

Ashwaganda (*Withania somnifera*) root harvested in fall, annual, full sun.

2,500 years of use in Ayurvedic medicine, calming adaptogen, stimulates libido, antispasmodic, iron rich herb, good for anxiety that contributes to hypertension, osteo and rheumatic arthritis pain, stress-induced immune problems, debility, exhaustion. Tonic. Long term use recommended.

Boneset, *Eupatorium perforatum*, aerial in flower

Potent immune stimulant, viral and bacterial infections, colds, influenza, bronchitis, pneumonia, digestive bitter

Calendula *Calendula officinalis*, flowers, annual, full sun.

High in carotenoids (good antioxidant for the eyes), lymphatic swellings, chronic skin eruptions, for cuts, wounds, burns, scrapes, surgical incisions, diaper rash, vaginal infections, radiation induced burns or dermatitis, eyewash for inflammation, post-mastectomy lymphedema.

Echinacea *Echinacea spp.*, entire plant, *E. angustifolia* has a tap root, *E. purpureum* has spreading root, harvest 2nd or 3rd year root in fall, perennial, species cross pollinate freely, partial germination the first year, more in the second year. Acute viral and bacterial infections, inflammation (prostatitis, rhinitis, sore throat, laryngitis), slow healing wounds/ulcers, lymphatic swelling, muscle pain from injuries or over exertion,

Elder *Sambucus nigra/canadensis*, leaf, flower and berries, multi-cycle germination, suckers may be removed and planted, 20' tall shrub, partial shade, likes to have its feet wet

Leaves: wound healing, soothing. Flowers: lung & sinus congestion, fevers. Berries: viral infections, constipation, lung and sinus congestion, Herpes Simplex virus, reduces oxidative damage, interferes with viral replication. Harvest flowers when in bloom around Midsummer's eve, berries before the birds get them in early fall, leaves in the spring.

Holy Basil *Ocimum sanctum*, aerial parts, annual, full sun, does well in pots, do not fertilize too much, does best when slightly stressed (causes volatile oil content to increase).

Immune system regulator, Ayurvedic herb, adaptogen, lifts the spirits, clears and calms the mind, relieves brain fog, dispels depression, stimulates digestion, antiviral, reduces cortisol and adrenalin, increases dopamine and serotonin levels. Protects from radiation induced immune suppression, protects the liver from damage from toxins, and down regulates hyper immune response (good for auto immune conditions).

Rosemary *Rosmarinus officinale*, aerial parts, perennial, sunny protected place, collect branches early in the day before volatile oils have been dried by the sun. Easy to propagate by layering or rooting stem cuttings.

Stimulates digestion, for gas, nausea, bloating, indigestion, headaches, improves cognitive function & memory, antidepressant, relieves brain fog, circulatory stimulant, tonic for the liver and gall bladder, age related depression, may reduce the risk of developing cancer.

Sage *Salvia officinalis*, aerial parts, perennial, likes full sun, good drainage and little or no fertilization.

Digestive upsets, fever, inflammation, respiratory congestion, intestinal viruses, sore throat, laryngitis, nasal congestion, chronic rhinitis, menopausal night sweats, food poisoning, stomach virus, use in a neti pot for nasal congestion or rhinitis, as a mouthwash for periodontal disease or mouth ulcers.

Shiitake *Lentinula edodes*, mushroom, spawn inoculated logs

Possible cancer prevention, reduces cholesterol lipid levels and blood pressure, protects the liver from toxins, reduces bronchial inflammation, anti-viral, Chronic Fatigue Syndrome, allergies, *Candida albicans* fungal infections, improves immune response and reduces the frequency of colds.

Thyme *Thymus vulgaris*, aerial parts, perennial, full sun, poor soil

Antibacterial, antiviral, improves digestion, for lung congestion & coughs, influenza, spasmodic coughs, COPD & emphysema, allergic rhinitis, gum disease, gas and poor digestion, abdominal bloating, gastric ulcers.

