

Clonal Forestry – Who Are You Kidding

Nordic Group for the Management of Genetic Resources of Forest Trees
Meeting in Scotland September 2002

Cuttings of lodgepole pine in successful plantations

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Background

Aim: to assess the genetic diversity

of lodgepole pine

from natural cuttings

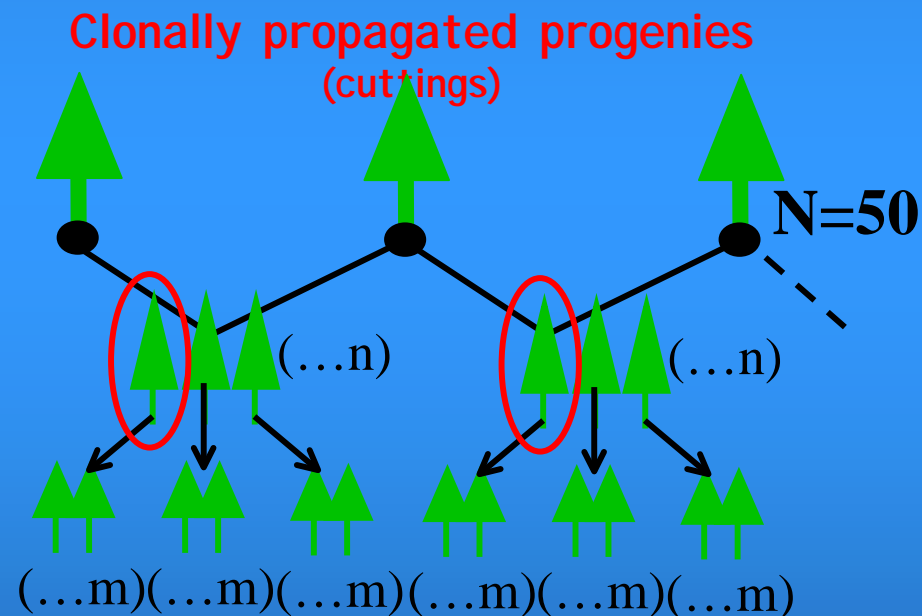
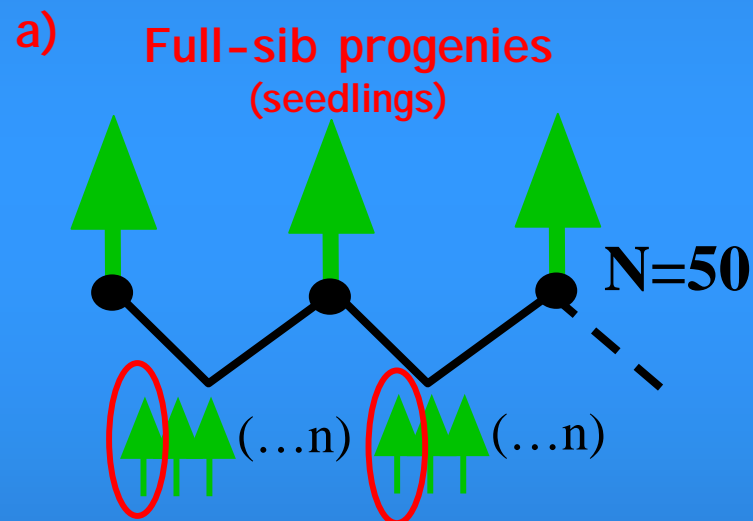
and possibilities

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Aims of the project

- compare progeny testing when based on clonal progenies (cuttings) and full-sib progenies (seedling)
- compare test designs when field testing cutting propagated clones



