ONIONS TRANSPLANTS

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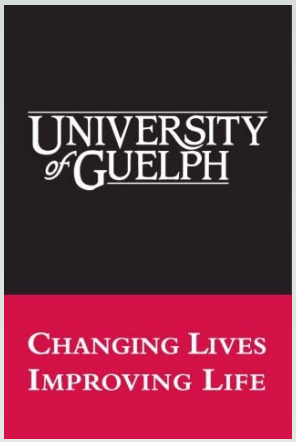


Off to the best start: Production of high quality onion plug transplants, tips for small-scale production

- Set Up
- Growth Requirements
- Timing of Seeding
- Temperature, Lighting
- Water Management
- Fertility
- Trimming plants
- Disease Issues
- Hardening off transplants

Onion Transplants

Advantages of transplanting:

- Earliness
- Uniform size and stand
- Conserves valuable seed
- May reduce pest and disease damage

Disadvantages:

- Cost
- Specialized equipment
- Labour and time

Transplants – Greenhouse

- Double poly plastic
- Consistent heat supply
- Easy assess to good water
- Ventilation and air circulation
- Clean - no weeds, insects
- Plants off the ground – root pruning

Transplants – Using Plugs

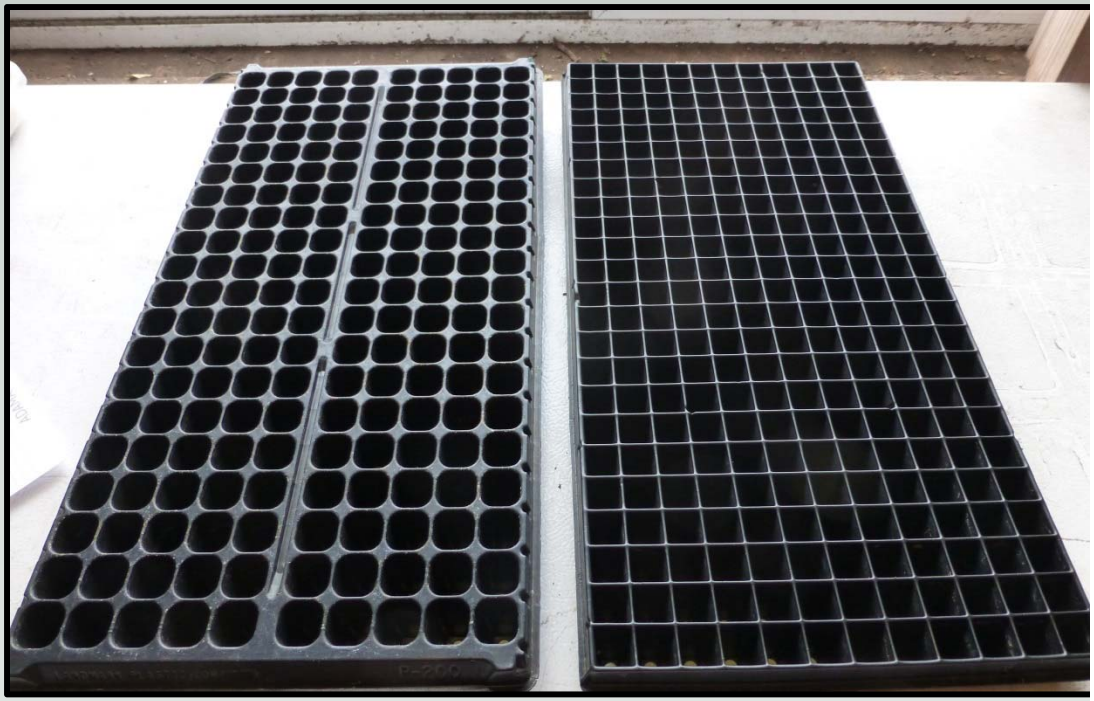
- Plugs grown in soilless mix
- Plugs provide plants with healthy compact roots
- Easy to move
- Plug transplants help to reduce transplant shock