Making Herbal Tinctures

Working with Menstruums

To make a tincture you need an herb and a solvent. The herb, which is also called the marc, can be a single plant, fresh or dried, or a combination of herbs. The liquid solvent is called the menstruum. The extraction or steeping process used to make tinctures is called maceration and usually takes about 14 days to complete. There is no heat involved in making tinctures.

Standard menstruums are a mixture of alcohol and water. The herb or herbs determine the ratio of alcohol to water used. Some herbs need a high percentage of alcohol to extract their constituents while others are fairly water-soluble and need only a small amount of alcohol. Very water-soluble herbs may only need a small amount of alcohol, perhaps only 25%, to act as a preservative.

Menstruum Ratios

A menstruum ratio refers to the amount of alcohol to water used to make a specific menstruum. If a plant is analyzed for its chemical constituents some of these constituents will be soluble in alcohol, some in water and some will be soluble in both. Based on this kind of analysis many tincture manufacturers create custom menstruums for each herb tinctured. Of course, as in so many areas of herbalism, which menstruum is best for each herb is largely a matter of opinion. Some general guidelines are that herbs traditionally used as beverage teas, such as chamomile (*Matricaria recutita*), or peppermint (*Mentha piperata*) are very soluble in water and require only a small amount of alcohol primarily as a preservative. Other herbs which are very resinous such as calendula (*Calendula officinale*) or gumweed (*Grindelia camporum*) require as much as 80 to 90% alcohol for their menstruums. To get the most activity out of your herbs it is probably a good idea to use a menstruum that has been customized for each herb. A chart with menstruum guidelines can be found at the end of this guide.

Many home medicine makers work with what is known as a standard menstruum or a mixture of 50% alcohol and 50% water. This menstruum tends to extract a fairly wide range of chemical constituents from most herbs and is a good place to start. However if you are working with a costly herb it may be a good idea to use a customized menstruum to get the most medicinal activity.

An easy way to get a 50/50 menstruum is to use any 100 proof hard liquor. The proof of the liquor divided by 2 tells you the amount of alcohol it contains. So 100 proof liquor contains 50% alcohol and 50% water. 80 proof liquor contains 40% alcohol and 60% water. Any type of liquor can be used but many herbalists prefer vodka because of the way it is manufactured and because it has little flavor. The least amount of alcohol that can be used is 25%, as this amount is needed to preserve the tincture. For economic and health reasons it is best to use the least amount of alcohol possible when making tinctures.

If you need a menstruum that contains more than 50% alcohol you must make your own using grain alcohol. Grain alcohol, which contains 95% alcohol and 5% water, is diluted with water to achieve the desired ratio of alcohol to water. Here is a chart to help you calculate the amount of alcohol and water (in ounces) you need to make custom menstruums.

When using custom menstruums, make up a quantity of menstruum first and then add it to the herbs.

Quantity of Menstruum Needed	Grain Alcohol to Water Ratios for Custom Menstruums in Ounces			
	50%	60%	70%	80%
4 ounces	2 grain 2 water	2.5 grain 1.5 water	3 grain 1 water	3.5 grain .5 water
8 ounces	4 grain 4 water	4 grain 4 water	6 grain 2 water	7 grain 1 water
12 ounces	6 grain 6 water	7.6 grain 4.4 water	9 grain 3 water	10 grain 2 water
16 ounces	8 grain 8 water	10 grain 6 water	12 grain 4 water	13.5 grain 2.5 water

Making Tinctures

There are two methods for making tinctures by extraction, the folk method and the weight to volume method. The former is the traditional way herbal medicines have been made for hundreds of years in kitchens all over the world. The latter is a more scientific method using weights and measures. Both have their value and you may want to use different methods for different herbs.

The folk method is a simple and fairly effective way to make tinctures and has been used for many generations. However, it is not the most cost-effective way to make a tincture because you are using much more herb to menstruum than is necessary.

On the other hand, the weight to volume method is designed to give you the most tincture for the amount of herb used. This method is based on ratios of herb to menstruum and comes from international pharmaceutical standards for tincture making. In terms of cost effectiveness, the weight to volume method assures you of getting the most tincture out of your herbs while ensuring maximum potency. Of course this assumes that all herbs used to make tinctures are of equal value in terms of freshness which is not always the case. All commercial manufacturers use the weight to volume method. In addition they use customized menstruums for each herb.

