

Five year growth of Chinese aspen (*Populus davidiana*) in Central Alberta

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5-year growth of Chinese aspen provenance trial

- Introduction
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Introduction

- Multipurpose trial:
 - Species introduction
 - Provenance trial
 - Family structure
- Interest in pure *P. davidiana* and in hybrids with native aspen (*P. tremuloides*)

Materials & methods

- Planted 1998 at TIC Wey. DV AB
- Seedlings in 615A syroblocks (45/340ml)
- Spacing 3 x 2.5m = 1,333 stems/ha
- Randomized blocks (highly unbalanced)
- Ten replicates of 4-tree row plots
- Complete site prep and vegetation control, cultivation & brush mats



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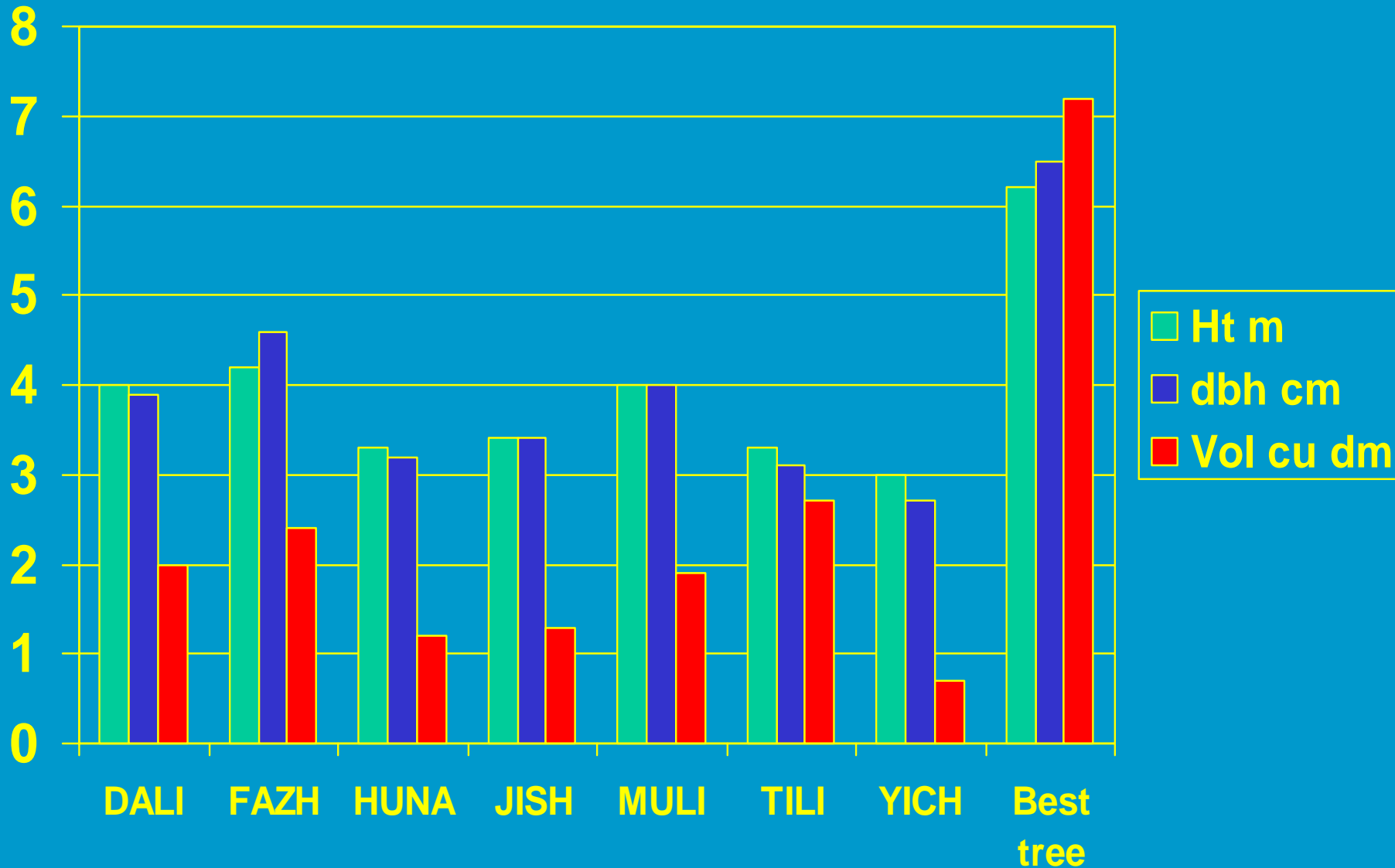
Materials & methods ctd.

