

CLONEX[®]

A Guide To Successful Cloning



The Clonex Propagation System



The Clonex Propagation Guide

Why You Should Clone

Getting Started

Taking A Clone

Transplanting

The Clonex Propagation System

WHY YOU SHOULD CLONE

Cloning is a tried and true method for continued success in your garden. To keep your favorite strain in rotation you will need to take clones.

A clone is a cutting (a small piece of plant that's been cut off) that has re-established roots and is a genetic replication of the mother plant.

This guide will take you through the steps to successfully root a cutting. Once you've mastered the art of cloning you'll be well on your way to keeping your favorite genetics in rotation and having a self-sustaining garden.

No more buying clones from questionable outlets or worrying about bringing in pests from someone else's garden.



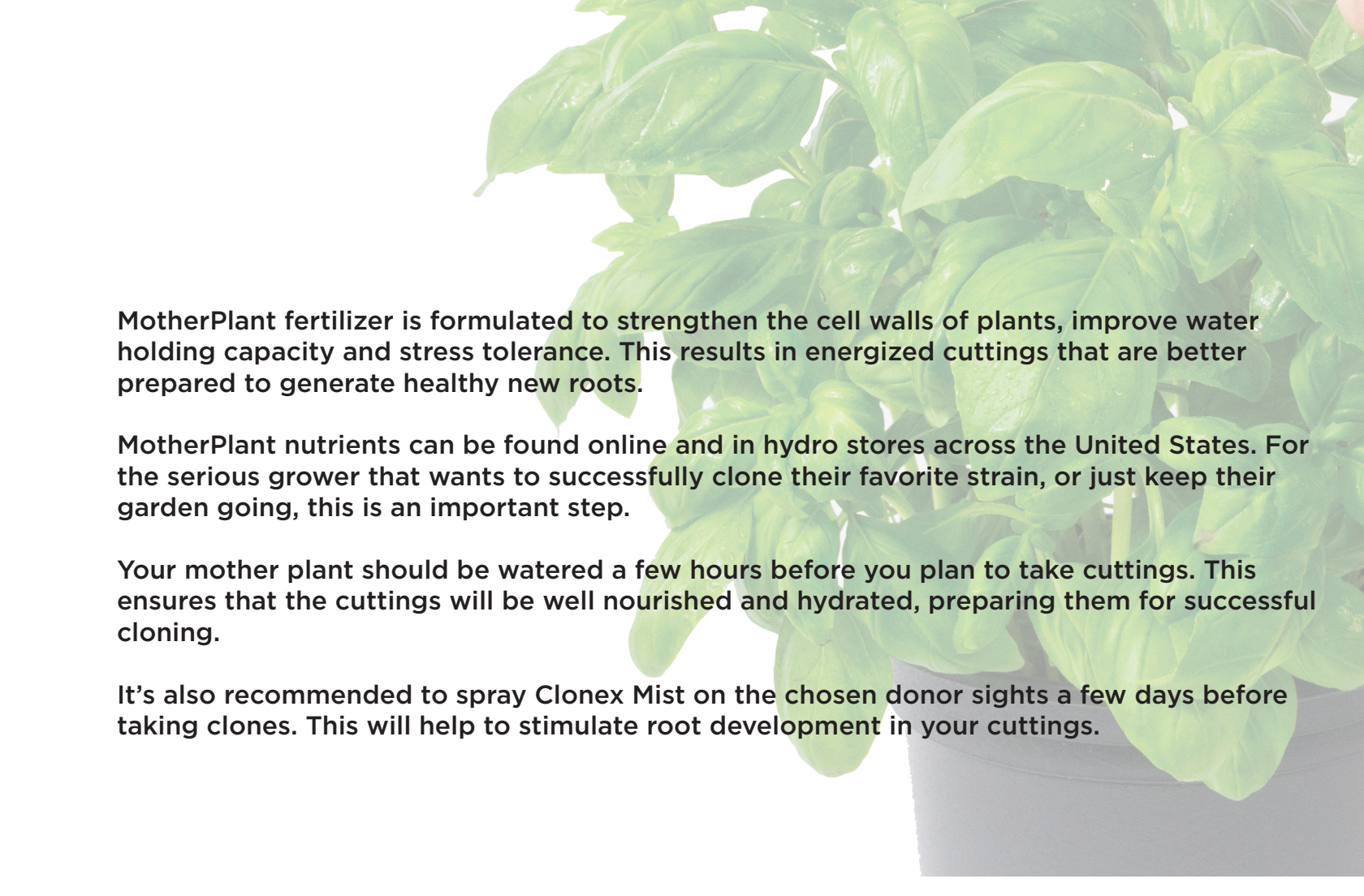
GETTING STARTED

Mother Plants

A mother plant is a plant that has been specifically grown to provide cuttings for starting new plants i.e. clones.

The cutting will be genetically identical to the mother, which is why you want to choose a mother that is a strong grower with good genetics. In other words, a healthy plant.

Using a fertilizer formulated for the needs of mother plants, like MotherPlant brand fertilizer, is important for the successful rooting of clones. A good fertilizer for mother plants is one that limits excess nitrogen and provides the important building blocks for carbohydrate accumulation. The excess nitrogen contained in standard fertilizers results in low carbohydrate reserves and poor rooting of clones.



MotherPlant fertilizer is formulated to strengthen the cell walls of plants, improve water holding capacity and stress tolerance. This results in energized cuttings that are better prepared to generate healthy new roots.

MotherPlant nutrients can be found online and in hydro stores across the United States. For the serious grower that wants to successfully clone their favorite strain, or just keep their garden going, this is an important step.

Your mother plant should be watered a few hours before you plan to take cuttings. This ensures that the cuttings will be well nourished and hydrated, preparing them for successful cloning.

