

# 29 PLANTS THAT MAY SAVE YOUR LIFE



## Table of Contents

Introduction .....	4
Section I: Wild Food Sources .....	5
1: (Curly) Dock.....	8
2: Amaranth .....	11
3: Wild Lettuce .....	14
4: Trout Lily .....	17
5: Jerusalem Artichoke.....	20
6: Hopniss .....	24
7: Maypop.....	27
8: Mayapple .....	30
9: Prickly Pear.....	33
10: Autumn-olive .....	36
11: Common Pawpaw .....	39
12: Acorns .....	42
13: Black Walnuts.....	48
14: White Walnuts .....	51
15: Hazelnuts .....	54
16: American Lotus .....	58
Section II: Natural Sources of Vitamins & Minerals.....	62
17: White Pine .....	65
18: Dandelion.....	67
19: Evening Primrose .....	70
Section III: Natural Health Remedies .....	73
20: Wild Garlic.....	76
21: Great & Common Burdock.....	78
22: Echinacea .....	81
23: Wild Ginger .....	84
24: Wild Licorice.....	86
25: Horehound.....	88
26: Witch Hazel .....	91
27: Jewel Weed.....	93
28: White Willow .....	96
29: Opium Poppy .....	99
Bibliography .....	102

## Introduction

If you ever find yourself in a situation where you are forced to forage for wild foods and/or herbal medicines, then the following chapters contain knowledge that may very well save your life. In fact, they describe 29 essential plants that you definitely need to know about and answers for each plant the five questions: What is it good for? Where do I find it? How do I identify it? How do I prepare it? Can I cultivate it in my garden? Also, each of the 29 plants described in the following chapters were chosen specifically because they provide either essential forms of energy that serves as fuel for the human body, essential vitamins and minerals that prevent certain debilitating conditions such as Beriberi and Scurvy, or serve to replace essential health remedies that we normally keep in our medicine cabinets such as aspirin, antacid, and cough suppressant. Consequently, you may notice that the following book is divided into three, separate, sections that describe wild food sources, natural sources of vitamins and minerals, and plants that serve as natural forms of medicine. Furthermore, you may also notice that the Wild Food Sources section is further categorized by dividing the plants into leafy vegetables, roots, tubers, bulbs, fruits, berries, nuts, and seeds; each of which provides essential vitamins, minerals, fats, proteins, and/or carbohydrates. Also, the Natural Sources of Vitamins and Minerals section specifically lists three, easy to find and identify, plants that provide essential vitamins and minerals that the human body absolutely must have in sufficient quantities to function properly and, the Natural Health Remedies section specifically lists ten common plant species that alleviate common ailments as coughs and upset stomachs as well as replacing antiseptic and antibiotic ointments.

## Section I: Wild Food Sources

Before the invention of farming somewhere around 800 BCE., Man lived in small, nomadic groups known as hunter/gatherers because they lived entirely on what they were able to forage from the land. Therefore, their very survival depended on an intimate knowledge of the land and the seasons as well as the plants and animals that were available to them. Consequently, if you know where to look and what to look for, Nature has provided us with a veritable bounty of edible plant species than can provide us with all of the nutrition we need to remain healthy.

In fact, in a survival situation, the need to find and consume food goes far beyond the need to satisfy your hunger. Therefore, simply finding enough food is only half of the survival equation because you also need to ingest a balanced diet to remain healthy. This, of course, requires that in addition to consuming enough food, you also consume the correct types of foods so that your body not only has enough calories (fuel) to continue functioning and to generate heat, you also gain the nutrition your body needs to remain healthy. Fortunately, Humans have evolved as omnivores (meaning that we can digest both plants and animal flesh) and thus, we can beneficially ingest almost any species in the plant or animal kingdoms. However, "man does not live by bread alone" as the old saying goes and thus, especially when we find ourselves in a survival situation, it is of paramount importance that we consume a variety of foods that provide us with fats, proteins, and carbohydrates, as well as essential vitamins and minerals if we are to remain healthy. Thus, you should also keep in mind the fact that the average person resting in a completely relaxed state requires 70 calories per hour just to maintain their basic, involuntary, bodily functions such as breathing and blood circulation and adding even simple activities such as standing up, sitting down, or walking short distances requires at least another 45 calories per hour. Therefore, without doing any sort of work whatsoever, the average human burns over 2,000 calories per day and adding even mild physical exertion can boost this requirement to upwards of 3,500 calories per day. Consequently, if you find yourself in a survival situation, it is of paramount importance that you keep calm, relax as much as possible, and conserve energy if food is scarce. Thus, plan your foraging missions accordingly.



## Energy Needs

The average human requires a minimum caloric intake of 2,000 calories per day:

Fats -	1gr. produces 9 calories
Proteins -	1gr. produces 4 calories
Carbohydrates -	1gr. produces 4 calories

**Nuts & Seeds** - excellent source of fats and proteins

**Fruits & Berries** - excellent source of sugars (carbohydrates)

**Roots, Tubers, & Bulbs** - excellent source of sugars & starches (carbohydrates)

**Leafy Vegetables** - excellent source of essential vitamins and minerals

### **Fats -**

Fats are molecules that are made by combining carbon, hydrogen, and oxygen atoms and, like carbohydrates, they are a concentrated source of energy. However, it should be noted that fats provide twice the energy of carbohydrates and thus, they are an extremely important source of energy. Also, fats store vitamins and minerals and thus, they are imperative to a balanced hunter/gather diet. In addition, fats serve to heat and insulate the human body, protect organs, lubricate the alimentary tract, and build an energy reserve and they are found in animals, fish, eggs, milk, nuts, and some vegetables and fungi. However, fats are also insoluble in water and thus, they require a lengthy digestive process with an adequate intake of water before they can be absorbed by the human body.

## **Proteins -**

Proteins are highly complex molecules made up of chemical structures known as amino acids combined in thousands of different ways and the human body uses proteins to generate new muscle tissues, heal abrasions and wounds, and repair other physical damage. Also, the main sources of proteins are meat, fish, eggs, milk, nuts, and fungi. However, it should be noted that while meat contains all of the amino acids the human body needs to remain healthy, plants do not unless a sufficient range is eaten. Also, in the event that carbohydrates are missing from the diet, protein is used by the human body to generate energy. But, it should be noted that this is done at the expense of other bodily needs and that it will cause the body to start consuming its own stored fats.

## **Carbohydrates -**

Carbohydrates are molecules synthesized by plants by combining carbon, hydrogen, and oxygen atoms and thus, they are easily converted into energy by the human body and they do not require a large intake of water to digest. Also, carbohydrates are the main source of energy for the human body and thus, they serve to supply the fuel needed for running the nervous system, maintaining internal functions, producing heat, and performing physical exertion. In addition, consuming carbohydrates prevents a condition known as Ketosis which consists of indigestion, nausea, and vomiting caused by the excessive breakdown of body fats during starvation. Furthermore, it should be noted that there are two different types of carbohydrates which consist of sugars that are found in fruits (and certain plants like Sugar Cane) and starches that are found in grains, roots, tubers, and bulbs. However, it should also be noted that carbohydrates lack vitamin B and that overconsumption may cause constipation.

**Note:** Starch granules are insoluble in cold water but, heat causes them to rupture and this is why roots, tubers, and bulbs are always cooked before consumption as a food source.

## 1: (Curly) Dock

(leafy vegetable)



### **Value As a Forage Food -**

The Dock plant (*Rumex spp.*) is a green, leafy, flowering, weed that is abundant throughout North America and is easy to identify. Also, its greens are high in vitamins and minerals A, E, C, K, iron, magnesium, manganese, calcium, folic acid, carotenoids, and Omega 3 fatty acids. In addition, they are high in fiber which helps to keep your digestive system working properly and, they contain antioxidants which help prevent cell damage and cell mutations.

### **Where it Can Be Found Naturally -**

The many different species Dock plant are quite common throughout North America except in desert regions but Curly Dock (*Rumex crispus*) is one of the best known species and it is also one of the most abundant. In addition, Dock has a distinct preference for open, sunny, areas, and moist, cultivated, or disturbed soils such as pastures, fallow fields, field edges, and fence rows. Thus, highly productive agricultural regions will always have a high density of Dock available.

### How to Identify it -

Curly Dock is a perennial that grows to a height of 1 ft. to 5 ft. and which produces a rosette of large, long, slim, lance-shaped, green, leaves up to 20 in. in length with distinctly wavy edges (aka "crisped" by botanists). In addition, as the plant matures, it produces a long, slim, cone-shaped, flowering, stalk upon which green flowers bloom. Also, it should be noted that there are several different species of the Dock plant in North America and, although all species of the Dock plant (*Rumex*) are edible, their taste ranges from highly palatable to extremely bitter with a slightly lemony taste.



### How it Should Be Prepared -

The leaves of the Dock plant are the most often eaten part of the plant and they are prepared either in a salad as a green vegetable similar to lettuce or steamed or stewed and eaten as a green similar to spinach or mustard. Also, because the flavor of this plant varies so widely, it should be noted that there is a technique that you can employ to ensure that you are harvesting a palatable species of Dock. So, assuming that you are looking at a Dock plant (*Rumex*), look for long, narrow, leaves with a smooth surface texture and no red or purple anywhere on the leaf, midvein, or petiole. Also, look for the lightest green petiole. Then, sample a portion of the leaf before harvesting.

**Note:** Dock leaves are best harvested in the spring when the leaves are still curled into a tube.



**How it Should Be Stored -**

Wild, green, leafy, vegetables cannot be preserved for long periods without modern refrigeration unless they are canned.

**Can You Grow it in Your Garden? -**

Yes, the Dock plant can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Dock has a distinct preference for open, sunny, areas, and moist, cultivated, or disturbed soils and thus, it does well in well light, freshly tilled, flower beds and gardens with well drained soil.

## 2: Amaranth

(leafy vegetable)



### **Value As a Forage Food -**

The Amaranth plant (*Amaranthus spp.*) is a green, leafy, flowering, weed that is abundant throughout North America and is easy to identify. Also, its greens are high in vitamins and minerals A, E, C, K, iron, magnesium, manganese, calcium, folic acid, carotenoids, and Omega 3 fatty acids. In addition, they are high in fiber which helps to keep your digestive system working properly and, they contain antioxidants which help prevent cell damage and cell mutations.

### **Where it Can Be Found Naturally -**

Amaranth ranges throughout North America and has a distinct preference for open, sunny, areas, and moist, cultivated, or disturbed soils such as pastures, fallow fields, field edges, and fence rows. Thus, highly productive agricultural regions will always have a high density of Amaranth available.

### **How to Identify it -**

The Amaranth plant is an annual that can grow to a height of 8 ft. and which displays green, ovate, lanceolate, spoon-like, or diamond-shaped leaves with non-serrated, wavy, edges usually measuring 2 in. to 5 in. in length. In addition, they also display spinney or bristly spikes or spike-like clusters at the ends of their ends of their branches that range from 2 1/2 inches to 12 inches in length which makes them easy to identify. Also, it should be noted that there are just under forty species of Amaranth in North America and, although all species of the Amaranth plant (*Amaranthaceae*) are edible, their taste ranges from highly palatable to extremely bitter.



### **How it Should Be Prepared -**

Both the leaves and stems of the Amaranth plant are eaten and, although the leaves can be eaten in a salad as a green vegetable similar to lettuce, the leaves and tender portions of the stem are usually steamed or boiled and eaten as a green similar to spinach or mustard. In addition, it should be noted that the dried seeds of the Amaranth plant have been used as a grain by many indigenous peoples. To harvest Amaranth seeds, wait until late summer or early fall after the plants have produced their seeds and began to die and then grasp the seed head with your hand and rub the seeds off; catching them in a container. Then, after the seeds have dried completely, they will need to be rubbed again to loosen the husks and then winnowed to remove the chaff.

**How it Should Be Stored -**

Wild, green, leafy, vegetables cannot be preserved for long periods without modern refrigeration unless they are canned.

**Can You Grow it in Your Garden? -**

Yes, the Amaranth plant can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Amaranth has a distinct preference for open, sunny, areas, and moist, cultivated, or disturbed soils and thus, it does well in well light, freshly tilled, flower beds and gardens with well drained soil.

