A Complete Step-by-Step Guide for Using the PHOTOTRON™ Pro LED Indoor Hydroponic Grow System
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Introduction

History

Thank you for purchasing a PHOTOTRON™ Hydroponic Indoor Grow System. Our PHOTOTRON™ Grow Systems are the result of over 20 years of study on the needs of all kinds of plants, from flowers and herbs, to fruits and vegetables.

PHOTOTRON™ Pro LED Features

This model provides the ultimate growing experience with full LED lighting and our proprietary ECO-Brain. At 320 watts, the energy efficient LED lighting kit is the equivalent of 1,000 watts of traditional lighting. A 200-watt top-mounted light unit and a total of 120 watts on the 6 sides of the unit maximize vertical growing and minimize heat output. Blue LED’s provide optimum light for the growing stage, while red LED’s shift flowering into high gear for maximum production. The ECO-Brain computer manages nearly every aspect of growing with features that include automated lighting, sensors to detect water level/moisture, a variable speed fan to control humidity and temperature levels, and a carbon filter to remove organic odors.

Step-by-Step Instructions

This User Manual features complete step-by-step instructions on how to use your new PHOTOTRON™. But should you have any questions along the way, there are several options available to you. A Customer Resource Center can be found at www.growlifeinc.com. You can also contact your Independent GrowLife Affiliate. If you still have questions, contact us directly at GrowLife.

SAFETY WARNINGS

Never look directly into the LED lights when the side panels of the PHOTOTRON™ are removed. Direct exposure to LED lights may cause permanent eye damage. Use the protective eyewear included with your system and wear gloves and long sleeves for additional protection when working in the PHOTOTRON™.

Use the PHOTOTRON™ Grow System indoors only.

DO NOT spray wiring, electrical components or bulbs with any type of liquid.

This device is not a toy. Children require adult supervision.
Using your PHOTOTRON™ Pro LED

**Step 1  Set up your PHOTOTRON™**

1. Place your PHOTOTRON™ on a flat, sturdy surface indoors, in a room with proper ventilation. Small spaces such as a closet should be avoided. Room temperature is also extremely important for the PHOTOTRON™ to work effectively. Make sure the room you choose has a temperature of 70-85°F. Also, be aware that the lights in the PHOTOTRON™ are on up to 24 hours each day, so you should consider this feature when choosing a grow area.

**Step 2  Make sure you have everything you need**

One of the most important things you will need to get started growing is nutrients, since plants will not grow in a hydroponic system without food. GrowLife offers nutrient kits specifically designed for use in the PHOTOTRON™ Systems. You will also need a large measuring cup, a pair of pruning shears and rubber gloves.

**Step 3  Decide what kind of water you will use**

Water quality is critical when growing plants hydroponically. The best types of water to use with this method of growing are reverse osmosis (RO) or distilled water, which remove up to 99% of impurities.

If you are using RO or distilled water to mix nutrients, it is highly recommended that you add MagPlus when preparing nutrient solution for your plant. A nutrient supplement offered by GrowLife, MagPlus is designed to replace elements critical to plant development that are removed from water during various purification processes.

**Most tap water is not recommended.** It usually contains high levels of sulphates, iron and chlorides which are particularly detrimental when mixing hydroponic nutrients. Furthermore, most tap water is considered “hard water” and should be avoided when growing hydroponically. Unintended reactions between minerals in the tap water and the hydroponic nutrients will likely occur, changing the composition of the plant food. In the United States about 85% of homes have hard water, so the chances are high that you do. If the faucets in your home have an opaque build-up, then you probably have hard water. Contact your local water municipality or health department to find out about the water quality in your area.

**Water processed through a water softener is deadly to plants and should never be used.** The salts that are present can create a toxic saline condition for plant growth.
Step 4 Understanding the ECO-Brain

The ECO-Brain computer manages nearly every aspect of growing inside the PHOTOTRON™ to help you achieve the highest possible plant growth rates. Features include automated lighting, sensors to detect water level/moisture, a variable-speed fan to control humidity and temperature levels, and a carbon filter to remove organic odors. A quick look at the information panel will tell you exactly what your plant needs at each stage of growth.

1. To get started, first plug the PHOTOTRON™ into an electrical outlet. The display panel will light up and a greeting will appear. Once this clears, the initial set-up process begins. You will be prompted to enter **Date, Time, What's Growing**, and **Starting Point**.

2. Set the **Date & Time**. This information will be used to manage light exposure along with plant growth cycles.

3. You will then select what type of plant you are growing in the **What's Growing** section. Your choices include **Non-Flowering Plants**, **Flowering Plants**, and **High-Yield Flowering**. If you are uncertain as to what category your plants are in, a reference guide is available at [www.growlifeinc.com](http://www.growlifeinc.com) in the “Resources” section.

