



## Seed Starting and Management

Seeds can be started indoors and outdoors. For our area April 15th is the usual last frost date to plant outside; the soil is usually too cool for good seed germination before that date. Though, in our area, planting seeds outdoors before that date might be problematic; you can easily start them indoors. Once they have germinated you can move them outdoors after the soil warms. Each seed packet will yield multiple years of seedlings. Read your seed pkt well for your seedlings germination and planting needs. After seeding each year, tightly seal the remaining seeds in their packets and store in a cool, dark location for use the next year.

### **For both indoor and outdoor seeding:**

**Soil-**Plants will need loose well aerated soil. Good drainage is necessary to these seedlings' health so choose your soil and containers wisely.

**Water-**Seed germination starts with moisture. Any soil dryness will prevent or stop germination and kill the seed.

**Temperature-**All seeds have an optimal temperature range for germination. Usually from 65-75 degrees F.

**Light-**Most seeds need regular light to germinate

### **Advantages to starting seeds indoors:**

- Allows you to control the environment. You can grow larger stronger seedlings to withstand the outdoor temperatures and insects, birds and other predators.
- You can use a sterile soil mix to reduce potential for fungal diseases.
- You will easily be able to space the seeds at planting so you will not have to thin the small plants after germination.

### **Possible downsides of starting seeds indoors:**

- All seedlings started indoors will need to be transplanted. Some plants don't transplant well. Research your chosen plants for any transplanting problems before you seed them indoors.
- All plants need light. When planted outdoors that isn't a problem. When planted indoors providing enough light for their health could be an issue.

### **Starting seeds indoors:**

**1-Containers:**You can start the plants in almost any container that has good drainage. Sterilize all containers with a 10% bleach solution (1 part bleach to 9 parts water) then rinse them well.

**2-Soil prep & filling containers:** In a large container, wet and mix the seed-starting soil well before using it to fill the containers within a ¼ inch from the top of the pot. Gently firm the soil but do not pack it down. Water the soil in each container again and allow the excess water to run off. The goal is to wet the soil well but not saturate it.

**4-Planting the seeds:** Most seed packets will have instructions as to how deep each seed should be inserted in the soil. A rough estimate is to plant each seed in the soil to a depth of approximately two to four times the seed's diameter. Then cover each seed lightly with a loose sprinkling of moist seed-starting soil.

**5-Create a 'greenhouse':** Cover these newly planted seeds with plastic wrap or some type of clear cover so that the soil remains moist. Dry soil equals dead seedlings.

**6- Temperature control:** If you keep your seedlings in a warm (70-75 degrees F) this will speed the germination.

**7-Light source:** Once the seeds germinate, move them to a cooler location with a bright light source. A south-facing window or a grow light placed approximately six inches above the seedlings.

**8-Watering:** Water regularly to keep soil moist and not soggy. Remember, dry soil equals dead seedlings. Do not overwater.

**9-Prepare seedlings for outdoors:** Before planting outdoors, place these new seedlings in their containers outdoors for a few consecutive days for progressively longer periods to get them used to the outdoor temperatures. This is called ‘hardening off’.

**10-Transplanting to new outdoor location:** Follow the directions below for outdoor planting to prepare the new location in the garden. Then gently remove each seedling from their container and place the plants in this prepared soil. The new plants should be placed to be slightly higher than the surrounding soil so that when watering the water will not pool around the base of the plants. Tuck the plants in with the surrounding moist soil

**Starting seeds outdoors:**

**1-Site prep:** -Clear the desired planting area of debris, weeds and dirt clods. If necessary apply soil amendments and/or fertilizer at this time. Plants will need loose well aerated soil. Water the soil well.

**2--Test soil temperature:** The seed packet will usually tell you the desired soil temperatures needed for successful germination.

**3-Plant according to soil type:** If you have light loamy soil, plant the seeds at the same depth as you would indoors and cover the planted seeds with a light sprinkling of the loamy soil. If you have heavier soil, like clay, plant the seeds a little shallower and cover the planted seeds with vermiculite.

**4-Water** the seeds gently and lightly to not disturb this soil/vermiculite covering. Mist the seeds daily to keep the soil moist, not water logged until the seedlings emerge.

**Continued watering and care of both types of seedlings once outdoors:**

-Water as needed to keep the soil moist but not wet until the new seedlings are well established. Then cut back the watering to the specific water requirements of each type plant as described on the seed packet.

-Consider protecting the new seedlings with a fabric row cover or something similar. This will prevent the local predators and heavy rains from damaging these vulnerable seedlings.

-Weed regularly so the plants have the best chance to thrive without competition.

Information links:

UCMG Napa County

[https://napamg.ucanr.edu/Seed\\_Starting/#:~:text=You%20can%20start%20seeds%20in,then%20firm%20and%20level%20it.](https://napamg.ucanr.edu/Seed_Starting/#:~:text=You%20can%20start%20seeds%20in,then%20firm%20and%20level%20it.)

UCMG Placer County

<https://ucanr.edu/sites/ucmgplacer/files/171555.pdf>

UCMG Marin County

<https://marinmg.ucanr.edu/CARE/PLANTING/Seedsandstarts/>

Damping off

<https://ucanr.edu/sites/ucmgplacer/files/171557.pdf>

It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at <http://ucanr.edu/sites/anrstaff/les/215244.pdf>) Inquiries regarding ANR's nondiscrimination policies may be directed to John I. Sims, Affirmative Action Compliance Officer/Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1397