### 3: Wild Lettuce

(leafy vegetable)



#### **Value As a Forage Food -**

The Wild Lettuce plant (*Lactuca canadensis*) is a green, leafy, flowering, perennial that is abundant throughout North America and is easy to identify. Also, its greens are high in vitamins and minerals A, E, C, K, iron, magnesium, manganese, calcium, folic acid, carotenoids, and Omega 3 fatty acids. In addition, they are high in fiber which helps to keep your digestive system working properly and, they contain antioxidants which help prevent cell damage and cell mutations.

#### **Where it Can Be Found Naturally -**

Both common species of the Wild Lettuce plant (*L. canadensis* and *L. biennis*) are found throughout North America in wooded regions where the soil has been disturbed. Also, they are commonly found in forested river bottoms, adjacent to roads and trails, along the edges of woods, and in shaded, fallow, fields.

#### **How to Identify it -**

Wild Lettuce (aka Yellow Lettuce) is a biennial that grows to a height of approximately 3 ft. and which produces a rosette of large, long, slim, lance-shaped, green, leaves up to 10 in. in length



with distinctly lobed edges. Also, as the plant matures, it produces a dandelion-like head from which the flowers bloom. In addition, all parts of the plant turn light orange-brown upon exposure to the air. Last, It should be noted that there are several different species of the Wild Lettuce plant throughout North America and that the leaves of this plant appear very similar to the Dandelion plant (which is edible as well).



#### **How it Should Be Prepared -**

The leaves of the Wild Lettuce plant are the most often eaten part of the plant and, when harvested at the correct stage, there is no other wild green that more closely resembles the taste of cultivated Romaine lettuce. Thus, they are most often prepared as a salad green similar to lettuce. Therefore, look for clusters of light, green, upright, leaves in the late spring or early summer because they become increasingly less palatable as they mature.

#### **How it Should Be Stored -**

Wild, green, leafy, vegetables cannot be preserved for long periods without modern refrigeration unless they are canned.

#### **Can You Grow it in Your Garden? -**

Yes, the Wild lettuce plant can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Wild Lettuce

has a distinct preference for open, sunny, areas, and moist, cultivated, or disturbed soils and thus, it does well in well light, freshly tilled, flower beds and gardens with well drained soil.

#### 4: Trout Lily (bulb)



##### **Value As a Forage Food -**

The Trout Lily plant (*Erythronium spp.*) is a green, leafy, flowering vine that is abundant throughout North America and is easy to identify. Also, its bulbs are high in both sugars or starches (depending on the time of year they are harvested) which the human body converts to carbohydrates.

##### **Where it Can Be Found Naturally -**

Trout Lily is widespread throughout the U.S. and Canada and is found in areas with rich, moist, soil. Therefore, it grows abundantly in the Eastern Woodlands, the Rocky Mountains, the Pacific states, and the wetter parts of the Great Plains. The eastern species are typically found in mature hardwood forest and the flood plains of creeks and small rivers. However, the western species are found in hardwood forests at lower elevations, in open woodlands at higher elevations, in alpine meadows, and on talus slopes.

### How to Identify it -

Trout Lily is a spring ephemeral (meaning that is usually gone by mid-summer) flowering plant that displays one or two basal leaves that typically measure 3 in. to 7 in. in length and 1 in. to 2 1/2 in. wide with a conspicuous crease running down the center. Also, it displays non-serrated, lanceolate or elliptical shaped, dull green, leaves that taper at both ends. In addition, when the leaves first emerge, they display mottled, curvy, grayish-purple, spots and streaks (hence the name *Trout Lily*) which fade as the leaves mature. Last, non-flowering plants typically have only one leaf whereas flowering plants typically have two. When it finally flowers, it produces a single blossom on a scape that measures 4 in. to 8 in. in length which grows directly from the base of the plant and it produces either white or yellow flowers with six, strongly recurved, petals with conspicuously protruding stamens and the scape takes a sharp turn at the top such that the flower either faces sideways or hangs slightly downward. The bulbs are teardrop-shaped and are about the size of a human fingernail (appear similar to a scallion or a wild onion) with a brownish coloring on the outside and a thin skin that peels off to reveal a white interior like an onion.



### How it Should Be Prepared -

Both the leaves and the bulbs of the Trout Lily plant (*Erythronium spp.*) are edible but, it should be noted that the Iroquois Indians used the leaves of this plant to prevent conception and consumption of the leaves may be responsible for miscarriages in pregnant mothers. However, the bulbs are a rare delicacy in the vegetable world people who try them for the first time often comment that it is the best tasting vegetable they have ever eaten. But, it should also be noted

that when harvested in the early in the spring, they are tender, sweet, and crunchy because they contain large quantities of sugars yet, when harvested in the fall, they are harder and starchy tasting instead of being sweet because the plant has converted its sugars to starches. Thus, they are usually eaten raw if harvested in the spring and either steamed, boiled, or sautéed in butter if harvested in the fall.

### **How it Should Be Stored -**

Wild tubers are best eaten fresh but, they can be stored for short periods in a dark, cool, dry place (such as a root cellar). However, they have a tendency to wither as they dehydrate. Therefore, to prevent dehydration, it is wise to place them in a bucket of *moist* (not wet) sand and then place the bucket in a cool, dark, dry place.

### **Can You Grow it in Your Garden? -**

Yes, the Trout Lily plant can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Trout Lilies require partial shade and thrive beautifully in cool woodland settings but do very poorly in hot, semi-arid, or arid locations. However, if you lack a woodland garden, then they will grow in flower beds as long as they are kept reasonably cool and provided with dappled sunlight. To successfully plant trout lily in the garden, plant them in early fall in moist, but well-drained, humus-rich, soil and place the base of the bulb 3 inches below the surface (may require a depth up to 6 inches in colder climates) and space them 5 to 6 inches apart if you're planting them in clumps. Last, Trout Lily tubers multiply each year and can be propagated by removing the small tubers from the ground and dividing them as part of your Trout Lily plant care.



## 5: Jerusalem Artichoke (tuber)



### **Value As a Forage Food -**

The Jerusalem Artichoke (*Helianthus tuberosus*) is one of the best known wild vegetables in North America and it appears as a green, leafy, flowering, weed that is abundant throughout the U.S and is easy to identify. Also, its tubers are high in starches/sugars which the human body converts to carbohydrates.

**Note:** Jerusalem artichoke also provides you with Thiamin, Iron, Phosphorus, Potassium.

### **Where it Can Be Found Naturally -**

Jerusalem Artichoke is widespread in North America east of the Mississippi River and it ranges from southern Canada to the Gulf of Mexico and from the Great Plains to the East Coast.

However, it is most abundant in the center of this range and can be found as an escaped or introduced species in parts of the western U.S. Like most wild tubers, the Jerusalem Artichoke prefers to grow in sandy river bottoms, floodplains, lake edges, creek sides, and wet areas where there is plenty of sunlight and where the soil is sand, loamy sand, or sandy loam.

**Note:** Commonly found growing adjacent to Hopniss.

### **How to Identify it -**

The Jerusalem Artichoke is a member of the Sunflower family and they are tall, green, leafy plants with a single, straight, round, unbranched (except occasionally near the top), stalk, usually measuring 1/2 in. to 3/4 in. in diameter which is covered with short, stiff, raspy, hairs which remain after the plant dies in the fall. Also, the leaves of the Jerusalem Artichoke commonly measure 4 inches to 10 inches in length and are spear-shaped with finely serrated edges, display a distinct crease down the center, and are covered with the same, short, stiff, raspy, hairs as the stem. Also, they display a two, prominent, secondary veins on each side of the midvein originating at the base but stopping at the midpoint to form a distinct "u" shape. In addition, the leaves on the lower section of the stalk are positioned opposite but are sometimes positioned alternate near the top. Furthermore, they produce large flower heads the usually measure 2 inches to 3 inches in diameter which look like miniature sunflowers except that the discs in the center are yellow instead of black and are much smaller. Also, each plant produces four to eight of these flowers in a loose group. The tuber of the Jerusalem Artichoke usually measures 2 inch to 5 inches in length and are produced at the end of horizontally spread rhizomes radiating from the stalk. In addition, the tuber has a smooth skin with except for constriction rings and is gray, light brown, or cream in color but which sometimes display a reddish hue.



### **How it Should Be Prepared -**

Jerusalem Artichoke can be dug at any time of the year but, they are not fully ripe until late fall, winter, or early spring; harvested at any other time of the year, they will be hard, bitter, and full of the indigestible starch inulin. Also, they are quite famous for causing *extreme* flatulence when ingested before the advent of cold weather causes them to convert their starches to simple sugars. Therefore, they should not be consumed during the late spring through early fall months. Also, because of their flatulent properties, they should be cooked for one to six hours (depending on the time of year they are harvested) to convert any inulin they contain to simple sugars before consumption and they can be cooked by either steaming, boiling, or baking. Last, they have a highly palatable, almost buttery, flavor.

### **How it Should Be Stored -**

Wild tubers are best eaten fresh but, they can be stored for short periods in a dark, cool, dry place (such as a root cellar). However, they have a tendency to wither as they dehydrate. Therefore, to prevent dehydration, it is wise to place them in a bucket of *moist* (not wet) sand and then place the bucket in a cool, dark, dry place.

### **Can You Grow it in Your Garden? -**

Yes, the Jerusalem Artichoke can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, all tubers need loose, moist, soil to grow in if they are to reach their maximum size. Therefore, make

certain that the soil you plant your Jerusalem Artichokes in is loose, deep, and rich and a pH of between 5.8 and 7.0 is best. Next, plant tubers 5” deep with 24” between each and make the rows approximately 3 feet apart. Also, try to keep the soil slightly moist because soil that is too dry or too wet is not helpful to this plant and you should find Jerusalem Artichokes growing in your garden bed within 4 weeks.

**Note:** Large tubers can be cut into smaller segments and planted. Also, to help this vegetable survive the winter (it will be dormant), cut the flower stalks off at the ground level. Then, cover them with a healthy dose of mulch to help protect from freezing winter temperatures. In the Spring, remove the mulch.

## 6: Hopniss (tuber)



### **Value As a Forage Food -**

The Hopniss plant (*Apios americana*) is a green, leafy, flowering vine that is abundant throughout eastern North America and is easy to identify. Also, its tubers are high in starches which the human body converts to carbohydrates.

### **Where it Can Be Found Naturally -**

Hopniss is widespread in eastern North America. It grows from southern Canada to the Gulf of Mexico and from the Great Plains to the East Coast. The favored habitat of this herb is sandy river bottoms, floodplains, lake edges, creek sides, and brushy wet areas. It thrives in full to partial sunlight. Common associates include swamp white oak, elderberry, poison ivy, and riverside grape. Hopniss, like most river-floodplain species, is adapted to both well-drained and very wet conditions. The most vigorous stands of it that I know of are in spring seepage areas with very loose, dark soil.



### **How to Identify it -**

Hopniss is a vigorously growing herbaceous vine that wraps around shrubs, small trees, and larger vines. It also sprawls across low vegetation and open ground. The vines grow from ten to twenty feet each season, dying back in the fall. The stems are thin and fragile-looking, about one-eighth inch in diameter or less, and thinly covered with very small hairs. Hopniss vines do not climb with tendrils (the coiled, thread-like branches that support grape and many other vines.) Instead, the entire vine of hopniss twines around and sprawls over its supports. Often, the vines grow profusely and form large, dense tangles. Hopniss tubers range from the size of a grape to the size of a grapefruit. They range in shape from spherical to extremely elongated to amorphous and knobby. Most commonly they are about one inch thick, one and a half inches long, and roughly egg-shaped. Tubers in their first year are generally rather smooth and light yellowish or reddish brown, with thin skin. Their surface shows scattered lenticels (like the eyes of potatoes) oriented perpendicular to the rhizome. On older tubers these lenticels develop into knobs, which grow erratically and sometimes become enormous. The skin on older tubers turns thick and leathery. A milky latex soon appears on damaged parts of the plant.



### **How it Should Be Prepared -**

Hopniss can be dug at any time of the year, provided that the ground is not frozen. Also, it should be noted that while sometimes the tubers will be right on the ground's surface, they are most often buried one to four inches deep (and sometimes they are as much as eight inches deep). Therefore, start by locating a vine and following it to the point where it enters the soil. Then, pry up a large scoop of dirt, loosen the dirt from around any tubers or rhizomes, then

follow them with your hands as far into the soil as you can before breaking them off. When there is a thick growth of the vines, you can simply dig anywhere within the patch. Once gathered, the fresh tubers can be baked whole or cut up and steamed or boiled.

