THE BACKYARD GARDEN BLUEPRINT
Session 4: Seeding and Transplanting

OVERVIEW:

1. Direct Seeding
2. Transplanting
3. What are soil blocks?
4. Our potting mix recipe
5. Transplanting successfully


DIRECT SEEDING

WHY DIRECT SEED?

1. It is not practical or economical to transplant some plants
    1. Examples of these plants are:
        1. Tap-rooted crops (carrots, parsnips)
        2. Low-return-per-square-foot crops (corn, pumpkin)
        3. Legumes (peas, beans)
        4. Fast-growing crops (radish, spinach)
        5. Herbs (can go either way)

DIRECT SEEDING

1. Germination percentages for direct seeding are lower than the percentage on the seed packet.

DIRECT SEEDING

- Allow for a “fudge factor” of 50 to 100 percent germination
- Example: If you want a plant every 4 inches then set the seed spacing at every 2 inches for the seeder

DIRECT SEEDING

- As a general planting rule, cover seeds to three or four times their diameter (i.e. plant a ¼" diameter pea 1 inch deep)
  - In cool or heavy soils, plant a little shallower
  - In warm or dry soils, plant slightly deeper
  - Keep soil moist until germination

DIRECT SEEDING WITH A SEEDER

1. Mark the row before seeding:
    1. Stretch a string tightly along the side of your first row
    2. The row-marker arm on the seeder will mark the following rows for you
    3. Aim your seeder straight for each pass
    4. For larger areas you can use an adjustable rolling marker or marker rake to mark your rows

DIRECT SEEDING BY HAND

1. Hand-seeding is often used for larger seeds like legumes and corn:
    1. Beans
    2. Peas
    3. Corn


TRANSPLANTING

TRANSPLANTING ADVANTAGES

- Transplanting is more reliable
- Better plant care and cost efficiency
- An almost sure harvest
- Green manure productivity
- It is easier to deal with weeds
- It increases the effectiveness of succession planting
- Shelter gives a head start

TRANSPLANTING

1. Germination temperatures
2. Ideal temperature for most crops: 70-75° F (21-24° C)
3. Ideal temperature for asparagus, cucumber, eggplant, melon, pepper, and squash: 75-80° F (24-27° C)
4. Use a heat mat and/or start seeds inside

TRANSPLANTING

1. Three Stages
    1. Starting Starts
    2. Potting on (optional)
    3. Setting out

STARTING STARTS

1. Seeds are sown in some sort of bed or container which usually holds a special soil mix or potting soil
2. The soil mix is different from garden soil in that it has extra organic matter and drainage material in it. This helps seedlings thrive despite their confined conditions
3. A controlled environment (in your home, greenhouse, cold frame, etc) is used to enhance the growing conditions for the young seedlings

STARTING STARTS

1. Types of containers to start seedlings in: individual pots, plug-type trays with individual cells, or soil blocks
2. We prefer the soil block method for most of our seedlings

POTTING ON

- Transferring a seedling from its initial container to a larger container
- This is only necessary when crops are grown for a longer time or to a larger size before being set out

SETTING OUT

1. Planting the young plants in the field or greenhouse where they will grow
2. The more efficiently this transfer is done, the more effective transplanting becomes

WHAT ARE SOIL BLOCKS?

SOIL BLOCKS

1. A block made out of lightly compressed potting soil
2. Serves as both the "container" and growing medium
3. Blocks are pressed out by a form and the air space between the blocks serve as "walls"

~ Elliot Coleman

SOIL BLOCK ADVANTAGES

1. When the seedling's roots reach the air they stop growing thus preventing root circling as would happen in a container
2. Seedling roots become well established in a soil block and quickly take root when transplanted in the field
3. The roots of seedlings quickly fill the soil block holding it together quite firmly so that it is not fragile when handling
4. There are no plastic pots or plug trays to deal with
5. Blocks can be made in various sizes to meet your potting needs

SOIL BLOCK MAKERS

- Has forms to make:
  - 3/4-inch blocks (mini-blocks)
  - 1 1/2-inch blocks
  - 2-inch blocks
  - 3-inch blocks
  - 4-inch blocks (maxi-blocker)

