

The strength of Corsican pine with regard to red band needle blight

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What was the aim

The over riding imperative was:

“ Does red needle bight significantly influence the properties of the timber, particularly strength?”

Strength

What is meant by strength?

- Structural strength
- Small clear strength

Influences on structural strength

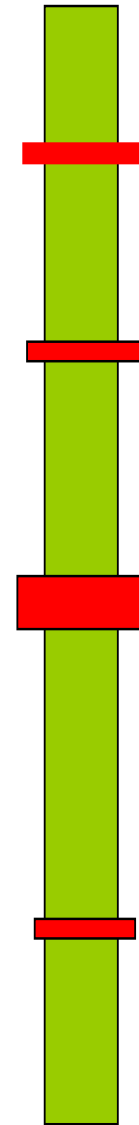
- The largest influence on structural strength in Corsican pine is the size and frequency of the knot whorls.
- The influence of the knot whorls will far exceed any influence of the disease.
- However the disease could have a great influence on small clear strength.

Strength grading - British Pines

- Corsican pine can be machine graded for BS5268 and BS EN 338 strength classes using bending type machines giving:
 - C16 strength class
 - C24 strength class
- Corsican pine can be visually graded to the two visual grades in BS4978:
 - GS = C14 strength class
 - SS = C22 strength class

Small clear strength

- This is the strength of the timber with all notable defects removed



Actions taken.

- Three areas of the UK were selected to supply material to investigate the influence.

Thetford Forest - South East

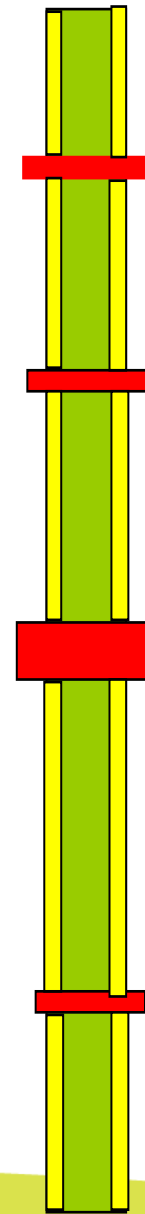
Cannock - Central England

New Forest - Southwest

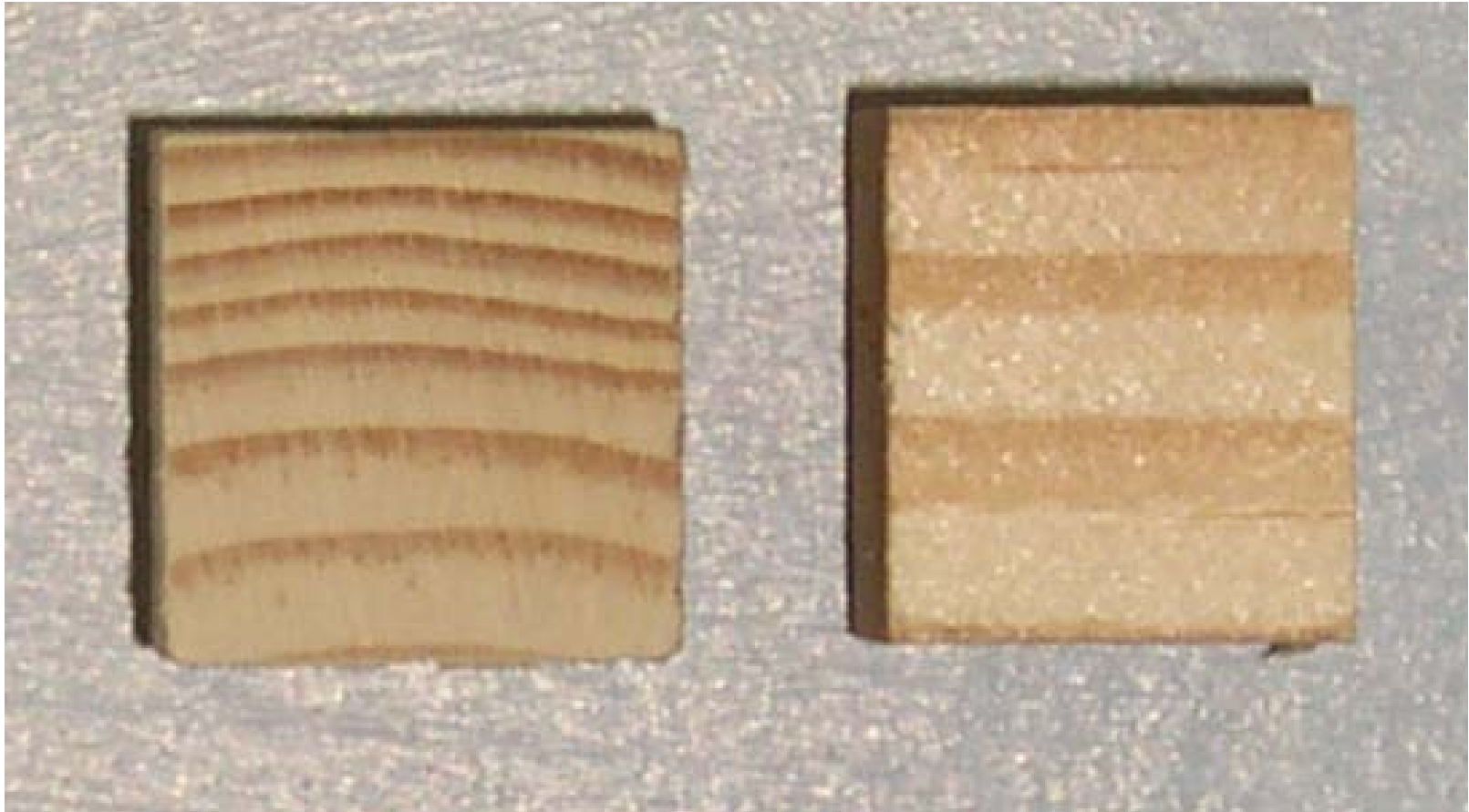
- Existing national data from the 1970's

