SURVIVAL USE OF PLANTS

After having solved the problems of finding water, shelter, and animal food, you will have to consider the use of plants you can eat. In a survival situation you should always be on the lookout for familiar wild foods and live off the land whenever possible.

You must not count on being able to go for days without food as some sources would suggest. Even in the most static survival situation, maintaining health through a complete and nutritious diet is essential to maintaining strength and peace of mind.

Nature can provide you with food that will let you survive any ordeal, if you don't eat the wrong plant. You must therefore learn as much as possible beforehand.

EDIBILITY OF PLANTS

Plants are valuable sources of food because they are widely available, easily procured, and, in the proper combinations, can meet all your nutritional needs.

WARNING

The critical factor in using plants for food is to avoid accidental poisoning. Eat only those plants you can positively identify and you know are safe to eat.

Absolutely identify plants before using them as food. Poison hemlock has killed people who mistook it for its relatives, wild carrots and wild parsnips.

At times you may find yourself in a situation for which you could not plan. In this instance you may not have had the chance to learn the plant life of the region in which you must survive. In this case you can use the Universal Edibility Test to determine which plants you can eat and those to avoid.

It is important to be able to recognize both cultivated and wild edible plants in a survival situation. Most of the information in this chapter is directed towards identifying wild plants because information relating to cultivated plants is more readily available.

Remember the following when collecting wild plants for food:

- Plants growing in contaminated water or in water containing *Giardia lamblia* and other parasites are contaminated themselves. Boil or disinfect them.

- Some plants develop extremely dangerous fungal toxins. To lessen the chance of accidental poisoning, do not eat any fruit that is starting to spoil or showing signs of mildew or fungus.
- Plants of the same species may differ in their toxic or subtoxic compounds content because of genetic or environmental factors. One example of this is the foliage of the common chokecherry. Some chokecherry plants have high concentrations of deadly cyanide compounds while others have low concentrations or none. Horses have died from eating wilted wild cherry leaves. Avoid any weed, leaves, or seeds with an almond-like scent, a characteristic of the cyanide compounds.
- Some people are more susceptible to gastric distress (from plants) than others. If you are sensitive in this way, avoid unknown wild plants. If you are extremely sensitive to poison ivy, avoid products from this family, including any parts from sumacs, mangoes, and cashews.
- Some edible wild plants, such as acorns and water lily rhizomes, are bitter. These bitter substances, usually tannin compounds, make them unpalatable. Boiling them in several changes of water will usually remove these bitter properties.
- Many valuable wild plants have high concentrations of oxalate compounds, also known as oxalic acid. Oxalates produce a sharp burning sensation in your mouth and throat and damage the kidneys. Baking, roasting, or drying usually destroys these oxalate crystals. The corm (bulb) of the jack-in-the-pulpit is known as the "Indian turnip," but you can eat it only after removing these crystals by slow baking or by drying.

WARNING

Do not eat mushrooms in a survival situation! The only way to tell if a mushroom is edible is by positive identification. There is no room for experimentation. Symptoms of the most dangerous mushrooms affecting the central nervous system may show up after several days have passed when it is too late to reverse their effects.

Plant Identification

You identify plants, other than by memorizing particular varieties through familiarity, by using such factors as leaf shape and margin, leaf arrangements, and root structure.

The basic leaf margins (Figure 1) are toothed, lobed, and toothless or smooth.

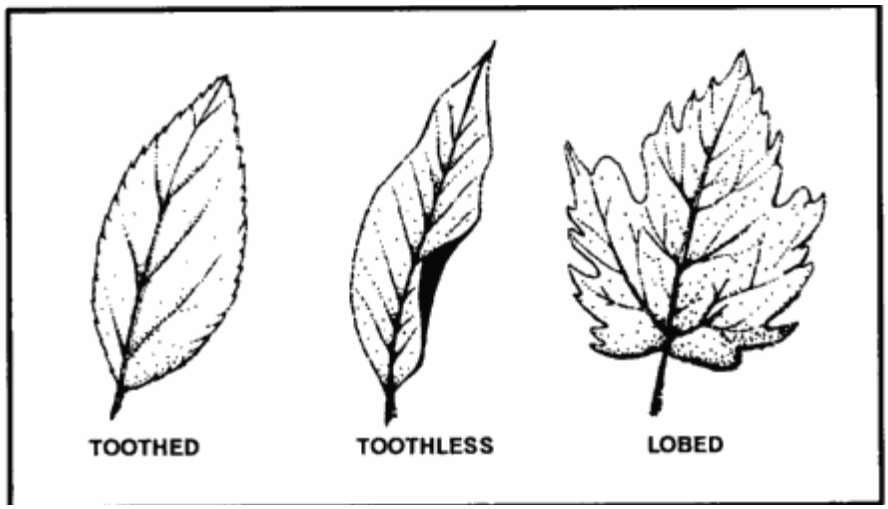


Figure 1

These leaves may be lance-shaped, elliptical, egg-shaped, oblong, wedge-shaped, triangular, long-pointed, or top-shaped (Figure 2).

