



BLOSSOM Organic Garden Store



4711 Black Lake Blvd SW, Olympia, Washington (360) 943-5670
Organic Growing Supplies for the Maritime Northwest

Gardening Information Leaflet (GIL) No. 8

\$5.00

**“DOING IT RIGHT”
THE MINERAL-AUGMENTED ORGANIC WAY
The Only Way to Grow!
Successful Seed Starting Indoors**

The basic aims of starting plants indoors for later planting out into the garden are to provide protection from adverse weather and pests and to get a jump start on the growing season. Another way to view this is providing a controlled environment for manipulating plant growth for various purposes. Indoor seed (or seedling) starting commonly is practiced for producing vegetable, herb and flower “starts” or “transplants”, and these are the types of plants this instructional leaflet is intended for.

Unlike other regions of North America where plants are successfully started readily in a sunny window without need for special equipment, this usually is not successful or satisfactory in our Maritime Northwest region. The reason is that on any given early spring day in this region, you are lucky to see the sun for more than a few hours, if at all. Plants require a certain minimum amount and intensity of light in order to photosynthesize or else they will not grow or develop properly. Lacking sufficient light, the plants are likely to be spindly, weak and yellowed. Sunlight or full spectrum light is best, but for vegetable starts, for instance, ordinary fluorescent shop lights giving 12 to 16 hours of light daily are adequate.

Besides strong light, plants (like humans) require four more fundamental growth factors; i.e., warmth, moisture, air and nutrients. Most plants require a sixth factor, which is anchorage or soil or other media in which to sink their roots. For this requirement, it is well to provide a special soil-less seed starting media (commonly made with peatmoss, perlite, and vermiculite) rather than actual soil, or even compost, in order to minimize exposure to disease organisms. Cold, wet, stagnant and undernourishment conditions invite damping off and other diseases. When using these natural and essentially sterile materials it is unnecessary (and even undesirable) to heat-sterilize the media.

Practically speaking, the best set-up is two each 4 foot shop lights (employing 4 fluorescent tubes in parallel) mounted above two standard 10” x 20” plastic trays containing inserts such as a sheet of 6 cell units, each cell to eventually hold one seedling. After the inserts are filled with the seed starting media and watered and then seeded, the trays (preferably set in protective mesh flats) are placed under the two light fixtures and situated within an inch of the tubes. Consult seed packets, catalogs or garden books on how deep to cover the particular crop seed to be sown. As the seedlings grow, either the lamps must be raised on chains or the trays lowered correspondingly. Do not allow leaves to contact the light tubes. Allow for 8 hours darkness initially, but this may be extended to 12 hours after true leaves form so that there is 12 hours light and 12 hours darkness.

We’ve taken care of light and anchorage (media) and introduced moisture. Moisture needs to be monitored daily and applied as needed to prevent the roots drying out and killing the seedling. A well-blended starting media will retain water, but also will drain quickly enough that there is little risk of drowning the roots by overwatering. Trays, however, must either be emptied of standing water or have slits that permit drain through.

Temperature is the fourth growth factor. Nearly all plants must be kept above 40° F to grow at all and below 100° F to avoid being burned up or dried out. An optimum daytime temperature of 70° F works for most crops, though “tropicals” like peppers prefer 80° F. A nighttime drop to 60° F, or even 50° F, simulates nature and is healthful. Air (containing both oxygen and carbon dioxide, essential to leaf and root processes), is factor number five and is usually a given. However, if you are covering your trays with a clear dome, it’s a good idea to remove them daily to allow air exchange and check on moisture.

Finally, we come to factor six; i.e., nutrients. Soil-less media is devoid of nutrients or plant food. The moment germinated seeds pop up, they should be fed a dilute, liquid, organic fertilizer such as liquid fish and, ideally, liquid seaweed as well in order to give them the full spectrum of major and minor nutrient elements and trace minerals, plus vitamins, enzymes and hormones found in the seaweed product. A weekly feeding of these fertilizers is usually sufficient and accomplishes watering at the same time.

Emerging seedlings generally put out two false leaves (or cotyledons) which function to provide enough stored food to get the young plant up to its first true leaf stage where it starts to make its own food in the form of sugars (using water, CO₂ and sunlight). However, the process is much more complicated than that and necessitates having soil-derived or foliar applied minerals. Almost always the seedling will benefit and grow better from mineral augmentation and the vitamins, hormones and enzymes supplied by the fertilizers.

Once the seedling reaches its second set of true leaves it is ready for transplanting, perhaps into a 4 inch pot or into a cold frame or even out in the garden, if weather and conditions permit. At this stage the seedling has passed its stages of greatest vulnerability to disease and can safely be up-potted to a soil-based potting mix or a commercial potting mix or into the ground (dirt). Stir in a complete, organic fertilizer such as our B.L.O.O.M. mixes before setting the transplant out on a cloudy day. Give yourself a green thumbs-up!