THE ART OF PROPAGATION

SuperSprouter™
YOUR BEST START FOR SEEDS AND CUTTINGS™
“Nurturing seeds and cuttings to full sized plants grows not just the garden, but the gardener.” — GRUBBYCUP

Your **Super Sprouter® Kit** is designed to assist in starting seeds (*seed germination*) and rooting cuttings (*cutting propagation*). Expert growing tips by Grubbycup are included in this booklet to provide basic “quick start” information on both methods to help get you up and growing. Along with your **Super Sprouter® Kit**, the information in this booklet can help you get your seeds and cuttings not only to start, but also to thrive!
About Your Growing Space

WHETHER YOU’RE STARTING PLANTS FROM SEEDS OR CUTTINGS, THE GROWING ENVIRONMENT YOU CREATE IS CRITICAL TO YOUR SUCCESS!

TEMPERATURE: Most seeds germinate (and cuttings thrive) within an ambient temperature range of 75-80º F (24-27º C) depending on the plant species. Temperature stability is also important. Avoid sudden or drastic changes that can shock or kill young seedlings by providing them with a sheltered, draft-free growing space.

MOISTURE/HUMIDITY: When a viable seed is exposed to proper moisture and temperature (and in some cases, light) it will sprout. Moisture enters the seed through small holes (micropyles) which cause the embryo to swell and burst through the seed coat. Cuttings require special care with moisture levels until they develop a healthy root system, as they are very vulnerable to drying out and suffering terminal wilt. While seedlings and cuttings develop, humidity and moisture levels must be carefully monitored. Too dry and they will wilt and die; too wet and they will suffer from molds and root rot.

LIGHT: A T5 high output fluorescent or LED grow light is an ideal option to get most seeds and cuttings off to a good start, as they generally do not need full intensity light until transplanting.
Photosynthesis is the process through which plants convert light, water and carbon dioxide into carbohydrates and oxygen. Light energy is collected by chloroplasts in leaves which contain chlorophyll pigments. These pigments appear green because they absorb red and violet-blue light, and reflect green light to our eyes. The chlorophyll pigment itself is made of carbon, nitrogen and magnesium, which is partly why carbon dioxide, nitrogen and magnesium are needed for plant growth.

**Tip: SAFETY FIRST!** Always set up a “drip loop” between any power cord and the wall outlet. This will keep any water that may run down the cord from entering the outlet!
WATCH YOUR MOISTURE LEVELS! NEVER allow your growing medium to stay too wet for long. Unaerated, sitting moisture is an ideal environment for fungal growth such as “damping-off” and “root rot” and is usually caused by over watering. To prevent these problems, the media must be allowed to dry out slightly between waterings. Do not allow it to dry too much though, as the vulnerable sprouts and cuttings can quickly die if not watered enough. Cuttings are particularly sensitive to drying out until they develop roots. However, they too must not be kept too wet with unaerated water as they can suffer similar over-watering issues as seedlings.

LIGHT AND DARK PERIODS CONTROL FLOWERING: Plants that trigger flowering according to the length of dark periods are called “photoperiod dependent” and are often referred to as “short day” or “long day” flowering plants. Short day plant flowering is triggered by the long nights in fall, winter and spring, while a long day plant flowers only during the summer when nights are short. Other plants that flower regardless of the length of dark periods are called “day neutral.” To control when a plant flowers, it is important to know whether it is a short, long or neutral day plant. Short day plants should be in darkness no more than 6 hours in every 24 hour period or they may begin to flower. In fact, 12 hours of darkness is often enough to trigger flowering in many plants. Be sure to research the specific photoperiod requirements for your plants!
Instead of starting from seed, many plants can be propagated by taking a cutting from a “mother plant”. A cutting consists of both a growth tip (apical meristem) and a section of stem containing undifferentiated cells (meristem cells). When exposed to the proper environment, the meristem cells in the stem can be triggered to develop into roots, creating a new plant. Since cuttings are grown from cells taken from a mother plant, they will be genetically identical to that mother plant (barring mutation), and are often referred to as “clones.” This can be very useful when plants that share common traits such as flower color or gender are desired.