Location and how much of the timber is affected

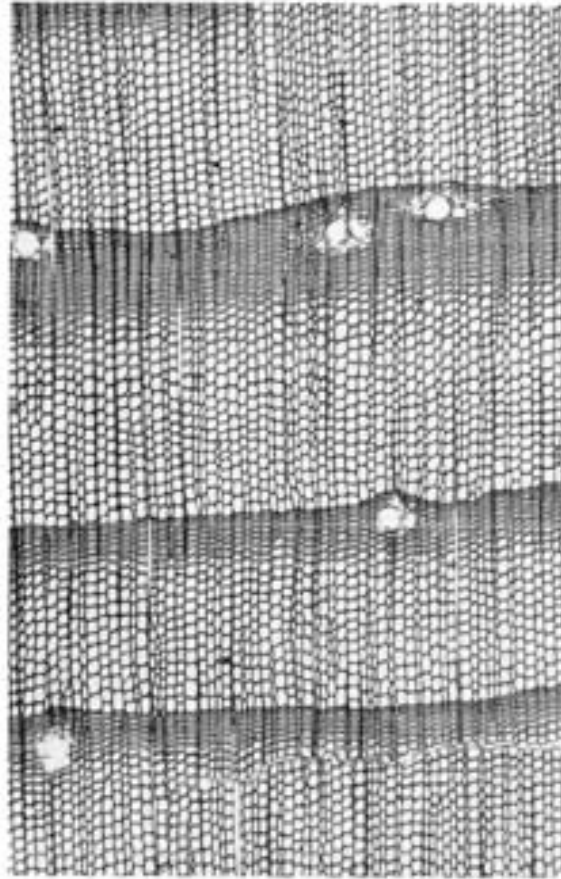
- The Location is in the most recently produced timber
- Much will be processed out during conversion
- Some will end up in the falling boards
- A little will remain in the bulk of the processed timber