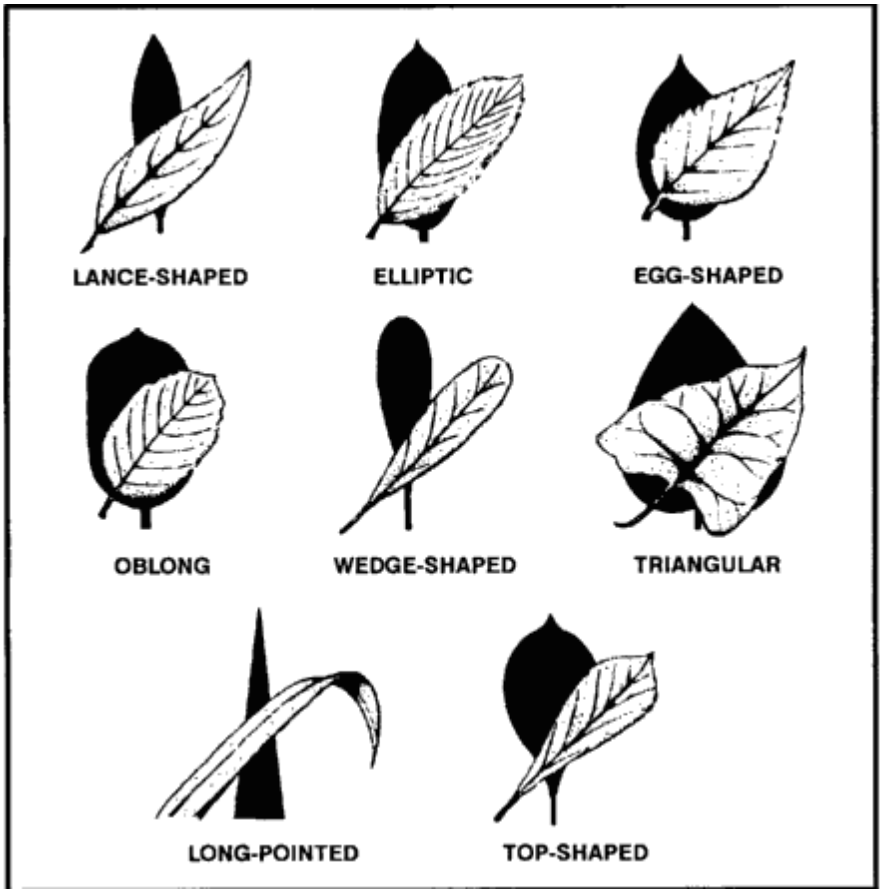


Figure 2

The basic types of leaf arrangements (Figure 3) are opposite, alternate, compound, simple, and basal rosette.

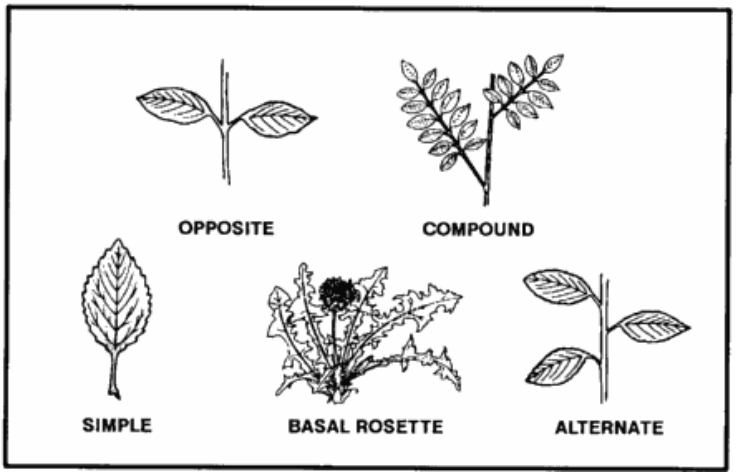


Figure 3

The basic types of root structures (Figure 4) are the bulb, clove, taproot, tuber, rhizome, corm, and crown. Bulbs are familiar to us as onions and, when sliced in half, will show concentric rings. Cloves are those bulblike structures that remind us of garlic and will separate into small pieces when broken apart. This characteristic separates wild onions from wild garlic. Taproots resemble carrots and may be single-rooted or branched, but usually only one plant stalk arises from each root. Tubers are like potatoes and daylilies and you will find these structures either on strings or in clusters underneath the parent plants. Rhizomes are large creeping rootstock or underground stems and many plants arise from the "eyes" of these roots. Corms are similar to bulbs but are solid when cut rather than possessing rings. A crown is the type of root structure found on plants such as asparagus and looks much like a mophead under the soil's surface.

