

Cloning



This is a wonderful time for you as a cannabis grower, it is a great milestone if you are reading this section. You are currently on the path to cutting your own clones which means that you have successfully kept at least one cannabis plant alive through propagation and into the vegetative stage.

Even though clones can be taken from a plant at any stage of its life, clones grow roots fastest when they are taken from a plant that has been in the vegetative stage for at least 3 weeks. This ensures that the plant you are cloning from is healthy enough to recover from the surgery it's about to experience. Typically mother, or donor, plants are at least one month old or older, some growers are capable of keeping mothers in Veg for years, producing clones month after month.

Cloning is the most stressful event that your

cannabis plant will experience. Cloning is said to be almost as traumatic on the plant as an amputation is for a person.



Like a human surgery, the healthier the mother plant is before its limbs are cut off, the faster it, and the clone, will heal. Also like surgery, everything that will come into contact with the plant needs to be extremely clean. You wouldn't want your surgeon to perform surgery on you without washing their hands or sterilizing their tools so you don't want to clone your cannabis without doing the same. It is also a bad idea for the surgeon to perform surgery on someone else right after cutting you open without sterilizing first. Sterilize your tools before taking cutting from different mother plants. Your mother likes you clean.



Tools Needed:

- 1 bottle of hand sanitizer
- 1 bottle of rubbing alcohol
- 1 roll paper towels
- 1 shot glass
- 1 razor blade or scalpel
- 1 pair of scissors
- 1 gallon of pH balanced water (5.5-6.3)
- 1 container cloning gel or rooting hormone

If you're not using an aeroponic clone machine

- 1 seedling tray 10in x 20in
- 1 seedling humidity dome 7in tall
- 1 seedling heat mat with thermostat
- 1 plastic spray bottle
- 1in rockwool or rooting cubes, OR

If you are using an aeroponic clone machine

- 2in neoprene collars
- 1 container Cloning Solution

Prepare Clone Medium

Before we start cutting, it is highly suggested that you water your mother/donor plant, with pH balanced water, 18 - 24 hours before taking clones. Add a bit of B-1 to the water to reduce the amount of stress both the clone and the mother receive, making for faster rooting and recovery. Liquid kelp is a great natural source of B-1 and many other organic growth hormones. Once the cubes are soaked, lightly squeeze out any excess water from them. Cubes that are too wet can cause damping off and will kill the cuttings, the cubes should just be moist. If you are using a soil based medium with cups or containers, slowly water until a few drops come out of the bottom drain holes.



Make Your Cuts



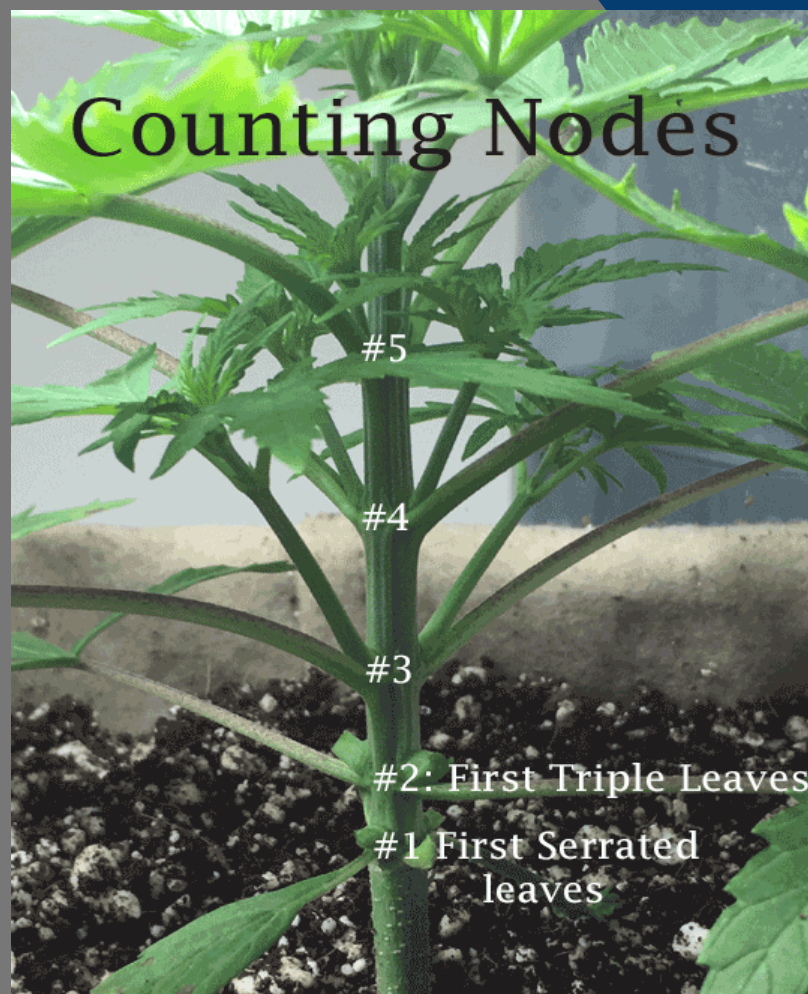
Now that you are ready to clone, we'll first start by washing our hands and sanitizing them with the hand sanitizer. Next we will sanitize all of our tools and containers with the paper towels and rubbing alcohol, if you haven't already.

