

Protection from livestock



Forage grown past its prime and competing with trees

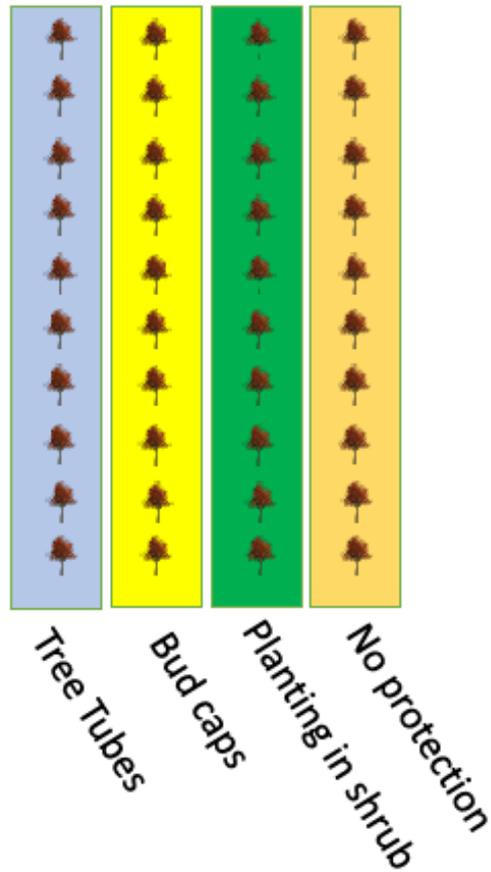


11/26/2021

Part 1: Deer Browse Protection

Part 1: Apical bud protection

Illustrating 1 of 6 randomized complete blocks



Sugar maple seedling planted in barberry 2019 (shrub treatment)