4. The final step in the set-up process is to indicate the **Starting Point**, either from a **seed**, **seedling** or **rooted clone**.

Additional ECO-Brain information can be found at [www.growlifeinc.com](http://www.growlifeinc.com) in the “Resources” section.

**NOTE:** If the PHOTOTRON™ is unplugged or electrical power is cut off, you will have to perform the initial set-up again.

Step 5 Germination tray preparation and watering

1. Remove the plastic bag containing the germination pods from inside your germination tray and place one pod in each of the cups. Make sure that the hole in the center of the pod is facing upward. Slowly add 1/3 cup (80ml) of water to each cup and allow 5 minutes for the water to be absorbed and the pod to expand.

2. Follow the instructions on your seed package or kit and place seeds at the recommended depth in each pod. Press 3-4 seeds **per plant type** in each pod in the germination tray.

3. Place the germination tray inside the PHOTOTRON™. The lighting should remain on for 24 hours a day during the Germination Stage.

4. Check the germination tray every day to make sure that the pods still have water in them. There should always be moisture available to the pods while they have seeds inside of them so that the germination process is a success. Add 4 tsp of water to each germination pod daily until the seedling has emerged. Germination times vary from plant to plant, but you should see signs of life in about 10-14 days.

Step 6 Feed your seedlings/clones

Once your seeds sprout and have 2 complete leaf sets **OR** reach a height of 2 inches, it’s time to discontinue using plain water and begin feeding your seedlings nutrient solution. At this point, the lid to the germination tray should be removed and left off. Follow the feeding instructions found on the side of your nutrient kit for the “Seedlings/Clones” stage of growth. Nutrient Feed Charts can also be found at [www.growlifeinc.com](http://www.growlifeinc.com) in the “Resources” section. Use the convenient plastic 1-gallon nutrition solution container that came with your PHOTOTRON™ when mixing your nutrients.
It is **very important** that you periodically thin or remove weak-looking seedlings during this stage of growth. Within 10 days after the seeds have sprouted, you should remove **ALL** of the weak-looking seedlings from each of the germination cups in your tray, keeping the single best plant in each one. The best plants to grow in your PHOTOTRON™ are those with the shortest “inter-nodal lengths”. The inter-nodal length is the distance between leaf sets. Plants with the shortest stem between leaf sets are the plants you want to grow, as they will have the greatest number of budding sites.

**Step 7 Transplant your plants**

When your plants reach 4-5 inches in height, you can transplant them directly into the PHOTOTRON™. By this time you should have removed all of the weak-looking seedlings from each of the 6 germination cups and only have one plant in each cup.

**To transplant:**

1. Remove the germination tray from the PHOTOTRON™.
2. Empty the bag of Sphagnum Moss that came with your PHOTOTRON™ directly into the bottom of the system and add 1 gallon of RO or distilled water. Using rubber gloves, mix the sphagnum thoroughly to make sure it is completely saturated.
3. Now that the growing medium has been prepared, choose a corner and dig a small hole down through the sphagnum so that you can see the base of the plastic liner. This “port-hole” will allow you to see the base. A puddle should be visible when nutrients are present and available to your plants. **ONLY** add the recommended amount of nutrient to the medium if the puddle is **NOT** present.
4. To remove the seedlings from the germination tray, simply turn the tray over and gently tap it to dislodge the pods. This should be done with caution to prevent the seedlings from falling to the ground or damaging them. Using a table or having a partner help will make removal much easier. If you are using clones instead of seedlings that you have grown yourself, carefully inspect them for signs of pests before transplanting them into your PHOTOTRON™. **Keep the reusable germination tray** for the next set of plants you start from seed.
5. When preparing to transplant, choosing the number of plants and locations inside the PHOTOTRON™ is important. You can grow up to 6 small plants in the PHOTOTRON™, but no more than 2-3 large plants. Keep in mind that overcrowding could reduce plant production and yields, so the fewer the better. If you spread out your seedlings, they will grow much faster and won’t have to compete as much for resources.
6. Dig out an area of sphagnum that your germination pod or rooted clone will easily fit into. Place the entire pod in the hole and lightly pack sphagnum around it. The top of the pod should sit level with the surrounding sphagnum.

**Step 8 Begin the Vegetative Cycle**

Once your plants have been transplanted, the Vegetative Cycle begins. The Vegetative Cycle will last **4 WEEKS** for blooming plants. **Non-blooming plants will remain in the Vegetative Cycle for the life of the plants.**

**To make the switch to the Vegetative Cycle, do the following:**

1. Until now, the lights in your PHOTOTRON™ have been on for 24 hours a day. To enter the Vegetative Cycle, the lights must now stay on for only **18 hours** each day. This light change simulates “summer” growing and tells the plant that it is now time to go into growth mode.
2. Follow the feed chart and mix the proper nutrition recommended for your plant at this stage. Water each plant at its base, distributing the required amount to each plant equally. Be careful not to let any water run between the liner and the base.