**TAKING A CUTTING:** With many plants, a branch that comes into contact with soil can send out roots instead of foliage. When a cutting is taken, the process is similar except the branch is separated from the parent plant and the cut end is placed in direct contact with the growing medium. As a general rule, here’s how to take a cutting:

**STEP 1:** Select a healthy and vigorously growing parent plant.

**STEP 2:** With a clean, sharp instrument, cut off a growing tip from the parent plant with enough stem to root. Allow at least 2” (usually down to the next growth node). A clean, sharp instrument (such as
sterilized scissors or scalpel) is used to minimize wound size on the parent plant and to reduce the risk of pathogen transmission.

**STEP 3:** Place the cut end of the cutting into a glass of clean water so it doesn't dry out while additional cuttings are taken. If taking cuttings from several parent plants, use one glass per parent, marking each with a rubber band and plant marker.

**STEP 4:** Once all cuttings have been collected, dip each cut end in a rooting hormone (according to directions) and gently thread the stem into the hole of a rooting plug or into the growing medium (being careful not to bend or damage the stem while inserting). Make sure the grow plugs or growing medium is moistened before use.

**STEP 5:** Place the cutting plugs into the cells of a 10" x 20" tray, moving plant markers from the glasses of water to the tray cells.

**STEP 6:** Water lightly and cover with a humidity dome.

**STEP 7:** Place a grow light fixture above the dome, turn it on and put the entire assembly on a flat stable surface. Cuttings may take several days to a couple of weeks to root. BE PATIENT.

**Tip:** If your growing area isn't within the optimal growing temperature range for cuttings of 75-80º F (24-27º C), use a heat mat under the tray. A heat mat thermostat is also recommended (purchased separately) for the most exact temperature control.
EXAMPLE: TAKING A TOMATO CUTTING

1. Cut a growing tip from a healthy parent tomato plant.

2. Trim off the lowest branch to create an extra rooting node.

3. Trim off excess stem at about 45° a little below the extra rooting node.

4. Dip cuttings in a rooting hormone, covering extra node and 45° tip. Transfer to grow media.
Seed Germination vs. Cutting Propagation

**SPEED:** Depending on the type of plant, rooting cuttings may be faster or slower than starting from seed. For example, cuttings from tomatoes root very quickly, so starting them from cuttings is much faster than seeds. Woody plants however, tend to take longer to root from cuttings (some substantially longer) than starting from seed. If speed is a factor, be sure to research your chosen plant to determine which method is faster.

**PLANT CHARACTERISTICS:** Plants grown from the same seed stock may look identical, but they have far more genetic diversity than a set of cuttings taking from a single mother plant. If variety is desired, then use seeds. If uniform plant characteristics are desired, then cuttings are the better choice.

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**Tip:** Woody plants tend to take longer to start from cuttings than herbaceous (non-woody) plants, and should be taken during the plant’s dormant phase (usually fall or winter).
Starting With Seeds

PREPARING YOUR SEEDS: Commercial seeds are usually ready to plant in plugs or soil straight from the packet (read seed packet instructions for best results). However, in some cases seeds that have been harvested and saved by the home gardener require some sort of pretreatment before use (i.e., saved tomato seeds are “fermented” as part of their seed saving process).

Seeds that have difficulty absorbing enough water to sprout may benefit from *scarification* (creating a nick or abrasion in the seed coat to help get water inside). Larger seeds can be carefully nicked with a sharp object, while smaller seeds can be placed in a matchbox with a piece of emery board and gently shaken.

Many seeds (scarafied or not) will benefit from being soaked in water for 12-24 hours before planting.

Another way to help moisture pass through the seed coat is to wrap the seeds in a moistened paper towel and store in a plastic bag kept in a warm location (75-80º F). As soon as the seeds sprout, they should be carefully transferred to a seedling grow medium. If this method is used, be sure to...
change the paper towel every few days to discourage the growth of toxic mold and mildew.

When transferring sprouted seeds into plugs, care must be taken while inserting them into the pre-formed holes. Gently insert the root section into the hole, taking care not to kink or break the root. An alternative is to split the plug in half lengthwise and lay the rooted sprout between the halves. Leave approximately 1/4" of stem and leaflets exposed. Gently pack growing medium into the hole and around the top of the sprout before watering thoroughly.