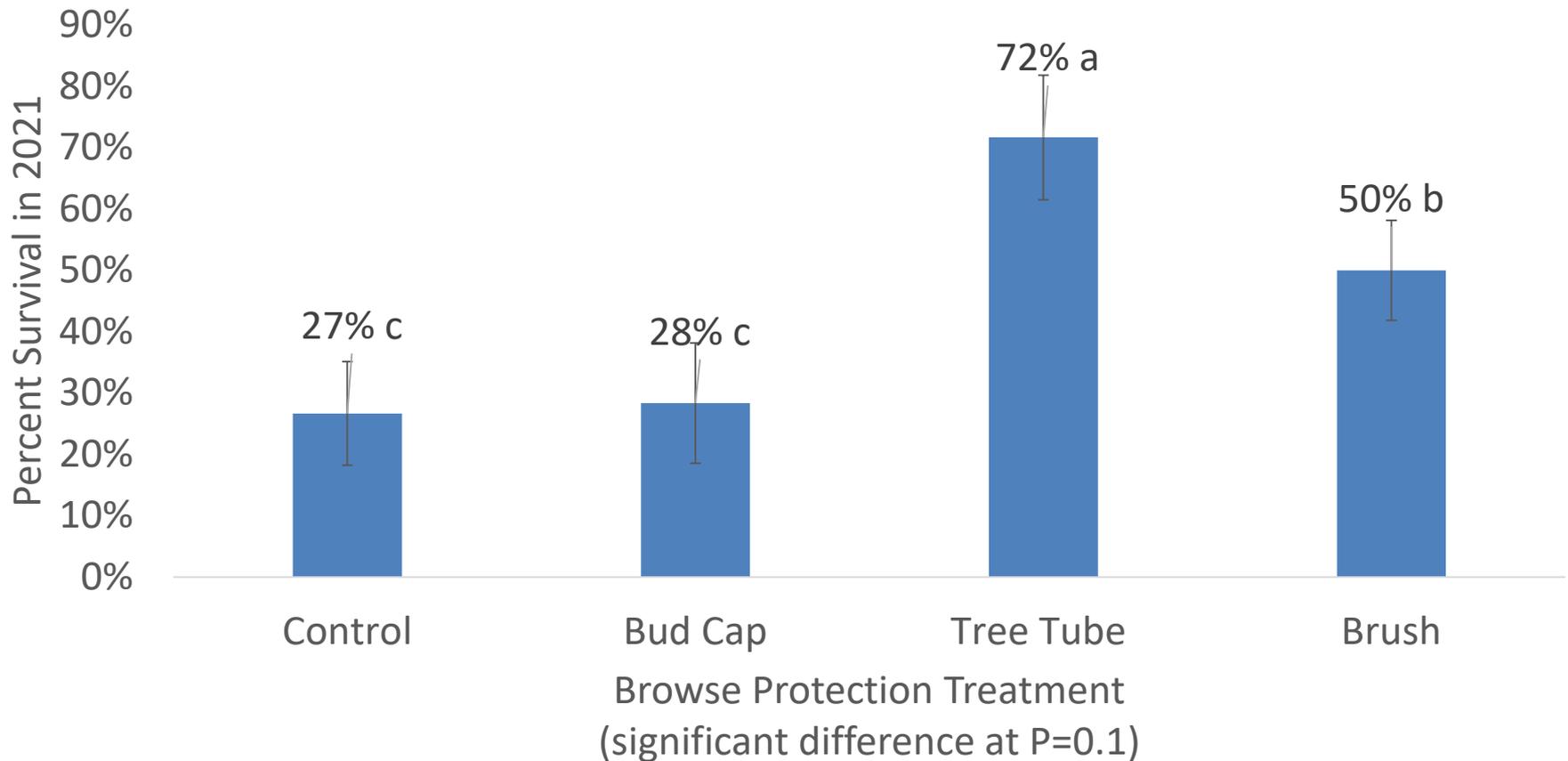


Chinese chestnut with a bud cap from the previous year,
note the deer browse damage from summer browse



Planted Spring 2019, final data collection Fall 2021

Survival of Tree Seedlings in 2021 Under Four Deer Browse Protection Treatments



Heavy deer browse on unprotected sugar maple



Tree tube blown over by the wind



Sugar maple protected by shrubs on (left) and sugar maple outcompeted by shrubs (right)



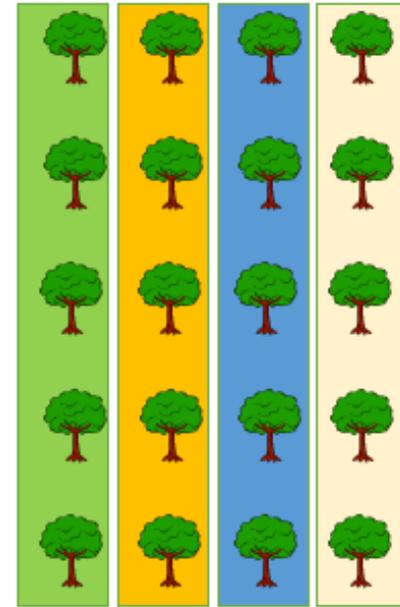
Other lessons learned

- Square stakes would have been better than round ones for holding tree tubes up in the wind and ice
- Trees may not be establishing under invasive shrubs but some may be protected once established
- Deer browse trees once they got above tree tubes



Part 2: silvopasture mulching systems

Part 2: Mulching systems
Illustrating 1 of 5 randomized complete blocks



Clipped white clover
Waste hay and manure
Glyphosate
Clipped Pasture Grasses

Waste hay from winter cattle feeding used as mulch around fruit trees in 2019



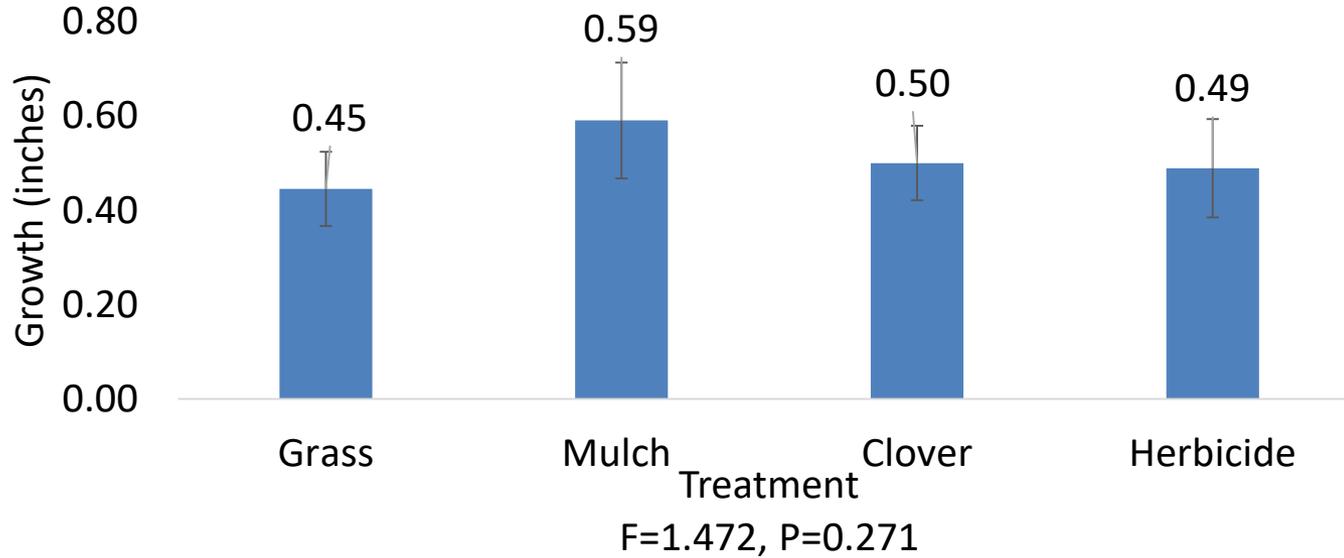
Apple silvopasture recently planted in 2019



