

Larrea Handout

Overview

Chaparral (*Larrea tridentata*, Zygophyllaceae) is a valuable plant for infections. Please note that I will be using the names Chaparral and Larrea interchangeably throughout this article.

There are a number of reasons I like this plant, alongside its medicinal properties. First, it is very common throughout several desert ecosystems in the southwestern US. So, while that is quite a ways from my home (Ithaca, NY), when I am out that way, I can gather oodles of this fragrant (some would say stinky) plant without impinging on it or its environment's health.

Botanical Description

Botanical name: *Larrea tridentata*

Botanical family: Zygophyllaceae (Caltrops family)

Common names: Chaparral, Creosote bush, Gobernadora, Greasewood.

Larrea tridentata is a medium-sized, branchy shrub with small, resinous, evergreen leaves. The leaves are compound and opposite, with two leaflets attached at the base. The flowers are shiny yellow with five petals. The fruit is a capsule densely covered in white hairs.

Interesting fact

Another aspect that makes this such an intriguing plant is its longevity. There is a Larrea stand in the Mojave Desert called the "King Clone" that is a whopping 11,700 years old. This makes it one of the oldest living organisms on earth (as far as measuring this type of thing goes). The original aboveground part of the plant died long ago, but it continues to expand underground, sending up new shrubs (clones) that now form a ring. All the plants in this clonal ring are genetically identical, and it has continued to grow and expand since about 9700 BC, around the same time humans started to experiment with agriculture.

And the last big glacial period was ending around then as well. At that time, in what is now California, a seedling sprouted, grew, and continues to this day through the many ages of what we call modern human history.

Wildcrafting

1. Chaparral is often the dominant plant in its habitat.
2. Frequently, there are large colonies in its range. To wildcraft, drive into one of these areas and look for plants with more young growth, which is a brighter green color (and often a more pungent resinous smell). You will see this distinction more often near the roadside as the scant water in the desert runs off the road and is taken up by the plants. I avoid the plants growing along the roadside due to the pollutants from vehicles and roadwork.

3. The plants are fairly easy to gather by either cutting the stems with pruners or just breaking off the younger stems, as the plant stems are brittle. I tend to use both methods when gathering. I put the plant material in burlap bags, which I find versatile for collecting many types of plants.

Processing and Medicine Making

After removing the leaves from the stems, there are a couple of ways to process these plants for medicine. First, you can just dry it for future use. The plant dries easily; just lay it out on a tarp in a non-moist environment. It is helpful if the room gets some sunlight to speed up the drying process. If you use a dehydrator, remember the smell will waft throughout your home, and your dehydrator will smell like Chaparral for a long time. This might be problematic if you plan to dry more delicate smelling plants or foods in it later.

Medicinal Preparations

The leaves are the part of this plant used medicinally, though if you have some branches, flowers, or seed capsules in with them, it will not hurt the medicine. The leaf can be used either fresh or dried, as they do not contain much water.

There are a number of preparations that can be made from Larrea. Here is a list of some of the ones I make and use frequently. Due to its antioxidant properties, the products often have a long shelf life.

1. **Tincture**-cover with 95% ethanol at about a 1:2 ratio. The leaves should be covered by the menstruum and a few inches above it.
 - This is for internal use.
2. **Liniment**-Similar to the tincture, but with 70% isopropyl (rubbing) alcohol.
 - This is for external applications.
3. **Infused oil**-soak (infuse) the leaves in extra virgin olive oil and let them sit for at least 2 weeks in the oil. Cover the leaves with the oil, plus a few inches above them. They can also be put in a hot water bath for 1½ hours. Since the leaves resist mold, you can leave them in the oil for a longer period compared with other plants.
 - This is for external applications where it is applied directly to the wound or infection.
 - Larrea has strong antioxidant effects, and its constituents help stabilize the infused oil. Adding Chaparral oil to other oils or salves will slow their rate of rancidity and give them a longer shelf life. The drawback is its strong taste and smell, so you may not want to employ it in preparations like lip balms.
4. **Salve**-salves are infused oils solidified with beeswax.
 - Using a Larrea salve is similar to using it as an infused oil, though the beeswax will help it maintain contact with the wound.
5. **Tea**- Chaparral is usually infused rather than decocted (cooked) in the water. Remember that if this is for drinking, you may want to use a light touch with the plant; it has a very strong bitter flavor.
 - This can be used internally or externally.

