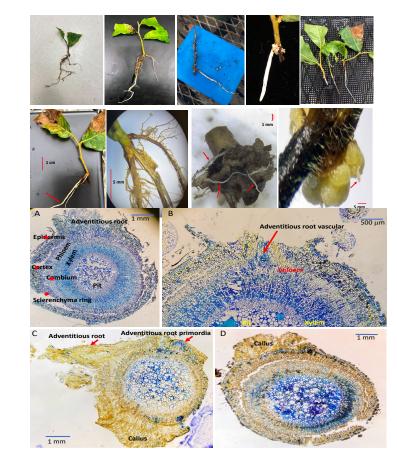
Rooting American chestnut stem cuttings (12/2021-07/2023) Haiying Liang Clemson University

We have achieved a rooting rate of close to 50% with American chestnut stem cuttings with 100 PPM 1-Naphthaleneacetic acid (NAA) treatment for two hours. Here are some major findings:

- 1. The current year cuttings that are semi-lignified and have new buds are suitable for rooting. Cuttings from springtime barely rooted.
- 2. It takes at least two months for adventitious roots to emerge. During this period, keeping leaves alive /green is the key.
- 3. Adventitious roots can be formed with and without callus formation. Adventitious roots formed without callus formation seem larger and more vigorous.
- 4. Due to the regulation associated with *Agrobacterium rhizogenes*, we did not proceed to apply this bacterium. Instead, we tested a growth-promoting bacterium, *Bacillus subtilis*. The strain was QST713. We found that QST713 did not increase the rooting rate, while it seemed to enhance root length.
- 5. A manuscript, entitled "Histology of Adventitious Root Formation and Phytohormone Analysis of American Chestnut Cuttings", has been accepted for publication in *Journal of Environmental Horticulture*.



6. Below are a few examples of chestnut adventitious roots: