GrowBox

User Manual

Version 2.0

OPCOM® Farm

WELCOME

Thank you for purchasing your OPCOM Farm GrowBox. Please follow this User Manual to assemble your GrowBox and plant your first garden.

This manual is a guideline to help you quickly learn the basics on how to plant with OPCOM Farm GrowBox. Final results may change according to the varietal of seeds used, plant selection, and your indoor environment.

Your GrowBox will do much of the work and save your time in the process of growing a crop of up to 50 plants. It is a tool to grow plants from seeds to harvest, simply and in a clean environment. Have peace of mind that your food is grown in a pollution and pesticide free environment under your control.

OPCOM Farm GrowBox helps automate the process of taking care of your plants during their growth stages. With attention from you and a bit of experimentation, you will quickly find out how to achieve the gardening result you want. For more product information, to register your OPCOM Farm membership, to receive updates on new products, and to purchase supplies and seeds, please visit our website: www.opcomfarm.com

OPCOM Farm developed our line of indoor gardens in dedication to a healthy environment with safe food. We invite you to become a professional indoor hydroponic farmer!
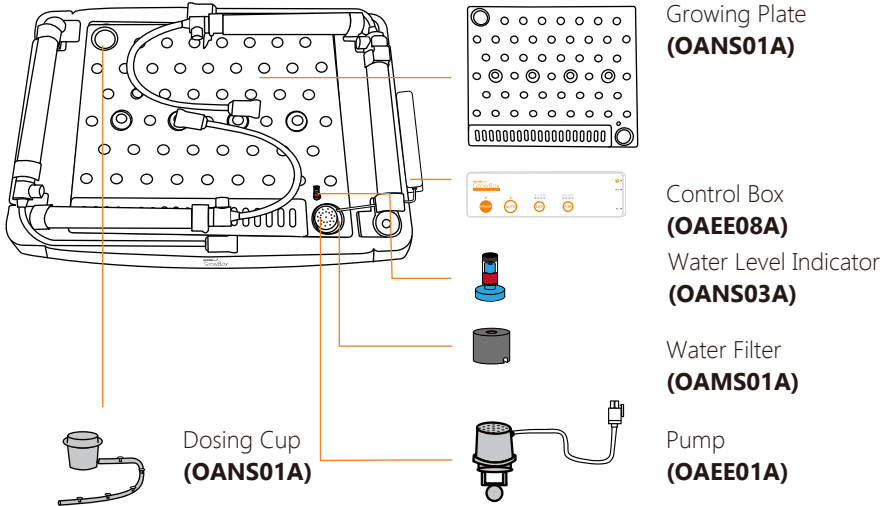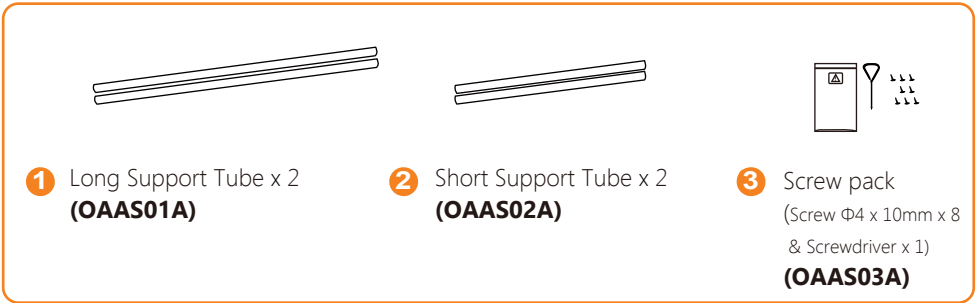
Enjoy Your OPCOM Farm!

Contents

Page

A: Assembly:

Please check all accessories listed here before starting setup.

1-1. Main Body - pre-assembled parts

Growing Plate
(OANS01A)

Control Box
(OAEE08A)

Water Level Indicator
(OANS03A)

Water Filter
(OAMS01A)

Dosing Cup
(OANS01A)

Pump
(OAEE01A)

1-2. Lighting support kit

1 Long Support Tube x 2
(OAAS01A)

2 Short Support Tube x 2
(OAAS02A)

3 Screw pack
(Screw Φ4 x 10mm x 8
& Screwdriver x 1)
(OAAS03A)

1-3. Climbing tube kit

4 Climbing Tube Holder x 1
(OANS04A)

5 Climbing Tube x 4
(OANS05A)

6 18W LED Growth Lamp
(L18B) x 4
(OAEE02A)
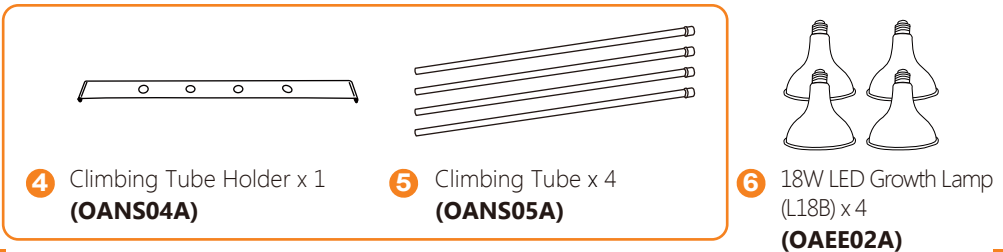
Please check all accessories listed here before starting setup.

1-4 Grow Kit

Growing Starter Kit
OPCOM Farm

7-A pH+/- Capsules
(OAMS05A,OAMS06A)

7-B Seeds Capsules (105 pcs / per bottle)
Green Lettuce,Red Leaf Lettuce,Basil
(OSLT01A,OSLT02A,OSHB01A)

7-C Nutrient Starter Cup 15(±2)g x 3
(OAMS03A)

7-D Nutrient Adjuster Cup 5(±1)g x 12
(OAMS04A)

7-E Replacement Filters x 3
(OAMS01A)
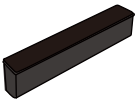
7-F EC and pH Meter Set with Bag
(OAEE03A,OAEE04A)
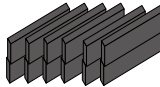
7-G Tweezers
(OANS12A)

7-H Seedling Sponge (60 x 4)
(OAMS10A)

