Stem dieback of hybrid poplar bareroot trees the year of planting

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Rationale

Stem dieback is frequently observed on hybrid poplar bareroot trees, the year of planting (not the following years). This is a major problem because it reduces the productivity of the plantation and damages stem form.

Objective

Identify the factors causing hybrid poplar stem dieback (clone 915319: *P. maximowiczii* x *balsamifera*), the year of planting.

Steps in the production of bareroot stock

Sticking

Growing

Extracting

Root pruning

Storage

Tested hypotheses:

1) Trees are extracted and stored too early in the fall (before they are dormant)
2) Trees are planted too late in the spring
3) Storage is not adequate
4) Plants receive too much fertilization during production at the nursery
5) Root/shoot ratio of pruned plants is unbalanced

Methods

Three fertilization regimes:

July, August, not fertilized

3 extraction dates:

October 21th and November 1st

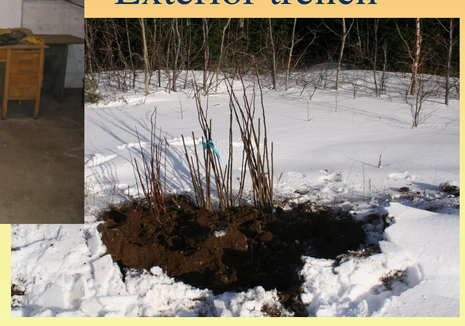
November 11th

Methods

2 storage methods:

Storage in the fridge

Exterior trench



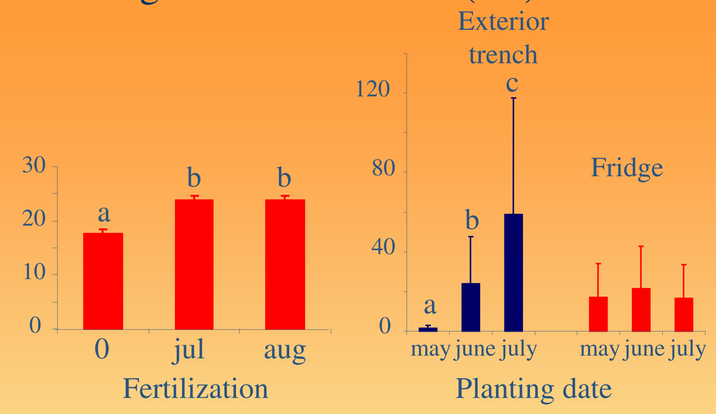
3 plant types: no stem, half stem or full-length tree

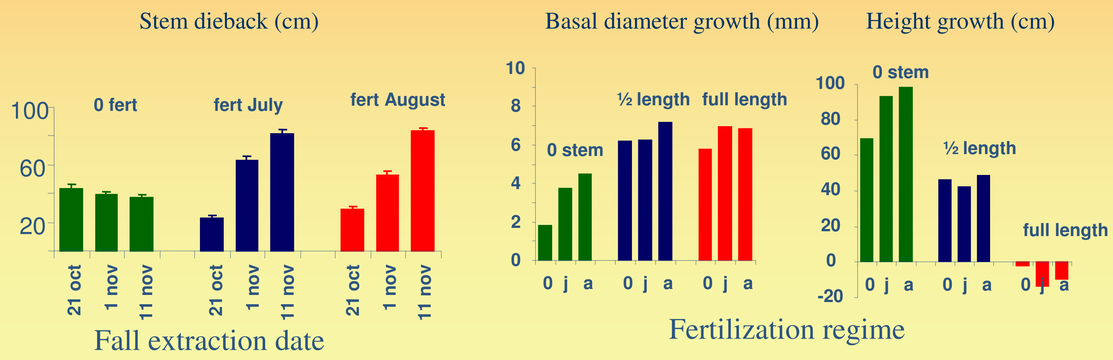
3 planting dates :

May, June, July

Destructive sampling

Length of stem dieback (cm)





Conclusions

- Excess fertilization prevents the trees from entering dormancy in the fall
- Fridge storage conditions are not adequate
- Planting date does not affect stem diecback when trees are stored in the fridge

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