3. Maintain a puddle in the base for 23 out of 24 hours of each day, with one hour of no puddle. It is highly recommended that you check your system every 8 hours for puddle status. If a puddle exists, DO NOT re-water. If no puddle exists, re-water. A common mistake for beginning growers is over-watering, which will likely kill the plant.

**NOTE:** Some varieties of plants may consume up to 8 cups of water each day during the Vegetative Cycle and some will consume less. Keep in mind that observing and maintaining the puddle is critical to your success.

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**Pinching and Pruning**

As mentioned in Step 6, during the Vegetative Cycle your plants will go into serious growth mode and will want to shoot right to the top of the system. Because of this, it is very important that you consistently “prune” and “pinch” your plants during this cycle. Becoming familiar with these easy gardening techniques will greatly increase your success. You will also use pruning and pinching to deal with stems, branches and leaves that are damaged or die during the course of your growing experience. These techniques should be continued as needed throughout the Bloom Cycle.

Specific pruning and pinching instructions for different types of plants can be found at www.growlifeinc.com in the “Resources” section.

**Begin the Flowering/Bloom Cycle**

After 4 weeks in the Vegetative Cycle, it is now time to begin the Flowering/Bloom Cycle. During this period, your plants will now switch from sending energy to the stems, leaves, and branches, to sending energy to the bud sites. The Flowering/Bloom Cycle typically lasts an additional 45-60 days. As with the Vegetative Cycle, you will again be making changes to the light cycle and the nutrients.

To make the switch to the Flowering/Bloom Cycle, do the following:

1. During the Vegetative Cycle, the lights in your PHOTOTRON™ have been on for 18 hours a day. Now during the Flowering/Bloom Cycle, the light will be reduced to only **12 hours** each day. This light change tells the plant it is now time to switch into “reproductive” mode, which is the reason budding plants “flower”.

2. Follow the feed chart and mix the proper nutrition recommended for your plant during the Flowering/Bloom Cycle.

3. Continue to observe and maintain a puddle, just as you did in the Vegetative Cycle.
Step 11  Training and pruning in the Flowering/Bloom Cycle

Keep in mind that even though your plants have now entered into the Flowering/Bloom Cycle, it does not mean that they will not continue to grow outward. Because of this, you must train your branches to grow away from the fluorescent lamp tubes. This can be done by entwining the branches from one plant to the branches of the plant next to it or near it. This will form a lattice network of branches growing around the inside of the PHOTOTRON™. Once you have woven your branches together as described, your plants will form one bush.

You can expect some leaves and branches to become burned if they touch the side bulbs. Don’t be alarmed when this happens. Simply prune the damaged section if it is burned so it no longer touches a bulb. It is also a good idea to prune branches when they touch a Plexiglas panel inside the PHOTOTRON™, or if they are crowding each other and causing plant material to die.

Step 12  Harvest your plants

During Week 12 in the Flowering/Bloom Cycle, you will begin using only water when feeding your plants. Using water without nutrients will let your plant know that it’s time to finalize the blooming process and that the growing “season” is coming to an end. With high-yield flowering plants specifically, using water only will flush budding sites and promote maximum aromatic development, improving taste and overall satisfaction.

Using pruning shears, carefully remove ALL ripe fruit or vegetables from your plants. Once you have harvested the entire crop, remove all plants from inside the PHOTOTRON™. Add them to your compost pile or discard.

Step 13  Clean your PHOTOTRON™

1. Remove any remaining plant material and sphagnum moss from inside the base. A shop-vac is helpful for this step.
2. Wipe down all internal and external surfaces of the PHOTOTRON™ using a soft cloth.
3. Create a diluted organic cleaning solution by combining 1 part hydrogen peroxide for every 10 parts of water in a spray bottle.
4. Spray the cleaning solution directly onto the surfaces of your PHOTOTRON™ and wipe thoroughly with a soft cloth. DO NOT spray wiring, electrical components or bulbs.

Tips for Success

- Before accessing the space inside your PHOTOTRON™, we recommend that you wash your hands thoroughly. Contaminants that may be present on your hands can negatively influence the growing environment inside your PHOTOTRON™. If you use tobacco products, you MUST wash your hands and change from the clothes you are wearing. Tobacco Mosaic Virus is easily transmitted among plants and is devastating to the life of crops. Wearing rubber gloves when working in the PHOTOTRON™ is highly recommended.
- Periodically inspect the lights to make sure that all are working properly.

Accessories and Replacement Parts

A complete line of Accessories and Replacement Parts are available at www.growlifeinc.com.