Transplants – Start Up

Plug size

288s - 1 - 1¾" deep

200s – bigger cell



Use good seed

Spanish Onions - 1 seed/cell

Yellow/Red Onions – 3 seeds/cell

Don’t over fill plugs - leave room for seed

Transplants – Start Up

Soilless mix

ASB, Pro Mix

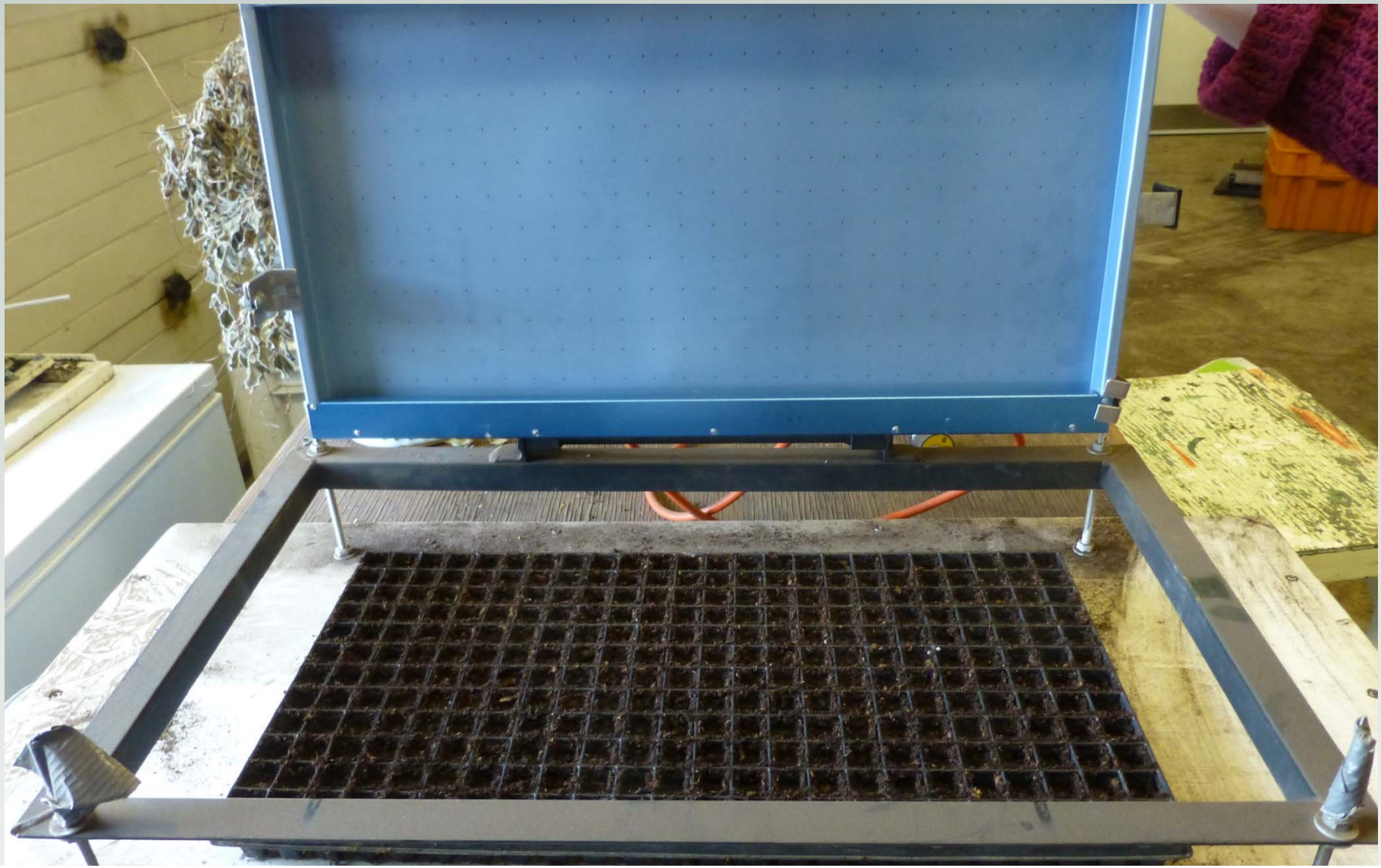
Several mixes – may include peat, perlite and vermiculite

