



CRC

for

Premium

Quality

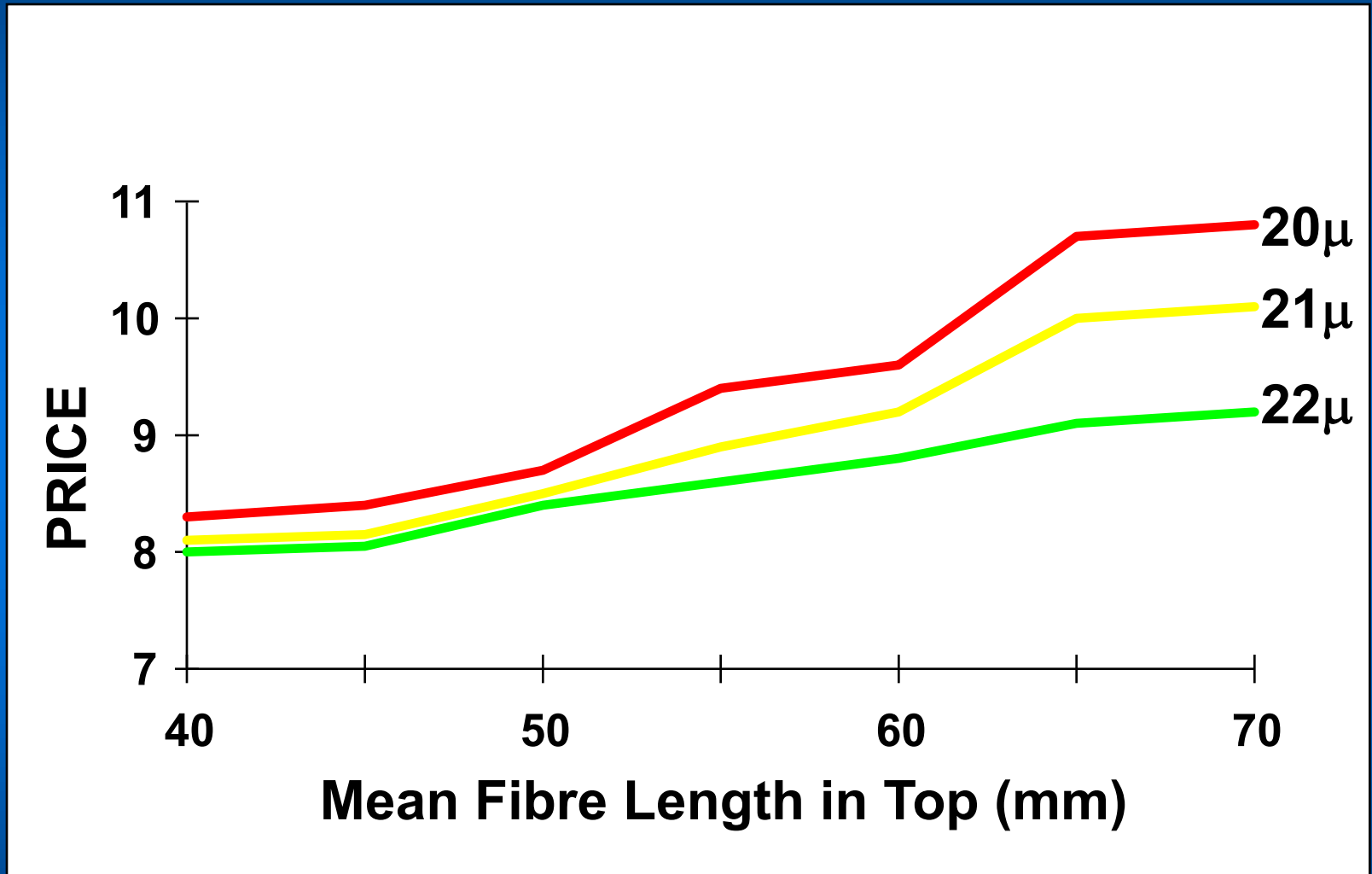
Wool

Fibre Breakage in Carding

Produced for the CRC for Premium Quality Wool undergraduate program by;
Gary Robinson, CSIRO Textile & Fibre Technology.



