# Grow *Genlisea* so you can see the traps

John Brittnacher • Ashland • Oregon • USA • john@carnivorousplants.org

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Abstract: *Genlisea* species have underground traps. There is a method of growing *Genlisea* that not only allows one to easily see the traps, but also it may be an easier way to grow *Genlisea* in general.

*Genlisea* species are some of the easiest carnivorous plants to grow but they are not commonly grown because under typical growing conditions all you see above the soil are the small rudimentary leaves and occasional small but cute flowers. It is quite easy to get bored with them. CPN has already had excellent articles on how to grow *Genlisea* (Meyers-Rice 1994; Corino 2020). Plus, there have been photos like Figure 1 in CPN. How to get a photo like that was left to the reader. It turns out it is very easy to grow the plants so you can see the traps any time you want.

There are about 28 species of *Genlisea* (Schlauer 2020). They are found in water saturated soils in Central and South America and Africa. The plants are small, rootless, have underground non-photosynthetic leaves in the form of traps that can be 20 cm long, above ground petiolate photosynthetic leaves, and they present their small flowers on relatively long scapes (Fleischmann 2012).

*Genlisea* are typically grown in a peat/sand soil mix heavy on the sand in pots tall enough to accommodate the traps. The water level is kept near the top of the pots. Grown this way, you cannot just turn the pot upside down in one hand and ease off the pot with the other hand to see the traps like you can with many *Utricularia* species grown with less sand and under drier conditions.

Personally, I am only interested in growing *Genlisea* if I can grow them in a way where I can see the traps whenever I want to see them. When considering how I could grow them that way, I realized the cheese baskets that I get ricotta cheese in would make the ideal soil holder for the plants and I could use yogurt containers with the lids to suspend the baskets with the plants in water. Except for a few feet of black plumbers PVC pipe wrap tape, all the materials needed to make the *Genlisea* growing containers are items that would have been either recycled or sent to a landfill.

Figure 1: *Genlisea hispidula* traps.

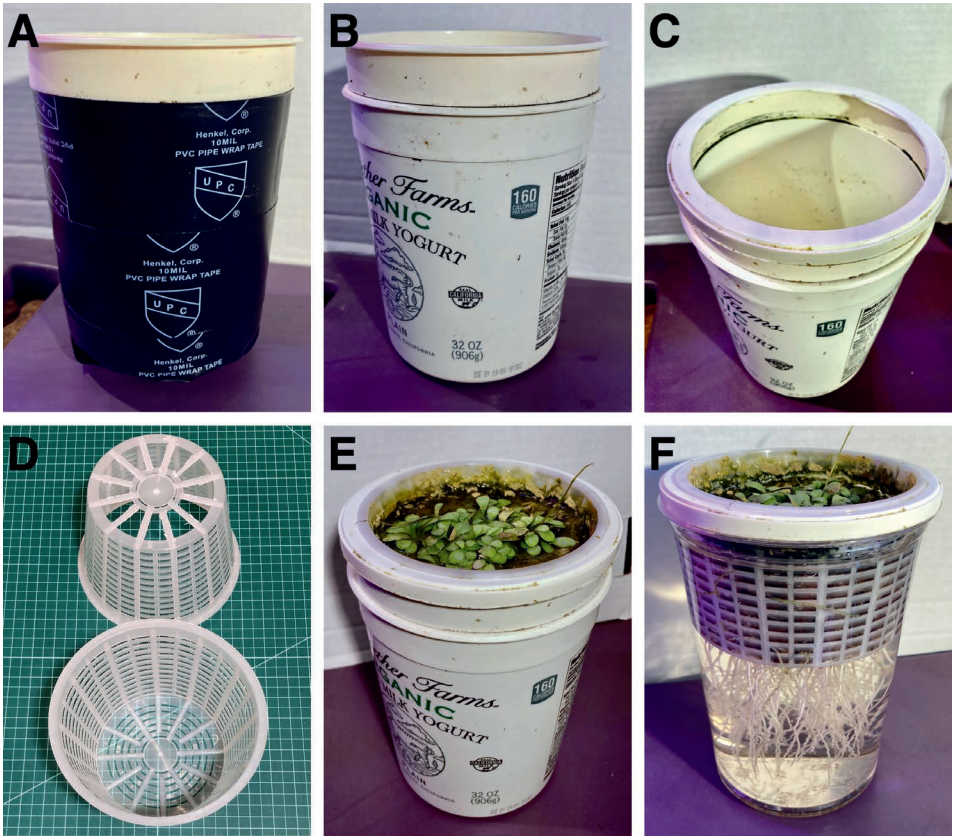


Figure 2: Construction of a *Genlisea* growing container. **A**. a 32 oz. yogurt container is taped to exclude light. **B**. the taped container is put inside another container for strength and stability. **C**. a lid is cut to fit a cheese basket. **D**. the cheese basket may need to be modified to allow the traps to escape the basket easily. **E**. these *Genlisea hispidula* plants are planted in pure long fibered *Sphagnum* moss. **F**. to display the traps, the basket with the plants is put into a 32 oz. deli container with fresh water.

The key item to find is a ricotta cheese basket that fits a 32 oz. yogurt container or some other container you have (Fig. 2D). Cheese baskets come in a bewildering number of shapes and sizes. If you are lucky, your grocery store carries a brand of ricotta or similar cheese that comes in a basket with a wide rim and you like ricotta. There are other options, of course, where you may have to buy or build something or otherwise be creative. An excellent option is small net pots (Fig. 3). Net pots also come in a number of sizes with various features. There are 3-inch net pots (82 mm wide at the top by 65 mm deep) that are the perfect depth for most if not all *Genlisea*. It is important to get net pots with wide rims so they will hang properly.