### **How it Should Be Stored -**

Wild tubers are best eaten fresh but, they can be stored for short periods in a dark, cool, dry place (such as a root cellar). However, they have a tendency to wither as they dehydrate. Therefore, to prevent dehydration, it is wise to place them in a bucket of *moist* (not wet) sand and then place the bucket in a cool, dark, dry place.

### **Can You Grow it in Your Garden? -**

Yes, Hopniss can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, all tubers need loose, moist, soil to grow in if they are to reach their maximum size. Therefore, make certain that the soil you plant your Hopniss in is loose, deep, and rich and a pH of between 5.8 and 7.0 is best. Next, plant tubers 5" deep with 24" between each and make the rows approximately 3 feet apart. Also, try to keep the soil slightly moist because soil that is too dry or too wet is not helpful to this plant and you should find Hopniss growing in your garden bed within 4 weeks.

**Note:** Large tubers can be cut into smaller segments and planted. Also, to help this vegetable survive the winter (it will be dormant), cut the flower stalks off at the ground level. Then, cover them with a healthy dose of mulch to help protect from freezing winter temperatures. In the Spring, remove the mulch.

## 7: Maypop (fruit)



### **Value As a Forage Food -**

The Maypop plant (*Passiflora incarnata*) is a green, leafy, flowering, vine that is most abundant in the Southeastern region of North America and is easy to identify. Also, its fruits are high in sugars which the human body converts to carbohydrates for use as a quick fuel source.

### **Where it Can Be Found Naturally -**

Maypop is most abundant in the southeastern region of the U.S. but, it does range from central Missouri to Texas east to the Atlantic coastal states. The favored habitat for this vine is brushy, overgrown, fields, forest edges, thickets, ditches, roadsides, and fencerows. In fact, Maypops display a distinct preference for fences and they seem to be more common along major highways than rural roads.

### **How to Identify it -**

Maypop is a perennial herbaceous vine that displays rough, slightly hairy, green stems that are usually less than 1/3 of an inch in diameter but, mature vines can reach as much as thirty feet in length and they cling to their support structure with long, coiling, tendrils. Also, they display large, green, tri-lobed leaves with finely serrated edges measuring 3 inches to 5 inches in both length and width and the leaves are placed alternately along the vine. Also, they are slightly hairy and have a rough texture. In addition, the Maypop plant produces some of the most striking blossoms to found in Nature and they consist of a ring of ten, white, sepals and petals 2 inches to 3 inches in diameter under a sunburst of thin, wavy, pink or purple, tendrils and in the center, there are five, yellow, cross-like anthers in a circle beneath three, arching, styles with enlarged stigmas. Furthermore, the fruit of the Maypop is appears as a large, green, egg-shape usually 1 to 2 1/2 inches in length suspended from the main vine on a short stem. Last, when the fruit first appears, it is dark green in color with a smooth skin but, as it ripens, it turns yellowish and become wrinkled and the interior contains a lining of soft, white, spongy, material which surrounds numerous, teardrop-shaped, flattened, seeds with a pitted surface that are contained in a small sack of yellowish pulp.



### **How it Should Be Prepared -**

Although the fruit of the Maypop is edible as soon as they appear in the spring, they are best harvested in late fall after the pods have turned yellow and become wrinkled which usually happens in October or November. After harvesting, tear open the outer rind and remove the pulp sacks surrounding the seed and place them in your mouth where you simply suck off the pulp. Also, the pulp sacks can be pressed and the juice collected and ingested as beverage.

**How it Should Be Stored -**

This particular fruit is best eaten fresh. However, seed sacks could be separated and then they *could* be set out to dry in the sun.

**Can You Grow it in Your Garden? -**

Yes, Maypop vines can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, they should be planted in early Spring and they prefer locations where they will receive dappled to full sunlight. Also, they will adapt to most well-drained soils and in the Spring, the soil should be kept evenly moist to ensure good flowering and growth.



## 8: Mayapple (fruit)



### **Value As a Forage Food -**

The Mayapple plant (*Podophyllum peltatum*) is a green, leafy, flowering weed that is abundant in the Eastern region of North America and is easy to identify. Also, its fruits are high in sugars which the human body converts to carbohydrates for use as a quick fuel source.

### **Where it Can Be Found Naturally -**

Mayapple is most abundant in the Eastern region of the U.S. and it ranges from central Canada to Texas east to the Atlantic coastal states. The favored habitat for this vine is mature hardwood forest with rich soil and dappled sunlight. Therefore, it is often found growing beneath stands of Oak, Hickory, or Ash but, it is found most abundantly in small clearings within hardwood forest. Also, it can be found at the edges of forests, occasionally used pastures with scattered trees, and along roads and banks.

### How to Identify it -

Like the Maypop plant, the Mayapple (*Podophyllum peltatum*) is a highly distinctive woodland forage food and thus, it is easy to identify. It is a ground-hugging, flowering, perennial, plant only reaching 12 inches to 24 inches in height with a single, smooth, round, straight, stalk that only produces a single leaf or branches once and produces two leaves (the plants with a single leaf never produce blooms but, the plants with two leaves do produce blooms). Also, the leaves of the Mayapple are large, shinny, light green, leaves measuring 9 inches to 16 inches wide and each leaf displays a group of 4 to 9 lobes arraigned around a solid center; each of which is sometimes divided into two, smaller, lobes and each leaf is coarsely serrated. In addition, the plants with two leaves produce a single flower on a stem 1 inch to 1 1/2 inches long that protrudes from the fork in the main stem and display 6 to 9 waxy, white, petals (about 2 in. in diameter) that contrast sharply with the bright yellow stamens in the center. However, it should also be noted that the flowers, when present, are hidden by the leaves. After, pollination, the flowers produce a single, lemon-shaped, fruit with a smooth, green, skin 1 inch to 3 inches in length. When ripe, the fruit will turn light yellow and have a smooth skin or brownish-yellow and have a wrinkled skin and inside of the tough, leathery, rind is a light yellow, semi-fluid, pulp mixed with many seeds whose taste many people describe as "ethereal".

**Note:** Mayapples tend to grow in enormous colonies that sometimes create patches of shin-high leaves that hide the ground from view.



### **How it Should Be Prepared -**

Please note that the fruit of this plant *is the only edible part*. All other parts of this plant are considered **highly** toxic and should not be consumed! However, the ripe fruit of this plant is considered to be perfectly safe to ingest. Also, it should be noted that unripe Mayapples will be green and feel hard to the touch but, as the fruit ripens, it grows noticeably softer and they develop a distinctly pleasant aroma. In addition, as the fruit ripens, the skin becomes thinner and the taste improves drastically. Thus, nearly ripe Mayapples are good whereas, fully ripe Mayapples are awesome. Last, Mayapples will ripen further after collection if they are left for a few days at room temperature. To consume them, simply tear open the skin and eat the fresh pulp or squeeze them and collect the juice for consumption as a beverage.

### **How it Should Be Stored -**

This particular fruit is best eaten fresh. However, seed sacks could be separated and then they *could* be set out to dry in the sun.

### **Can You Grow it in Your Garden? -**

Yes, Mayapple plants can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it should be noted that they do not do well in dry, arid, climates unless special conditions are provided. For instance, Mayapples can be grown in both sunny and lightly shaded areas of the garden and they prefer a moist, rich, acidic, soil with a pH of 4 to 7. Also, Mayapples can either be grown from either rhizomes or from seeds. Thus, if you are growing them from rhizomes, bury them about 1 inch deep. The seeds should be fresh and sown into flats, under glass, in a shaded part of the garden in august or September. Seeds can take from one to six months to germinate. Once you see seedlings let them grow for a year; transplant to individual pots and allow the Mayapple to grow for a further year, then transplant into the garden in spring or autumn.

## 9: Prickly Pear (fruit)



### **Value As a Forage Food -**

The Prickly Pear plant (*Opuntia spp.*) is a green, leafy, flowering cactus that is most abundant in the Southwestern region of North America and is easy very to identify. Also, its fruits are high in sugars which the human body converts to carbohydrates for use as a quick fuel source.

### **Where it Can Be Found Naturally -**

Although commonly thought of as a Southwestern plant, Prickly Pear cacti can surprisingly be found throughout the lower forty-eight states and even into parts of southern Canada due to the fact that some species are specifically adapted to warm climates while others are adapted to areas with extremely cold winters. However, all species require locations with intense sunlight and dry soil and thus, they are most commonly found in deserts, on dry, open slopes at mid to low elevations in the West and in sandy or gravelly soil on the Great Plains. Also, in the East, they can sometimes be found growing on sand dunes, sand barrens, open areas of very course, well drained, soil, and rocky outcroppings; especially on steep, south-facing, slopes.

### **How to Identify it -**

Although there are many different species of Prickly Pear cactus (all of which produce edible fruit), they all display green, oblong or rounded, flat, paddle-like, pads that are covered with rows of sharp spines and which are fused to one another to form upright, tree-like, structures or trailing chains upon the ground. Also, while some species may only reach a few inches in height, others can reach to over eight feet and the colonies in which they grow can cover an extensive amount of ground. In addition, the pads bear large, yellow, orange, or reddish flowers (depending on species) along the upper rims of healthy, terminal, pads. Last, the pads also bear a red to purplish colored, pear-shaped, fruit that not only displays spines of its own, they also harbor areoles on their surface that bear glochids which are tiny, almost invisible, barbed spines that detach easily and imbed in the skin when touched.



### **How it Should Be Prepared -**

Although the pads, flowers, and fruits of this plant can be eaten, the fruit is the most commonly consumed part.

**Prickly Pear fruit** - Because the fruits have areoles that contain glochids, they should be picked only with gloves on or using a pair of tongs. Then, once collected, they must be scrubbed to remove the glochids from the areoles and then, they can either be sliced in half and the pulp scooped out or they can be peeled and eaten raw. Also, once peeled, the fruits can be pressed and the juice collected for consumption as a beverage.

**Prickly Pear pads** - Because the pads also have both spines and areoles that contain glochids, they too should be picked only with gloves on or using a pair of tongs. Then,

once collected, use a knife to remove the spines from the pads and then scrub the pads vigorously against the direction of the aureoles and glochids and then wash them to remove the glochids from the surface of the pads. Last, new pads can be eaten with the skin on but, older pads must be peeled before consumption. Then, after peeling, they can either be sliced into sections and eaten raw cooked with other foods. Last, in their raw state, they have a taste somewhat similar to Bell Peppers with the tang of Purslane.

### **How it Should Be Stored -**

This particular fruit is best eaten fresh. However, it can be peeled and sliced and then placed in the sun to dry in order to create a portable, preserved, snack.

### **Can You Grow it in Your Garden? -**

Yes, Prickly Pear cacti can be cultivated in gardens and flowerbeds throughout the lower 48 states provided that it is given the correct soil and light conditions. However, they grow best in hot, arid, or semi-arid, locations. For instance, they prefer locations in full sunlight and they prefer poor, well-drained, soils and thus, a half-and-half mix of soil and sand is good for planting prickly pear pads. Also, propagation from pads is relatively quick and quite simple since the pads are actually specialized, flattened, stems. Start with six month old pads that have been removed from a mother plant and set them out in a dry area for about a week to form a callus on the cut end. Once the callus has formed, plant the pad in soil about 2 inches deep and it will form roots in about a month. During this time, it needs support and should not be watered. However, it can be watered after it reaches the point where it will stand on its own.

## 10: Autumn-olive (berry)



### **Value As a Forage Food -**

The Autumn-Olive plant (*Elaeagnaceae umbellata*) is a green, woody, flowering, deciduous, shrub that is endemic to China but which is abundant throughout the U.S. and Canada and it is very easy to identify. Also, its fruits are high in sugars which the human body converts to carbohydrates for use as a quick fuel source.

**Note:** analysis has shown that, ounce for ounce, the typical autumn olive berry is up to 17 times higher in Lycopene than the typical raw tomato (80-90 per cent of the US intake of this nutrient comes from tomatoes and tomato products). In addition, they also contain high levels of vitamins A, C and E, as well as flavonoids and essential fatty acids.