Effect Of Top Length On Price



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TEAM Formula

$$H = 0.52L + 0.47S + 0.95D - 0.19M^* - 0.45V - 3.5$$

where

H = Hauteur (mm)

L = Staple length (mm)

S = Staple Strength (N/ktex)

D = Fibre Diameter (μm)

M* = Adjusted percentage of middle breaks

V = Vegetable Matter base (%)

VALUE OF TOP

EACH 1mm DECREASE IN HAUTEUR \longrightarrow 10c/kg LOSS

EACH 1% INCREASE IN NOIL \longrightarrow 7c/kg LOSS

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Cost Implications (21 μm Top)

LOSS: 2mm Hauteur	20	c/kg
LOSS: 1 percent unit Romaine	7	c/kg
TOTAL	27	c/kg

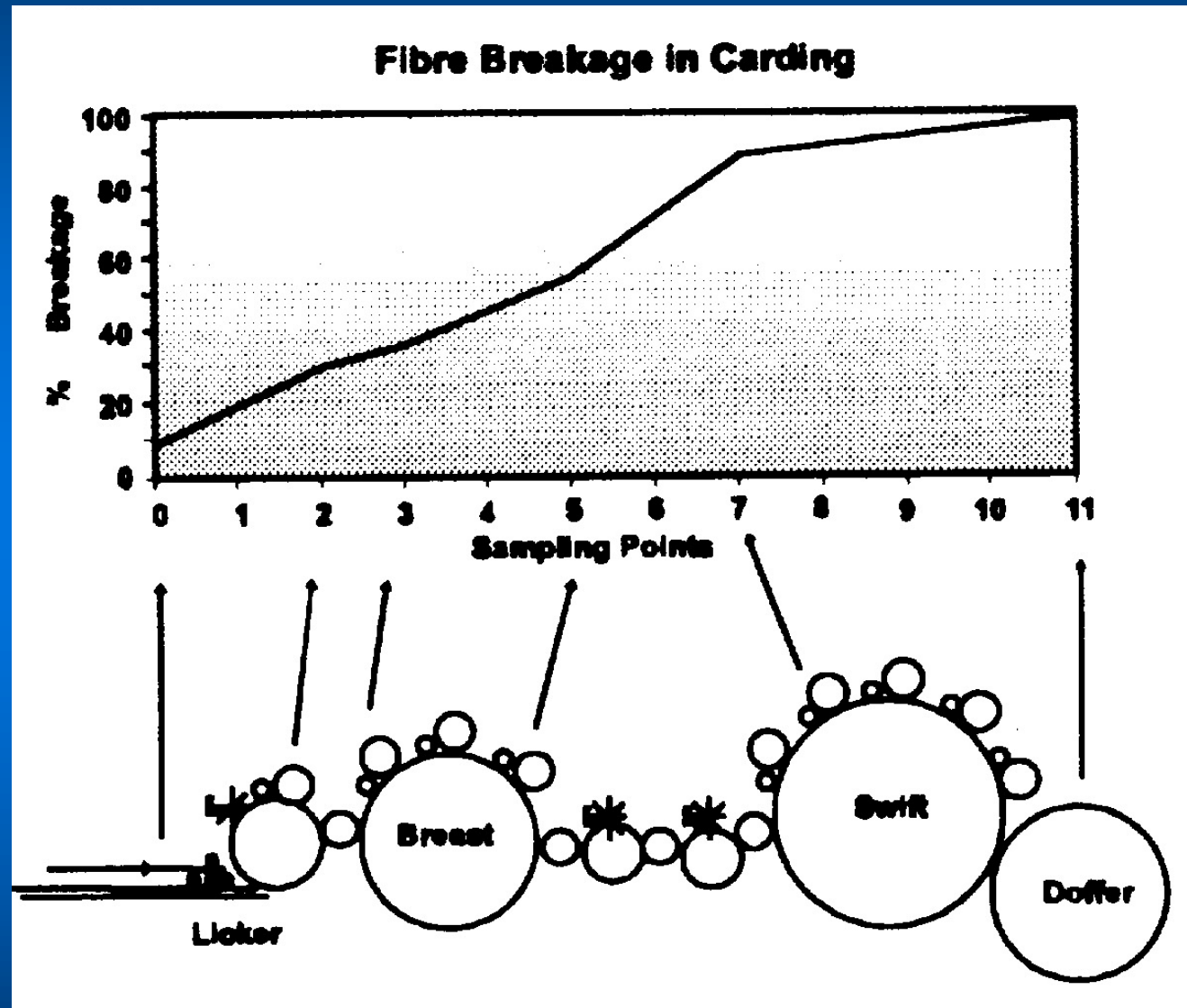
Within MILL **2 tonne / hr**
\$540 / hr

50 Tonne Consignment
25hr mill time
→ \$13,500

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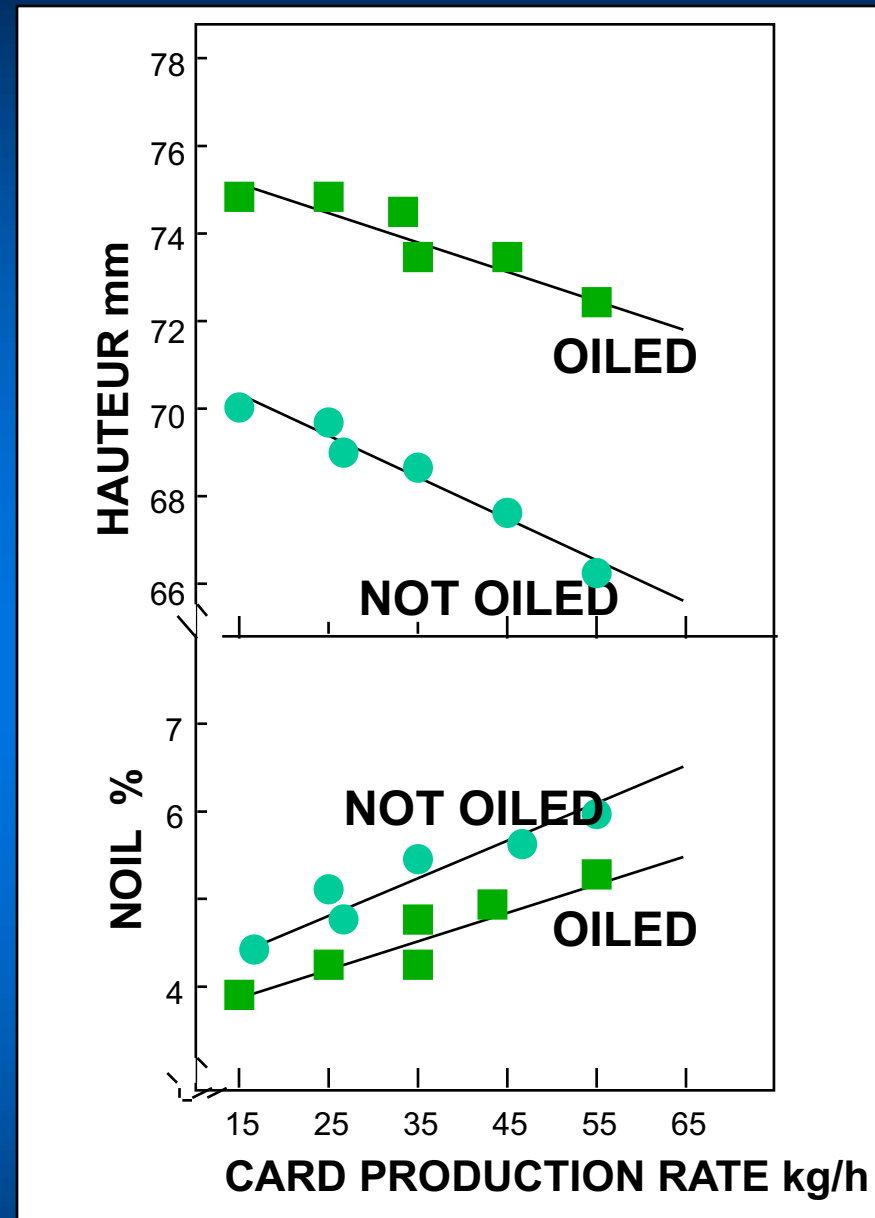
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The Effect of Lubrication at the Card