1-5 Planting Accessories

8 Sprout Cover
(OAAS04A)

9 Sprouting Sponges x 12
(OAMS02A)

10 Draining Tube x 1
(OAAS06A)
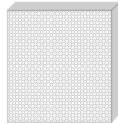
11 Insect Net
(OAAS05A)

1-6 Manual

12 Warranty Card

13 Quick Guide Manual
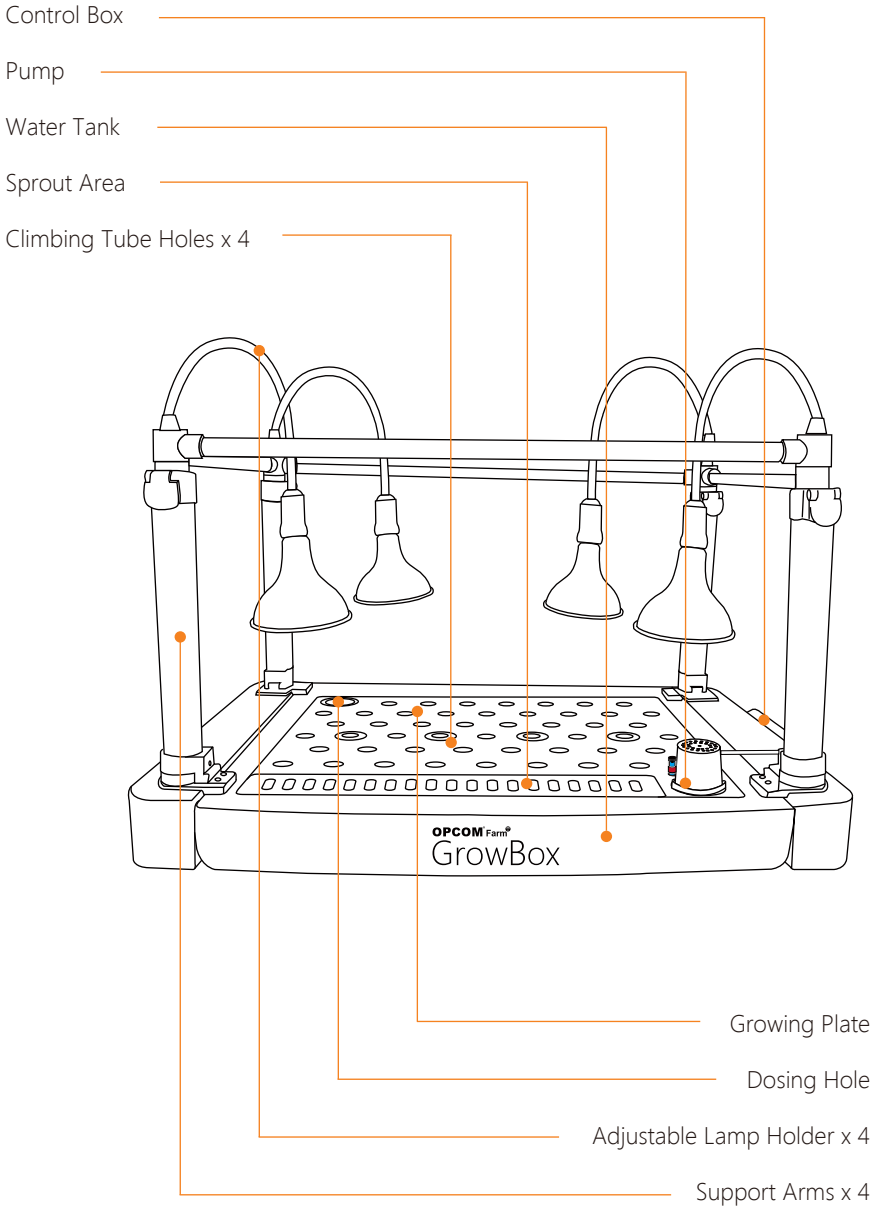
14 Optional Accessories Kit

15 Planting Q&A

⚠ **Note**
• We recommend keeping seed capsules refrigerated around (5°C / 41°F) with over 30% humidity after opening.
• Please use dry hands when taking out seed capsules.
• Use OPCOM Farm grow kit supplies for best results. OPCOM cannot guarantee the results of seeds from other sources.
• A germination rate of seeds of 70% ± 10% is normal (depending on varietal of plant).

2. Description

Control Box

Pump

Water Tank

Sprout Area

Climbing Tube Holes x 4

OPCOM Farm®
GrowBox

Growing Plate

Dosing Hole

Adjustable Lamp Holder x 4

Support Arms x 4

⚠3. Caution

Keep indoors
at room temperature
41-90 °F (15-32°C).

Please use LED Growth Lamps
under 200W. Unplug unit
when changing LED Growth Lamps.

Designed for
indoor use only.

To avoid electric shock,
do not touch plugged-in
appliance while in contact
with faucet or water line.

Unplug unit if not in use.

Mind children's use of unit,
and ensure that plant
nutrition and other supplies
are not ingested.

Do not stack.

Place on stable surface
before assembly and
operation. Two people are
required to lift the unit.
The surface must support
70lbs, the weight of the
unit and water.
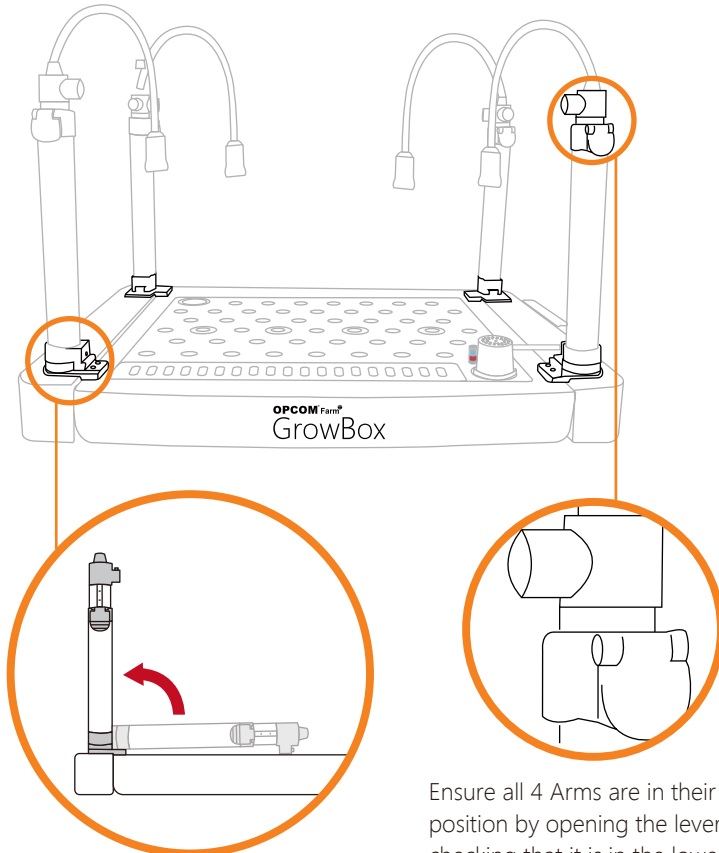
Keep away from fire
and chemicals.