### **Where it Can Be Found Naturally -**

Autumn-Olive is most abundant in the Eastern region of the U.S. and is quite likely *the most abundant edible, wild, fruit in this region*. However, it ranges from southern Canada to Texas and both east and west to the Atlantic and Pacific coastal states. However, it does not survive in extreme cold and thus, it is absent from the northern Plains and the higher elevations of



mountainous regions. Also, it grows in both open areas with bright sunlight and sparse hardwood and pine forest with dappled shade and is extremely drought tolerant. In addition, it prefers locations with poor or eroded soils and thus, it can be found in most any soil deprived area but seems to especially prefer hilly country that has been overgrazed and rocky, sandy, or gravelly locations where the soil is naturally poor.

### **How to Identify it -**

The Autumn-Olive appears as a large, bushy, shrub originating from several, small, gnarled, strongly arching, trunks with arching branches whose tips often reach the ground and they can reach a height of 15 ft. Also, the limbs display sharp, spinney, thorns and bear, alternate, elliptical, or oval-shaped, leaves with a dull, dark green, color on top and a distinctly silvery underside that usually measure 2 to 3 inches in length with non-serrated, often wavy, edges. In addition, the bark of this shrub is smooth and grayish-green on the smaller trunks but peels in long, thin, narrow, strips on older trunks. Plus, the both the leaves and twigs are covered in tiny, silvery, flakes or scales. Furthermore, the limbs produce large numbers of small, dull, yellow, flowers in clusters and each flower consists of four petals joined at the base to form a tube. Last, the fruit first appears a small, round, dull, light colored, clusters of green berries that plump up and turn bright red-orange with silvery flakes when they ripen in the Fall.



**How it Should Be Prepared -**

The berries of the Autumn-Olive shrub can be eaten raw immediately after harvest or they can be pressed and the juice collected for consumption as a beverage. Also, they can be placed in the sun to dry in order to create a portable, preserved, snack.

**How it Should Be Stored -**

This particular fruit is best eaten fresh. However, it can be placed in the sun to dry in order to create a portable, preserved, snack. Also, the dried berries can be mixed with cooked or dried, ground, meat and melted animal fat which is then formed into cakes or balls and dried in the sun to create a high energy food called pemmican which will keep for several months without spoiling.

**Can You Grow it in Your Garden? -**

Yes, Autumn-olive shrubs can be cultivated in yards throughout the lower 48 states provided that they are given the correct soil and light conditions. In fact, they are very easy to cultivate because they grow well in poor soils and do well in location that receive either full or partial sunlight. In fact, once established, about all they need is adequate water.

## 11: Common Pawpaw (fruit)



### **Value As a Forage Food -**

The Pawpaw plant (*Asimina triloba*) is a green, woody, flowering, deciduous, tree that is abundant throughout eastern North America and is easy very to identify. Also, its fruits are the largest edible fruits indigenous to the U.S. and they are high in sugars which the human body converts to carbohydrates for use as a quick fuel source.

### **Where it Can Be Found Naturally -**

The Pawpaw tree (aka Common Pawpaw) is native to the Eastern, Southern, and Midwestern United States and adjacent southernmost Ontario, Canada, from New York west to southeastern Nebraska, and south to northern Florida and eastern Texas. Also, Pawpaws do best in deep, fertile soil that is moist, but well-drained, and slightly acidic. Consequently, they commonly grow in floodplains and shady, rich, bottomlands, where they often form dense colonies of understory trees in mature forest which often appear as a patch or thicket of individual, small, slender, trees.

### **How to Identify it -**

The Pawpaw tree is a woody, deciduous, flowering tree that often appears narrowly conical and which commonly reaches a height of 12 to 20 feet. Also, Pawpaw trees are a small, slender,

shade-loving, tree with large, dark green, alternate, spirally arranged, obovate-oblong (spear-shaped), drooping, leaves with non-serrated edges that measure up to 12 inches in length and 4 inches to 5 inches in width which lends the Pawpaw tree a somewhat tropical appearance. However, in autumn, the leaves turn a rusty yellow which makes it possible to spot pawpaw groves from a long distance. Also, the flowers of the Pawpaw tree are 1 in. to 2 in. in diameter and are a deep redish-purple or maroon when mature and display three sepals with six petals. In addition, the fruit of the Pawpaw tree is a large, yellowish-green to brown, berry with a smooth skin 2 inches to 6 inches long and 1 to 3 inches wide containing several brown seeds 1/2 to 1 inch in diameter embedded in the soft, edible, fruit pulp. Last, the conspicuous fruits begin developing after the plants flower and although they are initially green, they turn yellow or brown when they ripen in the Fall.



### **How it Should Be Prepared -**

The fruit of the Pawpaw tree can either be eaten fresh from the tree after being sliced open and de-seeded or they can be pressed and the juice collected for consumption as a beverage.

**How it Should Be Stored -**

This particular fruit is best eaten fresh. However, it can be peeled, deseeded, and sliced and then placed in the sun to dry in order to create a portable, preserved, snack.

**Can You Grow it in Your Garden? -**

Yes, Pawpaw trees can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Pawpaws prefer rich, moist, well-drained, soil that has a slightly acidic to neutral pH. Also, it should be noted that Pawpaw trees can't pollinate themselves, so you will need two different types of trees to produce fruit and, to further complicate matters, the insects that pollinate Pawpaw trees are neither abundant nor efficient so, you may have to fertilize the flowers by hand to get a good crop. Therefore, when you can see a brown ball of anthers with yellow pollen grains in the flowers, it is time to gather the pollen. Then, use a small, soft, artist's paintbrush to transfer the pollen from one tree to the stigma inside the flowers of another tree (the stigma is most receptive when the pistils are green and glossy and the anthers are hard and green). Last, because most flowers contain several ovaries, each flower results in more than one fruit. Therefore, it is important not to over-fertilize the flowers because if you do, you'll have to thin the fruit to prevent the branches from breaking under the weight.

## 12: Acorns (nut)



### **Value As a Forage Food -**

The Oak tree (*Quercus spp.* & *Lithocarpus spp.*) is a green, woody, flowering, deciduous, tree or shrub that is abundant throughout the entire U.S. and is easy very to identify. Also, the acorn it produces is quite possibly the most abundant nuts in North America and thus, it is an important wild food source for foragers. Furthermore, its nuts contain starches which the human body converts to carbohydrates for use as a quick fuel source as well as some essential oils.

### **Where it Can Be Found Naturally -**

The Oak tree can be found throughout North America and ranges from southern Canada to northern Mexico and from the West Coast to the East Coast. Also, the Oak tree is a sun loving, tree and thus, it generally prefers to grow in open areas and it can be found in habitats ranging from lowland swamps to high, rocky, mountain ridges, to semi-arid deserts. In addition, it is also a major component of mature Eastern hardwood forest where it is often the dominate tree.

### **How to Identify it -**



There are over 90 species of Oak tree growing in North America and all of them produce an edible acorn. Also, it should be noted that although the various species of Oak tree differ greatly in size, shape, and appearance and, even though their leaves also differ greatly in appearance, the acorns of all species are easily recognizable. For instance, from the time that the nuts first appear to the time that they ripen in late Summer to early Fall, the nuts are all green in color with a distinct, brown, cap that may encompass only the butt of the shell, the entire shell, or somewhere in between. Also, the outer husks or "caps" of each species range from knobby to hairy while the inner shell remains smooth. In addition, the inner shell ranges in shape from squat and rounded to round and elongated with a distinct tip at one end and, unlike the shells of other nuts, they remain pliable until the nut dries. Plus, as the nut ripens in the Fall, the inner shells turn from green to colors ranging from light tan to dark brown to dark burgundy and, when the nut is ripe and the outer husk separates from the inner shell, the nut displays a distinct disk of course, pithy-looking, material. Furthermore, the nuts range in size from 1/2 inch to 3/4 inches in diameter 1/2 inch to 2 inches long and contain a fleshy meat.



### **How it Should Be Prepared -**

Although acorns can be eaten fresh from the tree, most species are bitter due to tannin contained in the nut. Therefore, the preferred method of consuming acorns is to make flour out of them and then leech the tannin by soaking flour in water.

Also, when collecting acorns, it is important to note the presence or absence of acorn weevils. The adult members of this Family of weevils uses its long snout to bore a hole in the acorn into which it deposits eggs and, when the larvae hatch, they immediately proceed to consume the



acorn seed. Then, they bore an exit hole in the shell and make their way into the leaf litter on the forest floor where they mature into the next year's generation. Also, it is important to note that although some species of these weevils feed exclusively on acorns, others attack chestnuts, hazelnuts, and other species. But, they also make excellent fish bait. Therefore, it is important to note that there are certain, simple, techniques that you can employ to differentiate "wormy" acorns and other nuts from good ones. The first step in determining whether or not a particular acorn is a "good" one is to look for defects in the shell. For instance:

- **Exit hole** - this is an obvious sign that the nut was infested and that the seed has been consumed.
- **Attached cup** - if the nut must be pulled or pried from its husk it is attached. When a weevil infests a healthy nut while it is on the tree, the tree senses the invasion and ceases to supply that nut with water and nutrients and consequently, the nut is dropped from the tree before the natural separation of husk and shell occurs.
- **Dark spots** - both the shells and the disks of acorns can display dark spots where an adult weevil has probed an acorn. However, they most often do so on the disk because that part of the acorn is softer than other parts of the shell and these spots appear as faint spots or tiny holes at regular intervals along the periphery of the disk.
- **Dark zones** - when a weevil infects an acorn, often times a dark area will appear on the disk and/or the shell where a weevil larva has eaten part of the seed and thus caused a bacterial infection. These dark areas are may be minute or they may encompass as much as a third of the shell and they may range from a little darker than the rest of the shell or to nearly black.
- **Bulging or sunken disk** - the disk of most acorns is either naturally flat, slightly concave, or slightly convex. Therefore, if the disk is sunken abnormally deep or abnormally distended compared to other acorn from the same tree, then it is a bad acorn.
- **Shell or disc separation** - Although the shell is tightly boned to the disk, occasionally they may separate. Therefore, a shell separation occurs when the shell has peeled away from the disk at one or more points resulting in flap of loose shell and a disk separation occurs when the internal pressure inside of an acorn pushes the disk away from the shell or when the acorn was pulled out of cap to which it was attached.

- **Rippled bottom** - the part of an acorns shell immediately adjacent to the disk (bottom) is often slightly rippled. But, an extreme or exaggerated ripple often indicates a bad acorn.
- **Old acorn** - nuts left over from the previous year will have a dull brown or gray color and contain only a dark sludge.
- **Sprouting acorns** - sprouting acorns with healthy white or green tips indicate a healthy acorn with no insect infestation. However, sprouting acorns with black tips indicate an acorn that has died due to an insect infestation.

The second technique you can use to determine whether or not a particular acorn is a "good" one is to use the float test. Because good acorns are heavier than water they will sink when placed in a container of water. But, any that float are bad because when the weevil larva eats the seed and the cavity becomes large enough, the nut becomes lighter than water. Thus, discard any acorns that float as well as any that remain suspended between the surface and the bottom. However, please note that this test only works on freshly harvested nuts and not those that have been stored for a while.

Furthermore, when shelling fresh acorns, the nuts are far more easily removed from their shells if the nuts are heated first. This can be accomplished by "flash roasting" them or by immersing them in a pot of boiling water for about 20 seconds. Then, crack the nuts and remove the meat while the nut is still warm. To crack the shells, lay the nuts out in rows after heating and strike them with a wooden baton or a hammer stone but do not smash them. Once the meat has been separated from the shell, the brown layer that covers it must also be removed because it is very high in tannin (a chemical that makes food taste bitter). To accomplish this, if the skin is loose, then simply rub it between your thumb and index finger to remove it. But, if it is not loose, then immerse the shelled nuts in water for five to ten seconds, stir them vigorously, and then drain them which will cause the skin to become loose. Then, once the nuts have dried, the skin can be easily rubbed off.

Next, acorns should be leached to remove the tannin before they are eaten. In fact, inadequately leaching acorns inevitably leads to an unpalatable product and yet, it is the most common mistake when preparing acorns. Furthermore, it should be noted that there are two different methods of leaching acorns; one of which uses hot water and the other of which uses cold water. However, it should also be noted that the two methods produce two entirely different

food products. Hot leeching is meant mainly for larger pieces such as quarters and halves and involves vigorously boiling the acorn pieces in a pot on a heat source for 30 to 60 minutes and then changing the water and boiling again and repeating the process up to fifteen times until the acorn pieces are no longer bitter to taste (when they are done, they will be a dark, chocolate, brown). Cold leeching on the other hand involves soaking the acorns in cold water with numerous water changes which, although it takes longer, produces a more nutritious product because the nut retains more of its starches, vitamins, and minerals. To complete this step, first dry the shelled and cleaned acorns and then pulverize them into a powder using a mortar and pestle.