Sterile, easy to handle, uniform, fertilizer charge

Fill plugs to a uniform depth, press down soil prior to seeding

Transplants – Seeding

Transplants – Seeding



Transplants – Temperature

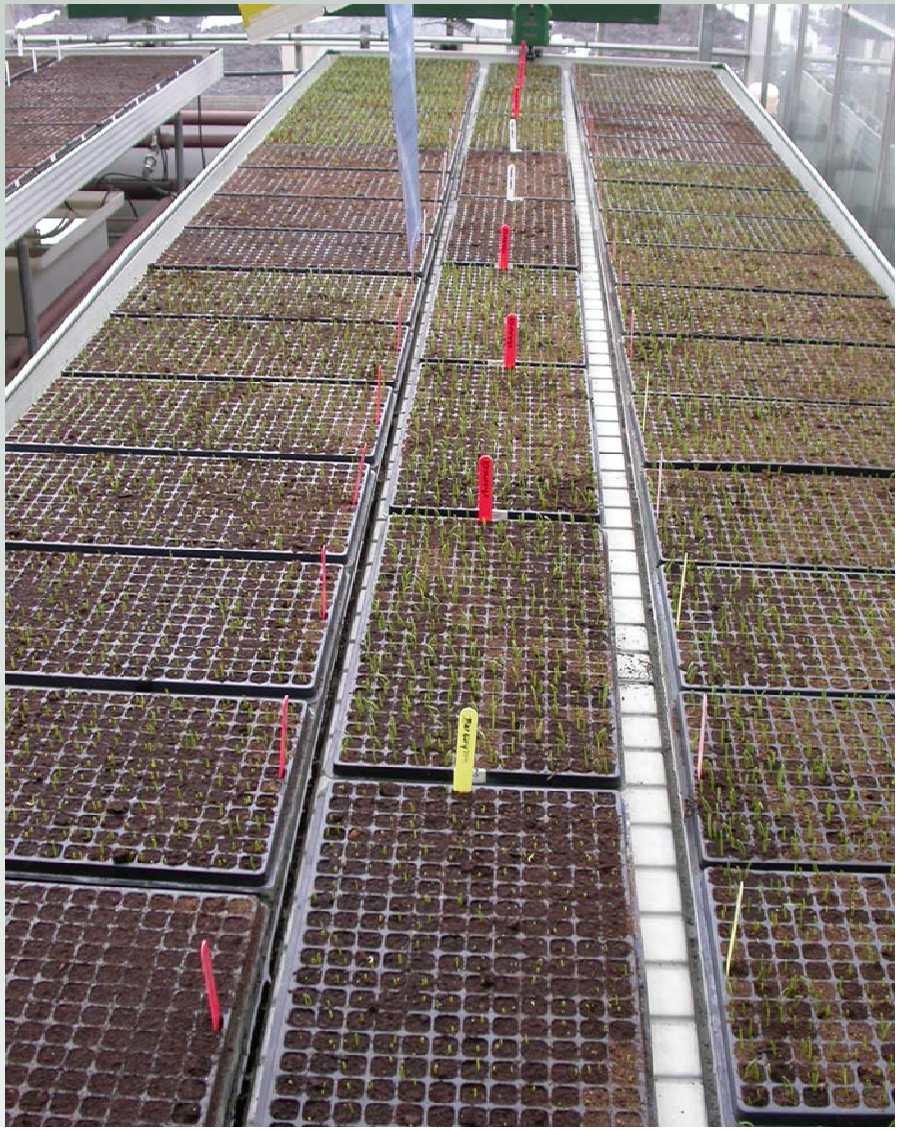
55-65 days to transplanting

Germination: 65 - 75°F

7 - 8 days to emerge

Ensure plugs have been watered thoroughly after seeding

Cool temperatures can delay onion emergence - uneven stands



Transplants – Heating

Growth control: DIFF method night temp 10°F warmer than day

65°F night - 55°F day

Avoids onions stretching and becoming spindly

Transplants – Lighting

Supplemental lighting - generally not required

Sunny days in early March – days are getting longer

Onions don’t require additional lighting for early development

Transplants – Watering

Avoid overwatering - can lead to damping off, poor growth, poor root development

Edges of greenhouses dry out quicker – need extra nozzles for overhead watering

Water in AM only

pH – 5.5 - 6.5 is ideal - up to 7.0 is ok

High salts in water can build up in soil, damage small onions

Transplants – Fertility

Soilless mix has a starter charge

Start 2 - 3 weeks after onions emerge

After 1st true leaf is developed

Transplants – Fertility

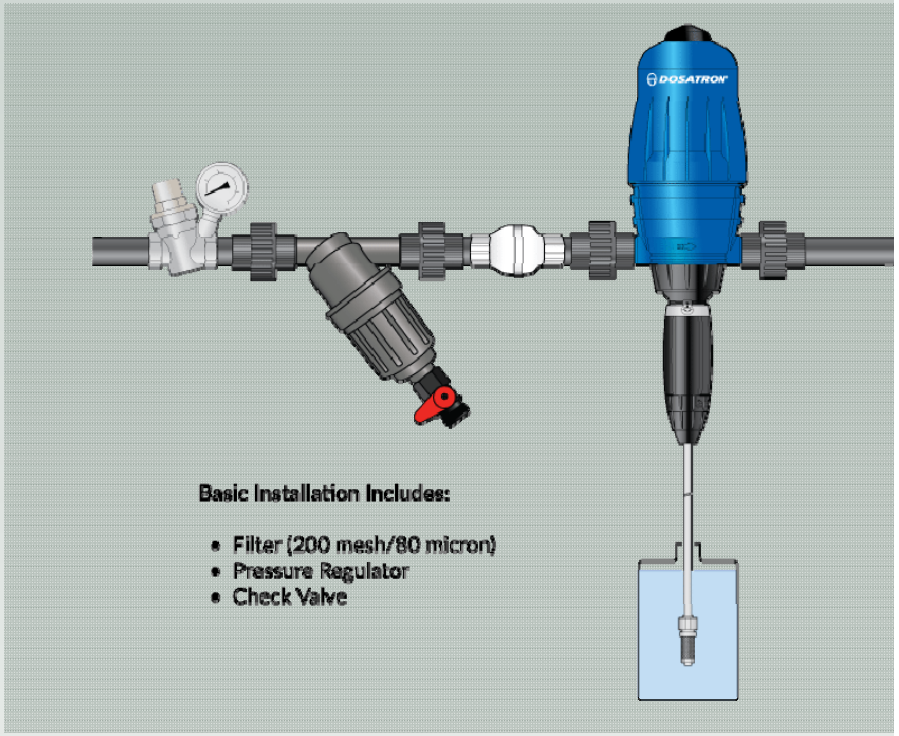
Dosatron® equipment

Weekly applications of 100 ppm of nitrogen

Balanced fertilizer solution

20-20-20 or 15-5-15

Lower concentration if fertilizing with every watering – 50 ppm N



Transplants – Trimming

Important to trim onions

Ensures stronger plants – stops leaves from getting too long

Easier for mechanical transplanting

Avoids onions stretching

Trim to 4" - after 1st true leaf develops

Transplants – Trimming

- Lawn mowers can be used to trim onions
- Use scissors for small batches of onions
- Ensure blades stay sharp
- Clipping are removed off of onions
- Trim on sunny days

Transplants – Trimming

Transplants – Hardening off

- Move outside one week prior to transplanting
- Can reduce transplant shock
- Slowly reduce water, fertilizer
- Cooler temperatures and environment
