

## Damping Off

If your seedlings suddenly collapse and die, one of the fungal diseases called “damping off” or “seed and seedling rot” may be to blame.

In one type of damping off, the seedling’s stem collapses at or near the soil surface; in another type, the seedling rots before it emerges from the soil, or the seed decays before it even sprouts.

To prevent these problems, use pasteurized potting mix and new or thoroughly washed and disinfected containers. A fungicide such as hydrogen peroxide may be helpful but best practice is to;-

Take care not to overwater seedlings.

Be sure to provide good air circulation and ventilation, so tops of the seedlings stay dry and standing moisture is kept to a minimum.



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# GROWING FROM SEED

A guide to stratifying seeds before sowing

## INTRODUCTION

This booklet gives suggested methods to achieve a good germination of various seed species.

I have tried many techniques over the years and have found that some are better than others. These are only my suggestions, and you may want to do things differently according to your own experience. The **medium** I use is 'Vermiculite' which is clean and sterile. (Some people use a mix of equal volumes of sieved peat (not compost) and sharp sand.)

The **containers** I use are plastic disposable take away containers with a few holes in the lid to allow air to circulate or self seal (Zip Lock) polythene bags.

## PLANNING & SOWING

Sowing in spring is optimal. Plan when you wish to sow the seeds. Use a calendar and count the weeks backwards to find when you should start the stratification process. For example: - 9-12 weeks treatment. Sowing in first week in April needs starting in the second week of January.

### Sowing seeds.

Sow seeds pointed end downwards about 6-8mm deep, and 15-20mm apart, in trays or pots filled with a 50/50 mix of suitable seed compost & sharp grit. Sowing on this type of grid pattern help to keep track of which seeds have germinated. Sowing with the point down results in a relatively straight seedling without the awkward wiggly root at the base.

Water the trays gently so as not to wash seeds out.

Place trays in a bright sheltered location outdoors or even better, in a greenhouse.

Protect from frosts, hot sunshine, strong winds and wildlife such as mice and birds.

When the seedlings have developed their second set of true leaves, it is time to transplant them into individual pots.

### To transplant seedlings,

Fill each new container with a moist planting mix of your choice.

Loosen the soil around the seedlings (a kitchen fork or chopstick is handy for this); then carefully lift them out, one at a time. Handle seedlings carefully by their leaves to avoid damaging the tender stems.

Poke a hole in the new planting mix, place the seedling in the hole, and gently firm soil around it.

Water the transplant right away. Keep the containers out of direct sunlight for a few days to let the transplants recover from the move.

Before the seedlings go outside full time, harden them off so they can withstand bright sun and cooler temperatures.

Put them outdoors for several hours each day in a wind-sheltered spot that receives filtered sunlight. A cold frame is useful for hardening off seedlings.

Over the next week or so, gradually increase exposure until the plants are in full sun all day.

At this point you can start using an organic fertilizer to help them grow.

## Zelkova serrata

### Pre chill for 3-10 weeks for best results.

These seeds are not actually dormant but will germinate faster and more uniformly if given a moist chilling (or pre-chill) at 2-4°C for up to 10 weeks.

- Soak the dry seed in warm water (approximately 30°C) for 48 hours, drain thoroughly.
- Mix seeds with at least 2 parts by volume of your chosen medium. (i.e. 2 parts medium to 1 part seeds.)
- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags.
- The seed can be sown any time after 3 weeks of treatment.

**Pinus thunbergii.**  
**Pre chill for 3-10 weeks for best results.**

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- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags.
- The seed can be sown any time after 3 weeks of treatment.

**Pinus Koreansis**  
**Deeply dormant requiring warm and cold stratification.**

These seeds are deeply dormant but will germinate faster and more uniformly if given the correct treatment.

- Soak the dry seed in warm water (approximately 30-35°C) for 48 hours, drain thoroughly.
- Mix seeds with at least 2 parts by volume of your chosen medium. (i.e. 2 parts medium to 1 part seeds.)
- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- Store at room temperature for 8 weeks. Followed by 12 weeks in the fridge at around 2-4°C.
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags.
- The seed can be sown any time after treatment. Sow outdoors in small individual pots.
- Protect from mice and birds.

