Section 5 Abstracts: Chestnut Tree Ecology

Ecology of Chestnut Blight and American Chestnut Survival in Appalachian Understory Forest Sites in Relation to Biocontrol of Blight. Gary Griffin. Department of Plant Pathology, Physiology and Weed Sciences, Virginia Tech, Blacksburg, VA 24061, USA

American chestnut generally exists as a small tree in the understory of forests in the Appalachians, except on some xeric sites where canopy or subcanopy chestnuts may be found. Blight incidence of chestnut sprout clusters ranged from 0 to 48% on mesic sites with a high level of hardwood competition and a relatively closed canopy, and from 34 to 80% on xeric sites with low hardwood competition and a more open canopy. Chestnut sprout cluster survival ranged from 90 to 100% on mesic sites and from 82 to 100% on xeric sites. Irradiance levels along transects in xeric understories were greater than in mesic understories. Chestnut in mesic understories received high levels of irradiance through small canopy gaps for only short time periods. Non-lethal, superficial blight cankers were found mainly on canopy or subcanopy chestnuts on xeric sites. Shallow cove mesic sites had the highest combined densities of large diameter chestnut stumps and live chestnut sprouts, compared to mesic deep cove and slope sites or xeric sites, and may be the best sites for blight management with hypovirulence and/or grafting blight-resistant chestnut clones following clearcutting.