

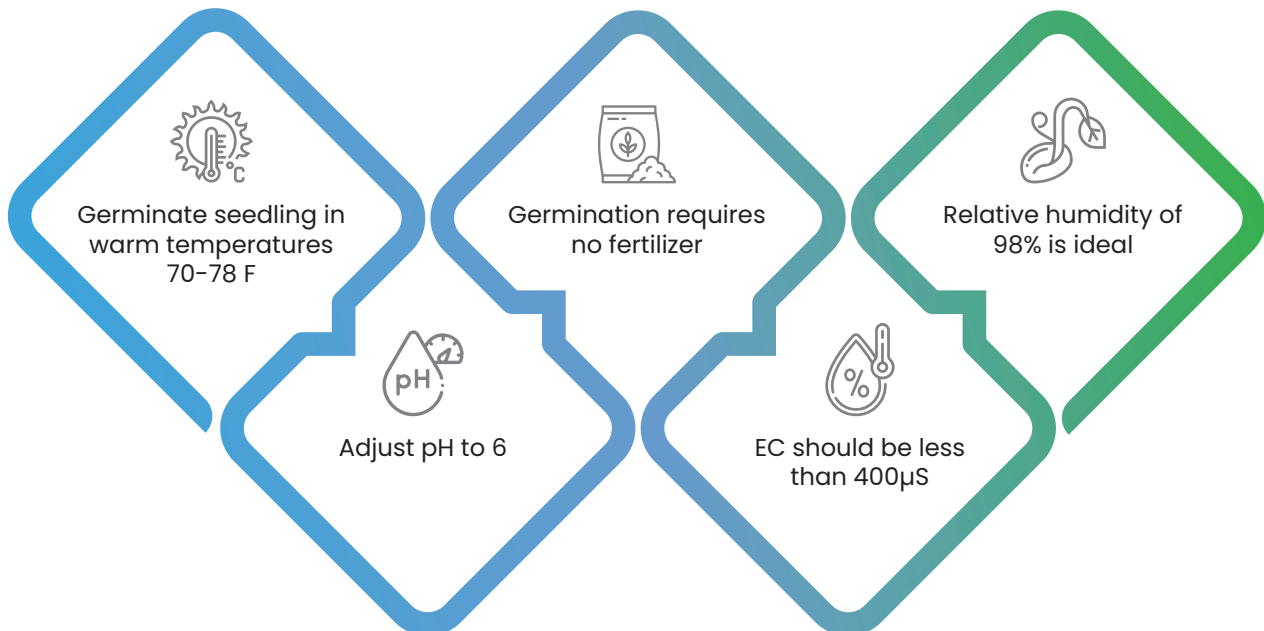


# **CLIMATE-SMART URBAN AGRICULTURE**

Supporting Historically  
Underserved Producers

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# OPTIMAL GERMINATION PARAMETERS



## BEST MEDIA

Coco coir – A fibrous material derived from the outer husk of a coconut (Organic)

Rockwool – Cubes derived from spun basalt rocks (Non-Organic)

Biochar – A highly porous type of charcoal that has been used for thousands of years (Organic)

Oasis Cubes – Similar to Rockwool, but made from foam (Non-Organic)

# GERMINATION METHODS

## Wet Paper Towel Method

There are many ways to germinate your seeds. One of the easiest ways for home growers is to wet a paper towel with room temperature water. Spread seeds evenly on one half of the wet towel, fold in half so the seeds are covered, place in a zip lock bag and store in a cool dry place (a drawer works fine). Check back in two days, and the seeds should be cracked. Once a small root has grown out, the seed is ready to be transplanted into a media of choice.

## Germinating in Rockwool

For growers wanting to germinate many plants at once, media that come in cubes is the most effective way to reduce labor as they are pre-perforated and come in uniform sizes. These cubes will also fit in a standard 20" x 10" starter tray that are available at almost every hydroponic store. Germinating in rockwool is the most popular method of germination. Rockwool comes slightly too alkaline for optimal germination, so it is recommended to reduce the pH by soaking them in a pH down diluted solution. Adjust tap water to a level of 5.5 pH before soaking and check with a pH meter. For organic production phosphoric-acid or other approved organic acids can be used. Once the cubes are soaked place a seed in the pre-cut-out hole, and make sure they are watered frequently. When germinating seeds, they should always be moist, so a daily checkup and watering is recommended. If the temperature is too

cold seedling heading pads are available. Simply place the pad underneath the tray. If relative humidity is too low place a dome over the top of the tray. As a recommendation place the dome over the plants at night and remove when plants begin to photosynthesize. This allows for fresh air exchange during photosynthesis, and removal of excess condensation from transpiration.

## Germinating in Oasis Cubes

The steps for germinating in Oasis cubes are the same as above, although they come pH neutral so there is no need to adjust pH.

## Germinating in Coco Choir & Bio Char

Coco Choir and Bio Char are available in loose bag form and in cubes. Both generally are more alkaline than optimal pH, but it is not recommended to soak them in a pH solution, instead water with tap-water adjusted to 6.0. This will keep the integrity of the cubes intact and keep natural microbes un-disturbed. When using Coco-Choir and Bio Char in bulk bags – small reusable cups with some holes in the bottom suffice. Remember to water daily and make sure cubes are moist, humidity is high, and temperature is between 70-78 degrees.



## FINAL RECOMMENDATIONS

- When roots are visible 1cm long or when first true leaves are showing plants are ready to be transplanted into a larger container, aquaponic or hydroponic system.
- If plants do not germinate consider switching to different genetics.
- If using artificial light make sure seedlings are not stretching or burning (12-24 inches away from the light is a good starting point). Adjust further away if leaf surfaces turn, yellow or brown at the edges or tan in spots. Adjust closer if the stem of the plant is long and skinny.



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