- **Seven provenances** (Dailing, Fangzheng, Hunan, Jiangshanjiao, Muling, Tieli & Yingchun)
- **Thirty-six families** (1, 9, 10, 11 ...60)
- **Seeds collected from phenotypically superior wild mother trees (stem form, growth and health), otherwise unimproved**
- **Three northeastern provinces of China** (40.3 to 47.0°N)

Results

- Survival was high (844/856 = 98.6%)
- Highly significant provenance differences for height, diameter and individual tree volume
- Smaller but significant family mean differences
- Large tree-to-tree variation within families
- Fifty-one trees over 5m tall & 3 over 6m

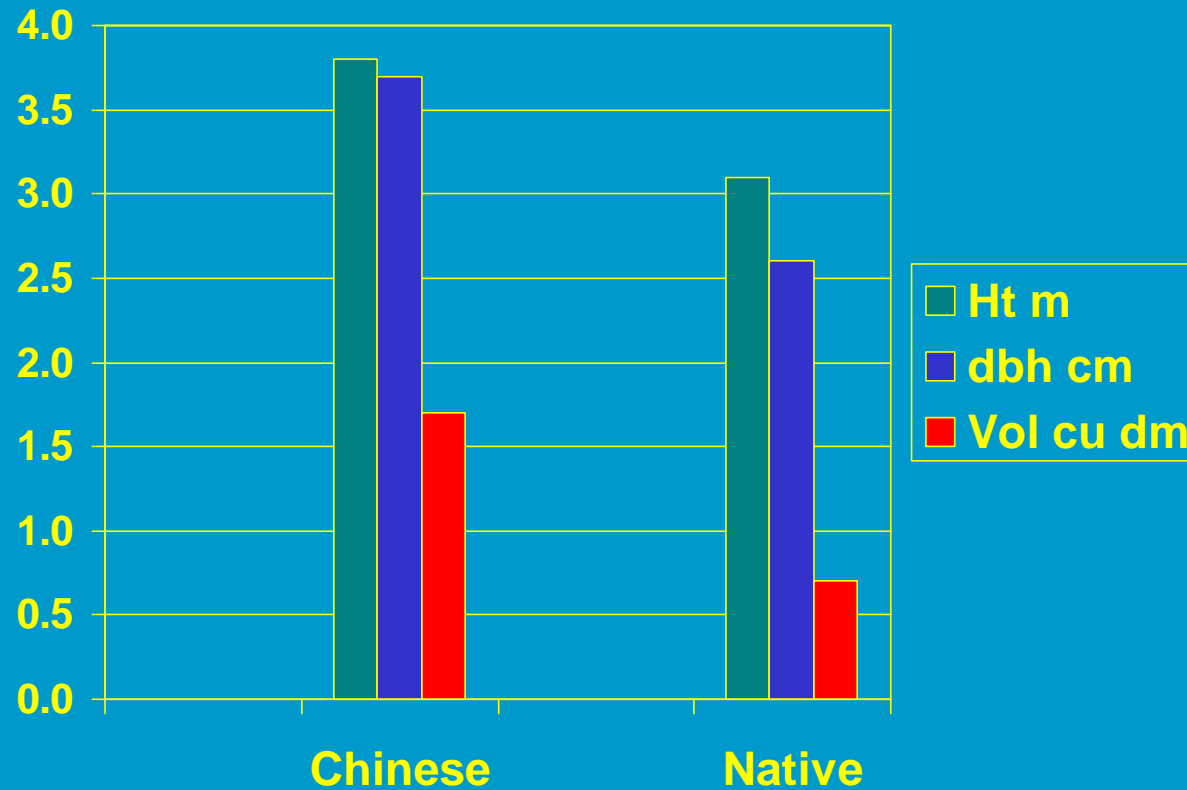
Provenance least squares means







P. davidiana & *P. tremuloides* compared



Conclusion and discussions

- Chinese aspen survives and grows fast under Alberta conditions
- WBAC plans to clone the superior individuals and test them on several sites
- We are interested in hybridizing *P. davidiana* with our native *P. tremuloides*



P. tremuloides



P. tremula



P. davidiana

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Questions & Comments

- Where should we go from here?
- Cloning *daurica*?
- Hybrids with *P. tremuloides* or *P. tremula*?
- New collections of *P. davidiana*? - Is it desirable, necessary or possible?

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