



## **Greenhouse Pest Message February 10, 2022** **Leanne Pundt, Extension Educator, UConn Extension**

### **Tips on Starting Seeds in Greenhouses**

Always purchase high quality seed from a reputable source that is tested for germination rates, uniform emergence, and viability. Request the germination percentage for the seed lots that you purchase. Seeds may also be coated, pelleted, primed, or treated with fungicides. Organic growers need to obtain seeds from organic sources whenever possible.

If you are using seed from last year, test it for germination before use.

Plan your seeding schedule for the upcoming season and keep good records.

Growers may record the following information for each cultivar in excel spread sheet records:

- Amount of seed
- Number of plug trays to sow at each sowing
- Number of packs to transplant from each sowing
- Plug trays left over after transplanting

Most seeds have optimum temperatures for germination and that information is available from the various seed companies. Never store seeds in a greenhouse for long term storage. Seeds quality can deteriorate quickly under conditions of high temperature and high relative humidity. Shelf life is reduced once the seed packet is opened.

### **Germination media**

Select a germination media that is well drained yet retains moisture. For most crops, use a growing media with a pH of 5.7 to 6.2 with low soluble salts.

Many growers also use a mix with a preventive biological fungicide already incorporated into the media to help prevent damping off disease. Test media before use. This is especially important if using compost-based media, because the composts can vary from batch to batch.

Minimize compaction of the growing media by lightly filling cell packs and plug trays with growing media with the excess brushed away. It is important to fill the plug flats uniformly. Plug cells with less growing substrate will dry out faster than those with more substrate. Do not pack down the growing media! Moisten the mix and then allow it to sit overnight before filling the plug trays. The media should be damp to the touch but not overly wet. Do not stack trays directly over one another.

## Containers

Seeds can be sown in rows in open germination flats or in plug trays. However, there are several disadvantages to using open germination flats. Open flats hold a lot of water and do not dry out very fast. This can be an issue during cool, cloudy weather. It is also very hard not to damage the root systems of tender seedlings as they are pulled apart during transplanting.

It is easier to transplant plug seedlings. However, plug trays may dry out very quickly, especially smaller cell sizes. Use plug trays with larger cells if this is a problem for you. Plug trays with deeper cells have better drainage and oxygen levels in the media because of the deeper columns.

## Sowing

Be sure the plug trays are uniformly sown or filled with seed. Seed placed near the edge of the cell are more likely to dry out and desiccate.

If covering seed, use medium or coarse vermiculite to help manage moisture levels and create a microclimate of high humidity. Fine vermiculite can result in buried seeds. Some seeds, such as lettuce, begonia, impatiens, and petunia need light for germination and should not be covered. A mist system will help keep these moist. But, others, such as phlox and vinca should be covered to exclude light. Many other species can be germinated with or without light, so covering with vermiculate helps with moisture management.



Figure 1: Leek seedlings covered with vermiculite. Photo by L. Pundt



Seeds can be sown by hand or with mechanical seeders such as a vacuum seeders or needle seeders. For more see Seeders by John Bartok.

<https://uconn.sharepoint.com/sites/CAHNRExtension/Shared%20Documents/IPM/Greenhouse/seeders2017.pdf>

After sowing seeds, gently mist thoroughly with tempered, warm water. Having adequate growing media moisture levels is needed for uniform seed germination. Some plants such as begonia, impatiens, pansy and vinca germinate better under “wet conditions” but cosmos, dahlia, verbena, and zinnia do better under drier conditions. If the growing media is too dry, seeds will not germinate uniformly. Careful attention to irrigation, and humidity levels is important.

Move seed trays to a germination chamber or propagation area after sowing. Germination chambers available from your greenhouse distributor provide uniformity of temperature and moisture. Remove flats from the germination chamber as soon as the radicles break thru the seed coat to prevent excessive stretching. See germination chamber/ Growth Room for Seedling Production by John Bartok.

<https://uconn.sharepoint.com/sites/CAHNRExtension/Shared%20Documents/IPM/Greenhouse/2015germinationchamberjb.doc.pdf>

Seedlings can also be grown on greenhouse benches with bottom heat or in small areas with heat mats. If only a few flats are sown, humidity domes can be used until the first sign of germination.



Figure 2: Use of bottom heat (heat mats) and humidity domes in a small area. Photo by L. Pundt

As soon as seeds develop their first true leaves, they can be transplanted. Do not hold the plugs in their trays longer than recommended. The seedlings stretch and cannot support themselves well. Roots become pot bound and they will require watering several times a day.

For more:

Avoid common mistakes when germinating seeds <http://www.e-gro.org/pdf/3-16.pdf>

Uneven seed germination in plug trays [http://www.e-gro.org/pdf/2019\\_805.pdf](http://www.e-gro.org/pdf/2019_805.pdf)

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