4. Set up Process

Please visit the GrowBox page at <u>www.opcomfarm.com/growbox</u>, or scan the QR code on the right, to watch the assembly video.

Step 1. Using two people, remove the main unit from the box.
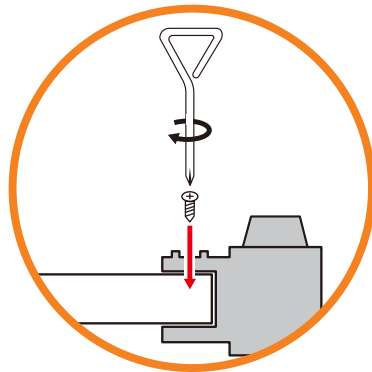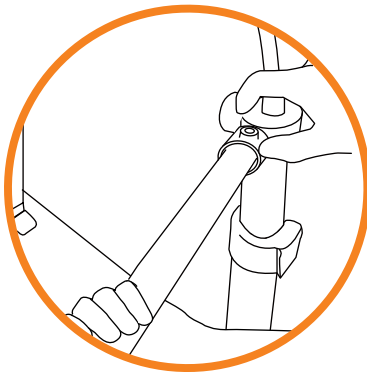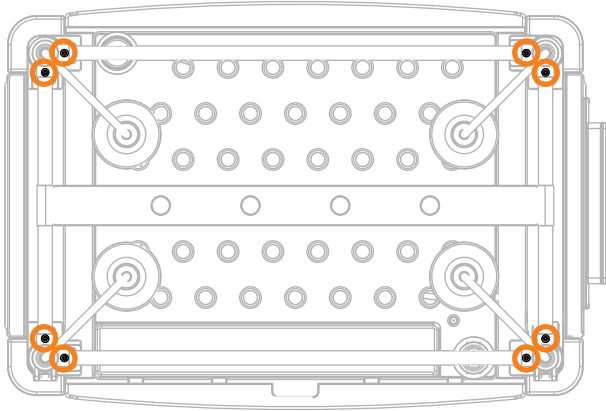Pick up the unit from the bottom side and place on a flat surface.

Step 2. Raise the four Support Arms straight up.

Ensure all 4 Arms are in their lowest position by opening the lever, checking that it is in the lowest position, and locking the lever.
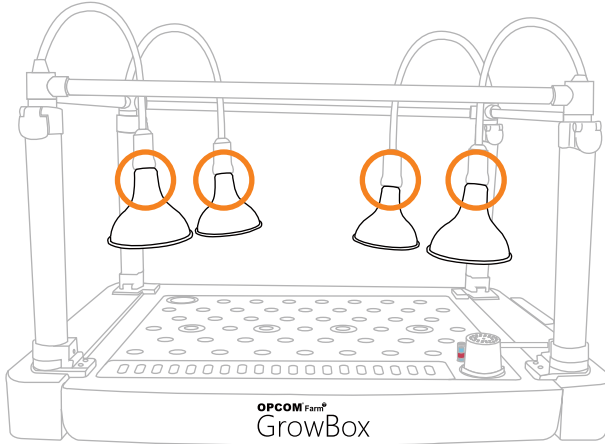
Step 3. Install the Long and Short Tubes

Insert tubes into sockets, ensuring that the holes line up. Use the included screws and screwdriver. Do not use power tools as this may damage the plastic.

Step 4. Install the LED Growth Lamps

Screw four LED Growth Lamps into holder clockwise.
Tighten until snug, but not too tight.

Note 〔Under 200 W〕

Lamps can be replaced by other brands of E26 lamp (less than 200 W) to accommodate plant varietals' special needs.
We cannot guarantee the results when using non-OPCOM lamps.

5. Preparing
Step 1. Add Water

Add water until the water level indicator floats to the top. You will need approximately 3.96 gallons. Do not overfill. Make sure that the Growing Plate is resting against the main body and not floating on the water.


15L (3.96 gallon)

OPCOM Farm®
GrowBox
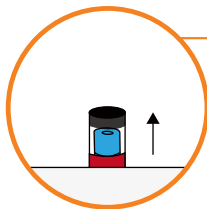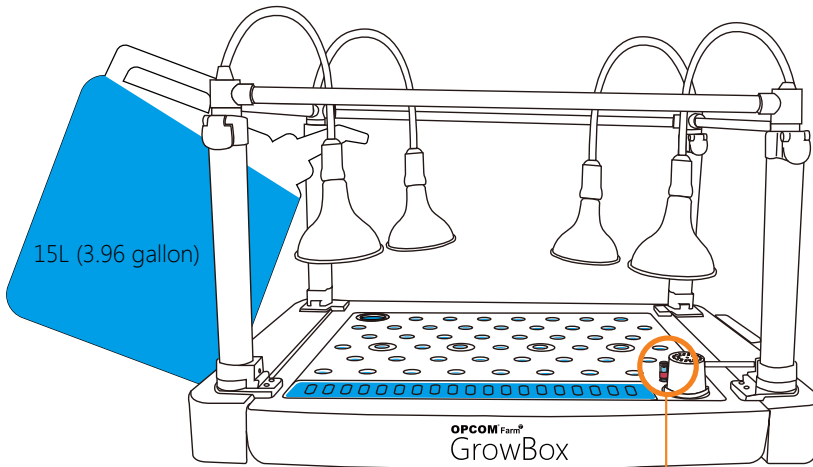
Maintain water level and keep
the water level indicator on the top.
Refill evaporated water weekly.

Step 2. Turn Power on and Test Unitt

Ensure the AC cable and pump cable are connected to the controbox, and press the POWER button. Confirm that the LED lights are on and that the water pump motor is running. **Do not start the unit without water, as this will damage the pump.**
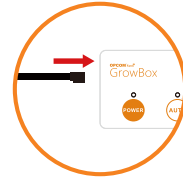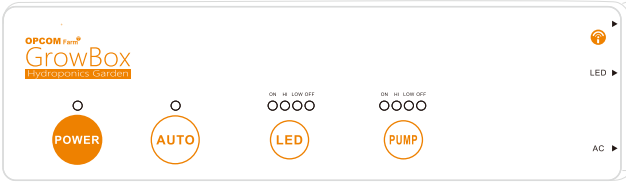
Ensure pump cable plug into the control box.