OUR POTTING MIX RECIPE

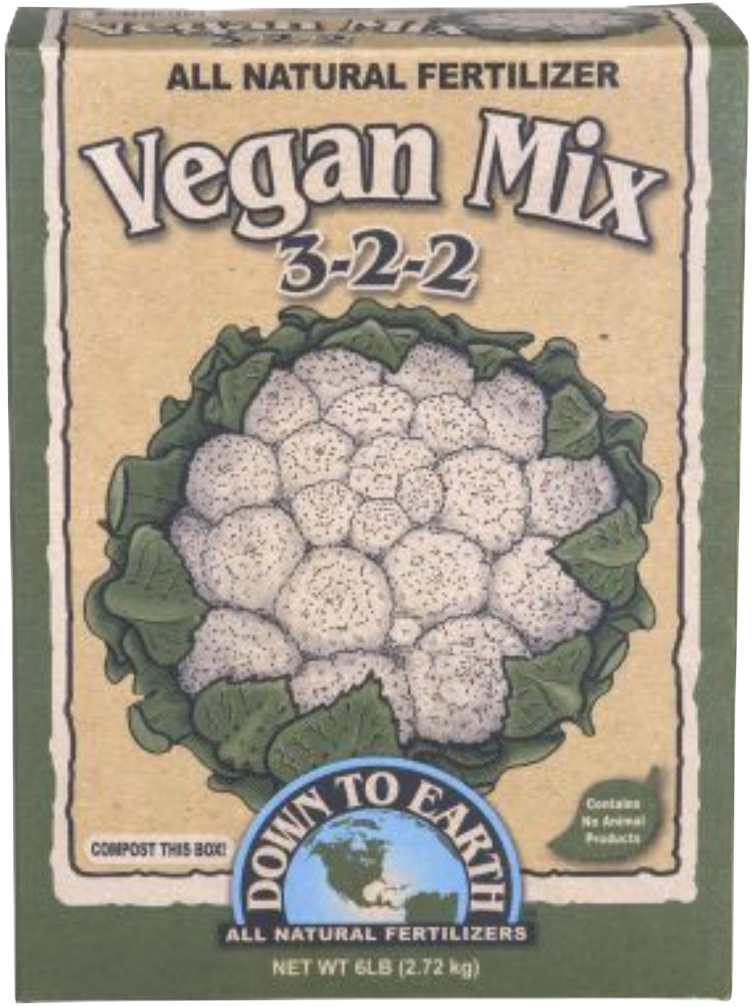
POTTING MIX RECIPE

1. **Potting Mix Recipe:**	**Full**	**Half**	**Quarter**
2. Peat Moss	6 gallons	3 gallons	1.5 gallons
3. Compost	6 gallons	3 gallons	1.5 gallons
4. Course Perlite	2 gallons	1 gallon	1/2 gallon
5. Fertilizer Mix	2 cups	1 cup	1/2 cup

6. **Note:** 2 gallon buckets work well for measuring. You can find them at your local hardware store.

FERTILIZER MIX

1. Down to Earth Vegan Mix
    1. OMRI Listed
    2. 100% Plant Based
    3. Excellent balance of nutrients
    4. Soy bean meal, canola meal, alfalfa meal, rock phosphate, langbeinite, greensand, kelp meal and humic acids



SOIL BLOCKING

1. This isn't the only recipe - others have mixes that work well also
2. Moisten the mix by adding water at an approximate ratio of 1 part water to 3 parts mix
3. It is better for the soil block mix to be more wet than dry
4. Should be like a wrung out sponge

SOIL BLOCKING

1. Using the soil-blocker:
2. Push down quickly with a twisting motion into blocking mix
3. Scrape off excess mix
4. Eject blocks onto a tray/flat
5. Rinse in water between each use


TRANSPLANTING SUCCESSFULLY

TRANSPLANTING SUCCESSFULLY

- Hardening Off
  - This is the process of gradually exposing sheltered seedlings (started in your home or green-house) to the outside elements
- **DAY 1:** Place outside in mid-afternoon and leave until mid-morning the next day
- **DAY 2:** Bring inside over the middle of the day and then transplant in the evening

TRANSPLANTING SUCCESSFULLY

1. Watering Well
    1. It is important that seedlings be well watered before transplanting
    2. It is also important to water immediately after transplanting. The moist ground helps the transplant take root faster and become established in its new environment.

TRANSPLANTING SUCCESSFULLY

1. Avoid Disturbing Roots
    1. Be careful to preserve the fragile root systems of the seedlings while transplanting
    2. You are less likely to disturb the roots of a seedling grown in a soil block because the roots are air pruned

TRANSPLANTING SUCCESSFULLY

1. Soil Contact
    1. Dig a hole with a trowel
    2. Place soil block lightly but firmly in the ground
    3. Avoid air pockets and uncovered edges
    4. If even a corner of the block is above the soil it can easily dry out the whole block

TRANSPLANTING SUCCESSFULLY

1. Proper Spacing
    1. By properly spacing transplants you are making optimum use of the land area
    2. Weeding/cultivating is more efficient when plants are properly spaced
    3. A marker rake is one of the easiest ways to space correctly

TRANSITIONING FROM ONE CROP TO ANOTHER IN A NO-TILL SYSTEM

TRANSITIONING CROPS

1. Scout for weeds that have or nearly have seed heads and remove.
2. Cut or knock down the established crop
    1. Flail mower
    2. Rotary mower
    3. Scythe
    4. Roller
    5. T-post crimper

TRANSITIONING CROPS

1. Tarp if cutting and knocking down won't kill the established crop
2. Black tarp prevents light from reaching plant and kills it
    1. Need to leave in place for 2-3 weeks
    2. Won't work on plants that have deep, heavy tap roots or on perennials

TRANSITIONING CROPS

1. Clean the bed as needed
    1. Widely spaced transplants don't need any cleaning
    2. Closely spaced transplants need heavy material removed
    3. Direct seeding will need most material removed
    4. Removed plant residue can be composted

TRANSITIONING CROPS

1. Amend
    1. Add any amendments or compost needed
2. Plant

CLASS HANDOUTS

borntogrow.net/adagra