Which is the best method for you? You may want to start simple with a few folk tinctures. This is especially true if you grow or harvest your own fresh herbs. However if you want tinctures to treat very specific health conditions you probably want to use the weight to volume method, not only for the increased potency, but also due to cost savings.

The Folk Method

The folk method is a simple technique not unlike home cooking. The fresh or dried herbs are chopped or ground finely and put in a jar with a watertight lid. Menstruum is added to a point just about two inches, or roughly the width of two fingers, above the level of the herb. The jar is capped, given a good shake and stored in a cool, dark place for two weeks. Once or twice a day tinctures should be given a thorough shaking. After about two weeks, the tincture is ready.

When using this method, any type of menstruum can be used. Menstruum ratios can be standard, 50% alcohol and 50% water, or customized for each herb.

Some points to remember when making tinctures with the folk method:
When calculating the level of menstruum to be added to the herbs make a mark on the jar before adding any liquid. Once you begin to pour in the menstruum your herbs will begin to float and you will need a point of reference.

Weight to Volume Method

The weight to volume method is based on pharmaceutical standards for making tincture extracts. For each ounce or gram of herb a specified amount of menstruum must be used. These guidelines were created to regulate commercial production of tinctures. Without this kind of standardization you could put one leaf of herb in huge container of menstruum for two weeks, strain it and call it a tincture! All commercially sold tinctures must conform to weight to volume guidelines in order to be sold as tinctures.

The weight to volume method gives you the most tincture possible per ounce of herb used. This may not be so critical if you are using common herbs that are abundant around you, such as nettles (*Urtica dioica*) or dandelion (*Taraxacum officinale*). However, when you are purchasing quality organic herbs at a fairly high price, getting the most for your money is a big consideration.

To make a tincture with this method you must first weigh your herb. For every ounce or gram of herb you must use a specified amount of menstruum based on whether the herb is fresh or dry. Because fresh herbs contain water the volume of menstruum used is less than with dry herbs. The math is fairly simple but here is helpful chart.

Herb to Menstruum Ratio for Weight to Volume Method		
Dry herbs	1:5	1 part dry herb to 5 parts menstruum dry herb weight x 5 = ounces of menstruum needed
Fresh herbs	1:2	1 part dry herb to 2 parts menstruum fresh herb weight x 2 = ounces of menstruum needed

For example, if you have 5 ounces of dried licorice root (*Glycyrrhiza glabra*) you would grind it up, put in a jar and add 25 ounces of menstruum to get a 1:5 tincture.

If you have 2 ounces of fresh chickweed (*Stellaria media*), you would chop it up, put it in a jar and add 4 ounces of menstruum to get a 1:2 tincture.

To actually make the tincture put the weighed herb in a jar, cover with correct amount of menstruum. The jar is capped, given a good shake and stored in a cool, dark place for two weeks. Once or twice a day tinctures should be given a thorough shaking. After about two weeks, the tincture is ready.

Non-Alcohol Tinctures

Tinctures can also be made using apple cider vinegar or vegetable glycerin as menstruums. People who are in recovery or just don't like the idea of using alcohol on a daily basis may prefer these tinctures. They are gentler and more food-like in nature, making them an ideal way to take tonic herbs for long periods of time. In general they are less potent than alcohol based tinctures because their extracting properties are weaker. They have a shorter shelf life - about a year - and should be stored in a very cool place or the refrigerator.

To increase the potency of vinegar and vegetable glycerin tinctures you might try what is known as double tincturing. First you make a tincture, as you would normally do, following the directions below. After you strain out the herb you take the finished tincture and reuse it as the menstruum for a new batch of herbs.

Glycerin tinctures or glycerites are sweet-tasting and are particularly good when making children's remedies or treating digestive system problems. Some commercial glycerites are actually alcohol tinctures with the alcohol removed and vegetable glycerin added.