Most plants can be grown using the AUTO mode. For specific varietals or if you want to experiment on your own, you can manually control the timing of the LED Growth Lamps and pump. The table below will explain the other manual settings that are available.

Control Panel	Mode	Time (On / Off)	
LED	AUTO	Normal	(12H / 12H)
	ON	ON	(24H / 0H)
	HI	High Duty Cycle	(16H / 8H)
	LOW	Low Duty Cycle	(8H / 16H)
	OFF	OFF	(0H / 24H)
Pump	AUTO	Normal	12 cycles/day
	ON	ON	24 cycles/day
	HI	High Duty Cycle	4 cycles/day
	LOW	Low Duty Cycle	2 cycles/day
	OFF	OFF	0 cycles/day
			* 30 mins/cycle

Note

Please power and turn on GrowBox at 6-9 AM to meet daytime / night cycle time.

B: Planting

B1. Sowing Stage

Stage	Time afer planting	LED	Pump	Note
Sowing Stage	Day 0~ Day 7 (Starting to sprout)	OFF	OFF	• Remove the top half of the seed capsules. • Check the sprout every day and make sure the sponges are always wet.

Step 1.

1. Find the black seedling sponge from the Grow Kit, which is pre-cut for planting use.

   Refer to below table for sponge quantity and planting numbers.

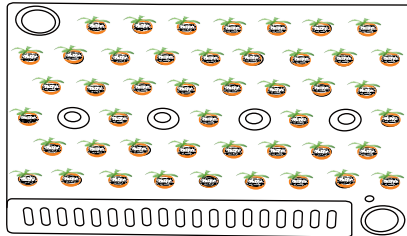   The germination rate of seeds is around 70%.

   NOTE: The germination rate may be affected by climate, environment and the variety of plants.

Plant Size	Small
Sponge Number	72
Planting number	50
How to Set up	

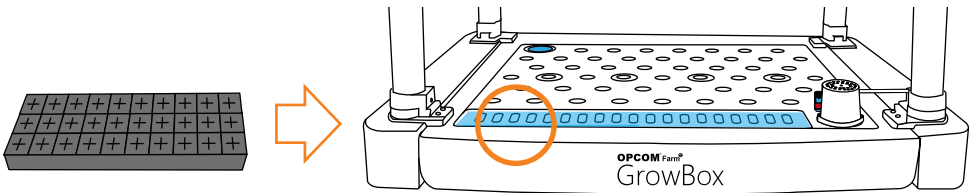| Plant Size	Medium-Large
Sponge Number	36
Planting number	25
How to Set up	
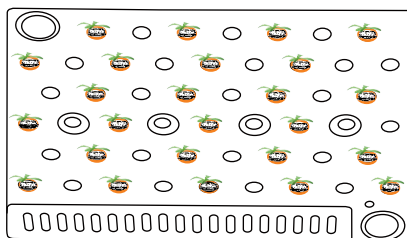
| Plant Size	Very Large
Sponge Number	25
Planting number	18

How to Set up
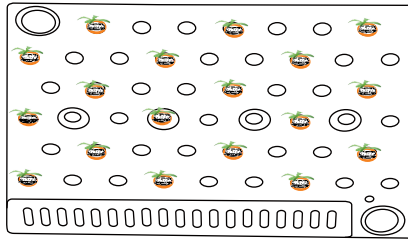
2. Wet the sponges in the water at the Sprout area and gently squeeze to make fully wet.

Step 2. Seed Sowing

If using OPCOM Farm seed capsules:

1. With completely dry hands, take out seed capsules from capsule bottle.
2. Insert seed capsules vertically halfway into the middle of each cross-opening in the seedling sponge.
3. Put any unused capsules back in bottle and store in the refrigerator immediately.

Press and open
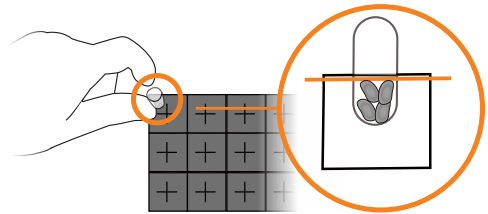
Make sure cross-opening at the top of the sponge is facing up.

If using non OPCOM Farm seeds:

Insert 3-4 seeds into the middle of each cross-opening of each sponge. The seeds should be placed just below the surface of sponge.

Step 3.

After 30 minutes, remove the top half of the seed capsules with tweezers. The bottom half will have dissolved into the sponge, depositing the seeds in the perfect location for growing.

NOTE: If you don't remove the seed capsule tops, they may inhibit sprouting rate.
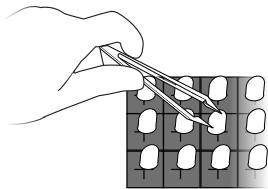
Step 4.
Cover the sprout cover for 0-7 days for sprouting and ensure sponge wet during this stage.

B2. Seedling Stage

The seedling stage should give young plants the best conditions to start their growth. Please refer to the instruction below.

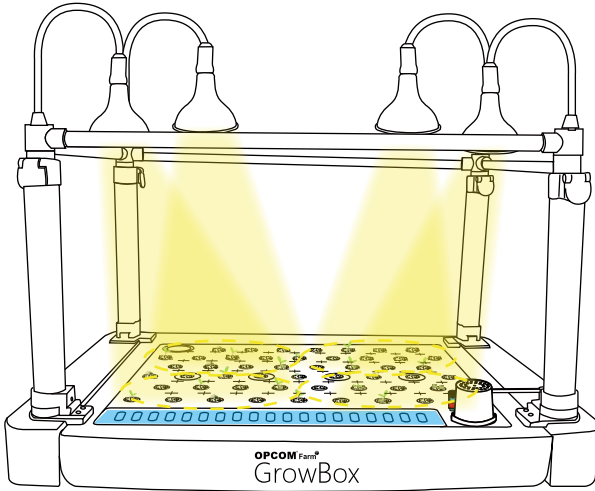| Stage	Time afer planting	LED	Pump	Note
Seeding Stage	Day 7~ Day 14 (Germination rate>70%)	ON	ON	• Ensure seeds germination rate>70%. • In each sponge, keep strong plants and cut the other weak plants (refer to the drawing below). • Adjust LED lights position and keep distance to cover all plants. • Ensure EC & pH value.
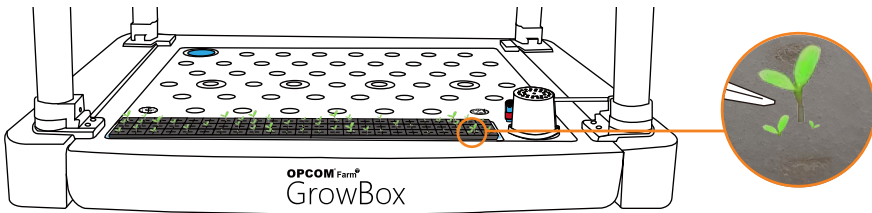
Step 1.