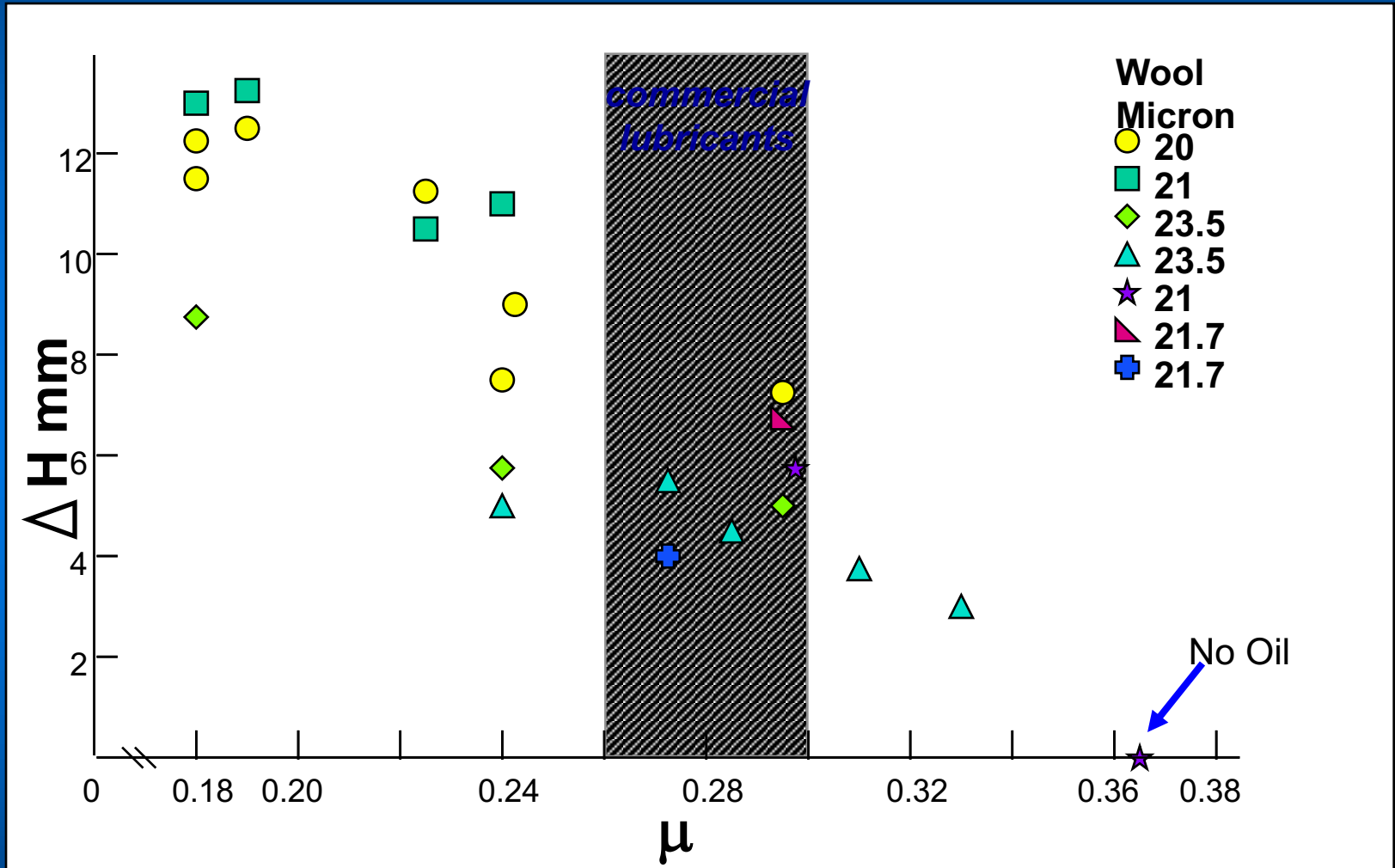
- Hauteur
 - increases
- Noil
 - decreases
- less fibre breakage