Vinegar Tinctures

Vinegar tinctures are made from undiluted organic apple cider vinegar. You can make them using a single herb or a combination of medicinal and culinary herbs. Vinegar tinctures can be used as salad dressings or taken as you would any other tincture. Vinegar tinctures can be made using the folk or weight to volume method. Keep in mind that any tincture made in this way is going to be significantly less potent than an alcohol tincture and it will have a shelf life of about one year.

To make vinegar tincture use undiluted organic apple cider vinegar straight from the bottle. Chop or grind your fresh or dried herbs, place in a jar and cover with the vinegar. The jar is capped, given a good shake and stored in a cool, dark place for two weeks. Once or twice a day tinctures should be given a thorough shaking. After about two weeks, the tincture is ready. Strain out the herbs and store in the refrigerator. Check your vinegar tinctures for cloudy masses that indicate that they have gone bad.

Teas or Water Extracts

The ritual involved in making and serving tea is an important gesture of good will and friendship in many cultures. Teas that are served in social situations are usually what we consider beverage teas. Blended and brewed to be flavorful, the ratio of herb to water is quite large. With medicinal teas the situation is quite different; flavor is often a secondary consideration and the ratio of herb to water is quite low. Medicinal herb teas are potent medicines and have strong, distinctive tastes. When making herbal teas that blend several herbs the challenge is to create an effective medicinal formula with flavors as part of the therapeutic effect.

Technically speaking, herbal teas are should be called infusions or decoctions depending on how they are prepared. The method used depends on the type of plant materials you are working with. Delicate or aromatic parts of plants, like flowers and leaves, are infused, or steeped, while woody, fibrous parts of plants, like roots, seeds and barks, must be decocted, or simmered. When a combination of plant parts is being used use a combination of brewing techniques.

Making Infusions

Infusions are prepared from the delicate parts of plants like the leaves and flowers. To make an infusion simply cover the herbs with cold or hot water and allow to steep. Steeping time can be from 20 minutes to 6 hours depending on the herb and the temperature of the water used. After the herb is infused it is strained, using a metal or bamboo tea strainer. Teas can be drunk hot or cold.

Dried herbs may be crumbled or ground for a few seconds before infusing. Fresh herbs should be chopped and bruised with a wooden spoon or mortar and pestle before infusing.

Teapots can be used for making infusions but another good method involves the use of quart canning jars. They will tolerate heat and can be capped while steeping. It is beautiful to watch the deepening color of the tea as it steeps. The tea can then be strained into a second clean quart jar and stored in the refrigerator.

If you use tea bags or tea balls be sure to suspend them in the top third of the teapot to allow the water to circulate through them as the tea infuses. The infused water will sink to the bottom and push the less saturated water up to contact the herb.

The amount of time an herb should be infused varies widely. Many herb books will give recommendations for individual herbs that can be helpful. Of course when working with a blend of different herbs you are usually on your own. A general guideline you may find useful is to steep herbs for acute conditions for 20 minutes to an hour, while tonifying herbs can be infused for 2-3 hours or overnight.

If you are using specific tonic herbs for many months you may find it easier to incorporate the herbs into your daily routine. One way to do this is to make a cold infusion of your herb or herbs in a quart jar before you go to bed at night. In the morning, strain the infusion into a second quart jar. You now have an easy to carry jar of herb tea that you can take with you for the day. This tea can be rewarmed later if need be, however please remember the no microwaves rule!

And finally, keep in mind that some roots which contain lots of essential oils, like valerian (*Valeriana off.*) or angelica (*Angelica archangelica*) are best prepared as cold infusions to retain more of their essential oils. This is also true for highly aromatic leaves like lemon balm (*Melissa off.*) and peppermint (*Mentha piperata*)

Making Decoctions

Decoctions are prepared from tough, woody parts of plants like roots, barks, seeds and some types of leaves. To make a decoction, place the herbs in a non-aluminum pot, cover with cold water and bring to a boil. Immediately reduce to a simmer, cover and decoct for 20 minutes or longer. Allow the decoction to cool slightly, then strain into a clean jar and compost the spent herbs. It is very important to always begin a decoction with cold water. Hot water causes certain fibers in plants to tighten; reducing the amount of constituents that will dissolve in the water. Dried herbs should be ground slightly before decocting. Fresh herbs should be cut into small pieces and bruised with a wooden spoon or mortar and pestle before decocting.

