

# GROWERTALKS

## Culture Notes

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### Simple Steps to Tomato Plant Production

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Like most projects, the key to producing high-yielding tomato plants begins at the planning stage. A grower needs to understand and control the various factors influencing his tomato crop even before he begins sowing his first seeds.

#### **Seed Choice**

While there are always varietal seed choice considerations depending upon early-, mid- or late-season crops, you should never consider using anything other than a high-quality seed specifically for plug transplant production. Even better, use a seed that's hybridized for disease resistance. Commercial seed companies can provide all the

information needed for informed purchasing, such as germination rates (which should be greater than 90%), seed vigor and optimum temperatures necessary for germination.

#### **Sowing and Germination**

When sowing, we use 288-plug trays and a plug media consisting of peat moss (pH level between 5.0-6.5), perlite, starter charge, wetting agent and a cover layer of vermiculite. Whatever you use, it's important to know the nutrient concentrations of your growing media so you can adjust your fertilizing program accordingly.

After sowing, we incubate the plug trays on our germination tables at an average temperature of 70F (21C) for 4 to 9 days. Germination times will vary. After germinating, we move the seedlings to a cooler bench having an average temperature of 65F (18C) for about one week, after which time they spend their last two weeks hardening off at 60F (15.5C) prior to transplanting. Plug hardening (reduced temperature and watering) increases the plant's carbohydrate reserves that are essential for maintaining the plant during the transplanting process and also for providing sufficient energy for new root and shoot promotion.

#### **Fertilization**

Proper fertilization is also key for producing healthy tomato plants. We use a formulation of 13-2-13 prior to transplanting, then change to 15-3-17 after transplanting. Our program for plugs calls for a constant feed of 75

ppm post-germination as needed, then switching to 150 ppm after transplanting. We will alternate to intermittent fresh water feed if growing conditions call for it.

### **Water**

For proper watering, the amount and frequency varies depending on the plug tray size, growing media, weather conditions and greenhouse ventilation. A thorough moistening of the entire plug is necessary for good root growth. Watering should be done in the morning, allowing the plug to then dry down preferably to a near-wilt stage. Keep in mind that plugs remaining wet overnight can lead to disease problems.

### **Disease**

For disease control, we utilize a moisture management program for disease prevention, with an emphasis on air flow. We use biological predators preventatively for insect control (with our main threat being aphids) with the option of spraying Marathon II should infestation exceed threshold limits.

### **Transplanting and Finishing**

After about four weeks, plugs are ready for transplanting into 4-in. pots. Ideally, our plugs are 5 cm high with straight, thick stems and good root development. Evidence of adequate carbohydrate reserves can be seen by purpling at the base of the stem as well as on the underside of leaves.

The time from transplant to a finished product is about three weeks. During this time, proper ventilation and air flow are extremely important, as is maintaining proper nutritional and moisture levels.

While it seems seven weeks from sowing to sale is a relatively short period, in reality a tremendous amount of processes occur during this time. As long as you use quality inputs, stay aware of the greenhouse conditions, and remain vigilant about proper nutritional and watering needs, you can be assured of raising a hardy and healthy tomato plant crop.