6. **Honey**-Chaparral covered in honey.
 - To prepare this, the Chaparral and honey can be placed in a double boiler, a hot water bath, or keeping the jar near a warm place so that the honey remains liquid enough to allow the plant's constituents to be absorbed into the honey.
 - Chaparral honey has antibacterial activity and is useful for applying externally to burns and wounds.
7. **Capsule**
 - This is for internal use.
 - The plant's constituents are stable, so the medicinal action will still be potent even after the powdering process.
 - Capsules are a good way to take Chaparral internally as they bypass the taste buds. But if there is 'Chaparral dust' on the capsule, it might decrease patient compliance.
8. **Compress**-a compress is prepared from a tea of the plant.
 - A cloth is dipped into the tea and applied topically.
 - Chaparral compresses are beneficial when you cannot directly soak the affected area.
 - You can also soak a bandage with the tea, though it can be problematic to keep an injured area moist for too long.
9. **Poultice**-a poultice is when the plant is applied directly to the body.
 - Compresses are usually easier to use, as any bits of the Chaparral will have to be removed from an open wound.
10. **Powder**-reducing the Chaparral into a powder
 - These can be put into capsules and used internally.
 - The powder can be mixed with other plant material, such as clay, and applied externally.
11. **Wash/Soak/Bath**-these are all ways of soaking a body part in Chaparral tea.
 - Make a very strong tea, then soak the infected body part, such as a foot or forearm. The tea should be warm to hot, but not hot enough to burn.
 - It is one of the most effective ways of using Chaparral.
 - Make sure to dispose of the now-infected water in a sanitary manner.

Patient Compliance

An important consideration with Chaparral is how to get people to ingest it. Externally, it is not difficult, but internally, it can be quite tricky as the plant is very bitter and its taste and smell are disagreeable to many. This is especially true if they will have to take it for a while. So when deciding what form to give it, it is important to consider the individual's ability to actually consume it. For most folks, choosing a different herb may be the best choice. It is not easy to disguise the flavor of Chaparral; adding honey to the tea just makes it taste sweet and yucky. Consider capsules, as they have little flavor (unless the outside is dusted with the plant powder) and are relatively stable in powder form. The next most acceptable form is tincture, mainly because you can shoot it down quickly and don't need as much. You

can add the tincture to juice or add flavoring herbs such as Cardamom to the tincture, but probably the best way to get it down is to dilute it, knock it back, and follow with a chaser. I would reserve the tea for folks used to herbal medicine.

Medicinal Uses

While there are many traditional and current uses of Chaparral, this will focus mainly on its uses for various infections.

Infections

Larrea tridentata in various preparations can be beneficial for preventing and killing several infectious organisms. These include bacteria, fungi, and protozoa. Chaparral is a valuable first aid plant for staph (*Staphylococcus aureus*) infections. It can also be beneficial applied topically to fungal skin infections such as athlete's foot.

With staph infections, if the wound is on an area that can fit into a basin (i.e., hands and feet), the infected area can be soaked in a very strong tea of *Larrea*. If it cannot be soaked, use a hot compress. Or *Larrea* tincture or liniment can be applied directly or put onto a gauze pad. It can also be alternated with other remedies, such as activated charcoal, or combined with other antibacterial plants, such as *Echinacea* or *Berberis* species, for internal and external use.

For staph infections, avoid using sticky tape to hold the gauze in place. When it is removed, the hair pulled out can leave a gap for an infection to occur. Use self-adherent cohesive tape. Staph infections are not always easy to treat and may need professional medical attention. Make sure that all waste products are disposed of safely.

Another place to use *Larrea* is for infectious gut organisms, including bacteria and protozoa, consumed through food or water. This gets tricky as it can be hard to tell if the symptoms (i.e., diarrhea and vomiting) are due to an infectious or non-infectious disorder. And Chaparral can be difficult to ingest if there is nausea. Again, it can be combined with other herbs and alternated with activated charcoal. Another place to consider using Chaparral is for fungal infections, such as the various *Tineas*. It can also be useful for toenail fungus (though these can be very stubborn). For toenail fungus, soak the foot in hot Chaparral tea and apply the tincture or liniment topically.

Other Medicinal Uses

Larrea is also used for a much broader array of medicinal uses. It has been researched due to its containing nordihydroguaiaretic acid (NDGA), which has strong antioxidant properties. The free radical-scavenging abilities of NDGA suggest it may be helpful in a wide range of diseases.

Due to its bitter flavor, it can be used as a digestive bitter, but since it has many other properties, it is safer to use a less complex bitters, such as *Gentian*.

Dosage

Here are some general dosage protocols. When treating an acute infection, such as one caused by contaminated food or water, start with a large loading dose and then use a medium dose regularly for 2 days or so afterward. For example, if someone drank some iffy water, you can start with about 4 ml (2 full dropperfuls) of the tincture, combined with other herbs. Alternate it with activated charcoal, waiting at least 2 hours in between. Later, take about 2.5 ml (about 1.5 dropperfuls) every four hours for about 2 days. Then, reduce it to about 2 ml (1 full dropperful) every four hours for another day or so. This all depends on whether the symptoms are improving.

For external infections, soak the infected part in hot-ish water at least 1-2 times daily. Then apply Chaparral tincture or liniment throughout the day.

Combinations

While *Larrea* can be used alone, it also combines well with other plants. What percentage of the plant you use in a formula depends on the primary health benefit you are seeking. For instance, if you are using it for an infected wound, you might use a larger percentage of Chaparral as it is a strong disinfectant. But if inflammation is also involved, you might add plants that have anti-inflammatory properties.

For staph infections in particular, it is helpful to use a mix of plants and change them after every few wound care treatments to help keep the staph infections at bay.