Last, although there are many different ways to consume leached acorns, one of the most practical methods for survivalists is to add hot leached acorn pieces to meat and vegetables in either a stew or a stir-fry. Also, the hot leached pieces can be dried and ground into a meal but, because hot leached acorn meal will not stick to itself, it must be mixed with wheat flour for baking. On the other hand, cold leached acorn flour will stick to itself and thus, it can be used by itself for baking. In fact, two of the most practical ways for survivalist to prepare cold leached acorn meal is to make a sort of flat bread by spreading a thin layer of acorn meal dough in a pan and then heating first one side and then the other until the center is done or you can thin the dough down with water to form a paste then spread very thin sheets in a heated pan and cook until hard to create acorn-meal chips.

### **How it Should Be Stored -**

Acorns can be sun dried and stored in their shells or they can be removed from their shells and then dried in the sun for long term storage in a dark, cool, dry place

### **Can You Grow it in Your Garden? -**

Yes, Oak trees can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Oak trees should be planted in a location that provides at least eight hours of direct sunlight, good air ventilation, and nutrient-rich soil with a pH between 3.6 and 7.0 (depending on species). Also, it should be noted that the average,

mature, oak tree will consume more than 50 gallons of water per day and therefore, young trees should be watered regularly to help establish a deep taproot which will allow the tree to draw water from the ground between rainfalls.

### 13: Black Walnuts (nut)



#### **Value As a Forage Food -**

The Black Walnut tree (*Juglans nigra*) is a green, woody, flowering, deciduous, tree that is abundant throughout most of the eastern U.S. and is easy very to identify. Also, its nuts contain fats which provide the fuel (calories) the human body need to maintain involuntary functions and to provide energy for physical exertion as well as the proteins it needs to generate new muscle tissues, heal abrasions and wounds, and repair other physical damage.

#### **Where it Can Be Found Naturally -**

Black Walnut trees can be found throughout most of the Eastern and Great Plains woodlands and ranges from Vermont to South Dakota to Texas to Florida. Also, Walnut trees are a sun loving, pioneer species (meaning that it like to colonize open ground), that prefers rich, mesic, soil in established forests and locations just above the flood plain adjacent to creeks and rivers and thus, it prefers to grow in young, mixed, hardwood forest and especially those that have been disturbed by either logging or windstorms. Also, it is often found along forest edges, in abandoned fields, and along fencerows where it can get plenty of sunlight.

### **How to Identify it -**

The Black Walnut tree is a medium sized tree that commonly grows to a height of 40 ft. to 80 ft. and has a dominate, single, trunk. Also, on the younger trees, the bark is smooth but, on older trees, the bark becomes fissured into distinct, separate, wavy, ridges (like a Butternut). In addition, the leaves of the Black Walnut tree grown on long stems measuring 18 inches to 32 inches in length and the leaves are spear-shaped with finely serrated edges that commonly measure 2 to 4 inches in length and which are arraigned alternately on the long branches in groups of 13 to 21 leaves. In addition, the branches bear both male and female flowers on the same twigs and the male flower appear as small, green, catkins. Furthermore, the fruit appears as a large, round, dark green, fruit measuring 1 1/2 inches to 3 inches in diameter with a moist, fleshy, outer hull that clings to the inner shell like the flesh of a fruit (makes them appear very similar to limes) and does not separate into sections. Furthermore, the flesh of this nut is smooth and hard at first but, as the nut ripens in the fall, the flesh will turn yellowish and, after the nut falls from the tree, the flesh will turn black and become mushy. Plus, when the outer husk is removed, the nut displays a highly wrinkled surface very similar to a peach pit. Last, they are usually produced in clusters of 3 to 7 nuts but, the clusters can contain significantly more or less than that.



### **How it Should Be Prepared -**

After harvesting, it is best to remove the outer hulls from the shells immediately while they are still somewhat yellowish rather than waiting until the outer hull turns black and becomes mushy because the ink created by the rotting hulls can seep into the shell and taint the meat. This is done by placing them on a hard surface and then striking the other end with a mallet (a short section of tree branch or a rock also works well). Then, the shells must be cracked using the same method in order to remove the kernels from the shells. Once separated from their shells, Butternuts can either be eaten fresh after being shucked from their protective sheath and shell or shucked from their sheath and roasted in their shells and then eaten.

### **How it Should Be Stored -**

Walnuts can be sun dried and stored in their shells or they can be removed from their shells and then dried in the sun for long term storage in a dark, cool, dry place

### **Can You Grow it in Your Garden? -**

Yes, Black Walnut trees can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Walnut trees should be planted in a location that provides at least eight hours of direct sunlight, good air ventilation, and nutrient-rich soil with a pH between 6.5 and 7.5 (depending on species). Also, Walnut trees grow best in soil that is deep, fertile, and moist, but also well-drained. Plus, the soil should be at least 30 inches deep before bedrock, gravel, or hardpan restricts root growth and the soil texture should be sandy loam, loam, silt loam, or silty clay loam. Last, Walnut requires at least 25 inches of precipitation (35+ inches is optimum) and 140 frost-free days (170+ days is optimum) per year.



## 14: White Walnuts (nut)



### **Value As a Forage Food -**

The Butternut tree (*Juglans cinerea*) is a green, woody, flowering, deciduous, tree that is abundant throughout most of the eastern U.S. and is easy very to identify. Also, its nuts contain fats which provide the fuel (calories) the human body need to maintain involuntary functions and to provide energy for physical exertion as well as the proteins it needs to generate new muscle tissues, heal abrasions and wounds, and repair other physical damage.

### **Where it Can Be Found Naturally -**

The Butternut tree (aka White Walnut) can be found throughout most of the Eastern Woodland except for the Southern Atlantic and Gulf Coastal Plains and ranged farther north than any other member of the walnut/hickory family in North America. Also, Butternut is a sun loving species and thus, it prefers to grow in young, mixed, hardwood forest and especially those that have been disturbed by either logging or windstorms. In addition, it seems to have a distinct preference for dry, limestone, ridges, rich, loamy, sand, and river valleys just above the flood plain. Also, it is an effective colonizer and thus, it is often found along forest edges, in abandoned fields, and along fencerows where it can get plenty of sunlight.

### **How to Identify it -**

The Butternut is a medium sized tree that commonly grows to a height of 40 ft. to 80 ft. and is frequently found in clusters of 2 or 3 trunks growing from a central location. Also, on younger trees, the bark is smooth but, on older trees, the bark becomes fissured into separate, wavy, ridges. In addition, the leaves of the Butternut tree are spear-shaped with finely serrated edges that commonly measure 3 to 4 inches in length and which are arranged alternately on the branches in groups of 11 to 17 leaves each and they often have a light yellow-green color which makes them easy to spot at long distances. In addition, the branches bear both male and female flowers on the same twigs and while the male flower appear as small, green, catkins, the female flowers are small and reddish with two, long, appendages and they occur in small clusters. The fruit appears as a large, dark green, nut with a moist, fleshy, outer hull (makes them appear similar to miniature coconuts) that is covered in sticky, reddish-brown hairs that measures 2 inches to 3 1/2 inches long and slightly less in diameter and which has an elongated shape coming to a point on one end. Plus, they are usually produced in clusters of 3 to 7 nuts but, the clusters can contain significantly more or less than that.



### **How it Should Be Prepared -**

After harvesting, it is best to remove the outer hulls from the shells immediately by standing them on end on hard surface and then striking the other end with a mallet (a short section of tree branch or a rock also works well). Then, the shells must be cracked using the same method in

order to remove the kernels from the shells. Once separated from their shells, Butternuts can be consumed fresh and, while they have a very soft texture, their taste is reminiscent of bananas and vanilla ice cream.

### **How it Should Be Stored -**

Butternuts can be sun dried and stored in their shells or they can be removed from their shells and then dried in the sun for long term storage in a dark, cool, dry place

### **Can You Grow it in Your Garden? -**

Yes, Black Walnut trees can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. For instance, Walnut trees should be planted in a location that provides at least eight hours of direct sunlight, good air ventilation, and nutrient-rich soil with a pH between 6.5 and 7.5 (depending on species). Also, Walnut trees grow best in soil that is deep, fertile, and moist, but also well-drained. Plus, the soil should be at least 30 inches deep before bedrock, gravel, or hardpan restricts root growth and the soil texture should be sandy loam, loam, silt loam, or silty clay loam. Last, Walnut requires at least 25 inches of precipitation (35+ inches is optimum) and 140 frost-free days (170+ days is optimum) per year.

## 15: Hazelnuts

(nut)



### **Value As a Forage Food -**

The Hazelnut shrub (*Corylus spp.*) is a green, woody, flowering, deciduous, shrub that is abundant throughout the northern U.S. and is easy very to identify. Also, in many parts of it range, it is the only edible nut. Furthermore, its nuts contain fats which provide the fuel (calories) the human body need to maintain involuntary functions and to provide energy for physical exertion as well as the proteins it needs to generate new muscle tissues, heal abrasions and wounds, and repair other physical damage.

### **Where it Can Be Found Naturally -**

There are two species of Hazelnut in North America: the American Hazelnut (*Corylus americana*) and the Beaked Hazelnut (*Corylus cornuta*). Also, the American Hazelnut (*Corylus americana*) can be found from southeastern Saskatchewan to Maine south to Arkansas and east to South Carolina but is most common it the prairie border region where well drained soil combines with sufficient moisture and sunny weather. In addition, it is a frequent understory shrub in dry forests and especially stands of oak, hickory, or pine and it often grows profusely after the cessation of logging operations, forest fire, or storms have opened up the forest canopy.

However, it also thrives in pine barrens and on steep slopes, rocky ridges, abandoned fields, forest edges, fencerows, and railways. Whereas, the Beaked Hazelnut (*Corylus cornuta*) ranges from Newfoundland to southern British Columbia and across the north U.S. extending southward along the Appalachian Mountains to central Georgia and along the Cascade Mountains to central California. Also, Beaked Hazelnut primarily inhabits younger forest with lots of open spaces and especially those consisting of Birch, Aspen, Oak, or Pine but, it also grows along forest edges, fencerows, and abandoned fields.

### **How to Identify it -**

The Hazelnut bush grows in clumps ranging from six to forty or so "trunks" that are typically 3/4 inches and 2 inches in diameter and the individual stem are straight and seldom branch below their mid-point and their limbs tend to be crooked and lean to the side. Also, the bark is gray in color and medium-smooth in texture lacking scales, plates, or peeling sections. In addition, the leaves are arranged alternately and are oval shaped and measure 2 inches to 5 inches long and approximately two-thirds as long with doubly or irregularly toothed and finely serrated edges. In addition, the nuts are born in tight clusters near the tips of the branches and are about 1/2 inch in diameter. Plus, they are contained in a protective sheath of two modified leaves and are an attractive light brown when they ripen in late summer. Furthermore, the two American species of Hazelnut can be differentiated by the differences in their nuts. For instance, the American Hazelnut is contained in a involucre that consists of two ruffled halves that are narrowest near the nut whereas, the Beaked Hazelnut involucre is wrapped tightly around the nut and extends to form a tapering "beak" 1 to 2 inches in length. Also, the American Hazelnut's sheath is covered in sticky hairs whereas the sheath of the Beaked Hazelnut is covered with tiny spines.



### **How it Should Be Prepared -**

The nuts produced by the Hazelnut shrub can either be eaten fresh from the bush after being shucked from their protective sheath and shell or shucked from their sheath and roasted in their shells and then eaten.