The biggest problem growing *Genlisea* so wet, especially if you use fertilizer, is the presence of cyanobacteria. It would be nice if you could grow *Genlisea* all the time in a display as pictured in D'Amato (1998). Unfortunately, you need to settle for systems where you have one setup for growing and another for display. Using tape to exclude light from the yogurt or other container will keep the traps free of cyanobacteria and algae. I use PVC pipe wrap tape because it is black, somewhat

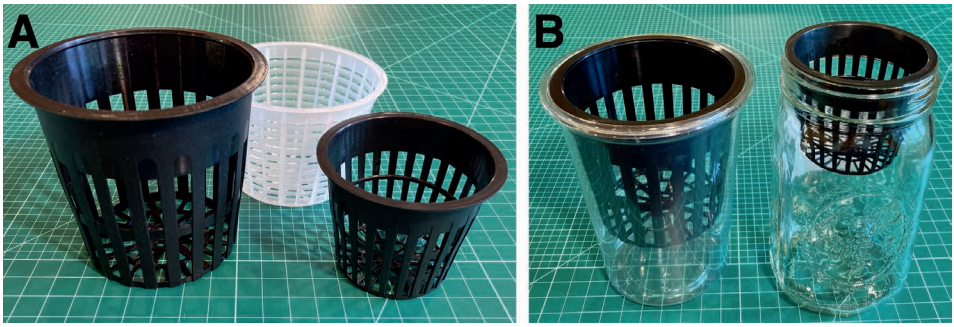


Figure 3: Net pots are an alternative to cheese baskets. **A**. Notice the wide rims on the top of these pots. The "4 inch" pot on the left is actually $4^1/_4$ inches (108 mm) edge to edge at the top; the "3 inch" pot is $3^1/_4$ inches (82 mm) edge to edge. **B**. The 4-inch pot fits in a 32 oz deli container after cutting a 4-inch hole in the lid; the 3-inch pot fits nicely in a wide mouth canning jar. Unfortunately, the 4-inch net pot is too deep to see *Genlisea* traps well but could be interesting for larger *Utricularia*. For *Genlisea*, this 3-inch net pot is perfect in a quart wide mouth canning jar.

stretchy, waterproof, and something I always have on hand (Fig. 2A). Any tape that excludes light will work. Since I allow the tape to extend onto the bottom, the taped container needs to be inside another container to be stable (Fig. 2B). The extra container also makes the setup stiffer when handling. If you use a canning jar with a basket or net pot, a sleeve made from heavy black plastic could work well.

Unless a cheese basket or net pot exactly fit the container, the lid will need to be cut to hold the basket. The baskets I get with ricotta are made by an Italian company (Anelli srl, P00665) although the dairy that makes the cheese is in California. The baskets need a hole about 98 mm wide. It turns out the yogurt lids have a ridge at about that width, so it is easy to cut a hole to hold the basket (Fig. 2C). The baskets should have some of the slats removed in the bottom to allow the traps to grow unimpeded. Use a utility knife with just a minimal amount of a new blade exposed from the outside of the basket or a chisel and block of wood from the inside. With the utility knife it is very easy to lose control of the knife and damage the basket if you use too much of the blade (Fig. 2D).

Long fibered *Sphagnum* moss is an excellent substrate for growing *Genlisea*. A new culture can be started by separating mature plants if the species self-propagates or, more commonly, from leaf cuttings using the photosynthetic or

Figure 4: *Utricularia reniformis* growing in a 3-inch net pot in a plastic glass. Notice there is no rim so this brand of net pot will not work suspended in a wide mouth canning jar. Photo by Mark Anderson.

the trapping leaves. The plants in Figure 2E have been growing in that basket over two years. You can also grow *Utricularia* species this way although there are a limited number of *Utricularia* species with underground traps that like being fully immersed in water like most *Genlisea*. With typical terrestrial *Utricularia* you would not necessarily need tall containers. If the plants want the water level lower, you could use short containers (Fig. 4). If you keep the water level well below the surface in a dark container, it is hard to determine at a glance when to add water. For species that really want a peat/sand soil mix, the basket or pot may be lined with long fibered *Sphagnum*.

Figure 5: *Genlisea hispidula* flower.

Maintaining the water level can be an issue for plants grown indoors where you cannot regularly hose off the plants. I cover mine with a plastic bag to help minimize evaporation and I forget about them for weeks if not months at a time. The plastic bag does interfere with flowering (Fig. 5) so for flowers it may be better to grow them in a large aquarium or just on a shelf in a plant tray. When I want to show off the traps, I put the basket in a 32 oz. deli container with clean water (Fig. 2F). You may need to cut a hole in the original deli container lid.

*Genlisea* do not require but appreciate strong light. Intense light will encourage cyanobacteria to overgrow the plants if you put too much fertilizer in the water. I have found that putting 5 to 10 coarse grains of a dry chemical fertilizer in the water does wonders for the plants. Once I put a pinch of fertilizer in the water for one plant. That was too much. The plants became completely overgrown with cyanobacteria. It required cleaning off the plants, flushing the soil and changing the water. They survived the episode just fine. Now I tend to fertilize the plants only when I change the water and want them to grow. That may only be once a year if the plants are looking good.

With the water level at the top of the soil, moss and *Drosera* can grow with the *Genlisea*. Raising the water level so that the plants are totally submerged can eliminate the moss, but I found *Drosera spatulata* to grow better totally submerged for months than they did in the nearby pots with peat/sand sitting in a small amount of water. Maybe it was the fertilizer in the *Genlisea* water.

*Genlisea* is underappreciated and should be grown more in ways that show off their traps. I find this method easer and the plants do better for me than using the traditional method.

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