It's also recommended to spray Clonex Mist on the chosen donor sights a few days before taking clones. This will help to stimulate root development in your cuttings.

GETTING STARTED

Supplies

Taking a clone can be as simple, or as complicated, as you want it to be. There are multiple techniques and products on the market for cloning.

For this guide, we're going with a simple but effective method. The following are items you'll need to successfully clone.



- **Mother Plant**
- **Rooting Gel**
- **Shot Glass**
- **Scalpel or Razor**

- *Scissors aren't recommended as they can crush the cutting's delicate tissue.*
- *Be careful not to cut yourself when taking your cutting.*

- **Starter Cubes**
- **Propagation Tray**
- **Humidity Dome**
- **Clonex Mist**



TAKING A CLONE

Your mother plant is picked out and all your supplies are ready. Now it's time to take some cuttings.

Step 1. **Sanitize**

Wash your hands. Then sterilize your equipment. Rubbing alcohol is an ideal choice for sterilizing.

Step 2. **Set up your work area.**

Have your items laid out and ready to go. A few things you'll want to do now include:

- Pour Clonex Rooting Gel into your shot glass.
- Take packaging off your Starter Cubes
 - Root Riot Starter Cubes are available in both a ready-to-use propagation tray and bags of 50 or 100 count.

Step 3. **Choose your cuttings.**

You'll want to choose a branch that looks healthy. Things you're looking for in a cutting are:

- Branches on the lower part of the plant
- Strong growing tips
- Multiple nodes (leaf nodes are where the leaf connects to the stem)

Step 4. **Take your cutting.**

Once you've chosen a branch, use your scalpel to remove the branch. You'll want to cut just below the node (the area from which leaves grow) at a 45-degree angle.

Step 5. **Dip the cutting in Clonex Rooting Gel.**

Dip it directly into the rooting gel you've added to your shot glass. Make sure the entire cut area, and its surrounding stem, is covered in the rooting gel.

This will stop air from affecting the cut surface area. Air exposure at this point can cause air bubbles that will prevent your cutting from taking up water and eventually rooting.

At this point you should clip the fan leaves, reducing the leaf area by 50%.