### **How it Should Be Stored -**

Hazelnuts can be sun dried and stored in their shells or they can be removed from their shells and then dried in the sun for long term storage in a dark, cool, dry place

### **Can You Grow it in Your Garden? -**

Yes, Hazelnut shrubs can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. But, it should be noted that they although they can withstand temperatures down to about 16 degrees Fahrenheit, hazelnut trees are best grown in

warmer climates where the summer season is at least six months long each year. Also, because Hazelnut shrubs are a pioneer species, they should be planted in a location that provides plenty of direct sunlight and well-drained, but not particularly rich, soil with a neutral to slightly acidic pH. Also, it should be noted that unlike other fruiting trees, the hazelnut tree blooms and pollinates in the middle of winter. Wind carries the pollen from catkins (male flowers) to small red female flowers, where pollination occurs. The flowers remain inactive until spring, when fertilization completes and the nuts begin to develop. However, it should also be noted that some Hazelnut shrubs produce only male flowers whereas other Hazelnut shrubs produce only female flowers. Therefore, both male and female plants are required for pollination and subsequent nut production.



## 16: American Lotus (seed)



### **Value As a Forage Food -**

The American Lotus plant (*Nelumbo lutea*) is a green, flowering, lily that is abundant throughout the eastern U.S. and is easy very to identify. Furthermore, its seeds contain 60% starches which the human body converts to carbohydrates for use as a quick fuel source as well as some essential oils and 15% proteins which our bodies use to generate new muscle tissues, heal abrasions and wounds, and repair other physical damage.

### **Where it Can Be Found Naturally -**

The American Lotus lily is native to the eastern U.S. and can be found ranging from Canada to Florida and as far west as Texas, Oklahoma, and western Iowa. Also, the American Lotus seems to prefer to grown in shallow ponds, lakes, sloughs, bayous, and rivers where the water is warm and the bottom is somewhat firm and grows in water depths ranging from a few inches to ten feet.

### **How to Identify it -**

American Lotus is a perennial flower that appears similar to the Water Lily but there are significant differences. For instance, the leaves of the American Lotus are dark green and round in shape with wavy, non-serrated, edges and have no cut-out. Also, the leaves of the American Lotus can reach as much as 3 ft. in diameter and they are born on a single, hollow, stalk. In addition, the leaves can float on the surface of the water when the plant grows in deep water or rise anywhere from a few inches to six feet above the surface when it grows in mud flats. In addition, each leaf is born on a single, unbranched, hollow, stalk that can measure as much as 1 inch in diameter that has dark projections similar to tiny feathers protruding from its surface. Plus, the leaves are covered with microscopic hydrophobic hairs that enable them to float and cause water to bead like mercury on the surface of the leaf. Complementing their distinctive leaves, the American Lotus lily has large, light creamy-yellow, flowers that range in size from 4 inches to 10 inches in diameter that open in the morning and close at night and only last two days. Furthermore, in the center of the flower is a receptacle shaped like a funnel holding several pistils. However, after the flower has been pollinated, the petals and sepals fall off and the receptacle broadens to a diameter of 5 to 6 inches to contain fifteen to twenty-five nuts the size of acorns. Then, as the seeds ripen and the seedheads dry out and turn brown, the seeds shrink inside of their individual chambers and while some fall out, some remain trapped inside of the seedhead, turn dark brown, and become hard as stones.



### **How it Should Be Prepared -**

Although the seeds of the American Lotus are the most commonly consumed part, this plant also produces a large, edible, tuber. In addition, it should be noted that like other nuts, the seeds of this plant do not ripen until late Summer or early Fall and the plant's tubers are best when harvested during this period as well. To harvest the seeds, simply break off the dry seedheads and then flex them, tear them, or crush them to remove the ripe seeds. Once the seeds have been separated from the seedheads, their shells must be cracked and the meat removed from the shells. To crack the shells, lay the nuts out in rows and strike them with a wooden baton or a hammer stone but do not smash them. Also, the kernels should appear to have a light, creamy, color and any that don't are probably spoiled and should be discarded. Then, once the meat has been removed from the shell, it can be eaten raw, boiled, or roasted. In addition, the shelled seeds are sometimes dried in the sun and ground into a meal and then used for baking the same way that acorns are.

### **How it Should Be Stored -**

American Lotus seeds are best stored dried in their shells and will keep for many months in this state if they are kept in a cool, dark, dry place after they are dried.

### **Can You Grow it in Your Garden? -**

Yes, the American Lotus lily can be cultivated in water gardens and ponds throughout the lower 48 states provided that it is given the correct soil and light conditions. The American lotus is a water plant that has large, round, leaves; the first of which floats on the water and can be as much as 1 foot wide. Also, the plant normally blooms from July through September and can be left in the water year round, as long as it is below the freeze line. To grow American Louts plants, harvest the seeds from a healthy plant and then rub the surface of the seed with sand paper until the top layer of the seed has been removed in one spot. Then, place the seed in cup of water that is at least 70° F in a warm, undisturbed location where the water temperature will not drop below 70° F. Next, replace the water daily to keep bacteria to a minimum and watch the lotus seed over the next few weeks as it nearly doubles in size before it splits open and a seedling

emerges. Next, mix 2 parts potting soil to 1 part compost and place in a flower pot with *no drain holes* to within 3 inches of the top and then make a depression in the soil and set the seedlings roots in. Then, gently push the soil around the roots and water until the seed is covered to a depth of about 1 inch and place the container in a sunny window where the plant will get at least 4 hours of sunlight a day. Once the leaves have formed, the water level should be kept to just under the leaves. Once the leaves have spread to about two inches in diameter, transplant the seedling to its final place in your water garden by scoop the aquatic soil around the seedling from its current location in the container and placing the seedling and soil ball securely in the soil of the water garden making sure the garden's water level is consistent with that of the container. Last, American lotus flowers should be given an aquatic fertilizer once a month 30 days after germination. Once leaves begin to fade, remove them to allow new growth. In cold areas where the pond is likely to freeze over it is important to cover the pond in the winter to stop it from freezing.

## Section II: Natural Sources of Vitamins & Minerals

Of the forty or so different vitamins, the human body absolutely requires sufficient intake of about a dozen them in or order to prevent such debilitating conditions as Beriberi, Pellagra, Scurvy, and Rickets and it requires the intake of certain minerals to enable the body to continue functioning properly. Fortunately, Vitamin D (prevents rickets) is synthesized whenever the skin is exposed to sunlight and Vitamin K (contracts muscles) can be synthesized by bacteria in the digestive tract. But, the other essential vitamins and minerals such as Vitamin A (necessary for eye health) must be obtained from the foods we eat.

- Beriberi is caused by a lack of thiamine (aka vitamin B1)
- Pellagra is caused by a lack of niacin (aka vitamin B3)
- Scurvy is caused by a lack of ascorbic acid (aka vitamin C)
- Rickets are caused by a lack of calciferol (aka vitamin D2) and cholecalciferol (aka vitamin D3)

### **Vitamins -**

Vitamins are chemical compounds that are essential to the proper functioning of the human body and preventing illness and there are about a dozen which are essential to good health in humans.

### **Minerals -**

Minerals are elements such as iron, potassium, calcium, phosphorus, and iodine that the human body requires to function properly. For instance, calcium is needed to create, repair, and strengthen bones and teeth, potassium is needed to contract muscles (including your heart), and iodine is needed to make thyroid hormones for healthy growth and development.

## Plant Preparations -

It should be noted that the plants used for herbal medicine are generally most potent when in flower and thus, it is best to harvest them at this time. Also, it should be noted that herbal plants are generally prepared in one of five different ways consisting of expressed juices, poultices, splinting agents, infusions, and decoctions. However, it should also be noted that often times, different parts of a plant are used for different purposes. For instance, infusions are usually made from leaves or flowers and decoctions are usually made from the roots. In addition, you should always prepare poultices, infusions, and decoctions from raw materials immediately prior to use and never keep them for more than 12 hours.

- **Expressed Juices** are used to treat abrasions, cuts, and rashes and are made by crushing the stems and leaves of a plant to a juicy pulp and then applying only the juice to a wound and the pulp to the infected area around the wound.
- **Poultices** are used to treat bruises, sprains, rashes, abrasions, and cuts, and are made by crushing the entire plant into a juicy pulp and then forming it into a flat pad which is then placed directly on the injury and covered with a large leaf or two and then bound into place.
- **Tisanes (aka infusions)** are used to treat ailments internally and are made by crushing the leaves and/or flowers into a juicy pulp (or by drying and grinding them) and then pouring approximately 20 ounces of boiling water over approximately one ounce of herb to create a tisane which is then consumed orally once it has cooled.
- **Tinctures (aka decoctions)** are used to treat ailments internally and are made by cutting, scraping, and crushing the roots of a plant into a pulp (or by drying and grinding them) and then pouring approximately 1 1/2 pints of boiling water over approximately two ounces of herb to create a tisane which is then boiled until the volume has been reduced by one third.
- **Extracts** are merely tinctures that have been reduced to either an essential oil or a dried powder and thus, they are a more concentrated form than tinctures.
- **Salves** are used to treat bruises, sprains, rashes, abrasions, and cuts, and are made by mixing either the dried and powdered form of the plant or the extract with a combination

of heated olive oil, beeswax, and vitamin E (acts as a preservative) to create a remedy for topical use.

**Note:**

- **Drying & Powdering** - Because most herbal remedies are best prepared immediately prior to use, a common way to store and transport them is to harvest them when they are in bloom (when they are the most potent) and then dry and crush them into a powder which can later be used to create poultices, tisanes, tinctures, extracts, and salves.
- **Splinting Agents** are plants that contains so much starch that they will form a hard shell when properly prepared and allowed to dry. Thus, they are also used to hold poultices in place as well as to help immobilize splinted limbs. They are made by crushing, boiling, and reducing the roots of the Comfrey plant or Solomon's Seal and the resultant is allowed to cool and then packed around the injury.



## 17: White Pine

(vitamins A & C)



### **Nutritional Value -**

The White Pine tree (*Pinus strobus*) is an evergreen tree that is abundant throughout the northeastern U.S. and is easy very to identify. Furthermore, a tisane made from its leaves will supply you with vitamins A & C.

### **Where it Can Be Found Naturally -**

The White Pine tree (aka Eastern White Pine) is endemic to the eastern U.S. and ranges from Canada to central Illinois and Iowa east to New Jersey and south along the Appalachian Mountains into northern Georgia. Also, white pine seems to grow best in locations with sandy, well-drained soil but it can also be found growing in sandy loams as long as the location is well drained.

### **How to Identify it -**

White Pine is a long-leaved evergreen tree that grows to a height of 150 ft. Also, its needles are long, green, cylindrical, have a whitish cast to them (hence the name), and are arranged in bundles of five leaves. In addition, this tree produces cylindrical cones that can measure up to 8 inches in length.



### **How it Should Be Prepared -**

The leaves of the White Pine tree can be prepared as a tisane and consumed as a beverage in order to ingest the beneficial vitamins and minerals it contains. Also, both the resin and the resin rich knots from this tree can be boiled and to create a tincture for use as a natural remedy for sore throats, coughs, and colds.

### **Can You Grow it in Your Garden? -**

Yes, White Pine tree can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, White Pines grow fastest in the open and prefers locations with medium to fine soil texture, medium to high soil fertility, and a soil layer that is moist most of the time and deeper than 18 inches. Also, you should avoid extremes of heavy, continually wet, soils and gravelly, drought-prone, soils and thus, White Pines grow well on slopes, hilltops, or shoulders of hills and thus, you should avoid potholes, bases of slopes, v-shaped valleys, or small openings in dense forest that favor the collection of cool, moist, air.

## 18: Dandelion

(vitamins A, C, D, & B complex)



### **Nutritional Value -**

The Dandelion plant (*Taraxacum officinale*) is a flowering perennial weed that is abundant throughout the temperate regions of the U.S. and is easy very to identify. Furthermore, a tisane made from the flowers or leaves of this plant will supply you with vitamins A, C, D, and B complex.

**Note:** all parts of the dandelion plant can also be eaten as a green, leafy, vegetable.

### **Where it Can Be Found Naturally -**

Dandelions are found throughout the entire temperate zone of North America and they grow mainly in fallow fields but can also be found growing alongside roads, ditches, and most any other place flowering plants and weeds are able to grow.

### **How to Identify it -**

Dandelion is a biennial flowering plant that grows to height of 2 in. to 18 in. and has a single, hollow, stalk that bears green, lance-shaped leaves with jagged, irregular, edges and yellow, composite, flowers with numerous rays.



### **How it Should Be Prepared -**

The flowers of the Dandelion plant can be used to make a delicate herbal tisane which is consumed as a beverage in order to ingest the beneficial vitamins and minerals it contains. In addition, the leaves and/or roots of this plant can be used to make a more pungent tisane.

