



Where Did I Go Wrong? A Germination Troubleshooting Guide

Sowing seeds is an act of faith. The rewards—sweet carrots, beautiful baby beets, delicious salad greens, and more—create a powerful incentive to do it again, and again, year after year. But, every so often, the results are disappointing.

What is a gardener to do? For one thing, don't give up! As you build experience, your garden will flourish, and you will gain the confidence and knowledge that you need to get it right—every time.



Carrot seeds can take time to germinate. Keep seedbeds moist by laying moist burlap or row cover fabric over the soil. Remove it when seedlings appear.

Germination Solutions

Problem: Seeds do not germinate.

Solutions: There are a few possible reasons for poor germination, each with its own solution. The most common are:

1. **Poor seed quality.** Buy from a reputable seed company. Home Garden Seed Association member companies (<http://www.ezfromseed.org/shop.htm>) share information about seed quality issues, and are vigilant about good germination rates and seed freshness. Some seed types can be save for a couple years but others—onions, parsley, and spinach are three examples—should be bought fresh every year.
2. **Incorrect planting depth.** Most, but not all, seeds germinate in either light or darkness. But some—three examples are lettuce, impatiens, and coleus—require light to germinate. Plant them too deeply and they will languish under the soil, and eventually rot. Read the seed packet. It will tell you how deeply to plant your seeds.
3. **Not enough moisture:** Keeping seeds continually moist but not overly wet can be difficult, and without sufficient moisture, seeds will not germinate. Start by moistening the soil thoroughly the day *before* you sow your seeds. If you live in a region where summers are typically dry, set up a

sprinkler, and connect it to an automatic timer. A tried-and-true way to keep carrot seeds moist until they germinate is to rest a layer of moist burlap or row cover fabric over the soil until seedlings appear.

4. **Soil is too cold, or hot.** Most seeds will germinate well when the days lengthen and the soil warms. Keep in mind, however, that the ground heats up more slowly than the air. Generally speaking, seeds germinate well when nights are consistently above 50°F, but there are exceptions. Spinach, for example, needs cool soil, and eggplants, peppers, and melons prefer warm soil. Time your planting accordingly, or germinate seeds indoors, where you can control the temperature.



Starting seeds indoors will give you more control over variables that can cause poor germination.

Problem: Garden germination is spotty.

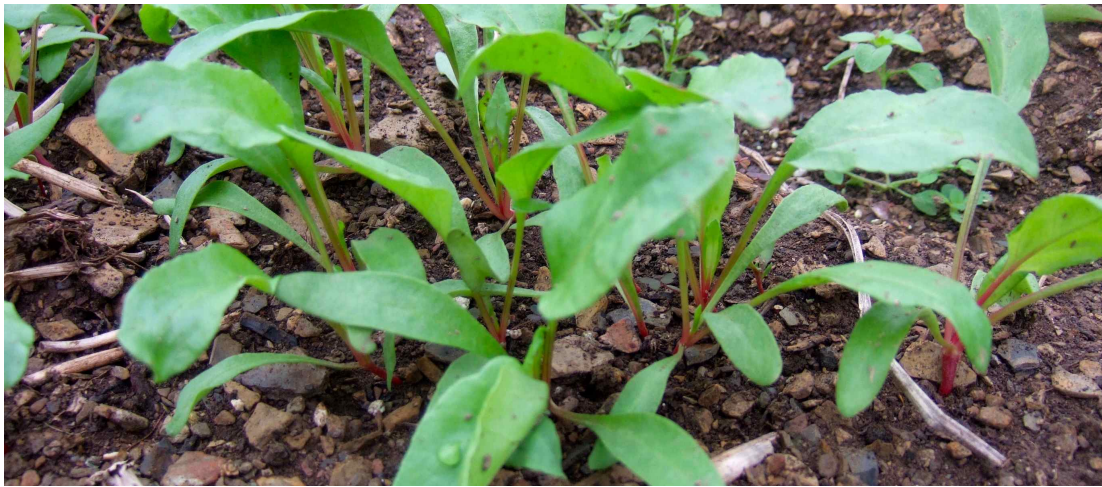
Solution: If some seed germinates well, but parts of a row come up empty, suspect seed- or seedling-eating insects or animals. Slugs, snails, and crickets dine on seeds and seedlings, cucumber beetles can make squash seedlings disappear overnight, and ants will carry your seeds away to their underground stash. What to do? Try a second sowing, and cover it with row cover or burlap to exclude such pests as crickets and cucumber beetles. Iron phosphate baits such as “Sluggo” and “Escar-Go!” deter slugs and snails, and are harmless to pets and people. If beet or chard germination is a problem, try setting mousetraps. For ant problems, rimming your row with baking soda or a string soaked with citrus oil may help. Or, rearrange your plantings so that direct-sown seeds are in areas with minimal ant activity.



Mice can sniff out beet seeds, hollow them out, and reduce germination to almost nothing.

Problem: Seeds germinate, but plants fail to thrive.

Solution: This is more than likely a soil problem. The soil is too wet, too dry, too compacted, too deficient in necessary nutrients, or the pH is too extreme. Start by checking the drainage of your soil with a simple drainage test: dig a 12-inch hole and fill it with water, if it doesn’t drain in 30 minutes, raised beds are your answer. Good soil preparation, and the addition of generous amount of compost, will solve many soil problems. A soil test will give you a complete picture of the structure and quality of your soil.



It's important to thin seedlings of root vegetables, such as beets, so roots can develop properly.

Problem: Seeds germinate well but root vegetables do not develop properly.

Solution: Thin! Yes, it is difficult to snip a living plant off at its base, but you must if you want to grow beets, carrots, radishes, or turnips of any size. Wait until seedlings have two sets of leaves and, very carefully, remove weaker seedlings—use scissors to avoid disturbing the neighboring plants. This can be done in two stages. Refer to seed packets for specifics on final spacing.

Problem: Seeds germinate and growth is good, but young plants disappear overnight.

Solution: Suspect rabbits or, worse, groundhogs. A good fence, with a wire barrier buried at least 6 inches underground, will keep them out. Sometimes, however, all it takes to deter critters (assuming they're not too hungry) is covering plants with floating row covers.



Groundhogs and rabbits will chew kale seedling down to a nub overnight, given the chance.

Visit these Seed Company links for information on successful seed starting, indoors and out.

Botanical Interests: <http://www.botanicalinterests.com/articles/view/18/Getting-the-Best-Germination>

High Mowing Seeds: <http://www.highmowingseeds.com/sb-factors-affecting-germination-of-organic-seeds.html>

Renees Garden: http://www.reneesgarden.com/articles/start_seeds.html

Burpee: <http://www.burpee.com/seed-starting/seed-starting-basics-article10018.html>