Ratios for Infusions or Decoctions

When making infusions and decoctions the ratio of herb to water used is determined by the weight to volume method. Measuring herbs but the teaspoon is not a very accurate system. For example, a teaspoon of a very fluffy herb like raspberry (*Rubus idaeus*) is very little actual herb, while a teaspoon of a dense root like dandelion (*Taraxacum off.*) is quite a bit of herb. Refer to a good herbal for specific recommendations on individual herbs.

When making teas use three times as much fresh herb as dry herb. The ratio of herb to water used is usually in this range:

- 1 teaspoon dry herb/ 3 teaspoons fresh herb: 8 ounces of water.
- 2 ounce dry herb/ 6 ounces fresh herb: 16 ounces water.

Infused Herbal Oils

Herbal, or infused oils, are prepared by infusing or steeping herbs in vegetable oil to extract their medicinal properties. The oils are used externally to treat a variety of conditions such as skin conditions, dry skin, wounds, bruises, sore muscles and more. Don't confuse herbal oils with essential oils; essential or volatile oils are highly concentrated extracts distilled from fresh plants. Almost all essential oils are produced commercially as they require stills or other sophisticated extraction equipment and large quantities of fresh plants.

There are several methods for making oils; good results can be had using solar infusion or an oven. Both methods require heat to activate the extraction process. Solar infusions work best in warm weather, obviously, and take several days to complete, while the oven method can be done any time and takes only a few hours to complete.

Many different types of vegetable oil can be used as a basis for herbal oils. Oils made from certified organic sources are best. It is foolish to use oils that have been heavily sprayed with chemicals, or those extracted with chemical solvents and heat. The type of vegetable oil you choose will add another dimension to the healing actions of the herbs. In addition, all oils have different molecular structures which affect the rate at which they are absorbed into the skin. For this reason oils that linger on the skin and are absorbed slowly would be preferable for treating topical skin conditions, while oils that are absorbed rapidly would be better for chest rubs and massage.

For both of the methods described here, fresh or dry herbs can be used. When making oils from fresh plants, be certain the plants are harvested after the dew has dried on a fairly dry day and, if possible, allow the herbs to wilt overnight. Dry herbs can be finely ground.

Keep in mind that the biggest challenge in making herbal oils is keeping them from becoming rancid or moldy. When working with juicy herbs, use the oven method for best results. If you do use the infusion method, be certain to wilt the herbs first and use scrupulously clean jars. It is also important to have as little air space in your jar as possible, so use jars that are equal in size to the amount of herb. Completely cover the herb with oil so no stray bits are sticking out. You may need to poke around with a chop stick to get the herb to settle.

Herbal oils should be stored in a cool, dark place or in the refrigerator. Properly stored they may last for several years. It is usually easy to tell when oil has gone bad as it will begin to get cloudy and smells like a swamp. Once oil is rancid it is no good and must be thrown out.

Making Solar Infused Oils Powder dry herbs or chop fresh, wilted herbs and put in a sterile jar. Use a jar that will be completely filled with the amount of herbs you are using. Cover herbs with oil to just above the level of the herbs and just below the top rim of the jar. You may need to poke a chop stick or wooden spoon in the herbs to release air bubbles. Herbs should be snug but not tightly packed. Remember, the oil must be able to move freely around the herbs to bath them and extract their properties. Cap tightly and shake well. Set the jar in a brown paper bag in a sunny spot. Shake daily and check for mold. The amount of time to infuse oils varies. Your oil could be ready in 5 to 7 days. When the oil has a deep, rich herb color and a nice fragrant smell it is ready. The important thing to remember about oils is that they must be watched closely for mold or weird smells.

The Oven Method Fresh or dry herbs may be used. Fresh herbs can be freshly harvested and without dew, bruise them slightly. Dry herbs should be powdered or coarsely ground. Put the herbs in a two quart ceramic or enameled casserole dish with a lid. Gently press the herbs into the bottom of the dish and then pour enough oil in to completely cover the herbs. Stir gently to coat the herbs with oil and allow them to settle into the oil. Cover and bake at 250 degrees for one to two hours. The time needed will vary from herb to herb. Dry herbs will infuse faster than fresh and will require less cooking time.

Every 20 minutes or so, gently stir the oil. If you are using fresh whole herbs, lift them from the oil with a slotted spoon or a fork to check for “crispness.” When herbs begin to look crisp or dry it means they have begun to cook and the oil is done. Dry herbs are harder to judge, here you are trying to keep the herbs moving around and using your sense of smell to guide you. Usually dry herbs require about one and half hours to be fully extracted. However, older herbs and plants that are by nature dry may take less time. Oils that are beginning to overcook smell a little like a camp fire. If that smoky fragrance greets you on one of your twenty minute checks, your oils are done.

Remove the casserole dish from the oven, uncover and cool before straining. Keep in mind that the trick to getting nice oils using the oven method is to be vigilant about checking the oil for “doneness”.

The oven method is recommended whenever you need oils quickly or when you are working with very moist, juicy plants.

Herbal Salves Salves are herbal infused oils that have been thickened with beeswax. Applied topically to wounds and cuts they hold the healing property of herbal oils on the surface of the skin. The beeswax in itself is healing and acts as a sort of pliable bandage. Beeswax can be purchased in many natural foods stores or directly from beekeepers. A little beeswax goes a long way.

It is very easy to make way too much salve the first time you attempt it. Before you begin, assemble several short, small wide-mouthed jars and use them to measure the amount of oil you will be working with. Salves, properly stored away from light and heat, have a shelf life of about a year so it is best to make small batches frequently.

Making Salve First prepare a batch or two of infused herbal oils using the directions given above. Grate up some beeswax. You will need about 1 tablespoon of grated wax for each ounce of oil. Measure the amount of oil you need, using your available salve jars as measures, into a non-aluminum pan. Warm gently over low heat. Add grated beeswax and stir until it dissolves completely.

Test for proper consistency by taking a spoonful of the oil/wax mixture and setting it on a plate in a cool place, or the refrigerator, until it hardens. The salve should be easy to scoop up with your finger but not runny or oily. If the salve is too soft, add a little more grated beeswax. If it is too hard, add more oil. You may have to fool

around with it a bit to get the right consistency. When the mixture feels right you may want to add several drops of essential oil or vitamin E, stir in completely. Pour into salve containers and let it cool and harden.

Herb Suppliers

Herbs - Fresh and Dried

Mountain Rose Herbs – Excellent website and catalogue. Top quality source of organic and ethically harvested herbs. Also essential oils, bottles, jars, beeswax and a wide range of herbal supplies.
800-879-3337 www.mountainrose.com

Pacific Botanicals – Dried and freshly harvested organic herbs. Fresh herbs available during the growing season (shipped overnight delivery.) Minimum quantity: one pound. Grants Pass, Oregon
541-479-7777 www.pacificbotanicals.com

Tinctures - Simple and Compounds

Herbalist and Alchemist – Tinctures of individual herbs and compounded formulas for a variety of conditions. Organic and ethically harvested herbs. Specializing in many hard to find herbs. New Jersey
908-689-9020 www.herbalists-chemist.com

Herb Seeds

Horizon Herbs: Strictly Medicinal Seeds – Exhaustive list of medicinal herb seeds, and good books on growing. Richo Cech. Williams, Oregon 541-846-6233 www.horizonherbs.com

Recommended reading:

Growing and Marketing Ginseng, Goldenseal and other Woodland Medicinals – Jeannine Davis and Scott Person

Identifying and Harvesting Edible and Medicinal Plants – Steve Brill with Evelyn Dean

Medicinal Herbs in the Garden, Field and Marketplace - Tim Blakely and Lee Sturdevant

The Medicinal Herb Grower: A Guide for Cultivating Plants that Heal: Volume 1 – Richo Cech

Medicinal Plants of the Southern Appalachians – Patricia Kyritsi Howell

Medicine Makers Handbook – James Green

New Holistic Herbal – David Hoffmann (or any other book by David Hoffmann)