

**The introduction of lodgepole  
pine**  
*(Pinus contorta var. latifolia)*  
**in Sweden**

Erik Valinger  
Professor

# Two pioneers in the 1970s



Photo: Bror Österman

Iggesunds bruk  
(Roland Nellbäck)

SCA  
(Stig Hagner)



Photo: SCA PF

# Reasons for the introduction

- Filling up expected gap in timber supply
- Other positive characteristics:
  - Good ability to survive damage
  - Frost tolerant and high seedling survival
  - Resistant to several fungi, e.g. pine rust (*Melampsora populnea*) , pine blister rust (*Cronartium flaccidum*) , pine needle-cast fungus (*Lophodermium seditiosum*)
  - Less attractive to Moose (*Alces alces*)
  - Wood characteristics as Scots pine

# Distribution in Sweden

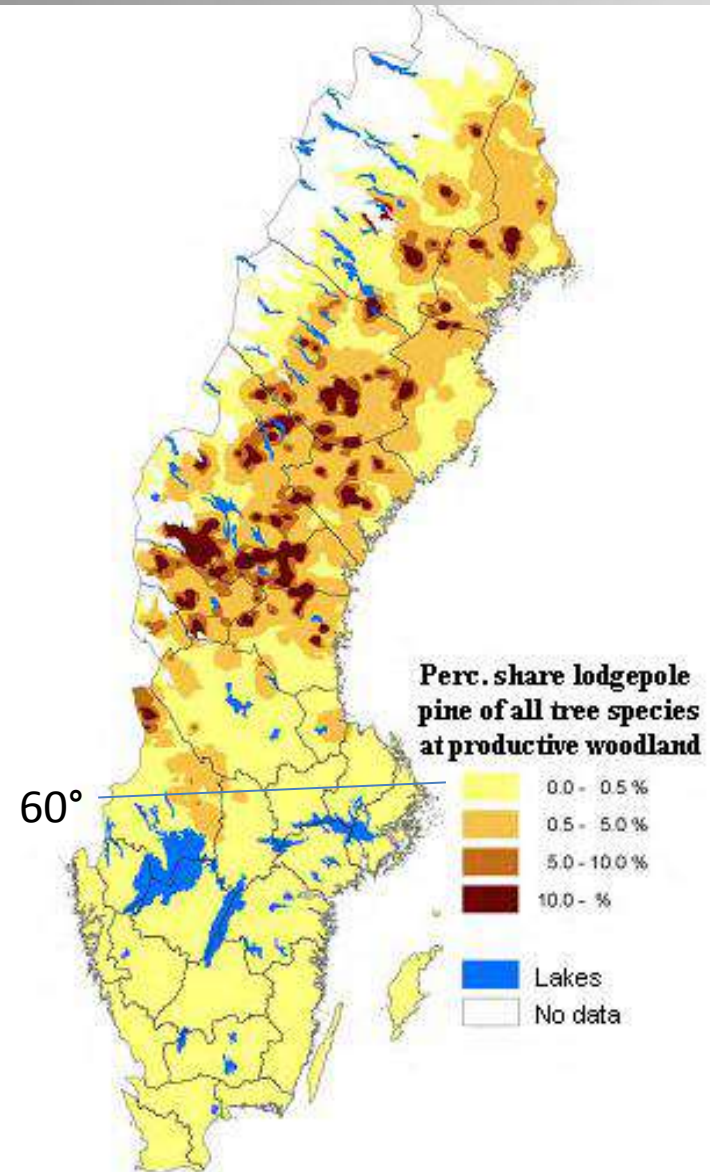


Figure: Lodgepole pine, proportion of total productive woodland in Sweden 2005-2009. (Swedish National Forest Inventory, 2009).