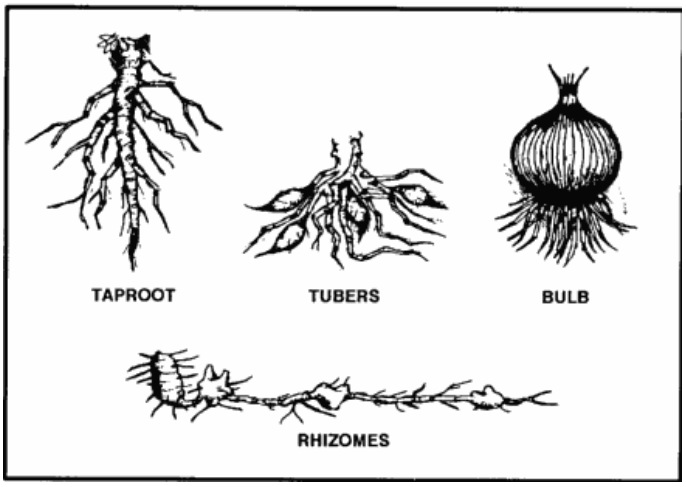


Figure 4

Learn as much as possible about plants you intend to use for food and their unique characteristics. Some plants have both edible and poisonous parts. Many are edible only at certain times of the year. Others may have poisonous relatives that look very similar to the ones you can eat or use for medicine.

Universal Edibility Test

There are many plants throughout the world. Tasting or swallowing even a small portion of some can cause severe discomfort, extreme internal disorders, and even death. Therefore, if you have the slightest doubt about a plant's edibility, apply the Universal Edibility Test before eating any portion of it.

Universal Edibility Test

1 – Test only one part of a potential food plant at a time.

2 – Separate the plant into its basic components – Leaves, stems, roots, buds and flowers.

3 – Smell the food for strong odor. Remember, smell alone does not indicate a plant is edible or not.

4 – Do not eat for 8 hours before starting this test.

5 – During the 8 hours you abstain from eating, test for contact poisoning by placing a piece of the plant part you are testing on the inside of your elbow or wrist. Usually 15 minutes is enough time to allow for a reaction.

6 – During the test period, take nothing by mouth except purified water and the plant you are testing.

7 – Select a small portion of a single part and prepare it the way you plan to eat it.

8 – Before placing the prepared plant part in your mouth, touch a small portion (a pinch) to the outer surface of your lip to test for burning or itching.

9 – If after 3 minutes there is no reaction on your lip, place the plant part on your tongue, holding it there for 15 minutes.

10 – If there is no reaction, thoroughly chew a pinch and hold it in your mouth for 15 minutes. Do NOT swallow.

11 – If no burning, itching, numbing, stinging, or other reaction occurs during the 15 minutes, swallow the food.

12 – Wait 8 hours. If any ill effects occur during this period, induce vomiting and drink a lot of water.

13 – If no ill occur, eat 0.25 cup of the same plant part preparing the same way. Wait another 8 hours. If no ill effects occur, the plant as prepared is safe for eating.

CAUTION: Test all parts of the plant for edibility, as some plants have both edible and non-edible parts. Do not assume that a part that proves edible when cooked is also edibile when raw. Test the part raw to ensure edibility before eating it raw. The same part or plant may produce varying reactions in different individuals.

Before testing a plant for edibility, make sure there are enough plants to make the testing worth your time and effort. Each part of a plant (roots, leaves, flowers, and so on) requires more than 24 hours to test. Do not waste time testing a plant that is not relatively abundant in the area.

Remember, eating large portions of plant food on an empty stomach may cause diarrhea, nausea, or cramps. Two good examples of this are such familiar foods as green apples and wild onions. Even after testing plant food and finding it safe, eat it in moderation.

You can see from the steps and time involved in testing for edibility just how important it is to be able to identify edible plants.