**Note:** All parts of the Dandelion plant are edible but, because the leaves become bitter later in the year due to heat and lack of moisture, Dandelions are best planted in shaded areas and harvested early in the year. Furthermore, Blanched, inner dandelion leaves are the sweetest. To blanch dandelions, tie up or band the leaves of the entire plant and the inner leaves will turn white and sweet.

### **Can You Grow it in Your Garden? -**

Yes, Dandelions can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Dandelions prefer locations

with plenty of direct sunlight and, although Dandelions will grow in poor soils, they grow best in rich, well-drained, slightly acid, soils with a pH of 5.5 to 7 and should be watered at least once a week (more often during periods of draught).

## 19: Evening Primrose

(minerals K, Mg, & Fe)



### **Nutritional Value -**

The Evening Primrose plant (*Oenothera biennis*) is a flowering biennial weed that is abundant throughout the temperate regions of the U.S. and is easy very to identify. Furthermore, a tisane made from the flowers or leaves of this plant will supply you with the minerals Potassium (K), Magnesium (Mg), and Iron (Fe).

**Note:** many native North American cultures consumed Evening Primrose as a staple food. In fact, the leaves can be eaten fresh, steamed, or boiled as a green, leafy, vegetable and the roots can be cooked and eaten as if they were a tuber.

### **Where it Can Be Found Naturally -**

Evening Primrose is found throughout the entire temperate zone of North America and it grows mainly in fallow fields but can also be found growing alongside roads, ditches, and most any other place flowering plants and weeds are able to grow.

**How to Identify it -**

Evening Primrose is a biennial flowering plant that grows to height of 1 ft. to 8 ft. with a single, branching, stalk that, during its first year, displays a non-flowering basal rosette of leaves. During its second year, this plant bears long, slim, lance-shaped, green leaves on thick stalks and bright yellow, bugle-shaped, flowers about 1 inch long on arching stems with fruit that appears as oblong, liner, four-sided, pods with a downy covering about 1/2 inch to 1 inch in length which contains black seeds with sharp edges.

**How it Should Be Prepared -**

The flowers, stems, or roots of the Evening Primrose plant can be used to make a stimulating herbal tisane which is consumed as a beverage in order to ingest the beneficial vitamins and minerals it contains.

**Can You Grow it in Your Garden? -**

Yes, Evening Primrose can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Evening Primrose prefers lightly shaded locations and, although it will grow in poor soils, it grows best in rich,



well-drained, slightly acid, soils with a pH of 5.5 to 7 and should be watered at least once a week and more often during periods of draught.

### Section III: Natural Health Remedies

Herbs are defined as any plant that is used for fragrant, flavor, or medicinal purposes and Man has been successfully using herbs for medicine for untold centuries. However, with the advancement of modern medicine, herbal medicine has fallen by the wayside partly because it is often thought of as folklore and thus less effective than modern medicine and partly due to conditioning by the major drug companies who want us to purchase their processed and patented pharmaceuticals instead of naturally available medicines. Therefore, as a survival prepper, the two choices available to you are to either stockpile common modern medicines (all of which have an expiration date and some of which are dangerous to take beyond that point) or to take advantage of Nature's cornucopia of natural medicines. In fact, over 40% of the prescription drugs sold in the United States today contain at least one ingredient that is derived from Nature and as many as 25% contain an ingredient derived from a flowering plant. However, due to the structure of patent law in America today, even when modern pharmaceuticals do incorporate natural plant substances, the manufacturer often subjects them to various processes in order to extract single, isolated, chemical components instead of taking advantage of the complex mix of chemical compounds contained in the plant naturally. On the other hand, in many developing countries such as China and India, herbal medicine is widely accepted as both a safe and effective means of treating many medical conditions and many of their traditional herbal cures have been vindicated by modern science. Therefore, in the following section, you will find information on various herbal medicines that can be found in Nature and which were specifically chosen to duplicate the effects of common modern medicines that most people keep on hand in their medicine chests such as aspirin, antacid, antihistamines, and antibiotics. Furthermore, it is important to keep in mind that when we are in the field, our bodies are especially susceptible to minor injuries such as cuts, scrapes, and abrasions which can quickly become infected if not treated as well as colds and flu which can develop into pneumonia. Consequently, having a thorough knowledge of the following herbal medicines will not only serve to replace the pharmaceuticals you keep in your medicine chest in the event that they suddenly become unavailable, it will provide you with a means of treating yourself in the field when necessary.

## Plant Preparations -

It should be noted that the plants used for herbal medicine are generally most potent when in flower and thus, it is best to harvest them at this time. Also, it should be noted that herbal plants are generally prepared in one of five different ways consisting of expressed juices, poultices, splinting agents, infusions, and decoctions. However, it should also be noted that often times, different parts of a plant are used for different purposes. For instance, infusions are usually made from leaves or flowers and decoctions are usually made from the roots. In addition, you should always prepare poultices, infusions, and decoctions from raw materials immediately prior to use and never keep them for more than 12 hours.

- **Expressed Juices** are used to treat abrasions, cuts, and rashes and are made by crushing the stems and leaves of a plant to a juicy pulp and then applying only the juice to a wound and the pulp to the infected area around the wound.
- **Poultices** are used to treat bruises, sprains, rashes, abrasions, and cuts, and are made by crushing the entire plant into a juicy pulp and then forming it into a flat pad which is then placed directly on the injury and covered with a large leaf or two and then bound into place.
- **Tisanes (aka infusions)** are used to treat ailments internally and are made by crushing the leaves and/or flowers into a juicy pulp (or by drying and grinding them) and then pouring approximately 20 ounces of boiling water over approximately one ounce of herb to create a tisane which is then consumed orally once it has cooled.
- **Tinctures (aka decoctions)** are used to treat ailments internally and are made by cutting, scraping, and crushing the roots of a plant into a pulp (or by drying and grinding them) and then pouring approximately 1 1/2 pints of boiling water over approximately two ounces of herb to create a tisane which is then boiled until the volume has been reduced by one third.
- **Extracts** are merely tinctures that have been reduced to either an essential oil or a dried powder and thus, they are a more concentrated form than tinctures.
- **Salves** are used to treat bruises, sprains, rashes, abrasions, and cuts, and are made by mixing either the dried and powdered form of the plant or the extract with a combination

of heated olive oil, beeswax, and vitamin E (acts as a preservative) to create a remedy for topical use.

**Note:**

- **Drying & Powdering** - Because most herbal remedies are best prepared immediately prior to use, a common way to store and transport them is to harvest them when they are in bloom (when they are the most potent) and then dry and crush them into a powder which can later be used to create poultices, tisanes, tinctures, extracts, and salves.
- **Splinting Agents** are plants that contains so much starch that they will form a hard shell when properly prepared and allowed to dry. Thus, they are also used to hold poultices in place as well as to help immobilize splinted limbs. They are made by crushing, boiling, and reducing the roots of the Comfrey plant or Solomon's Seal and the resultant is allowed to cool and then packed around the injury.

## 20: Wild Garlic

(antiseptic/antibiotic)



### **What it's Used For -**

The root bulbs of Wild Garlic plant (*Allium vineale*) contain both a powerful antiseptic and an antibiotic compound. Therefore, the bulbs are usually crushed and applied externally for cleansing wounds. Also, they can be ingested orally for treatment of colds, sinus congestion, earaches, stomach aches, and headaches as well as for reducing fevers and coughs.

### **Where it Can Be Found Naturally -**

Wild Garlic is found throughout much of North America and it prefers to grow mainly in fallow fields but can also be found growing alongside roads, ditches, and most any other place flowering plants and weeds are able to grow.

### **How to Identify it -**

The Wild Garlic plant is a perennial, flowering, evergreen that grows to height of 8 in. to 24 in. with long, lance-shaped, green leaves sheathing approximately half of the stalk and it produces either white or pink flowers and broadcasts a strong garlic odor.



### **How it Should Be Prepared -**

Wild Garlic is usually harvested for its root clusters and can be applied as expressed juice to cleanse abrasions, cuts, or open wounds or ingested orally as a tisane or a tincture.

### **Can You Grow it in Your Garden? -**

Yes, Wild Garlic can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Wild Garlic prefers locations which are in full sunlight or lightly shaded and, although it will grow in poor soils, it grows best in rich, well-drained, soils with a pH of 6 to 7 and should be watered at least once a week and more often during periods of draught.

## 21: Great & Common Burdock

(antiseptic/antibiotic)



### **What it's Used For -**

The roots, flowers, and leaves of the Great Burdock plant (*Arctium lappa*) as well as the Common Burdock plant (*Arctium minus*) contain several antibacterial compounds (most notably artiocpicrin). Therefore, the leaves, stems, and flowers are usually prepared as a poultice and used to treat abrasions, cuts, sores, ulcers, insect bites, and snake bites. They are also prepared as a tisane and used externally as a wash for hives, eczema, and other skin irritations. In addition, *the roots of the Burdock plant contain up to 50 percent inulin which was traditionally used to treat diabetes.*

### **Where it Can Be Found Naturally -**

Both Great Burdock and Common Burdock are found throughout the entire temperate zone of North America and they grow mainly in fallow fields but can also be found growing alongside roads, ditches, and most any other place flowering plants and weeds are able to grow.

### **How to Identify it -**



The Great Burdock plant is a biennial flowering plant that grows to height of 2 ft. to 9ft. with large, green lower leaves that are shaped similar to those of rhubarb with a solid, celery-like, stalk. The flowers appear as round pods covered in thorns with vibrant reddish-purple flowers on top. Common Burdock is a perennial flowering plant that grow to a height of 2 ft. to 5 ft. and appears similar to Great Burdock but with non-celery like, hollow, stems and smaller leaves combined with smaller flowers.



### **How it Should Be Prepared -**

Burdock leaves, stems, and flowers are usually crushed, boiled, and applied externally as a poultice, a tisane, or a tincture. Burdock root is usually boiled and prepared as a tisane or a tincture and ingested internally. The seeds are usually crushed and prepared as a poultice.

### **Can You Grow it in Your Garden? -**

Yes, Burdock can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Burdock prefers locations which are in full sunlight or partially shaded and, although it will grow in poor soils, it grows

best in rich, sandy, soils and should be watered at least once a week and more often during periods of draught.

## 22: Echinacea

(immune system booster/antihistamine)



### What it's Used For -

Echinacea (*Echinacea angustifolia*) consists of three different species; the Purple Coneflower, the Pale Purple Coneflower, and the Narrow-Leaved Purple Coneflower and all three species are considered to be a non-specific immune system booster. Consequently, it is used similar to an antibiotic to help heal both external and internal infections. Therefore, it can be used topically as either a poultice, a tincture, or a salve to aid in healing cuts and abrasions, wounds, and burns, and can be taken internally as either a tisane (tea), a tincture (a concentrated tisane), or a dried extract to treat internal infection, colds, and flu. In fact, clinical studies have shown that ingesting this plant can significantly reduce both the severity and duration of both cold and flu symptoms. Last, it has traditionally been used as a treatment for both spider and snake bites to help alleviate the tissue and nerve damage caused by the poison that these creatures inject.

## Where it Can Be Found Naturally -

Both the Narrow-Leaved Purple Coneflower (*Echinacea angustifolia*) and the Pale Purple Coneflower (*Echinacea pallida*) occur naturally throughout the central and mid-western United States ranging from Texas to Minnesota and as far west as Colorado. In addition, both of these species have a distinct preference for meadows and open prairies where it mixes with other perennial grasses. The Purple Coneflower (*Echinacea purpurea*) on the other hand, is an eastern species that occurs naturally mostly in the eastern states ranging from Louisiana to Georgia and Minnesota to Maine and it prefers to grow in open woods and thickets.

## How to Identify it -

The Narrow-Leaved Purple Coneflower is a tap-rooted perennial that grows 6 inches to 20 inches in height and has stiff, hairy, lance-shaped, green, leaves topped by a flower with a prominent, cone-shaped, disc surrounded by long, slim, drooping, purple, petals. Whereas, the Pale Purple Coneflower (*Echinacea pallida*) is similar in appearance to the Purple Cone Flower but grows up to 40 inches in height and produces a larger flower with petals up to four inches in length that range from off-white to purple in color. Last, the Purple Coneflower (*Echinacea purpurea*) is similar in appearance to both the Narrow-Leaved Purple Coneflower and the Pale Purple Coneflower but commonly grows to a height of 24 inches to 36 inches and has oval shaped, green, leaves with coarsely toothed edges. Also, like the Purple Cone Flower, it produces a flower with a prominent, cone-shaped, bristle-like, disc in the center surrounded by oval shaped petals that range from off-white to purple in color.



