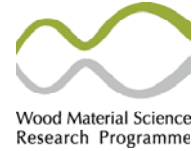


**Innovate**  
**wood**



## Variations in pulp properties

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Innovood Seminar, STFI-Packforsk  
Stockholm, March 21, 2007



## Objectives

To improve the knowledge  
on relationships between  
+ pulp and paper properties  
and  
+ wood and fibre properties  
+ origin of wood raw materials



## Activities

- wood samples with very different properties have been collected
- properties of the stands, trees, wood and fibres have been carefully characterized
- pulps have been produced and tested
- pulp properties have been related to log, wood and fibre properties as well as origin of wood
  
- the relationships have been utilized in the case study at Södra Cell



## Sampling scheme

### Sweden

#### *Thinning*

- high SI, large tree, toplog spruce and pine

#### *Final cutting*

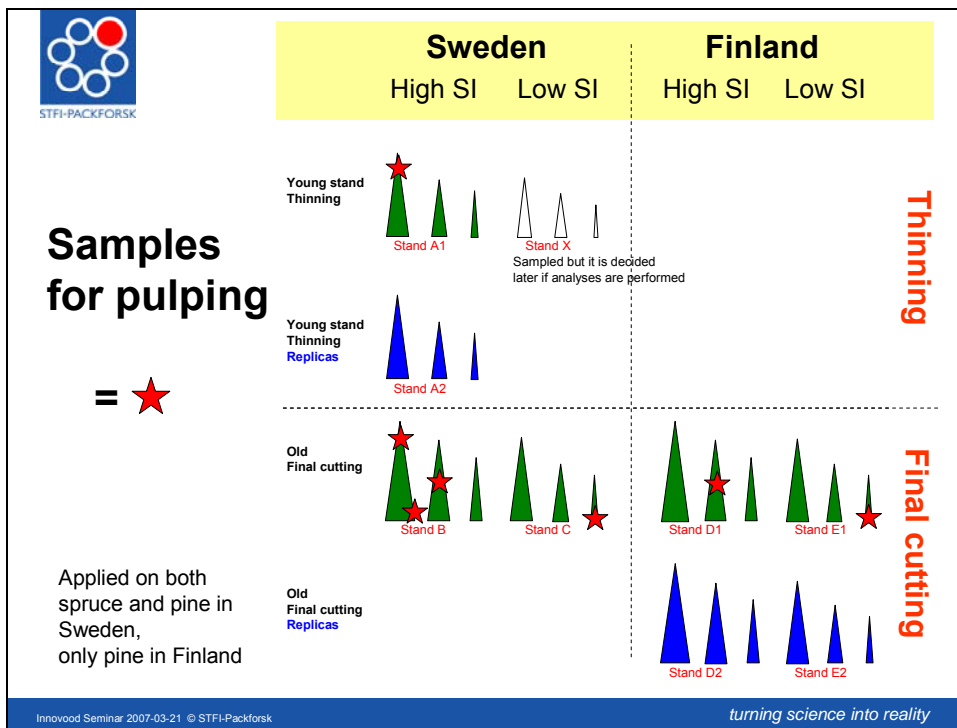
- high SI, medium tree, timber limit spruce and pine
- high SI, large tree, sawmill chips spruce and pine
- high SI, large tree, toplog spruce and pine
- low SI, small tree, low log spruce and pine

### Finland

#### *Final cutting*

- high SI, medium tree, timber limit pine
- high SI, large tree, sawmill chips pine





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**Expected fibre properties of the wood samples**

Sweden	FL	FW	FWT	MFA
<i>Thinning</i>				
• high SI, large tree, toplog	-	-	-	+
<i>Final cutting</i>				
• high SI, medium tree, timber limit	m	m	m	m
• high SI, large tree, sawmill chips	++	+	+	--
• high SI, large tree, toplog	-	-	-	+
• low SI, small tree, low log	+	-	+	-
<b>Finland</b>				
<i>Final cutting</i>				
• high SI, medium tree, timber limit	m	m	m	m
• high SI, large tree, sawmill chips	++	+	+	--

m = reference; + = higher value than ref; - = lower value than ref

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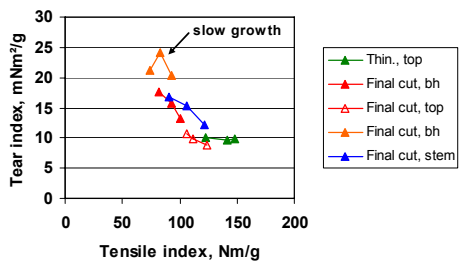


... some examples of relationships:



## Strength development with beating

### Spruce



### Pine