To avoid potentially poisonous plants, stay away from any wild or unknown plants that have--

- Milky or discolored sap.
- Beans, bulbs, or seeds inside pods.
- Bitter or soapy taste.
- Spines, fine hairs, or thorns.
- Dill, carrot, parsnip, or parsley like foliage.
- "Almond" scent in woody parts and leaves.
- Grain heads with pink, purplish, or black spurs.
- Three-leaved growth pattern.

Using the above criteria as eliminators when choosing plants for the Universal Edibility Test will cause you to avoid some edible plants. More important, these criteria will often help you avoid plants that are potentially toxic to eat or touch.

An entire encyclopedia of edible wild plants could be written, but space limits the number of plants presented here. Learn as much as possible about the plant life of the areas where you train regularly and where you expect to be traveling or working. Listed below and later in this unit are some of the most common edible and medicinal plants.

The following is a list of Temperate zone plants that can be eaten for food:

- Amaranth (*Amaranthus retroflexus* and other species)
- Arrowroot (*Sagittaria* species)
- Asparagus *(Asparagus officinalis)*
- Beechnut (*Fagus* species)
- Blackberries (*Rubus* species)
- Blueberries (*Vaccinium* species)
- Burdock *(Arctium lappa)*
- Cattail (*Typha* species)
- Chestnut (*Castanea* species)
- Chicory *(Cichorium intybus)*
- Chufa *(Cyperus esculentus)*
- Dandelion *(Taraxacum officinale)*
- Daylily *(Hemerocallis fulva)*
- Nettle (*Urtica* species)
- Oaks (*Quercus* species)
- Persimmon *(Diospyros virginiana)*
- Plantain (*Plantago* species)
- Pokeweed *(Phytolacca americana)*
- Prickly pear cactus (*Opuntia* species)
- Purslane *(Portulaca oleracea)*
- Sassafras *(Sassafras albidum)*
- Sheep sorrel *(Rumex acetosella)*
- Strawberries (*Fragaria* species)
- Thistle (*Cirsium* species)
- Water lily and lotus (*Nuphar*, *Nelumbo*, and other species)
- Wild onion and garlic (*Allium* species)
- Wild rose (*Rosa* species)
- Wood sorrel (*Oxalis* species)

The following are Tropical zone plants that can be eaten for food:

- Bamboo (*Bambusa* and other species)
- Bananas (*Musa* species)
- Breadfruit *(Artocarpus incisa)*
- Cashew nut *(Anacardium occidental)*
- Coconut *(Cocos nucifera)*
- Mango *(Mangifera indica)*
- Palms (various species)
- Papaya (*Carica* species)
- Sugarcane *(Saccharum officinarum)*
- Taro (*Colocasia* species)

The following are Desert zone plants that can be eaten for food:

- Acacia *(Acacia farnesiana)*
- Agave (*Agave* species)
- Cactus (various species)
- Date palm *(Phoenix dactylifera)*
- Desert amaranth *(Amaranths palmeri)*

Seaweeds

One plant you should never overlook is seaweed. It is a form of marine algae found on or near ocean shores. There are also some edible freshwater varieties. Seaweed is a valuable source of iodine, other minerals, and vitamin C. Large quantities of seaweed in an unaccustomed stomach can produce a severe laxative effect.

When gathering seaweeds for food, find living plants attached to rocks or floating free. Seaweed washed onshore any length of time may be spoiled or decayed. You can dry freshly harvested seaweeds for later use.

Its preparation for eating depends on the type of seaweed. You can dry thin and tender varieties in the sun or over a fire until crisp. Crush and add these to soups or broths. Boil thick, leathery seaweeds for a short time to soften them. Eat them as a vegetable or with other foods. You can eat some varieties raw after testing for edibility.

The following is a list of seaweeds that can be eaten after testing for edibility:

- Dulse *(Rhodymenia palmata)*
- Green seaweed *(Ulva lactuca)*
- Irish moss *(Chondrus crispus)*
- Kelp *(Alaria esculenta)*
- Laver (*Porphyra* species)
- Mojaban *(Sargassum fulvellum)*
- Sugar wrack *(Laminaria saccharina)*

Preparation of Plant Food

Although some plants or plant parts are edible raw, you must cook others to be edible or palatable. Edible means that a plant or food will provide you with necessary nutrients, while palatable means that it actually is pleasing to eat. Many wild plants are edible but barely palatable. It is a good idea to learn to identify, prepare, and eat wild foods.

Methods used to improve the taste of plant food include soaking, boiling, cooking, or leaching. Leaching is done by crushing the food (for example, acorns), placing it in a strainer, and pouring boiling water through it or immersing it in running water.