### **How it Should Be Prepared -**

Echinacea can be applied externally as a poultice or a salve or ingested internally as either a dried powder, a tisane, a tincture, or an extract.

### **Can You Grow it in Your Garden? -**

Yes, Echinacea can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Echinacea prefers locations which are in full sunlight and, although it will grow in poor soils, it grows best in rich, well-drained, soils and should be watered at least once a week and more often during periods of draught.

### 23: Wild Ginger (nausea & vomiting)



#### **What it's Used For -**

Wild Ginger root (*Asarum canadense*) is a well known and widely accepted natural remedy that has been used for thousands of years for relieving nausea and vomiting. The roots of this plant contain the antihumor aristolochic acid and thus, it has also use by many Native American tribes as a remedy for indigestion, cramps, sore throats, coughs, colds, and nervous conditions.

#### **Where it Can Be Found Naturally -**

Wild Ginger prefers dense forests with a mature canopy and is mainly found east of the Mississippi River but ranges as far north as Canada, as far south as Alabama, and as far west as Oklahoma and North Dakota.

### **How to Identify it -**

Wild Ginger is a ground hugging plant that spreads via runners and displays green, hart-shaped, leaves and maroon, urn-shaped, flowers with three, distinct, petals that appear at the intersection between the runner and the leaf.



### **How it Should Be Prepared -**

Wild Ginger root is commonly ingested orally as an expressed juice by chewing a portion of the root. However, it can also be prepared as either a tisane or a tincture and then ingested orally.

### **Can You Grow it in Your Garden? -**

Yes, Wild Ginger can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Wild Ginger prefers locations which provide partial to deep shade and they grow best in moist, rich, well-drained, slightly acidic soils.



## 24: Wild Licorice

(antacid)



### **What it's Used For -**

Wild Licorice root (*Glycyrrhiza lepidota*) is a well known natural remedy for acid indigestion because it acts as a natural antacid. Also, it contains an antiviral compound, and is considered to be antiviral, anti-inflammatory, anti-convulsive, and antiallergenic. Therefore, it is also widely used for relieving sore throat, cough, diarrhea, stomach ache, ear ache, and for reducing fevers in children.

### **Where it Can Be Found Naturally -**

Wild Licorice prefers to grow in open prairies and fields is most often found west of the Mississippi River ranging from Canada to Texas but can occasionally be found scattered throughout the eastern states from Virginia to Maine.

### **How to Identify it -**

Wild Licorice is a perennial shrub that grows 5 ft. to 9 ft. in height and which has long, green, compound leaves with long, slim, spear-shaped leaflets usually with 15 to 19 per side and produces, small, white, flowers on short spikes. This plant also produces clusters of spiny seed pods.



### **How it Should Be Prepared -**

Wild Licorice root is commonly ingested orally as an expressed juice by chewing a portion of the root. However, it can also be prepared as either a tisane or a tincture and then ingested orally.

### **Can You Grow it in Your Garden? -**

Yes, Wild Licorice can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Wild Licorice prefers locations which provide full sunlight and they grow best in deep, moist, rich, well-drained, soils.

## 25: Horehound (cough suppressant)



### **What it's Used For -**

Horehound (*Marrubium vulgare*) is a well known natural remedy for congestion, coughs, and sore throats because it acts as a natural expectorant and a natural cough suppressant. Also, it contains an antibacterial and an antifungal compound. Therefore, it is also used poultice for wounds as well as gall bladder disorders, jaundice, and hepatitis.

**Note:** Horehound also contains vitamins A,B,C, & E which are essential to good health.

### **Where it Can Be Found Naturally -**

Horehound is found scattered over most of North America and it grows mainly in fallow fields but can also be found growing alongside roads, ditches, and most any other place flowering plants and weeds are able to grow.

## **How to Identify it -**

Horehound is an herbaceous perennial weed that somewhat resembles mint in appearance and which grows to a height of 10 to 18 inches with a branched stalk. Also, the wrinkled, grey-green leaves are arranged opposite and are approximately 1 inch to 2 inches in length with a round or oval shape and roughly serrated edges with a densely crinkled surface that is covered in downy hairs. In addition, the flowers are white and are borne in clusters on the upper part of the main stem immediately above the leaf pairs.



## **How it Should Be Prepared -**

Horehound is commonly ingested orally as either a tisane or a tincture. Therefore, after harvesting, the plant should be crushed and steeped in boiling water and the resulting tincture strained before consumption.

## **Can You Grow it in Your Garden? -**

Yes, Horehound can be cultivated in gardens and flower beds throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, although Horehound will

grow in poor soils, it prefers locations which provide full sunlight and it grows best in moist, rich, well-drained, soils.

## 26: Witch Hazel (astringent)



### **What it's Used For -**

Witch Hazel (*Hamamelis virginiana*) is an astringent, hemostatic, and antioxidant and has historically been one of the most important American medicinal plants and is still so today. Due to the tannins contained in the leaves and bark of this plant, the leaves are usually prepared as a poultice and applied externally to treat abrasions and minor cuts, as a tisane or a tincture and applied externally to relieve itching, skin irritations, and minor pain as well as hemorrhoids, and as a tisane ingested internally to treat sore throat, fevers, and colds.

### **Where it Can Be Found Naturally -**

Witch Hazel prefers shaded, hardwood, forests and ranges from Canada to Florida east of the Mississippi River.



### **How to Identify it -**

Witch Hazel ranges in size from a shrub to a small tree as much as 15 ft. tall. Also, it has green, obovated, leaves with serrated edges and uneven, wedge-shaped, bases with yellow flowers approximately 1 in. in diameter with very slender petals appearing only after the leaves drop in the fall.



### **How it Should Be Prepared -**

Witch Hazel leaves are usually crushed and applied externally as a poultice or a tisane and Witch Hazel roots are usually boiled and prepared as a tisane or a tincture and ingested internally.

### **Can You Grow it in Your Garden? -**

Yes, Witch Hazel can be cultivated in gardens and flower beds throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, although Witch Hazel will grow in poor soils and/or full sunlight, it prefers locations which provide partial sunlight and it grows best in moist, rich, well-drained, soils.



## 27: Jewel Weed

(Poison Oak rash/antihistamine)



### **What it's Used For -**

Jewelweed (*Impatiens capensis*) is a well known and widely accepted natural remedy for relieving the rash caused by contact with Poison Oak. Both the leaves and stems of the plant contain Lawsone which may explain its antihistamine and anti-inflammatory properties. Also used traditionally as a remedy for insect bites, sores, cuts, bruises, sprains, burns, eczema, and ringworm.

### **Where it Can Be Found Naturally -**

Jewelweed is predominately found east of the Rocky Mountains but does occur incidentally further west. Also, it prefers to grow in shady spots where there is moist, sandy, well-drained, soil and therefore, you will find it in lowlands, wetlands, fens, and adjacent to streams, ponds, lakes, and bogs. In addition, it is often found growing adjacent to patches of Poison Oak.

### **How to Identify it -**

Jewelweed (aka Spotted Touch-Me-Not) is a smooth annual flower that grows 3 to 5 feet in height and has oval leaves with serrated edges and the lower ones are placed opposite of each other whereas the upper ones are alternate. Also, the funnel shaped flowers are suspended from a single stem and appear yellow with red spots.



### **How it Should Be Prepared -**

The flowers of the Jewelweed plant are usually crushed and applied directly to the Poison Ivy rash as either an expressed juice or as a poultice but, the stems can be used if the plant is not in flower. Also, you can create either a tisane or a tincture and then apply it topically.

### **Can You Grow it in Your Garden? -**

Yes, Jewel Weed can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid locations unless special conditions are provided. Also, Jewel Weed prefers locations

which provide either full or partial sunlight and it grows best in rich, moist or wet soils. Thus, it should be watered at least once a week and more often during periods of draught.

## 28: White Willow

(mild pain reliever)



### **What it's Used For -**

White Willow (*Salix alba*) bark is one of the most well known sources of Salicin which is oxidized in the human bloodstream and the liver to produce Salicylic Acid which is the natural form of aspirin. Therefore, it is used like aspirin to relieve minor pain caused by over exertion, minor injuries, headaches, and inflammation as well as to reduce fever and cure diarrhea.

### **Where it Can Be Found Naturally -**

White Willows can be found nationwide. But, it should be noted that because all species of willow tree require copious amounts of water to survive, they can only occur naturally near water sources. Therefore, look for White Willows near creeks, streams, rivers, ponds, lakes, swamps, and bogs.

### **How to Identify it -**

The White Willow is a medium to large deciduous tree growing up to 90 ft. tall with a trunk up to 3 ft. in diameter and an irregular, often-leaning, crown. Also, the bark appears grey-brown and is deeply fissured in older trees. In addition, the shoots are typically grey-brown to green-brown and the leaves usually measure four to eight inches long and 1/4" to 3/8" wide. Also, they are paler than most other willows due to a covering of very fine, silky, white, hairs particularly on the underside.



### **How it Should Be Prepared -**

White Willow bark is typically ground, steeped in boiling water, and ingested orally as a tincture. However, it could not also be prepared as a tisane or an extract.

### **Can You Grow it in Your Garden? -**

Yes, White Willow tree can be cultivated in yards throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid or semi-arid

locations unless special conditions are provided. Also, White Willows grow fastest in the open and prefers locations with full sunlight and moist, rich, soils.

## 29: Opium Poppy

(intense pain reliever)



### **What it's Used For -**

The Opium Poppy (*Papaver somniferum*) produces a latex that is Nature's most potent and effective painkiller. Known as "the milk of the poppy", this plant has been used by Man since prehistoric times and by Asian, Indian, and European cultures for centuries for the relief of severe pain and to induce sleep. However, it should be noted that because this plant substance contains opioids, it should be used with caution and as infrequently as possible to avoid developing a dependency. Therefore, it is best reserved for emergency situations which require the relief of extreme pain.

### **Where it Can Be Found Naturally -**

Although this plant is only indigenous to central Asia, it has been heavily cultivated for ornamental use in North America and thus, it is a relatively common plant to find in the wild where it has escaped from a local garden.



### **How to Identify it -**

The Opium Poppy is a stout annual flower that grows 2 ft. to 3 ft. in height and has a smooth, blue-green stem. The leaves are vaguely lettuce shaped and are coarsely toothed with either wavy or shallowly lobed margins. Also, the stalks develop large pods at the top upon which the four-petal flowers appear; usually in white, pink, red or purple.



### **How it Should Be Prepared -**

The most common way to prepare the Opium Poppy is to harvest the stems and flowers and use them to make either a tisane or a tincture which is then ingested orally. However, the latex can also be extracted from the pods by lightly scoring the surface of the pod which causes the sap to ooze out. Then, once the sap has dried, it is scraped off of the pod and collected. Then, once you have a sufficient quantity of the latex, it can be dissolved in grain alcohol to create a remedy called Laudanum.

### **Can You Grow it in Your Garden? -**

Yes, Opium Poppies can be cultivated in flower beds and gardens throughout the lower 48 states provided that it is given the correct soil and light conditions. However, it does not do well in arid

or semi-arid locations unless special conditions are provided. Also, Opium Poppies prefer locations which provide either full or partial sunlight and it grows best in rich, well drained, slightly dry, soils.

## Bibliography

Foster, Steven and James A. Duke. *Peterson Field Guide to Medicinal Plants and Herbs*. New York: Houghton Mifflin Harcourt Publishing Company, 2014. Print.

Meuninck, Jim. A Falcon Guide. *Medicinal Plants of North America*. Gulliford: Morris Book Publishing, LLC., 2008. Print.

Thayer, Samuel. *The Forager's Harvest: a guide to identifying harvesting, and preparing edible wild plants*. Birchwood: Forager's Harvest, 2006. Print.

Thayer, Samuel. *The Forager's Harvest: a guide to identifying harvesting, and preparing edible wild plants*. Birchwood: Forager's Harvest, 2010. Print.

Wiseman, John "Lofty". *SAS Survival Handbook: How to Survive in the Wild in Any Climate, on Land or Sea*. New York: HarperCollins, 2004. Print.