Hauteur and Coefficient of Friction

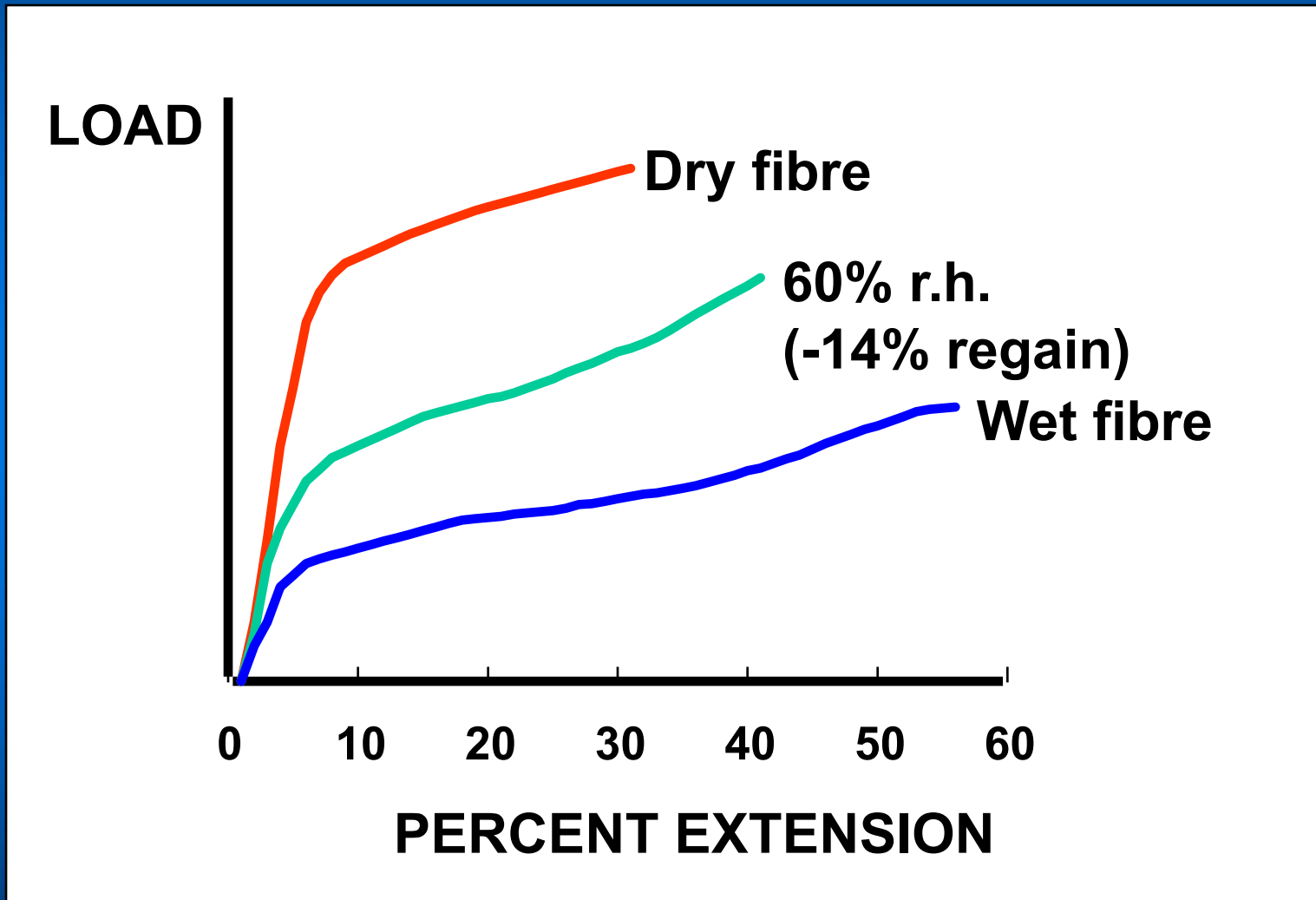
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Moisture Content & Fibre Tensile Properties

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Optimum Regain

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Card Production	Time Delay Before Processing	Hopper Regain	Combing Noil, %	Hauteur
55	None	3.0	4.52	82.3
"	"	15.7	4.31	81.2
"	"	18.4	4.40	80.7
"	"	20.5	4.38	81.2
"	"	26.7	4.55	80.4
		Means	4.43	81.2
55	7 days	3.6	4.40	81.4
"	"	15.2	4.39	81.6
"	"	17.0	4.37	82.0
"	"	21.0	4.35	80.8
"	"	24.6	4.54	80.4
		Means	4.41	81.2