Seed Germination

Many garden flowers and vegetables are members of a group of plants called spermatophytes, which use seeds as part of their life cycle. Seeds are formed when pollen comes into contact with a receptive female flower organ. The resulting pollinated (fertilized) egg begins as a zygote, which then develops into a seed that is ready to germinate and grow. Seeds are amazing bits of biology that contain a tiny, dormant plant called an embryo and nutrient storage (endosperm) for it wrapped in a protective casing called a seed coat (testa). The endosperm will supply the sprouting (germinating) embryo with all the energy and nutrients it needs until it has developed a root system to absorb them from a growing medium.
Planting Your Seeds

Plant seeds in plugs or soil to the correct depth specified on the seed packet. If no depth is specified, seeds can usually be planted to a depth of about 2-4 times the seed size. Cover seeds loosely with soil and water thoroughly.

An industry-standard 10” x 20” tray is ideal for holding planted plugs or soil inserts. When combined with a thermostat-controlled heat mat below the tray, then covered with a ventilated humidity dome, you can maintain the ideal temperature and humidity for your seedlings or cuttings to thrive!

Tip: A crochet hook is excellent for handling seeds, making seed holes in soil, and perfect for working tender sprouts into plugs or soil.
Nurturing Seedlings Or Cuttings

Check growth progress at least daily and water as needed. DO NOT OVER WATER! The growing medium should be kept moist, but not soggy. If humidity is too high (water is dripping down the inside of the dome), open the vents on top of the dome or set it slightly off center. Humidity that is too high encourages toxic fungal growth and pathogens.

Inspect plants frequently for under watering (wilting due to dry media). Generally, a mild under watering is less traumatic to plants than a mild over watering, but once a plant dries out enough it will not recover. Plants should be removed from the starting trays and transplanted into larger containers before they grow large enough to become root bound.

Tip: STAY ORGANIZED! Always use seed markers in each container (or row) to record the type of plant and to document the starting date. Record the same information on a calendar along with the estimated harvest time, then actual harvest date. This information can be helpful in planning the timing of future gardens.
SUPER SPROUTER® GROWING OPTIONS
Super Sprouter® offers many options when you want to get your plants off to their very best start!

7” PREMIUM HEATED PROPAGATION KIT:
Everything you need in one convenient kit. Includes heat mat, 10” x 20” grow tray, “Light Track” vented humidity dome, and a T5 high output fluorescent light. Super Sprouter® offers many options when you want to get your plants off to their very best start!
When you’re ready to transplant...

If you’re gardening year-round indoors, be sure to check out www.SunlightSupply.com for everything you need. You can browse the entire product line, find growing tips, helpful links, and find the retailer closest to you.

7” DELUXE PROPAGATION KIT:
Includes 10” x 20” grow tray, “Light Track” vented humidity dome and T5 highoutput fluorescent light.
**Tip:** Whatever propagation kit you’re using, always keep it in an enclosed, draft-free area as close to ideal germination temperature as possible. **DO NOT** place outdoors in direct sun or in any cold, drafty location!
7” HEATED PROPAGATION STATION®:
Includes 7” vented humidity dome, 72-cell insert (media sold separately), 10” x 20” grow tray and Heat Mat.

SUPER SPROUTER QUICK START® REFILL PACKS:
Designed for square cell insert trays and can be used with any Super Sprouter® Plug Insert Tray. Quick Start® Plugs feature a custom peat moss blend for a great mixture of moisture and aeration. Pre-drilled hole in each plug creates optimum stem to media contact. Also available in 500-Pack (#714184), and 1400-Pack (#714186).

For a huge selection of soil, rockwool or plug options visit www.SunlightSupply.com
SUPER SPROUTER® SEEDLING HEAT MATS:
Place heat mats under grow trays to warm root area 10-20° F over ambient temperature to help improve the germination and rooting process.

1-Tray heat mat uses only 20 watts.
2-Tray heat mat uses 60 watts and allows placing trays end to end (instead of side by side). It's also daisychainable so you can hook up to 10 mats in series using only one outlet plug!

Extra large 4-Tray heat mat uses 110 watts and allows you to warm a whopping 4 trays at once!

Tip: For more exact temperature control an analog or digital Heat Mat Thermostat is available (see following page).
SUPER SPROUTER® HEAT MAT THERMOSTATS:
Digital or analog models help maintain precise control of grow media temperature and are super easy to use. Plug heat mat into the thermostat, insert temperature probe into your media, set desired temperature and you’re done! Digital unit constantly displays current soil temperature (analog model simply has a set dial). Both models have a temperature control range of 68 – 108º F (20 – 42º C) and include a 1 year warranty.

For control of heat mats only!

Analog Heat Mat Thermostat
#726702

Digital Heat Mat Thermostat
#726700
AQUA CLONE® DEEP WATER CLONING SYSTEM:
The best way to start your clones!
• Integrated finger cut outs to easily remove neoprene inserts.
• Elevated reservoir for temperature control.
• Aeration pump included.
• Easy lift handles built into the lid.
• Instructions included.
• 30 colored neoprene inserts included (24 + 6 extras).
• 90 day warranty.

ROOT RAIN® SPRAY CLONER:
The spray generated from this aeroponic cloner offers suspended cuttings a rich combination of oxygen and water for accelerated root growth.
• Faster roots.
• Easy to assemble.
• Water aeration.
• Includes submersible pump, filter and sprayer manifold.
• 30 colored neoprene inserts included (24 + 6 extras).
SUPER SPROUTER®
NEOPRENE INSERTS:
For gentle securing of cuttings and clones. Pre-slit for easy insertion with pre-drilled hole.
Solid Colors: 100/Pack
Multi Color: 192/Pack

ROOT RAFT® FLOATING GROW TRAY:
The easiest way to keep your seedlings and cuttings watered!
No worries about watering because moisture is automatically wicked through plugs. Pre-filled floating tray insert with 55 plugs (reservoir tray included). Custom blended plugs for optimum stem-to-plug contact and superior wicking action.

SUPER SPROUTER® SCALPELS:
Extra sharp surgical steel blade minimizes stem damage when taking cuttings (sold individually wrapped in packs of 10).
AN OPTION FOR SEEDLING OR CUTTINGS:
One great option from Super Sprouter® is the Singled Out® 10” x 20” Premium Mesh Bottom Tray and Singled Out® 2” Pot. A quick and easy way to handle your seed planting or plant starts. Holds up to 50 - 2” pots.

Singled Out® 2” Pot
#726404

Mesh bottom tray for excellent drainage.
Can be used as stand alone heavy duty mesh insert.

Singled Out® 10” x 20” Premium Mesh Bottom Tray #726406
**TRAY OPTIONS AVAILABLE:**

- **72 Square Cells #726220**
- **72 Round Cells #726410**
- **50 Cell Plug Insert Tray #726227**
- **72 Cell 6 Pack Tear Away Insert #726212**
- **Mesh Bottom Insert Tray #726160**

**ROOT STAR® TRAY INSERT:**
50 cell plug insert directs roots down through its patented star pattern design. Durable 2 mil thickness.
TRAYS:
Check out our large selection of various heavy duty 10” x 20” trays (with or without drain holes). Ultra heavy duty QUAD THICK trays are available too!

Single Thick Trays:

10” x 20” Single Thick Tray
#726165 – Black

10” x 20” Single Thick Tray with holes
#726167 – Black

Double Thick Trays:

10” x 20” Double Thick Tray
#726294 – Black

10” x 20” Double Thick Tray with holes
#726296 – Black
Triple Thick Trays:

10" x 20" Triple Thick Tray
#726302 – Black

10" x 20" Triple Thick Tray with holes
#726304 – Black

10" x 20" Triple Thick Tray
#726306 – White

10" x 20" Triple Thick Tray with holes
#726308 – White
Quad Thick Trays:

10" x 20" Quad Thick Tray  
#726298 – Black

10" x 20" Quad Thick Tray  
Insert with holes  
#726300 – Black

Short Trays:

10" x 20" Short Germination Tray  
#726210 – Black

10" x 20" Short Germination Tray with Holes  
#726216 – Black

Holds up to  
FOUR 10" x 20" trays and domes!  
(SOLD SEPARATELY)

2’ x 4’ Propagation Tray  
#726432
DOMES:
Large selection of Standard Vented, Ultra Clear Light Track and Germination/Humidity Domes in sizes ranging from 2" to 7".

- Ultra Clear Vented Humidity Dome 4" with Light Track  
  #904289

- Ultra Clear Vented Humidity Dome 7" with Light Track  
  #904295

- Ultra Clear Vented Germination Dome 2 in  
  #904288

- Ultra Clear Dome Replacement Vent  
  #726245

- Standard Germination Dome 2 in  
  #726215

- Standard Humidity Dome 4 in  
  #726239

- Standard Vented Humidity Dome 7 in  
  #726241

- Replacement Vent for 7 in Dome  
  #726243
Heat Mats

Heat Mat Thermostats

Cloning System & Inserts

Germination & Propagation Kits

Plug Trays and Refills

Domes, Trays and MORE!

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Vancouver, WA 98660-05232018ST