

## TECH TRAINING: TRANSPLANTING BEST PRACTICES

*Bringing in plugs and liners is a great way to start a successful growing season. While it is easy to focus on finishing, it is just as essential to start off on the right foot at transplant. As production ramps up, it is important to continue following best practices from the time young plants are received. Following these best practices will produce the best quality plants going into the greenhouse and make the growing side easier.*

### **Tip 1: Act Quickly Once Received**

- Get plants inside and unboxed as quickly as possible.
  - Complete a comprehensive quality check.
- Consider chemical applications prior to transplant.
  - PGR liner dips can provide efficient growth control of vigorous species.
  - Fungicide drenches are effective in the plug tray.
- Do not hold plants longer than necessary.
  - Ensure crops are properly irrigated, fertilized and cared for while waiting for transplant.



For best results, keep boxes upright.

### **Tip 2: Optimize Transplant Techniques**

- Ensure substrate is not:
  - Excessively wet or dry.
  - Over- or under-filled.
  - Compacted from stacking.
- Remove plugs and liners carefully to prevent damage.
  - Use a plug popper if necessary.
- Stick plugs and liners at the appropriate depth.
  - Generally—level with the substrate.



Stacking pre-filled pots may seem efficient but causes compaction.

### **Tip 3: Post-Transplant Acclimation**

- Assess plug or liner placement after irrigation.
  - Make adjustments on the transplant line as needed.
- Limit exposure to stressful environmental conditions.
  - For example, excessively high or low moisture, temperature or light.
  - Cycle irrigation to allow sufficient drying.
  - Provide adequate fertilizer—depending on crop needs.
- Begin a preventative IPM program.
  - If not applied pre-transplant, make a fungicide application within 3 to 5 days of transplant.



Example of transplanting too shallow.

## **DEEPER DIVE: THE WHY**

**Unboxing.** While plug and liner producers do all they can to ship a quality product, you should practice due diligence by inspecting plug and liner quality upon arrival. Ensure the young plants are free from obvious signs of pests, diseases or physical damage. If trays are in boxes, get them unboxed as quickly as possible to minimize the negative effects of shipping stress. While in transit, tender young plants may be exposed to numerous stressors including temperature extremes, physical damage and ethylene buildup.

**Pre-Transplant Applications.** Prior to transplant, consider whether any PGR or fungicide applications should be made to the plugs or liners. PGR dips are an efficient way reduce chemical waste, and pre-transplant fungicides can help prevent unnecessary substrate saturation from a post-transplant drench.

**Holding Crops.** Try to get newly received plant material transplanted quickly. Holding young plants for too long often results in a reduction in quality. For instance, plants may become rootbound, making it more difficult for roots to proliferate into the new substrate—stalling growth.

**Planting Depth.** Some species including tomatoes and dahlias can tolerate being transplanted with some of the stem below the surface of the substrate, but most species should be planted close to level with the container substrate. Transplanting most species too deep will often result in increased disease pressure including root, stem and crown rots. If plugs or liners are planted too shallow, young plants may dry too quickly and struggle to root out into the new container. If using an automated transplanter, make sure it is set to the proper height. If transplanting is done manually, make sure everyone on the planting line understands proper transplanting technique and ensure quality control measures are in place.

**Pot Fill.** Use the correct type of substrate for the intended crop, container and production stage. Finishing mixes tend to have larger aggregates that provide greater aeration when compared to plug mixes. Upon transplant, ensure the substrate is not excessively wet, dry or compacted. Substrates should be moist, but not saturated, with sufficient aeration to allow the roots to respire. Although pre-filling and stacking pots seems efficient, it often leads to compacted substrates with uneven moisture. If you do pre-fill, offset trays to prevent compaction and use them as soon as possible to avoid water loss.

**Post-Transplant Acclimation.** In general, avoid exposing plants to stressful conditions for at least one week after transplant. This means maintaining moderate substrate moisture, fertility, light and temperature. Once roots have proliferated to the sides of the container, environmental conditions can be adjusted as necessary for the species.

**In Summary.** Transplanting is an essential step to ensure successful finishing. Assess plant quality prior to transplant and ensure each step of the transplant process is done with proper technique. Make sure everyone on the transplant line is trained to understand these techniques and recognize when something is not right. Lastly, implement quality control measures wherever possible so that the plants (and growers) are set up for success.

**For more information, check out these additional resources:**

[Ball Tech on Demand: Todd's Top 5 Transplant Tips](#)

[Healthy Starts](#)