Boil leaves, stems, and buds until tender, changing the water, if necessary, to remove any bitterness.

Boil, bake, or roast tubers and roots. Drying helps to remove caustic oxalates from some roots like those in the *Arum* family.

Leach acorns in water, if necessary, to remove the bitterness. Some nuts, such as chestnuts, are good raw, but taste better roasted.

You can eat many grains and seeds raw until they mature. When hard or dry, you may have to boil or grind them into meal or flour.

The sap from many trees, such as maples, birches, walnuts, and sycamores, contains sugar. You may boil these saps down to a syrup for sweetening. It takes about 35 liters of maple sap to make one liter of maple syrup!

PLANTS FOR MEDICINE

In a survival situation you will have to use what is available. In using plants and other natural remedies, positive identification of the plants involved is as critical as in using them for food. Proper use of these plants is equally important.

Terms and Definitions

The following terms, and their definitions, are associated with medicinal plant use:

- *Poultice.* The name given to crushed leaves or other plant parts, possibly heated, that you apply to a wound or sore either directly or wrapped in cloth or paper.
- *Infusion or tisane or tea.* The preparation of medicinal herbs for internal or external application. You place a small quantity of an herb in a container, pour hot water over it, and let it steep (covered or uncovered) before use.
- *Decoction.* The extract of a boiled down or simmered herb leaf or root. You add herb leaf or root to water. You bring them to a sustained boil or simmer to draw their chemicals into the water. The average ratio is about 28 to 56 grams (1 to 2 ounces) of herb to 0.5 liter of water.
- *Expressed juice.* Liquids or saps squeezed from plant material and either applied to the wound or made into another medicine.

Many natural remedies work slower than the medicines you know. Therefore, start with smaller doses and allow more time for them to take effect. Naturally, some will act more rapidly than others.

Specific Remedies

The following remedies are for use only in a survival situation, not for routine use:

- *Diarrhea.* Drink tea made from the roots of blackberries and their relatives to stop diarrhea. White oak bark and other barks containing tannin are also effective. However, use them with caution when nothing else is available because of possible negative effects on the kidneys. You can also stop diarrhea by eating white clay or campfire ashes. Tea made from cowberry or cranberry or hazel leaves works too.
- *Antihemorrhagics.* Make medications to stop bleeding from a poultice of the puffball mushroom, from plantain leaves, or most effectively from the leaves of the common yarrow or woundwort *(Achillea millefolium).*
- *Antiseptics.* Use to cleanse wounds, sores, or rashes. You can make them from the expressed juice from wild onion or garlic, or expressed juice from chickweed leaves or the crushed leaves of dock. You can also make antiseptics from a decoction of burdock root, mallow leaves or roots, or white oak bark. All these medications are for external use only.
- *Fevers.* Treat a fever with a tea made from willow bark, an infusion of elder flowers or fruit, linden flower tea, or elm bark decoction.
- *Colds and sore throats.* Treat these illnesses with a decoction made from either plantain leaves or willow bark. You can also use a tea made from burdock roots, mallow or mullein flowers or roots, or mint leaves.
- *Aches, pains, and sprains.* Treat with externally applied poultices of dock, plantain, chickweed, willow bark, garlic, or sorrel. You can also use salves made by mixing the expressed juices of these plants in animal fat or vegetable oils.
- *Itching.* Relieve the itch from insect bites, sunburn, or plant poisoning rashes by applying a poultice of jewelweed *(Impatiens biflora)* or witch hazel leaves *(Hamamelis virginiana).* The jewelweed juice will help when applied to poison ivy rashes or insect stings. It works on sunburn as well as aloe vera.
- *Sedatives.* Get help in falling asleep by brewing a tea made from mint leaves or passionflower leaves.
- *Hemorrhoids.* Treat them with external washes from elm bark or oak bark tea, from the expressed juice of plantain leaves, or from a Solomon's seal root decoction.
- *Constipation.* Relieve constipation by drinking decoctions from dandelion leaves, rose hips, or walnut bark. Eating raw daylily flowers will also help.
- *Worms or intestinal parasites.* Using moderation, treat with tea made from tansy *(Tanacetum vulgare)* or from wild carrot leaves.
- *Gas and cramps.* Use a tea made from carrot seeds as an antiflatulent; use tea made from mint leaves to settle the stomach.
- *Antifungal washes.* Make a decoction of walnut leaves or oak bark or acorns to treat ringworm and athlete's foot. Apply frequently to the site, alternating with exposure to direct sunlight.