

Workshop Title: Transplants and Potting Mix, Part 2

Speaker(s) & their title(s): Tim Livingstone, Jolly Farmer Products Inc.

Summary

Tim Livingstone describes raising transplants and discusses which potting mixes work best for given crops, and what additional fertility they may require. He talks about certain crops – cauliflower, tomatoes, corn – specifically based on his growing experience, noting where his methods may differ from conventional wisdom.

Basics of Raising Transplants

Some points to consider when sourcing organic seeds:

- Seeds that work with your seeding system
- Pellets for hand sowing small seeds
- Good germination percentages

Storage

- Store seeds well from year to year and test older seed.
- Relative humidity plus temperature should add up to less than 100.
 - If seeds are in cold storage, seed packets should acclimatize to room temp before you open the package, let them sit out.

Soils:

Seed germination is a very sensitive time. High fertility inputs might reduce germination for some seeds, so a low fertility mix is needed, and during pot-up, use a richer mix.

Soils rich in compost (60% compost, 40% peat)

- Hold nutrients longer
- Less supplemental fertility needed
- Heavier mix holding upright better
- Less peat moss required
- But...
 - Germination can be reduced
 - Can be harder to re-wet when dry
 - Roots generally thinner
 - Root ball falls apart more easily
 - Can be more difficult to keep moisture optimum

If a compost-rich mix is animal manure based, make sure you have way to minimize salt content.

Peat-based mixes (8-10% compost, 5% castings, 10% vermiculite, 15% perlite, ~60% peat):

- Lighter; more pore air space; easier to re-wet; roots whiter and thicker; Root ball holds better at planting

But...

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- Will run out of nutrients faster
- Require more peat, perlite, and vermiculite
- Require supplemental fertility

Aim to bring the soil pH to 6.5. For liming: use calcitic lime. Use the finest lime you can find. For a natural surfactant-wetting agent, Tim recommends a Yucca Ag product sold by Desert King International.

Need to make sure there is not too much fertility; don't use too much feather-meal – mix needs to be stable so it does not start composting.

Ways to Add Fertility: Start supplementing before plants look 'anemic', if using liquid fertilizer like fish emulsion, can take 3 days to kick in.

- Using protein meals
 - o Generally cost effective and can be mixed at different rates for different crops; also store well in unmixed state; but mix cannot be stored after mixing and can start compost process in the mix
- Using compost
 - o Renewable resource; stable nutrient source; can store mix; but makes a heavy mix and excessive salts can be a problem
- Using liquid fertilizers
 - o Hydrolyzed fish is best, but smelly and expensive; but easy to use, nutrients become quickly available, and it allows different feed amounts.

Seeding:

Mostly done in 144 trays; corn in 72s; cukes/squash in 50s. Started in early March.

1 per cell crops: toms, peppers, coles, lettuce, melons

2 per cell: onions (or 1 for big onion), shallots, basil, corn, cucumbers.

Multiple: chard and herbs

Covered with medium vermiculite or soil. Cover to twice the depth of the seed.

Vermiculite for most crops, corn gets soil, some herbs get nothing.

Equipment:

Hand is obviously lowest cost, but timely. Hand-operated needle seeders and plate.

seeders are also option. Expensive automated seeders for bigger operations – are they worth it for your operation?

Watering Requirements:

Increase fluctuation as plant grows, and remain consistent in the beginning.

Example crops:

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Cauliflower: gets a compost-rich mix, seeded in 144 trays, and still do well despite being a bit lanky at of 4 or 5" in. tall, cotyledons should be green; cold crops spend ~5 weeks before being planted out.

Tomatoes: planted out when first cluster is flowering; they don't bury the stem like many growers – when stem is buried a growth signal is sent, which delays fruit set. The few weeks after planting can be scary, plants can turn purple before greening up and properly establishing; but with this method, they find they are able to get earlier tomatoes, can harvest by mid-July. On cherry tomatoes, the first fruit is set by mid-May.

Sweet corn: they have had success transplanting; it is their least profitable crop, but people love it. Need about \$10-\$12/dozen to make it worthwhile.

- With non-treated seed, you need a germination temp of 65F or more (if treated, drop by 10F) – have had no germ issues.
- Plants will look sad for first 2 weeks, and will be shorter in general than direct-seeded corn, but the cobs look great.
- They try to transplant as early as possible, usually at a 3-week stage, but the ideal stage would be at 2 weeks, which may work with hand planting.

Brassicas like a compost-rich mix and fertility; if temps drop below 10F at night, it might induce premature flowering. Tim recommends a fertility boost during the hardening off stage: using 3x the amount of fish emulsion.