**Acer Palmatum**  
**(Selected Small Seed, Dry).**  
**Stratify for 9-12 weeks.**

These seeds are deeply dormant and require a lengthy period under warm and cold conditions before they will germinate.

Natural outdoor fluctuations in temperature are effective, however it can be unreliable, and it exposes the seed to the risk of wildlife finding them and eating them. The conditions can be replicated artificially using a warm room and refrigerator.

**For sowing in the first week in April, I recommend starting this procedure in the first week of the new year.**

- De-wing the seed roughly and then rub lightly between two sheets of sandpaper in order to slightly damage the pericarp (shell) of the seed.
- Soak the dry seed in warm water (approximately 30°C) for 48 hours, drain thoroughly every few hours and refresh the water.
- (Optional) I recommend giving the seed a fungicide dip (hydrogen peroxide) for a few minutes at this stage just to discourage any fungal spores from growing.
- Mix seeds with at least 2 parts by volume of your chosen medium. (i.e., 2 parts media to 1 part seeds.)
- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- At this stage, dry seed can have a more uniform germination if it is kept for 2-8 weeks at room temperature, 18-20°C before chilling.
- Place in the fridge at around 1-4°C for 9-12 weeks or 9-10 if you have done the warm period of 2 weeks. Begin treatment in August for sowing in the following April. (In the book 'Japanese Maples' by Vertrees & Gregory they suggest a minimum period of 60 days up to a maximum of 120 days.). The way I read it that refers to freshly collected, not dry seed.
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags to allow the seed to breath. Some seed may start to germinate early if the temperature is too high so watch for this happening.

**Acer Buergerianum**  
**Stratify for 9-12 weeks.**

These seeds are deeply dormant and require a lengthy period under warm and cold conditions before they will germinate.

Natural outdoor fluctuations in temperature are effective, however it can be unreliable, and it exposes the seed to the risk of wildlife finding them and eating them. The conditions can be replicated artificially using a warm room and refrigerator.

**For sowing in the first week in April, I recommend starting this procedure in the first week of August.**

- De-wing the seed roughly and then rub lightly between two sheets of sandpaper in order to slightly damage the pericarp (shell) of the seed.
- Soak the dry seed in warm water (approximately 30°C) for 48 hours, drain thoroughly every few hours and refresh the water.
- (Optional) I recommend giving the seed a fungicide dip (hydrogen peroxide) for a few minutes at this stage just to discourage any fungal spores from growing.
- Mix seeds with at least 2 parts by volume of your chosen medium. (i.e., 2 parts media to 1 part seeds.)
- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- At this stage, dry seed can have a more uniform germination if it is kept for 2-8 weeks at room temperature, 18-20°C before chilling.
- Place in the fridge at around 1-4°C for 8-12 weeks or 9-10 if you have done the warm period of 2 weeks. Begin treatment in August for sowing in the following April. (In the book 'Japanese Maples' by Vertrees & Gregory they suggest a minimum period of 60 days up to a maximum of 120 days.). The way I read it that refers to freshly collected, not dry seed.
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags to allow the seed to breath. Some seed may start to germinate early if the temperature is too high so watch for this happening.

**Chaenomeles japonica.**  
**Stratify for 18 weeks.**

These seeds are mildly dormant and will not germinate at all unless given a lengthy period of chilling.

**PLEASE NOTE; I have found this batch of seed to be very keen to grow and have at times begun germinating early while still in the fridge. This is not a problem. Just sow them as you normally would and protect from early frosts and freezing temperatures.**

- Soak the dry seed in warm water (approximately 30°C) for 48 hours, drain thoroughly.
- Mix seeds with at least 2 parts by volume of your chosen medium. (i.e. 2 parts medium to 1 part seeds.)
- Place the seed mix in a clean container or self seal bag and lightly moisten the medium with water. **(It MUST NOT be soaking wet, just barely damp. If its to moist the seed will rot and die).**
- At this stage, dry seed can have a more uniform germination if it is kept for 2 weeks at room temperature, 18-20°C before chilling.
- Store in the fridge at 0-2°C for 18 weeks.
- Mix the seed and medium twice weekly to allow fresh air to enter the container or bags. Some seed may start to germinate early if the temperature is too high so watch for this happening.