We now need to choose which branch or branches we want to use as clones. Traditional teachings say that the bottom branches are the best to clone. The thinking behind this is that they are closer to the roots and therefore have better access to the newest nutrients and hormones. Newer schools of thought and experimentation have shown that clones can be taken from any part of the plant at any stage of growth including

the first few weeks of flowering.

When choosing your clones you will want to make sure to pick branches that are long enough to work with while also small enough to fit comfortably inside your dome, or cloning machine. The typical sized clone is roughly 6-8 inches tall with at least four leaf nodes growing off of it. A leaf node is a section of the stem where the leaves grow out of it. There are usually 2 leaves per node on female cannabis plants, males can show different node characteristics, but not always.

Next, take your clean razor or scalpel and cut the branch directly below the fourth leaf node. Place the trimmed cutting into a glass of water while you take more clones.



Gel & Medium

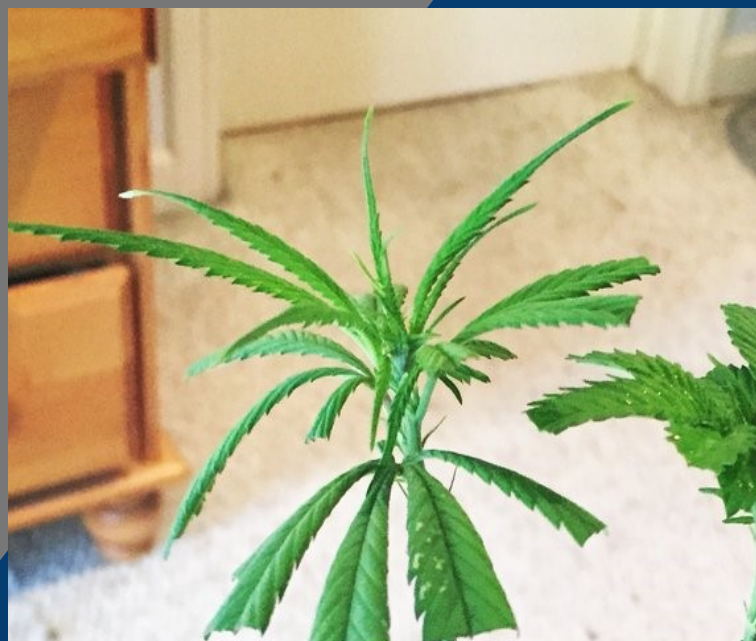
Now that we have our clones cut, we need to treat them with a rooting hormone and place them into the cloning medium of your choice. Your cloning medium needs to be soaked, or treated, appropriately at this time. Some rooting cubes come pre soaked but rockwool cubes need to be treated up to 30 minutes before use to adjust for pH.



Next fill the shot glass half way with your cloning gel, or rooting hormone, and set it to the side. Try not to dip your cutting directly into the gel container as it can cause cross contamination. Now take one of the clones from the water and

trim off all the leaves that are below the top growth node. Cut them off right where the leaf stem is attached to the main stem. Cut off anything that's still attached to the lower part of the stem. If any small leaves or growth sites are still attached to the stem get buried by your cloning medium, your clone will try to heal it and slow down the root production process. Now place the stem into your shot glass. Leave it to soak a few minutes while you trim the next clone.

When the next clone is finished, place it into the shot glass and remove the first one. Take the first clone and place it into your cloning medium at least 1 inch below the surface of the medium. If you're using a neoprene collars, wrap the collar around the stem leaving at least 1 inch below the bottom of the collar. Now take the sterile scissors



and trim down the remaining leaves, making them no shorter than an inch. This will cut down the amount of transpiration the clones put off while inside the dome. The more transpiration that occurs, the more water your clone will need in order to produce new roots. Once you trim down the leaves, your clone can be placed into your seedling tray or cloning machine.

Repeat this process until all of your cuttings have been treated and placed into their grow medium.

Nest Your Clones



When all of your cuttings have been put into their cubes/collars, we will gently place them into the seedling tray or cloning machine. This is

where they will live for the next couple of weeks, or hopefully less, until they're properly rooted. If

your ambient conditions are less than optimum it could take longer than two weeks before you see new roots. Some growers have seen health roots in less than a week but that is when ALL of their conditions were perfect.

A day or two before you take cutting, consider taking the time to set up your cloning tray, dome, heat mat & thermostat and thermometer and make sure everything is working and performing properly. It is really disappointing to loose all of your beautiful cuttings because the temperature in the dome was too hot or too cold. For the best and fastest results, consider following the 90/90 rule.



Keep your ambient, root level, temperature and your ambient humidity at 90 degrees for the first 4 days of nursing. After the initial 4 days you can back it down to 75-80 degrees until you see roots.

In order for this to work properly, it is best to NOT remove the dome at all unless there are issues. Some growers even go as far as taping their dome to the tray so it cannot be removed.

It is best to arrange the cubes so that none of the clone's leaves are overlapping another clone's leaves. If this is unavoidable, be sure to rotate each individual clone every couple of days to avoid growing mold and mildew.

After about two weeks of being in the dome, your lovely ladies should be ready to be transplanted into their permanent medium. If you are using a cloning machine, clones will be ready for transplant a few days earlier if conditions are right.