TAKING A CLONE

Step 6. **Place the cutting into your Root Riot Starter Cube.**

Once you've finished taking your cuttings and placed them in a propagation tray it's time to add your humidity dome. You do not want to have leaves pressed up against the dome walls or stuck between the dome and the tray. Make sure you've spaced your cuttings to avoid either of these from happening.

Step 7. **Spray your cuttings.**

Place tray under suitable lighting. Spray your cuttings with Clonex Mist every other day to ensure they don't dry out. Beyond that, leave the cuttings alone. Most plants will root in 7 - 10 days, but some could take up to 2 weeks or longer. When you see roots coming out of the cube then you're ready to transplant.

Cloning In Four Easy Steps



1 Prep
Spray mother/donor plant a few days before taking cuttings



2 Cut
Make a sharp diagonal cut below a leaf node



3 Start
Dip cutting into Clonex Rooting Gel then straight into Root Riot cube



4 Feed
Spray with Clonex Mist until roots develop, then feed with Clonex Clone Solution



INFOGRAPHICS SERIES

Explaining the steps to

STEP 1 Mother Plants & Nutrients



Mother Plants are specifically raised to provide clone cuttings. When propagating, one must start with a Mother Plant.



A clone is a "cutting" (a small piece of plant that's been cut off) that has re-established roots and is a genetic replication of the mother, or stock plant.

STEP 2 Cloning dos and don'ts



Doing your own cloning helps prevent pests and unhealthy cuttings.

When starting a clone you should have the following supplies on hand: shot glass, sterile glass with water, scalpel or razor - NEVER SCISSORS, a propagation tray, and a humidity dome.



STEP 3 Keep it clean...



When taking a cutting, you should ALWAYS WASH YOUR HANDS FIRST! A good tip is to use rubbing alcohol to sterilize your hands and your tools before touching the mother plant.



For over three decades Clonex has provided explosive root development that serious growers and plant nurseries depend upon for successful and profitable plant propagation.

ROOTED IN RESULTS **CLONEX**[®]

proper propagation...

STEP 4
**Choose a
healthy
cutting...**



When choosing your cutting you should look for a healthy branch. A healthy branch is located on the lower part of the plant, its stem diameter is approximately the same as your Starter Cube opening, it should have strong growing tips and multiple nodes where the leaf connects to the stem.



STEP 5
**Dip, place
and spray!**



Take your cutting then dip it in Clonex Rooting Gel.
Place your cutting into the Root Riot Starter Cube, then spray with Clonex Mist.



STEP 6
**Dust and
feed...**



Once your clone is ready for transplanting, dust roots or dust planting hole with Clonex Root Maximizer. Then feed the clone with Clonex Clone Solution.



TRANSPLANTING

Once you see roots coming out of your starter cubes it's time to transplant. Most growers tend to use a cup (like the small, red Solo cups) to transplant their newly rooted clones into.

The clones are still fragile at this point and should be treated the same as they were when they were cuttings.

Step 1. **Prep**

Fill your cup halfway with your chosen soil or soilless mix. Sprinkle Clonex Root Maximizer, a mycorrhizae, on to the exposed roots.

Root Maximizer will help to extend the overall reach of your plant's roots. This means your plant will be able to reach water and nutrients that might not be available otherwise. Basically, it helps the plant get more of what it needs to thrive.

Step 2. **Transplant**

Place your rooted clone in the center of the cup and fill in the remaining space with your soil, or soilless medium, and pack it just over the top of the starter cube. The soil should be packed gently so as not to disrupt the delicate roots or stress the clone, but also tightly so that the clone will not tip over.

Step 3. **Feed**

Water your clone with Clonex Clone Solution, a clone-specific nutrient.

A regular Grow formula at this stage can burn your plant, most likely resulting in a stunted or dead clone.



THE CLONEX PROPAGATION SYSTEM

Clonex Rooting Gel has been helping growers successfully clone for three decades. Billions of clones are proof of the effectiveness of using Clonex.

