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# Avoiding common mistakes when germinating seeds.

*Avoiding some key mistakes will ensure that seed propagated material you use this spring will result in a high quality crop that your consumers will enjoy.*



There are many ways to start our plants for spring, purchase un-rooted cuttings, liners, pre-finish, plugs from seed or germinate seed in-house. Many growers do a combination of several of these and germinating seed in-house is often a large component. Although seed propagation is the oldest method in the book, there are still some common mistakes that growers make that result in poor crop quality. Taking a few precautions and steps will help ensure that you have success with your seed crops this spring.

Success begins with flat selection. Many growers still sow seeds in open germination flats (Figure 1) although this has the advantage of not drying out in a manner of hours

like plug trays can, it has a couple of major disadvantages. First being that they hold a lot of water and do not dry out very fast, this becomes a problem in cool cloudy weather or with a grower who tends to run crops on the wet side. Diseases, particularly root rots can move in quickly.

The second disadvantage is the difficulty of transplanting. Seedlings germinate and begin to grow roots that are intertwined with each other. It is impossible not to significantly damage the root systems when they are pulled apart during the transplanting process.



Figure 1. Seedlings growing in "open" germination flats.

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Figure 2. Plug trays properly stacked to ensure they do not "nest" and cause compaction

You will produce high quality seedlings using a plug flat with individual cells for each plant. If you have had problems with them drying out too fast in the past, consider choosing a flat with few, therefore larger, cells, or cells that are deeper. Either way the result is more substrate volume per cell and greater potential for water-holding capacity.

Be sure to take care to properly fill your plug trays with germination media. If you fill your trays well in advance of sowing be sure to not stack the trays. If you must stack them, be sure to off set them so they do not nest and compact the media, Figure 2.

With the goal of saving heating costs, some growers choose to germinate seeds in a warmer location other

than their greenhouses, often times in their homes using fluorescent lights. This can be a good strategy, but be sure to move the seedlings into the greenhouse as soon as they germinate so they do not elongate due to low light conditions. Figure 3 shows pansy seedlings that were kept in a growth chamber lit with fluorescent lights for only 36 hours after germination. The result was elongated stems and unusable plants. The grower had to spend time, materials, and seed to replant this crop.

Another strategy to conserve heat while not compromising the germination rate and quality of your crop is the use of bottom heat. Some growers choose to install bottom heat throughout their greenhouse but in some situations this may not be feasible. Relatively inexpensive heat

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Figure 3. An example of pansy plugs kept in a low light situation for only 36 hours after germination. These plants are elongated and of poor quality.



Figure 4. To reduce the need to heat the entire greenhouse to germination temperatures, consider using heat mats equipped with thermostats to increase the substrate temperature.



Figure 5. Plugs overgrown due to delaying transplanting.

mats can be used to deliver heat directly to the substrate where it is needed most, Figure 4. These mats typically come with a thermostat that is placed in the germination media and will regulate the heat.

The final mistake commonly made by growers that drastically affects crop quality is to hold plugs longer than recommended. Plugs are growing in a very confined space and with very little substrate to support the roots. When plants are crowded their stems stretch to out compete each other for light, Figure 5. The plants might look OK in the flat, but once transplanted

they will be tall, spindly, and unable to support themselves. Additionally, plugs held as long as the ones in Figure 5 will require irrigation several times a day. Missing one watering may result in a crop loss. If you do need to hold plugs longer than you would optimally like to, space them out in extra trays, Figure 6. In this example the grower spaced out their impatiens plugs giving them almost twice as much space. Although not ideal, these plugs will be higher quality after being held for an extra week or so than they would be if no space was given.

When using seed propagated material, either purchased plugs or ones you germinated yourself, crop quality can greatly suffer before you even transplant them. Taking a few precautions with your seedlings and plugs will help you maintain a high quality crop all the way to the consumer.



Figure 6. This grower took the time to space out plugs in plug trays in-order to hold plants past thier optimal transplanting date.