Separate the seedling sponges.Then move the sponges from sprout area to growing Hole. Be careful not to push sponges into

the water, sponge surface should be just below the surface of the plate. You may want to use the enclosed tweezers to adjust a sponge.Throw away the non-germinated one(s).
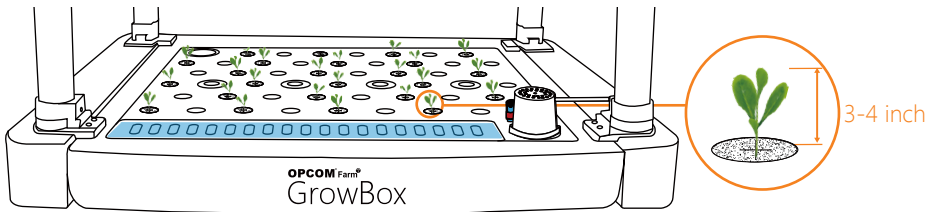

Gap for Air
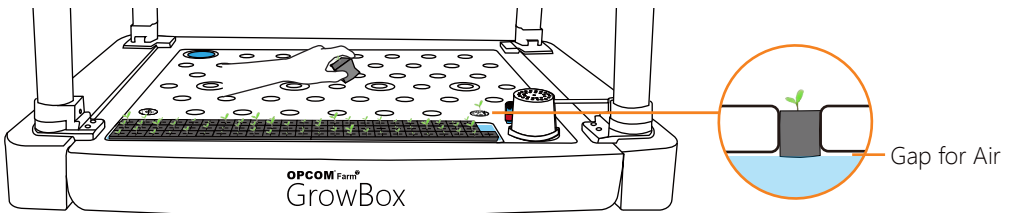
Step 2.
Adjust the Lamps. Ensure the whole growing plate are covered by LED light.

B3. Growing Stage

| Stage	Time afer planting	LED	Pump	Note
Growing Stage	After Day 14	Auto	Auto	• When young plants grow to 3-4 inches height, change control box to AUTO mode. • Maintain EC & pH value.

3-4 inch

B4. Grow to Harvest

Once a week, check the water level and refill as needed. Also test the water's pH and EC levels and adjust as necessary. For more information, see pages 21-22.
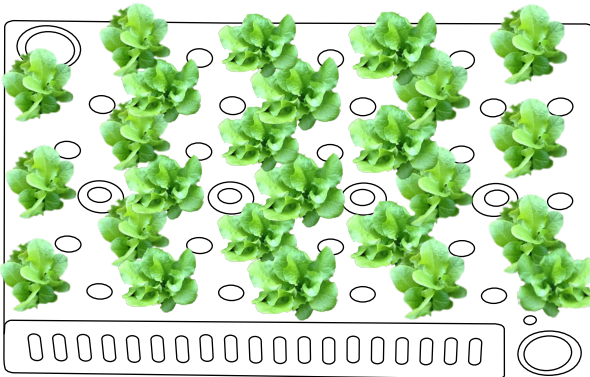Below are images of what to expect as your plant progresses through the growth stages.
Have fun and enjoy experimenting with your plants at home!

Week 3-4
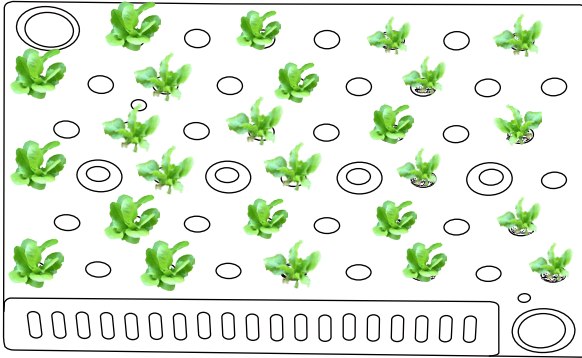
The picture shows the growth status of lettuce around the 3rd - 4th week.
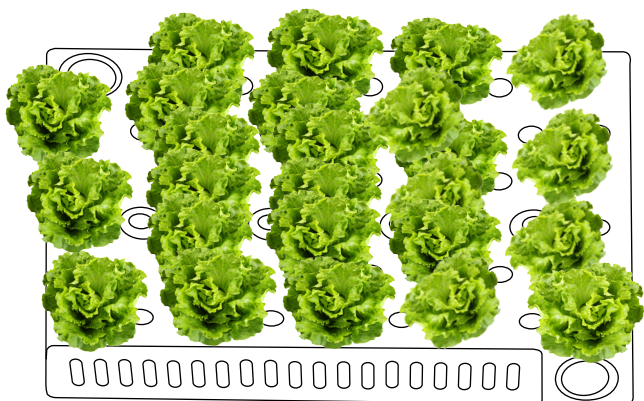(Growth pattern varies by seed type).

Week 5

The picture shows the growth status of lettuce around the 5th week.
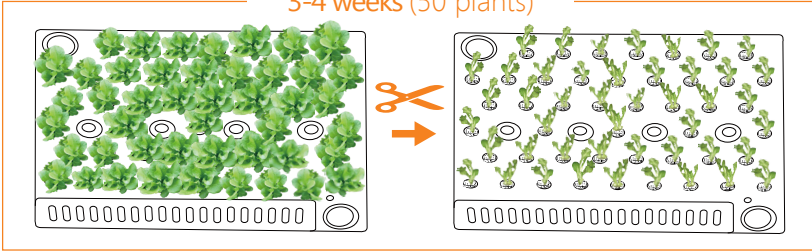(Growth pattern varies by seed type).

Harvest

When plants have reached full growth, you can enjoy your harvest. If plants start getting crowded and interfere with each other, harvest the large ones, to give the others more space to grow to full size.

