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Trees vs. Reed Canary Grass

Josian Aardema  
*Calvin University*

Moses Jangala  
*Calvin University*

David E. Martinez Vasquez  
*Calvin University*

David Warners  
*Calvin University*

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Proposed Research

Overview
For this research project, 220 trees will be planted in the Fall of 2020 along Schooley Drain near 84th St. SE and East Paris Ave. SE in Caledonia, MI. Trees will be planted in single-species clusters of 4 so that the interior area forms a square [1].

Tree Species
We propose to use the following 7 species in our project: Bur oak (Quercus macrocarpa), Black walnut (Juglans nigra), Hackberry (Celtis occidentalis), Red maple (Acer rubrum), Swamp White oak (Quercus bicolor), Sycamore (Platanus occidentalis), and Tulip tree (Liriodendron tulipifera).

Planting Procedure
There will be either 7 or 8 replicated clusters for each species, generating a total of 55 clusters (Figure 1). The clusters will be planted at least 4.5 meters apart from each other. Within each cluster, each tree will be planted 3 meters apart and no closer than 6 meters from the drain.

Reed Canary Grass Data
The interior area of each cluster will be periodically monitored for Reed Canary grass density, height, biomass, and cover to determine the extent of Reed Canary grass success following the planting. To obtain these measurements, we will use quadrats to sample each cluster. Baseline data will also be collected and mapped prior to planting the trees. Mapping will involve the use of a GPS to collect spatial data and ArcGIS to produce a map.

Timeline
We collected Reed Canary grass biomass samples pre-planting late this summer. This fall the Kent County Drain Commission and Plaster Creek Stewards will plant the 220 trees along Schooley Drain. After the trees are planted, data on Reed Canary grass will be collected once a year in late summer. Tree data will be collected about three times throughout each year.

References

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