b)
Plot
types

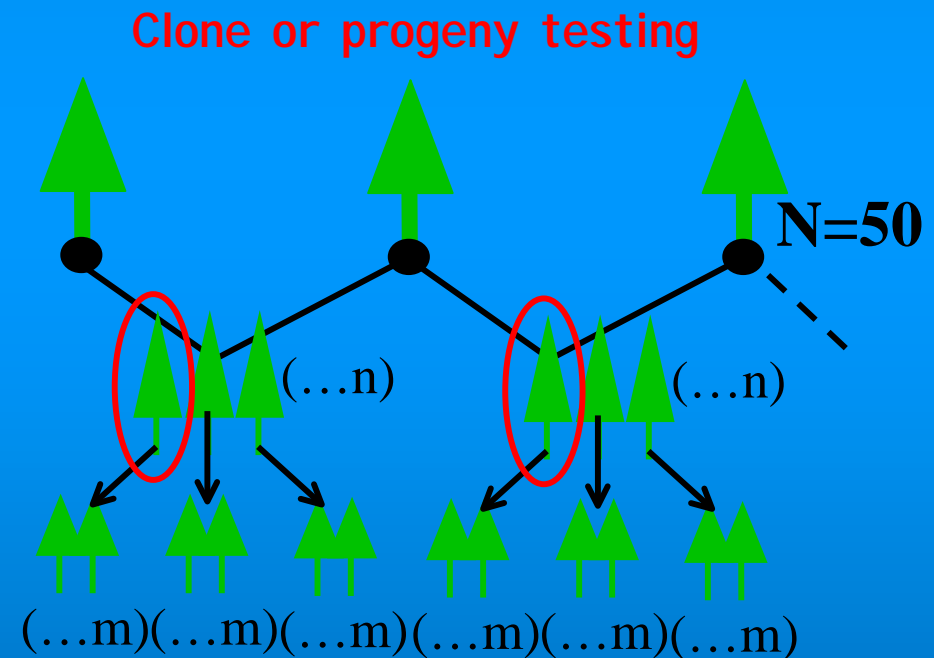
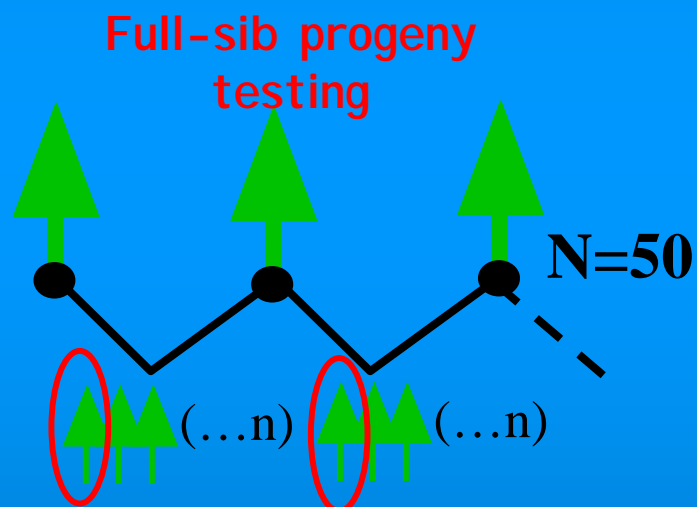
Monoclonal	Multi-clonal
Two-clonal	Single tree

Continuation:

to compare long term breeding strategies based on full-sib seedlings and clonal cuttings under consideration of

diversity **heritability** **gain** **cost** **time**

(Dag Lindgren, Darius Danusevicius)



(...n), (...m) and selection age were optimized under a budget constraint

Field test with lodgepole pine cuttings

Plant material

Full-sib families from Swedish seed orchards with plus tree clones

Cutting propagation 1989–1994

Rooting after IBA treatment indoors in greenhouse

Rooting medium: unfertilized peat, heating from below, high moisture

Two growing cycles each year, artificially induced dormancy and dormancy breakage

Ramet identification kept and data continuously collected

Field tests of different dimensions and design planted 1988–1995 at six localities

Large-scale tests (>800 cuttings) at four localities 1991–95

Field tests with lodgepole pine cuttings

Location

Northern Sweden, County of Västerbotten
30–80 km from the coast, latitude ca 64°N, alt. 200–300 m.



Field tests with lodgepole pine cuttings

Test sites and design, no of cuttings

Data



Kulbäcksliden planted 1991, 1992 and 1993 Clonal cuttings in single tree plots (350, 400 and 100 cuttings, respectively)

Data



Pyttisberget 1993 Cuttings in monoclonal, 2-clonal and 3-clonal plots, and single-tree plots (200, 64, 64 and 1200 cuttings, resp)

Skivsjö 1994 Cuttings in monoclonal, 2-clonal and 3-clonal plots, and single-tree plots (500, 200, 50 and 850 cuttings, respectively)



Fagerlund 1995 Cuttings in monoclonal and 2-clonal plots, and single-tree plots (1400, 800, and 4000 cuttings, respectively)