Influence on rate of growth



Normal Corsican pine growth ring



x25

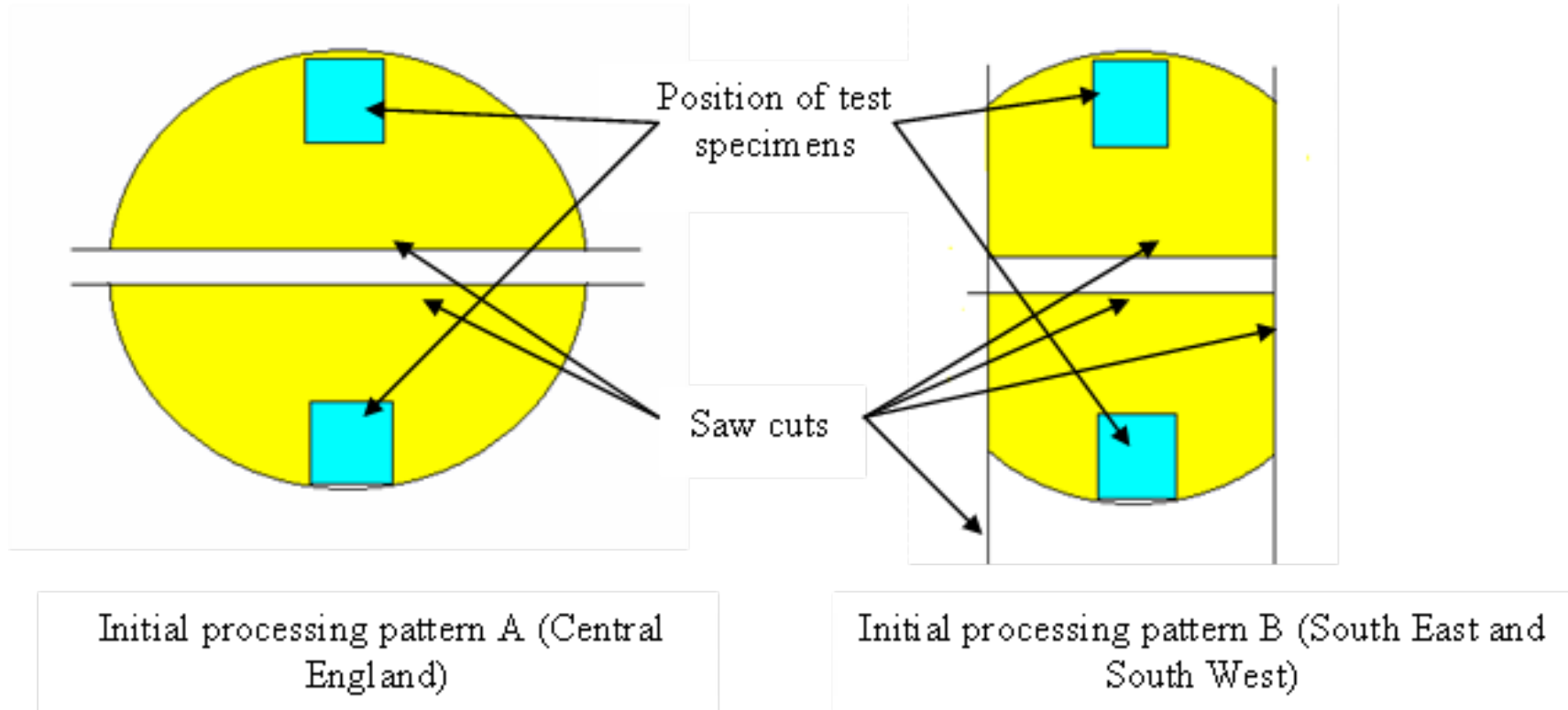
Processing



Processing



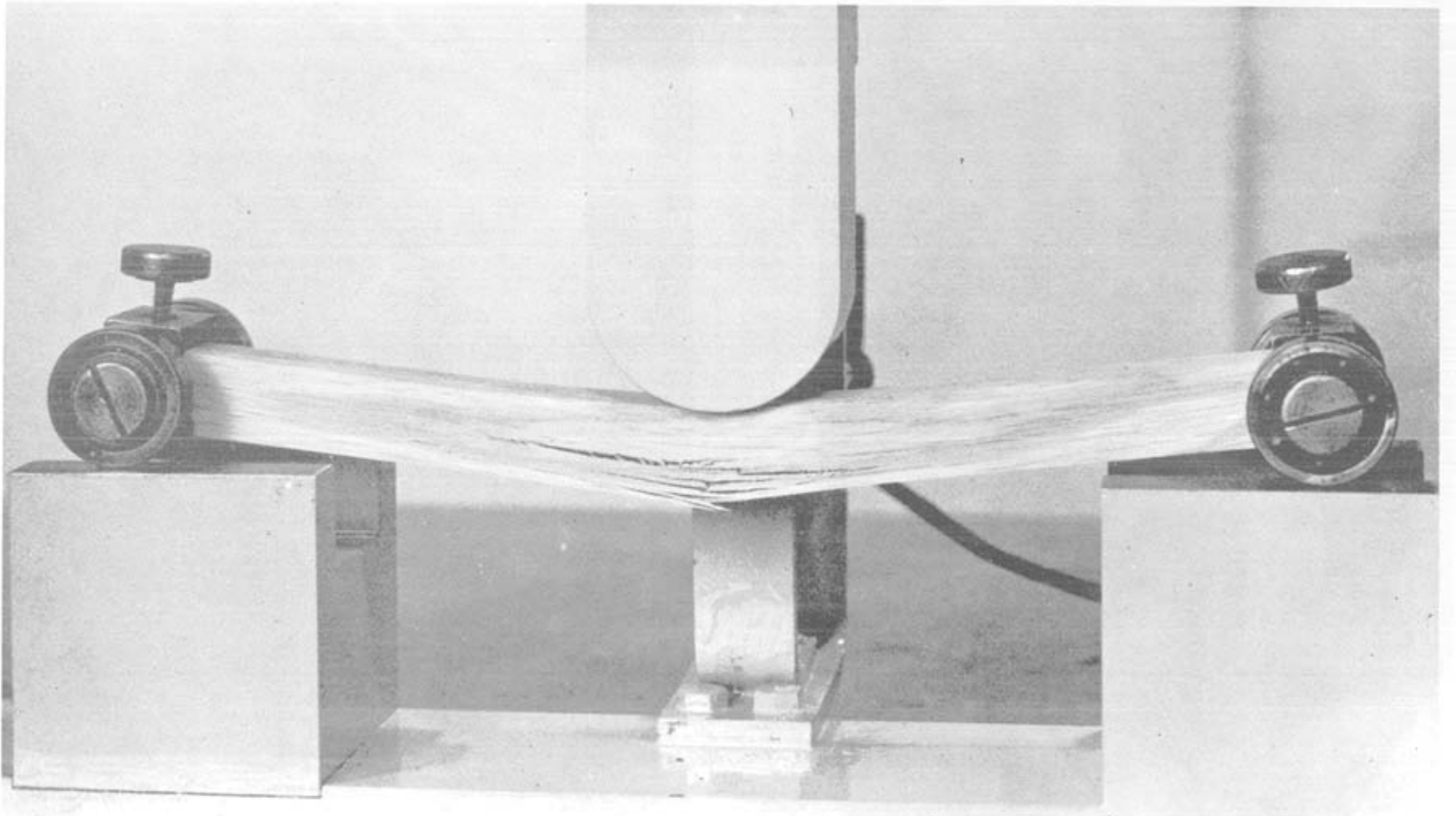
Processing



Kiln Drying



Testing – BS 373:Small clear



Results for Thetford Forest

| | Strength | Stiffness | Density |
|-------------------------|-------------------------|------------------------|-----------------------|
| Infected | 85.59 N/mm ² | 9776 N/mm ² | 510 kg/m ³ |
| Clean | 82.37 N/mm ² | 8718 N/mm ² | 494 kg/m ³ |
| National Data 1970's | 81 N/mm ² | 9200 N/mm ² | 481 kg/m ³ |

Results for Central England - Cannock

| | Strength | Stiffness | Density |
|-------------------------|------------------------|-----------------------|----------------------|
| Infected | 76.68N/mm ² | 8302N/mm ² | 483kg/m ³ |
| Clean | 59.2N/mm ² | 6136N/mm ² | 396kg/m ³ |
| National Data 1970's | 81N/mm ² | 9200N/mm ² | 481kg/m ³ |

Conclusions based on the results

- For Thetford Forest there is only marginal difference between timber from infected trees and clean trees.
- Both sets of results compare well to data for the national supply obtained in the 1970's.
- The disease may confer slight benefits to the timber properties before the tree dies.
- There is a difference between Thetford Forest and material from Central England which shows a larger difference between timber from infected trees and timber from clean trees.
- The disease should make little difference to the end use of the timber.



InCrops Project

