

## Geneva® Apple Rootstock Technical Bulletin: Plants derived from *in-vitro* culture (micropropagation) to be used directly as liners.

As the implementation of micropropagation of Geneva rootstocks is becoming widespread we have a few recommendations and suggestions about the nursery phase of such material:

1. Micropropagation nurseries need to stress the importance of the recommended planting method for the *in-vitro* plantlets when planting into the field. It is very important to have a rootstock stem (shank) on the tree that is planted a minimum of 4 in/10 cm below soil line and budded 6 in/15 cm above soil line. The problem arises because the *in-vitro* plants have root systems that are at the soil line of the pot (crown). Part of the traits of apple rootstocks are provided by the shank, and if there is no or little shank, then the properties of dwarfing and precocity are reduced – reducing potential yield.
2. The material is usually very delicate compared to normal liners, therefore planting in good weather conditions and providing moisture and other nursery care is very important to produce successful liners.

**Scientific Contact:**  
Dr. Gennaro Fazio  
315-787-2480  
gennaro.fazio@ars.usda.gov

**Licensing Contact:**  
Jess Lyga  
607-255-0270  
JML73@cornell.edu