- Apply insecticide before planting

Transplant Onions

What should a healthy plug look like?

2-3 green leaves

Actively growing

White roots –hold plug together

Transplant Onions – What's New

Mycorrhizae

Microscopic fungi that live in root of plants

Enhance root growth

Faster plant development

Mine nutrients from the soil

Works well in greenhouse environment

Transplant Onions – What's New

MYCORRHIZAL INOCULANT

AGTIV

Mycorrhizae fungi are micro-organism that links to plant roots to create an underground network of filaments carrying water and nutrients to the roots.

MYCORRHIZAE AVANTAGES

- Improved plants established for an increased field population.
- More vigorous growth.
- Increased tolerance to plant damages caused by stress.
- Increased yield.
- Easy to use: the inoculant is incorporated in the seed coating.

During the summer of 2016, Norseco, in collaboration with Prisme, proceeded with a comparative treatment trial on onions in muck soil. The goal was to measure the possible increase, on a quantitative level, of onion yields treated with the addition of mycorrhizal inoculant on the seeds.

Our results:

SOIL TYPE	YIELD DIFFERENCE	ADDITIONAL YIELD (# OF BAGS/ACRE)	POTENTIAL OF ADDITIONAL INCOME/ACRE*
Good quality soil	↑ 0.87 %	15 bags	150$
Lesser quality soil	↑ 5.6 %	93 bags	930$

** Based on an average price of 10$/bag*

Transplants – Disease Issues

Pythium – damping off

Use treated seed – carbathiin/thiram, metalaxyl-M, azoxystrobin

2 weeks after emergence is highest risk

Allow soil to dry between watering – good air circulation

Possible chemical treatment – if registered

Onion smut – no issue with soilless mix

Transplants – Disease Issues

Transplants – Issues

Low light levels – poor growth

Wet and dry areas in the greenhouse

Plants are yellowish

Over fertilizing can build salt levels in plugs

Cold temperatures at planting – delayed planting, old plants

Old plants – prematurity bulbing

Need soil for insecticides – good plug

Onion Transplanting

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The End Result

Thank You