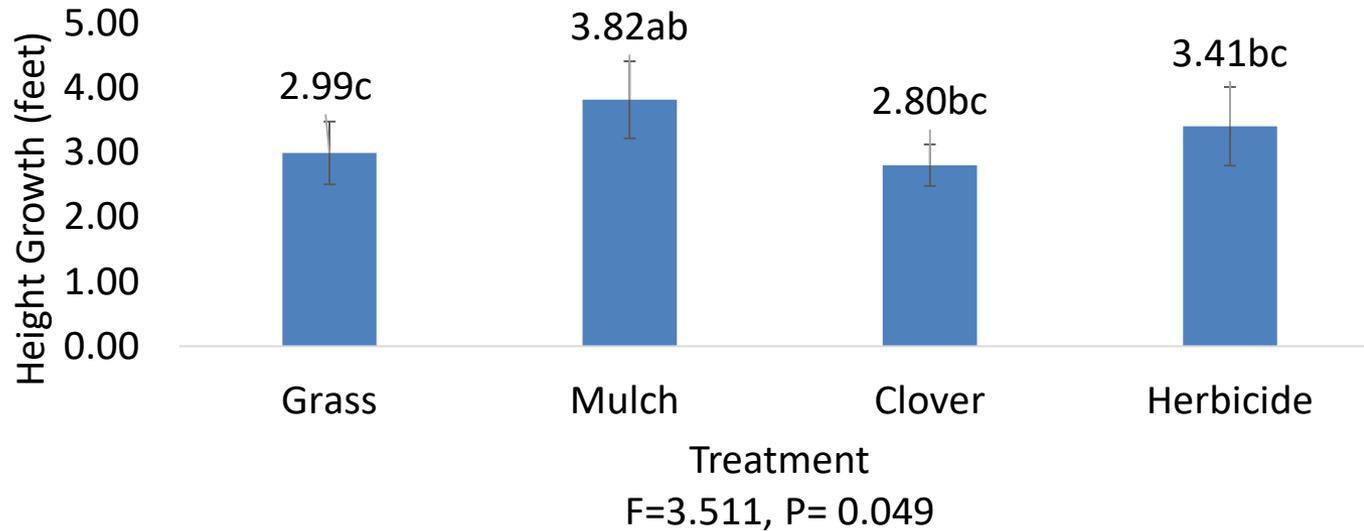
Cattle grazing among pear trees in spring 2019



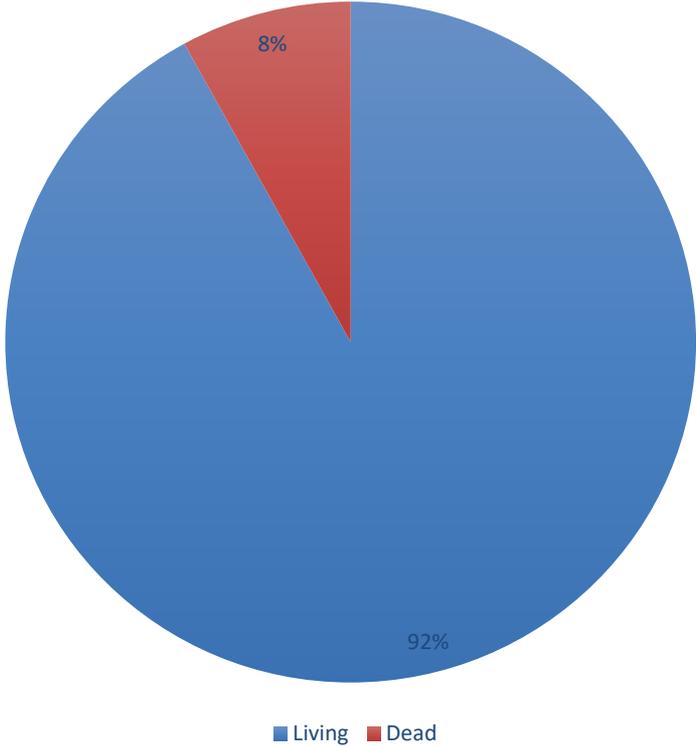
Fruit Tree Root Collar Diameter Growth July 2019 - October 2021