C. Optional
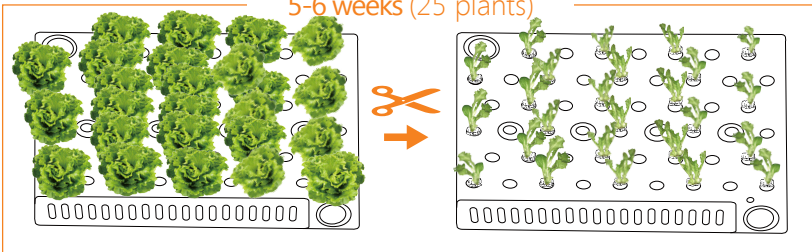## C1. Regrowing

3-4 weeks (50 plants)


5-6 weeks (25 plants)

For certain plants like lettuce, you may be able to get a second growth cycle and harvest by cutting the leaves off for consumption and keeping the roots in the reservoir. Cut off the large leaves, and leave 2-3 young leaves in the middle for regrowing. We recommend regrowing the plants 3-5 times ,then start a new planting cycle.

C2. Sprouts Process

1. Put seeds in a bottle of warm water (max:105°F / 40°C) for 12~24 hours to start the process. Please change the water at least one time.
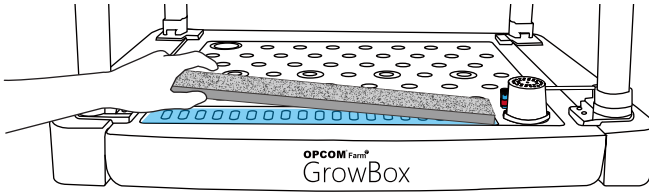
2. Take the black sprouting sponge (OAMS02A) and place it in the Sprout Area. The sponge should be fully wet.
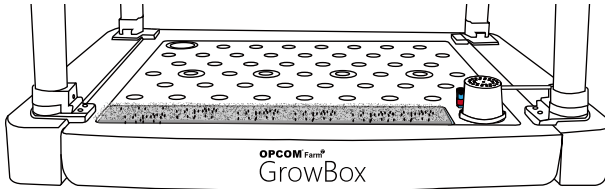
3. Spread sprout seeds from the bottle onto the wet sponge; discard the water.

Recommended Quantity for the Sprounts

Wheatgrass	Alfalfa Sprouts	Daikon Sprouts	Buckwheat Sprouts
60g	25g	50g	80g

4. Cover the seeds and sponge with the Sprout Cover (OAAS04A).

5. After 1 days, check the status of your sprouts.

If they are varietals such as sprouting beans which have no edible green parts, keep covering it with the Sprout Box.

For green sprouts such as wheatgrass, take off the Sprout Box and let light onto plants.

Details for growing sprouts and length of time to harvest should be described on sprout seed packages.
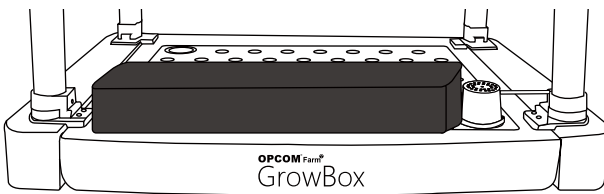
For no edible green parts.

For green sprouts.

C3. Climbing Plants
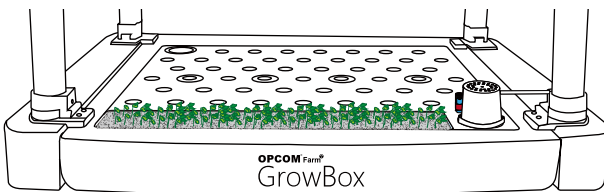## Install Climbing Arms for Vining Plants

Push
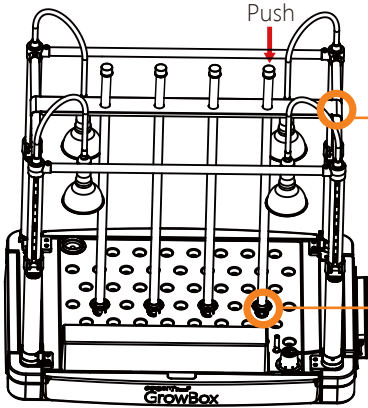
Step 1.
Press climbing tube holder **4** (OANS04A) onto the two short support tubes **2** (OAAS02A).

Step 2.
Insert the four climbing tubes **5** (OANS05A) from the top.

Adjust The Height Of Support Arms For Higher & Climbing Plants

1 UP

Pull up to unlock.

2

3 DOWN
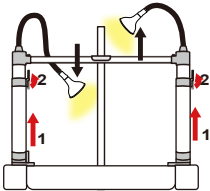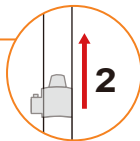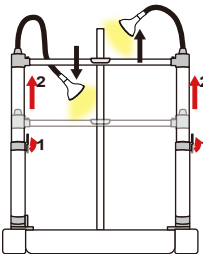
Push down to lock.

1. Unlock the 4 arms.

2. Adjust the height of the four arms simultaneously. Ensure that the same number of lines show on each arm.
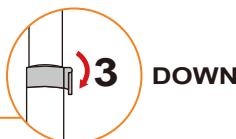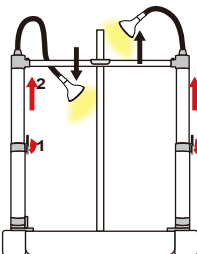
3. Lock the 4 arms to finish set-up.

C4. Insect Protection
Set Up Insect Net
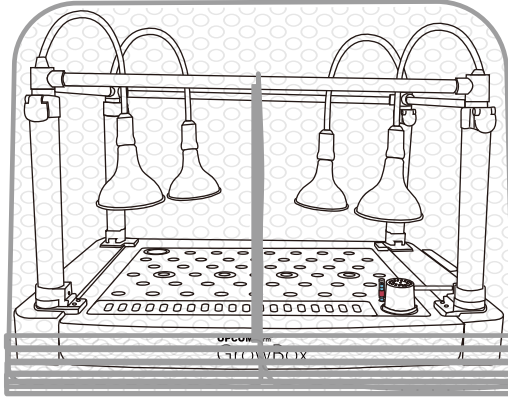
With normal
light arms.

1. Cover the entire unit with the insect net and make sure.
   all openings are blocked. (OAAS05A).
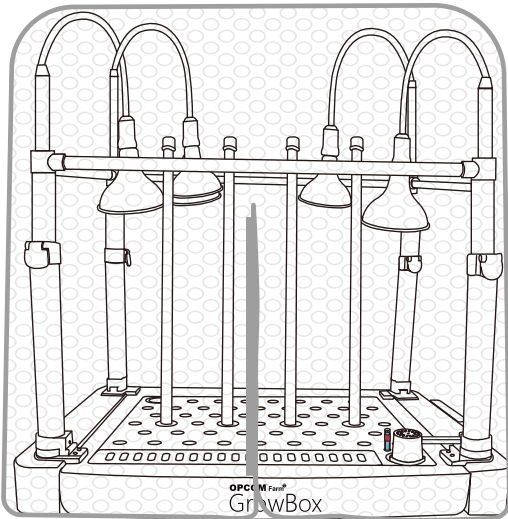
With extended
light arms.

2. Close the front opening after you have setup the net.

D. Maintenance

D1.Change Water

Change water after each cycle, and clean the Appliance.

If the water appears clean, then you can reuse the water with nutrient solution for another cycle. If you see dirt or algae, it is time to change the water and clean the unit. Follow the steps below:
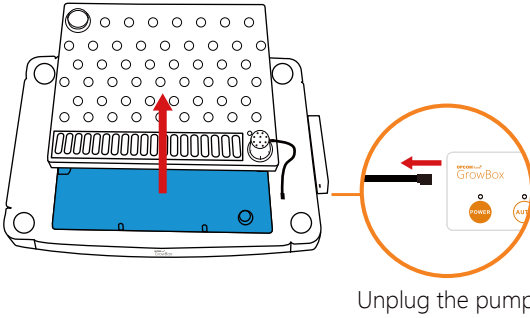
Unplug the pump

1. Unplug AC Power.
2. Unplug the pump power cable.
3. Take out the growing plate with pump and dosing cup.

2

1 Move out tube.
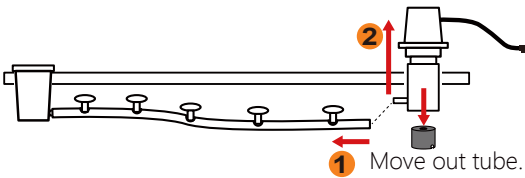
4. Remove the water tube from the pump and take out the pump from the Growing Plate.
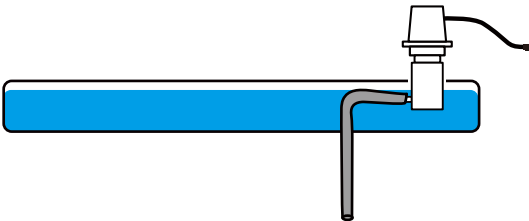
5. Place draining tube onto pump (OAEE01A).
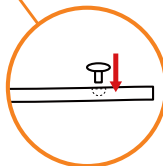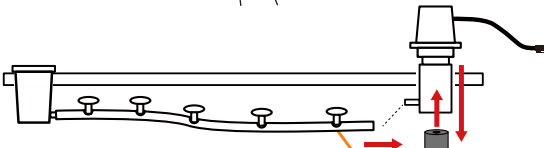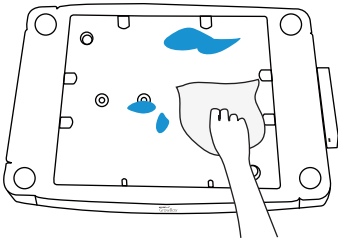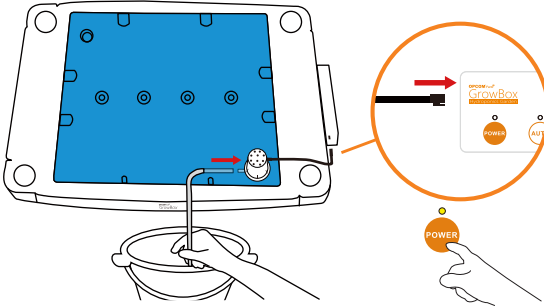
Keep the air-holes facing up.
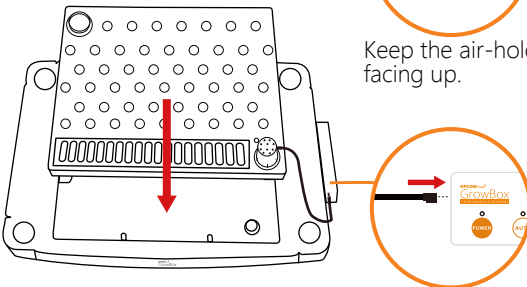
6. Put draining tube into a container or bucket to empty tank.

7. Plug Pump power cable into Control box and put pump into the water.

8. Plug the unit into an AC outlet and press POWER ON. The pump will turn on and water will drain out of the unit ,after about 10 minutes.

9. Turn off the machine immediately when water is out to avoid air bubbles to enter (water pump will get damaged if air bubbles enter for a long time).

10. Clean the water tank and machine with dry cloth.
    Note: If there is a serious alage problem, spray with alcohol and wait for 3-5 days, then start a new planting cycle.

11. Reattach the water tube onto the pump.

12. Rinse the water filter and replace; change out with new filter if it started disintegrating.

13. Replace dosing cup and pump on plate.

14. Plug pump power into control box again.

15. Add new clean water into water tank up to correct level.

16. Power ON and test all function buttons.

D2. Check EC & pH

In order to keep good growing conditions, check and adjust EC/pH weekly.
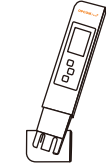
Please maintain EC between 1000-2000μS/cm (=1.0-2.0 ms/cm)

Status	0.4-0.6	0.6-0.8	0.8-1.0	1.0-2.0	over2.0
Nutrition Adjuster Cup	(add 3pcs)	(add 2pcs)	(add 1pcs)	Standard range	Add Water

EC
0855
μS/cm

0.85ms/cm

Please keep pH between 5.5 - 6.5

Status	3.5-4.0	4.0-4.5	4.0-4.5	5.0-5.5	5.5-6.5	6.5-7.0	7.0-7.5	7.5-8.0
pH + Capsule	(add 4pcs)	(add 3pcs)	(add 2pcs)	(add 1pcs)	Standard range			
pH - Capsule					Standard range	(add 2pcs)	(add 3pcs)	(add 6pcs)

4.7

4.7

Nutrient Solution EC / pH Adjustment

● We recommend measuring the EC / pH when first planting, and maintaining water quality weekly. EC/pH can be adjusted by plant variety, please refer to the manual for each seed pack.