Clonex Rooting Gel

Clonex Rooting Gel contains a unique proprietary formula in a tenacious gel which will remain in contact around the stem, actually sealing the cut tissue and then supplying the hormones needed to promote root cell development. It is manufactured under strict pharmaceutical laboratory conditions and is, consequently, years ahead of old fashioned hormones and powders. Clonex Gel is recommended over powder rooting agents.

Powder rooting agents:

- Can and will be blown around
- Will wash off the stem when watered
- Contains talc - a carcinogen

Clonex Rooting Gel is EPA registered in all 50 states plus Washington D.C. and Puerto Rico. This means it's approved for use on all crops, including food or ingestible crops. It's also the only rooting gel approved by the Colorado and Washington Dept. of Agriculture for propagating medical plants.

Clonex Rooting Gel is used at the beginning of propagation to help seal your cuttings delicate root tissue and provide the necessary environment for successful rooting.

Clonex Clone Solution

Clonex Clone Solution is specifically formulated for rooted clones and seedlings. It contains a special blend of minerals and vitamins that encourages rapid root development.

Clonex Clone Solution contains specific micro nutrients, and the highest quality minerals including Nitrogen, Phosphorus, Potassium, and Calcium, plus Vitamin B1 which reduces the risk of transplant shock.

It is formulated to nourish new root cells in plants. Used with Clonex Rooting Gel, it encourages rapid root development while helping to minimize stress.

Clonex Mist

Clonex Mist is a foliar spray that is for both mother plants and clones to stimulate root development.

It is formulated to boost the health and vigor of young plants while promoting robust root development and the elongation of root hairs.

Independent trials showed that the use of Clonex Mist vs. water alone to mist cuttings resulted in:

- Rooting up to 10 days sooner
- 30% longer roots
- Up to 156% more roots

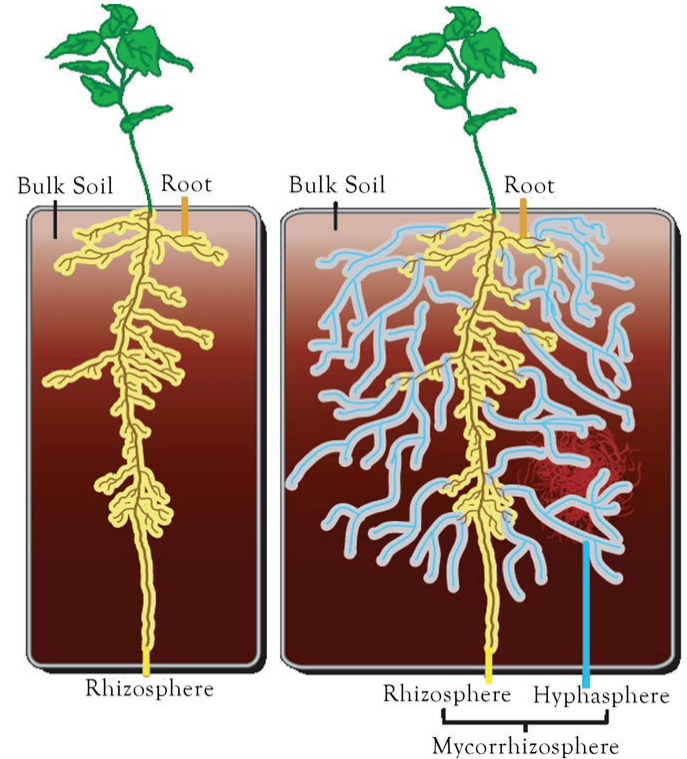
THE CLONEX PROPAGATION SYSTEM

Clonex Root Maximizer

Clonex Root Maximizer is a mycorrhizae fungus product which increases the surface area of your clone's roots. Mycorrhizae fungus extends the plants reach, allowing it to get more of what it needs.

Mycorrhizae fungus is a network of filaments that grow in and around the plant root cells. This forms a mass that extends considerably beyond the plant's root system, making the plant stronger and more resistant to stress. It even protects your plant against unwanted pathogens.

