

GROWER'S NOTES

BY PAPERPOT CO.



Sunflower Microgreens

CROP DATA:

SUNFLOWER MICROGREENS	Paperpot Trays (12" x 24")	Standard Trays (10" x 20")
RECOMMENDED CULTIVARS	Black Oil	Black Oil
DRY GRAMS PER TRAY	220 g (dry)	167 g (dry)
SEED SOAK TIME	4-8 hours	4-8 hours
GERMINATION TIME (STACKED)	4 days	4 days
DAYS TO MATURITY	12 days (+/-) *time from seed to harvest	12 days (+/-) *time from seed to harvest
TARGET CROP YIELD PER TRAY	700 g	532 g
HARVEST UNIT	140 g of product per clamshell	140 g of product per clamshell
HARVEST UNITS PER TRAY	5 (+/-)	3.8 (+/-)
PRICE PER UNIT	\$14	\$14
REVENUE PER TRAY	\$70 (+/-)	\$53 (+/-)

**NOTE: All above crop data is courtesy of Scintilla Farms and is based on their actual numbers growing in Paperpot Germination Trays (scaled down by 24% to provide numbers for growers using 1020 trays)*

SUGGESTED TOOLS & SUPPLIES:

TRAYS	Perforated top trays nested into solid bottom trays (Paperpot trays or 1020's)
GROWING MEDIUM	80% peat moss, 20% perlite or vermiculite (nutrients/compost optional)
SOAKING/RINSING	5-gallon bucket, mesh paint strainer bag liners - or - large metal colander
SEED SANITIZER	Sanidate 5.0 (1.6 oz to 5 gal. water), or 1:1 white vinegar and hydrogen peroxide
SHELVING	<u>NSF Wire Shelving Racks</u> : 60"x24"x72" fits four Paperpot trays per shelf, 48"x18"x72" fits four 1020 trays per shelf. *Add a 6th shelf to these 5-tier racks to fit five grow shelves, 12" between shelves.
LIGHTING	4' T5 LED Barina Lights - 3 per 24" deep shelf (2 per 18" deep shelf)
VENTILATION	Desktop computer fans (2 per shelf), or standing fan next to rack
HARVEST	Well sharpened kitchen knife
PACKAGING	Clamshells (or plastic bags), farm logo stickers
POST HARVEST	White vinegar, hydrogen peroxide, or Zerotel 2.0 (food grade hydrogen peroxide concentrate), 2 Liter pump spray bottle.

SOIL & TRAY PREPARATION

- The best growing medium consistency for microgreens is composed of fine particulates with even drainage. Too much drainage will lead to dehydrated crops, and too little drainage will lead to fungal issues.
- Clumpy mix can be loosened up by hand when adding to your filling bin. Mix with larger particulates can be sifted through a DIY sifter made from 1/4" wire mesh on a box frame. This can be placed over a wheel barrow or tote to sift our larger material that may inhibit germination.
- When filling trays with growing medium, make sure to spread it evenly in the corners and edges of the tray or microgreens in those areas will become dehydrated and tend to fall over.
- After spreading the growing medium evenly in the tray, use a custom wooden press, or an empty tray to tamp/press the soil, creating a smooth even surface.

SEEDING & GERMINATING

- Soak dry seeds in a 5-gallon bucket of water lined with a paint strainer bag for 4-8 hours.
- Sunflower seeds float, so twist the bag closed and weight it down with a brick in the bucket.
- If mold is an issue in your context, after the initial soaking, soak them again in a 1:1 white vinegar–hydrogen peroxide solution for 10 minutes. Rinse again, and they're ready for planting.
- After soak time, lift the strainer bag, dump the water, and tie off the bag to the bucket handle to drain. Allowing the seeds to dry a little makes them easier to spread when seeding.
- Spread the soaked seeds evenly over the tray. Press the tray once more after seeding to ensure good seed to soil contact, then water generously.
- Seeded trays can be stacked (no more than six at a time), with an empty tray at the top. Place a 14 lb paver on the top to weight down the trays, encouraging strong stems and vigorous growth.
- Germinating trays do well at 70-73° and can be stacked in racks with no lights.
- After 3-4 days the sprouts will begin pushing the trays up. Closely monitor so the stack does not tip over.

GROWING & WATERING

- Transfer the trays to the grow racks under the lights, nesting them into the solid bottom trays.
- Top water sunflower for the first 3-4 days under lights to help soften the seed hulls.
- 16 hours of light per day is recommended for microgreens.
- After day 2 or 3, daily brush over the tops of the greens with your hand to knock off hulls. Do this just after watering. Position sunflowers on bottom shelf of rack so hulls can fall to the floor.
- At day 4, watering can be done by lifting the top tray by the thumbhole and pouring water straight into the bottom tray.
- Bottom watering should take place once every morning. If your growing medium does not retain its moisture as long, water once more in the evening.
- Stop watering 24-48 hours prior to harvest to ensure crops are dry and free from excess moisture. This helps greatly to extend the shelf life of the microgreens.
- Sunflower microgreens are ready for harvest when the true leaves are just barely beginning to emerge above the cotyledons.

HARVESTING & PACKAGING

- Wash hands thoroughly and/or wear latex gloves before handling greens for harvest.
- Sharpen the harvesting knife each time prior to harvest. To harvest, grab a handful of microgreens and cut just high enough above the growing medium to ensure there isn't any stuck on the ends of the greens.
- Remove any remaining sunflower hulls by hand, and carefully place the greens directly into the clamshells.
- Scintilla Farms tip: place the clamshells into the refrigerator with the lids open for the first 10-15 minutes to avoid build up of moisture (after which they can be closed). This can increase shelf life.

POST HARVEST TRAY SANITIZING

- Dump the harvested tray's soil and root matter into bins or wheel barrows to be taken to compost.
- Wash, then spray down the tops and bottoms of the trays with 20ml of Zerotel 2.0 to a 2 Liter pump spray bottle of water, or a 1:1 hydrogen peroxide, white vinegar solution. Allow trays to dry prior to being reused.