● Please follow the result of the EC& pH meter to adjust with Nutrition, water or pH+/- capsules to meet the suggested standard.

● Results may vary with different environment and climates; the above table is for reference only.

Note

The above table is just for users' reference, as specific plant needs may be affected by climate, environment and the variety grown .

D3. EC / pH Meter Use and Calibration

pH meter   EC meter

The pH and EC meters come with a convenient, protective bag that you can hang by your GrowBox.

Usage :
Remove the protective cap. Turn the meter on by sliding the black button to the left.
Immerse into water up to the max immersion level. Stir gently and wait until the display stabilizes enough to read the result. Turn off pH meter and clean the electrode with pure water. Wipe the electrode dry and replace the protective cap. (Measurement Range: 0.0 - 14.0 pH; Temperature 32-122°F / 0-50°C; Humidity Max 95%).

Calibration: (pH meter were pre-calibrated before shipping.)
After changing batteries, immerse the meter in a pH 6.86 buffer solution and allow reading to stabilize. Using a small flat screwdriver, modify the screw on the back of the unit to adjust the calibration reading to 6.9.

Also, immerse the meter in a pH 4.01 buffer solution and allow reading to stabilize. Using a small flat screwdriver, modify the screw on the back of the unit to adjust the calibration reading to 4.0.
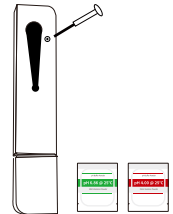
Maintenance :
Keep the electrode clean and cover the electrode protective cap. Take out the batteries when not in use for an extended amount of time. Don't use distilled or deionized water for storage purposes. When the meter can't be turned on / off or the display fades, take out the batteries and replace with new battery.

EC meter

Usage :
Unplug the electrode protective cap. Turn the meter on and immerse into water.
When reading is stable, press "Hold" button and take it out of the solution to read. After reading, turn off the meter and clean the electrode with pure water. Wipe the electrode and replace protective cap. (Measurement Range: TDS: 0-99990us/cm, Temperature 32 - 176°F / 0 - 80°C).

Maintenance:
Keep the electrode clean and always cover with protective cap. Please take out batteries when not in use for a long time, and replace with new battery.

E:

E1. Troubleshooting

Issue	Checkpoints / Solution
Lamps are not lighting up	☑ Make sure all power cables are connected.
	☑ Power button is turned ON.
	☑ Make sure LED status is not OFF.
	☑ If on AUTO, HI or LOW there will be periods of time during a 24-hour cycle when lamps are off. See page 9 for cycle descriptions.
	☑ If a lamp has burned out or does not work, replace with a new OPCOM lamp (OAEE02A).
Pump is not working	☑ Make sure the pump's cable is correctly plugged into the control box.
	☑ Make sure Pump status is not OFF.
	☑ If on AUTO, HI or LOW there will be periods of time during a 24-hour cycle when lamps are off. See page 9 for cycle descriptions.
	☑ If the pump still does not work, replace with a new OPCOM pump (OAEE01A). Refer to pump box for installation.
Pump has a buzzing sound	☑ Pump may give off a buzzing sound in the beginning due to air inside the pump. After a minute with water running through the pump, this should be reduced.
	☑ Too low of a water level in your GrowBox may have resulted in air entering pump. Over time this may shorten the life of the pump. Please maintain correct water level at all times.
	☑ If pump is failed, replace with a new OPCOM pump (OAEE01A). Refer to pump box for installation.
The lamp or the pump stopped working after a few hours	☑ OPCOM Farm's control box is designed with Auto, HI and LOW cycles, which will turn the lamps and the pump on and off at certain intervals. This is to mimic an outside daily cycle, offer the best growing condition for your plants, and save you energy.
	☑ Check the manual page 9 for cycle descriptions.

E2. GrowBox Q&A

Q1 : Pump was accidentally running without water. Is it damaged?

A1 : This can shorten the life of the pump. Maintain proper water level. Always keep the water level indicator on the top.

Q2 : What type of lamps can be used in the GrowBox?

A2 : The lamps provided with your GrowBox is standard OPCOM 18W (L18B) LED Growth Lamp. This is suitable for most plants' growth. You may also use OPCOM Professional LED Growth Lamp 50W (L50B) to accommodate special growth needs.

Q3 : When should the climbing tubes be used?

A3 : The climbing tubes is an optional function for your GrowBox, and you will only need to install the climbing kit when growing tall plants and vining plants like tomatoes. For these plants, the climbing tubes can be used to support the plants as they grow.

Q4 : When should we use the insect net?

A4 : We recommend using the net if the product is in an environment where insects may be present.

To get the most updated planting tips and ideas, please go to our website www.opcomfarm.com and register. By registering, you will receive growing tips, new ideas, and inspiration via email.

If you have additional questions, please email us at info@opcomfarm.com.

Register with OPCOM

Please register with www.opcomfarm.com to receive tips and ideas on how to grow a variety of vegetables, sprouts, herbs and fruits using your OPCOM Farm appliance. We are continuously adding more usage ideas to our website, as part of OPCOM Farm's mission to provide you with tools to source healthy, clean, living foods.

⚠️IMPORTANT SAFETY INSTRUCTIONS

When using an electrical furnishing, basic precautions should always be followed, including the following: Read all instructions before using (this furnishing).

DANGER – To reduce the risk of electric shock:
　1. Always unplug this furnishing from the electrical outlet before cleaning.
WARNING – To reduce the risk of burns, fire, electric shock, or injury to persons:
　2. Unplug from outlet before putting on or taking off parts.
　3. Close supervision is necessary when this furnishing is used by, or near children,invalids, or disabled persons.
　4. Use this furnishing only for its intended use as described in these instructions. Do not use attachments not recommended by the manufacturer.
　5. Never operate this furnishing if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the furnishing to a service center for examination and repair.
　6. Keep the cord away from heated surfaces.
　7. Do not use outdoors.
　8. Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
　9. To disconnect, turn all controls to the off position, then remove plug from outlet.
　10. For loading always put heavier items at the bottom and not near the top in order to help prevent the possibility of the furnishing tipping over.
　11. Each surface intended to support a load shall have a corresponding statement in the use instructions specifying the maximum intended load for that surface in pounds(kilograms).

SAVE THESE INSTRUCTIONS

For more information, please visit
www.opcomfarm.com

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