Clonex Root Maximizer puts life into your soil by adding bountiful amounts of mycorrhizae fungi, beneficial bacteria and Trichoderma that combine to improve the overall health and vitality of plants.



Root Riot Plant Starter Cubes

Root Riots are ideal for rooting plant cuttings! They are pH balanced and pre-moistened, so they are ready to use right out of the bag or in the tray. Made from Canadian peat moss, Root Riot cubes have a great spongy texture which retains the perfect air/water ratio for healthy, rapid root growth.

MotherPlant Nutrients

MotherPlant nutrients are formulated for mother, or stock plants but can be used throughout the vegetative cycle of your plants with impressive results.

It contains the perfect diet for mother plants without excess nitrates. Rich bio-organics are added to improve the uptake of nutrients and strengthen the plant's natural immunity resulting in strong, vibrant clones.

Rockwool Conditioning Solution

Europonic Rockwool Conditioning Solution is an advanced formulation of ingredients that stabilizes and adjusts the pH of rockwool for maximum nutrient utilization by plants.

It is ideal for pre-conditioning rockwool and stonewool cubes before starting clones or transplants.



Growth Technology™
CLONEX®
 CLONE SOLUTION

1-06-1
GUARANTEED ANALYSIS

Total Nitrogen (N)	0.20%
Available Nitrogen (AN)	0.20%
Available Phosphorus (P)	0.02%
Available Potassium (K)	0.10%
Calcium (Ca)	0.10%
Magnesium (Mg)	0.10%
Sulfur (S)	0.10%
Boron (B)	0.002%
Copper (Cu)	0.0002%
Zinc (Zn)	0.002%
Chlorine (Cl)	0.002%
Iron (Fe)	0.002%
Manganese (Mn)	0.002%
Silicon (Si)	0.002%
Molybdenum (Mo)	0.0002%
Vanadium (V)	0.0002%
Chlorine (Cl)	0.002%



CLONEX CLONE SOLUTION (CCS) is a clone specific plant food formulated using a full profile of the highest quality nutrients including Nitrogen, Phosphorus, Potassium, and Calcium plus two other essential elements that all plants require for vigorous growth. Clonex Clone Solution also contains Vitamins B6 to help promote success.

DIRECTIONS FOR USE:
 Mix 1.0 fl. oz. of Clonex Clone Solution per liter of water (1 quart) or 2.0 fl. oz. per gallon of water. Use 1.0 fl. oz. per quart or 2.0 fl. oz. per gallon of water for several hours or add to Aeroponic systems. Increase the water to 1.5 fl. oz. per quart or 3.0 fl. oz. per gallon of water for plants showing stress. Clonex Clone Solution is a pH sensitive liquid nutrient and should be used with a pH meter.

Contains Calcium Nitrate, Potassium Nitrate, Urea Nitrogen, Diammonium Phosphate, Monoammonium Phosphate, Iron (EDTA), Magnesium EDTA, Zinc (EDTA), Boron (EDTA), Silicon Dioxide, Calcium Chloride, Calcium Nitrate, Calcium Nitrate and Calcium Nitrate.

PLANT FOOD INGREDIENTS:
 Calcium Nitrate, Potassium Nitrate, Urea Nitrogen, Diammonium Phosphate, Monoammonium Phosphate, Iron (EDTA), Magnesium EDTA, Zinc (EDTA), Boron (EDTA), Silicon Dioxide, Calcium Chloride, Calcium Nitrate and Calcium Nitrate.

Growth Technology™
CLONEX®
 Rooting Gel



Net Contents: 32 fl. oz. (946 ml)

Growth Technology™
CLONEX®
 Rooting Gel



Net Contents: 8 fl. oz. (230 ml)

Growth Technology™
CLONEX®
 ROOT MAXIMIZER



MYCORRHIZAE
 1 lb.

Growth Technology™
CLONEX®
 ROOT MAXIMIZER



MYCORRHIZAE
 1 lb.



CLONEX[®]