensis*

Lamiaceae

This mint is one of the most commonly consumed herbal teas in North America today. Traditionally, Native Americans and Europeans used mint tea to aid digestion and to treat nausea, colds, coughs, congestion, sore throat and fevers. A poultice of the leaves also was used to soothe painful arthritis, inflammations and toothaches. Please pick a few of the wonderfully scented leaves.

### **Beebalm**

**Native**

*Monarda fistulosa*

Lamiaceae

Beebalm was widely used as a strong mint tea for colds and coughs by Plains tribes (Lakota, Dakota, Omaha, Ponca, Pawnee, Winnebago, Crow, Kiowa and others). The Pawnee had four different "species" named to reflect a variety of smells and tastes, from peppermint-like to oregano-like with a bit of hot spice. (Also in the U.S. Pharmacopeia/National Formulary bed.)

## **Catnip**

*Nepeta cataria*

Lamiaceae

Catnip is native to Europe and has naturalized throughout North America. It has been primarily used for its relaxing properties. It also has been used as tea to treat pain, upset stomach, colds, sore throat, anxiety and sleeplessness, especially for infants and young children, and thus an important plant in pediatric medicine. Of course, cats love it, too.

## **Marjoram**

*Origanum marjorana*

Lamiaceae

Marjoram is native to the Mediterranean region. It is primarily a culinary herb but is often used as an essential oil applied externally for sprains, bruises and sore muscles. Like many herbs, it is high in antioxidants. The dried leaves are taken internally for insomnia, anxiety, headaches, upset stomach and respiratory ailments.

## **Oregano**

*Origanum vulgare*

Lamiaceae

Oregano is native to southwestern Eurasia and the Mediterranean. It has a long tradition of medicinal use for indigestion, headaches, toothaches, rheumatism and severe coughs associated with whooping cough and bronchitis. It is high in antioxidants, and the primary components of its oil are carvacrol and thymol, which have antibacterial properties.

## **Slender mountainmint**

**Native**

*Pycnanthemum tenuifolium*

Lamiaceae

This plant's fragrant leaves and flowers were used by many Native American tribes to make a flavorful tea used for fevers, chills, sore throat, colds and fatigue. Mountainmint tea also was considered a health tonic in Anglo folk medicine. The taste of the leaves varies among plants and through the season, and can become bitter. Please pick a few leaves to smell and taste.

## **Rosemary**

*Rosmarinus officinalis*

Lamiaceae

Rosemary, a well-known culinary herb, is native to the Mediterranean region and was used in traditional European medicine to improve memory and treat indigestion.

Rosemary oil is still used in aromatherapy to improve memory and relieve stress, and is also used topically to treat muscle pain and arthritis.

## **Culinary sage**

*Salvia officinalis*

Lamiaceae

Common sage has a long history of medicinal use in Europe for calming nerves, aiding digestion, and soothing sore throats and coughs. These uses were adopted by Native Americans after the plant was introduced in North America. Clinical trials have shown the plant's therapeutic effects as a treatment for mild to moderate Alzheimer's disease.

**Thyme**

*Thymus vulgaris*

Lamiaceae

In addition to its esteemed culinary qualities, thyme has a long tradition of medicinal use in Europe. It is consumed as tea, inhaled as vapor and applied externally as an oil extract to treat coughs, bronchitis, chest tightness, emphysema, asthma and other lung ailments. Thymol, the primary component of its oil, is a powerful antiseptic.