Fruit Tree Height Growth July 2019 - October 2021



Mortality due to whitetailed deer in fruit trees



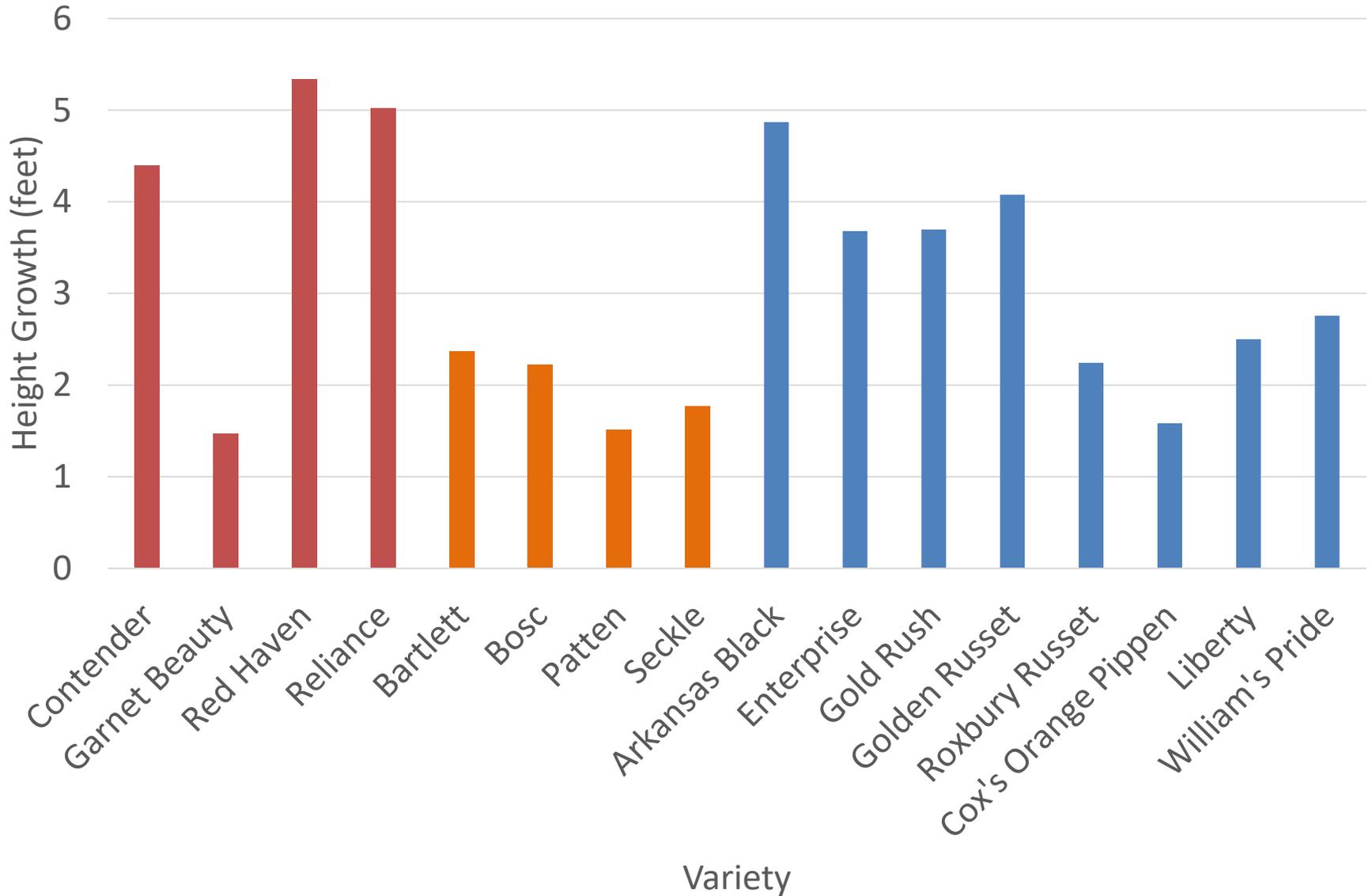
Poly wire and tree tubes protecting fruit trees in silvopasture treatment during summer of 2021