1. **Antibacterials**-Echinacea (*Echinacea purpureum*), Osha (*Ligusticum porteri*), Goldenseal (*Hydrastis canadensis*) Oregon grape root (*Berberis* spp), Barberry (*Berberis thunbergii*), Yarrow (*Achillea millefolium*), Myrrh (*Commiphora* species).
2. **Antiinflammatories**-Arnica (*Arnica* species.), Willow (*Salix* species.), Tumeric (*Curcuma longa*), Licorice (*Glycyrrhiza* species).
3. **Astringents**-*Anemopsis californica* (Yerba mansa), Oak (*Quercus* spp.), Witch hazel (*Hamamelis virginiana*), Geranium root (*Geranium maculatum*).
4. **Vulneraries**-*Calendula officinalis*, Yarrow (*Achillea millefolium*), St. Johnswort (*Hypericum perforatum*).

Safety Profile

There are some safety concerns about the internal use of Chaparral. None of these health risks is associated with using the plant externally. There are various opinions about the potential toxicity of Chaparral; unfortunately, these safety issues are not clear-cut. I use guidelines from what I've gleaned from research and clinical experience. I have not personally seen any toxicity issues with taking Chaparral internally, but that does not mean they do not exist.

One thing that seems consistent is that short-term use at a low dosage seems safe. This range is around 2-4 ml of tincture daily or 1-2 cups of tea daily for two weeks.

Safety gets much more complicated when taking larger doses for a longer duration. As with many studies about herbal medicines, it can be difficult to interpret the causality between Chaparral and bodily harm, but there is research suggesting potential for liver damage at higher doses.

I suggest people with any liver disease, such as hepatitis or cirrhosis, avoid taking it internally unless it is for a very brief time. It also seems like a good idea to avoid Chaparral during pregnancy. I think the internal use of Larrea for first-aid situations, notably infections, is reasonably safe due to the short duration of its use. The intense flavor of Chaparral is often a deterrent for people drinking large amounts of the tea or ingesting it for prolonged periods. Capsules bypass this and should be used cautiously.

As with so many plants, there is speculation that Chaparral may interact with medications. So far, there has not been direct evidence of this happening. Still, it is a good idea to monitor any medicines you are taking to make sure that Chaparral is not interfering with their function.

Chaparral is used by some people as a cancer treatment. I don't feel unqualified to give a response to this, as I don't have enough information, and would suggest that anyone with serious health disorders make sure to be seen by a knowledgeable healthcare practitioner.

Considerations

Please remember that when helping people, to keep the patient's needs first. Their getting well is more important than any desire to experiment with herbal medicines. If there is an infection that is quickly getting out of hand, it may be time for medical intervention.

Conclusion

Larrea tridentata is a valuable plant for several reasons. First, it has strong infection-fighting potential and can be used to inhibit or kill several different infectious organisms. This makes it a useful plant for anyone preparing to do first aid in an outdoor situation, especially at a longer event. Next, it is a common plant and can be gathered without harming the plant population or the environment it grows in. It is soluble in a wide variety of menstruums and can be prepared into a number of beneficial medicinal preparations. It has strong antioxidant properties, maintains its medicinal strength for a lengthy period, and can be added to other medicines as a preservative. For all of these reasons, plus the way it makes the desert smell after a rainfall, I hope others learn to appreciate and use this plant.

Stories and Anecdotes

Story #1. There were a few times when I have gathered Chaparral while on a Southwest road trip with family and friends. With the desert sun beating down through the car windows, the recently gathered wildcrafted Larrea plants reeked its strong odor. It was sort of like 10,000 of those little pine fresheners, but each one coated with Larrea resin.

A warning. Some of the people who have been with me on these trips needed a few years' recovery time to be around this plant again without being overwhelmed by the aroma. (This may be a bit of an exaggeration, but only a bit.)

Story #2 involves how I process the plant. In the mid-1990s, I was studying and teaching at Michael Moore's school in Albuquerque, NM. While there, I lived in a basement apartment. I was garbling (a quaint but useful herbal term for refining the plant) the recently gathered Chaparral by letting the plant dry on a tarp on the floor. After it dried, I would step on it to separate the leaves from the stems. This is pretty efficient, but as you can imagine, this Larrea Dance releases quite the odor tribute. And the landlords upstairs did not appreciate it. So I put a fan nearby, pointing towards the only little window I had down there. After a while, they stopped complaining, though I am unsure whether it was because they didn't want the hassle of kicking me out or that they just got used to the smell.

Story #3

Years ago, I lived in a very drafty, moist cabin. To keep most of my dried plants dry, I kept them in jars, buckets, and tubs. But I kept my Chaparral in an open box, figuring it would resist any molds. A couple of weeks after I had stored it in the aforementioned box, I looked in, and all of the Larrea had gone moldy. I didn't even know that could happen, but it sure did, and I had to compost all that hard work and plants gathered from far away. I guess Chaparral is not used to living in a constant moist environment and had no defenses against the pathogen.