# SLU's oldest provenance trial with lodgepole pine

"The Bang-series"

Established 1960-62

11 sites from Skåne

to Norrbotten

10 to 23 provenances



# Production results

- Approx. 600 000 ha of lodgepole pine in Sweden
- Approx. 2 % of productive forest area and 1 % of total standing volume
- 30-40% increase in growth
- Actual effect of total growth ~1 mill. m<sup>3</sup>



# Standing volume

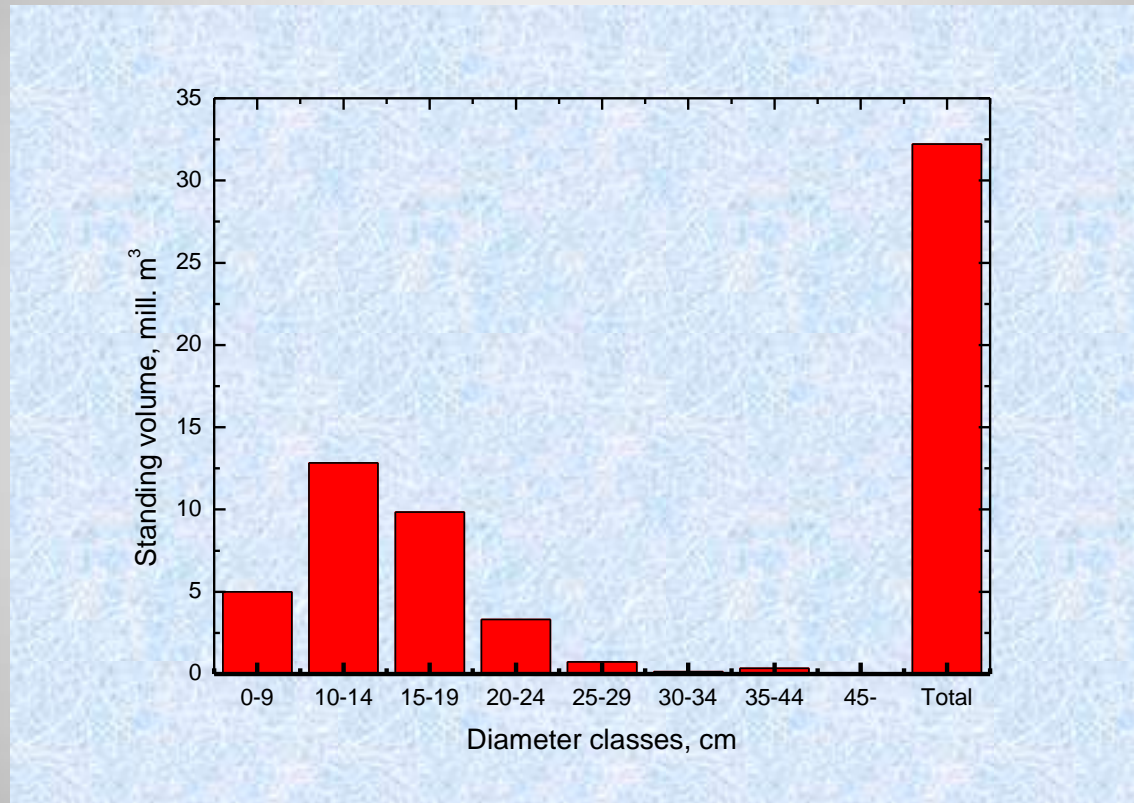


Figure 1. Standing volume of lodgepole pine per diameter class (mill. m<sup>3</sup>)

# Korsseleberget



- One of the oldest stands in Sweden (87 yrs)
- Total production  $612 \text{ m}^3$ , i.e.  $7 \text{ m}^3/\text{ha, yr}$







# Drawbacks and hazards

- Infection by *Gremmeniella abietina*
- Rodents
- Wind and snow damage
- Instability
- Crooked stems
- Vegetation of reindeer lichens suffers

# Crooked stems



# Possible drawbacks

- Invasive growth, regenerates naturally and outcompete native species
- Fungii and insects
- Thinning regimes
- Different species composition
- Less species in comparison to Scots pine stands

# Invasive growth





# Fungi and insects



Rust fungi



Mountain pine beetle

Canfor Salmon river and Winton bear lake,  
Prince George

# The future

- Evaluate effects of pathogens, self spreading capacity, biological diversity, thinning regimes, and species composition
- Increased area for regeneration with lodgepole pine is not desired from ecological perspectives until further studies have been carried out

**Thank you!**