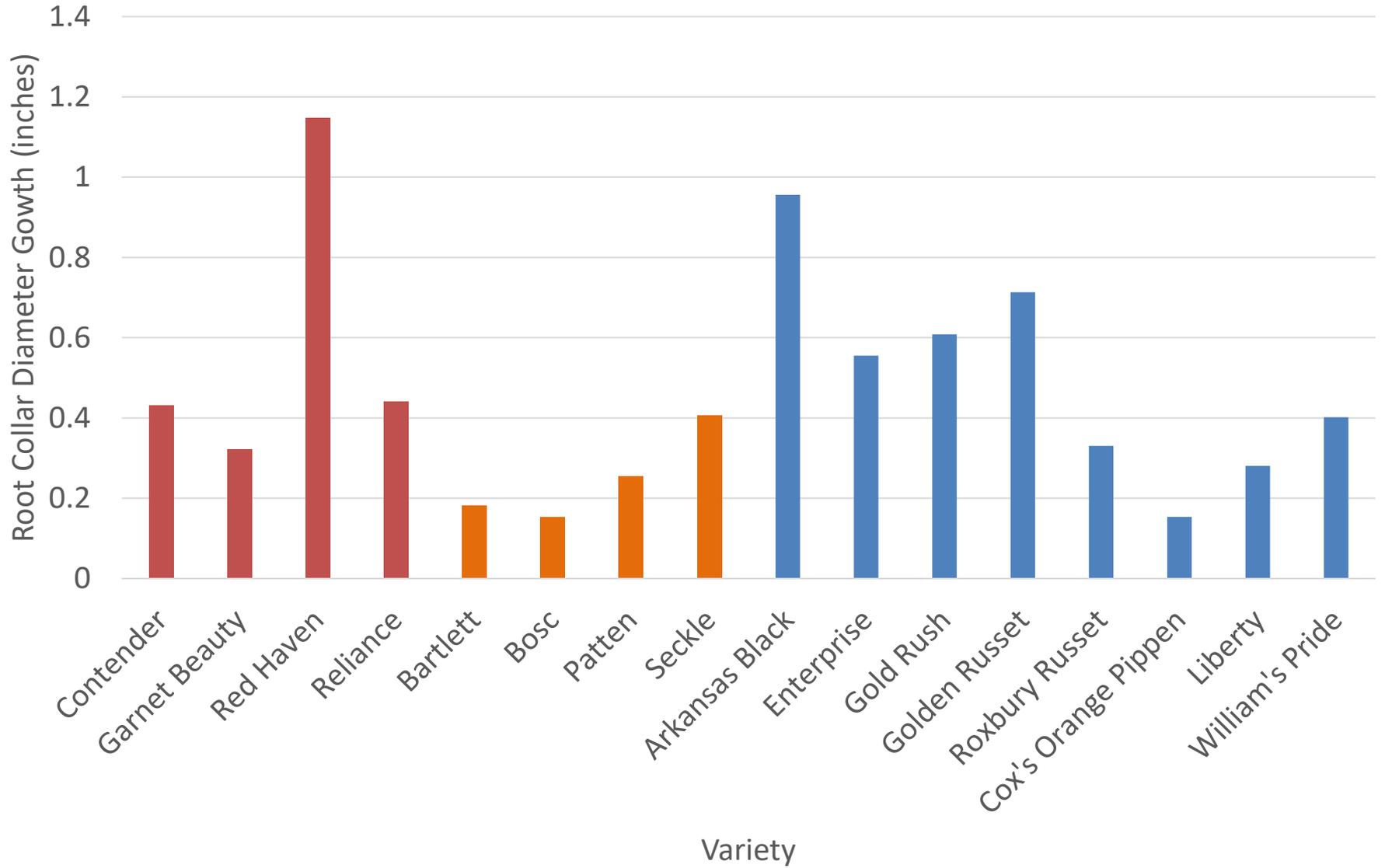
Poly wire and tree tubes protecting fruit trees in silvopasture treatment during summer of 2021



Height Growth by Variety June 2019 - October 2021



Root Collar Diameter Growth by Variety June 2019 - October 2021





Red Haven peach trees with first fruit set in silvopasture in 2021, two years after planting.

Other lessons learned

- Deer exclusion fencing would have been preferred for all parts of this study
- A single strand of polywire, on both side of a fruit tree alley, was enough to keep cows off trees but two strands would have been better
- Mowing grass adjacent to trees just prior to grazing reduced interest in the trees by cattle
- Wider alleys (25') had less cattle/tree issues than narrow ones (15'-20')

