洗毛操作不得当时所带来的影响
The Effects of Poor Scouring Practice

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洗毛过程中的妥协
Compromises involved in Wool Scouring

- 洁净与缠绕
  cleanliness vs entanglement
- 洁净与纤维的损伤
  cleanliness vs fibre damage
- 洁净与环保的矛盾
  Cleanliness vs environment

洗毛对后道加工的影响
Effect of Scouring on Subsequent Processing

- 残留污染物质
  Residual contaminants
- 纤维的缠绕
  Fibre entanglement
- 纤维损伤
  Fibre damage
- 含潮率的变化
  Moisture levels

各种加工试验的对比
Comparative Processing Trials

- 商业洗毛
  Commercial Wool Scours
  - IWS/CSIRO – 5 scours/two wools
  - ACIAR/CSIRO – 12 scours/ two series/two wools
  - ANDAR/CSIRO – 1 scour/ three configurations
- 联邦研究所洗毛
  CSIRO Pilot Scour

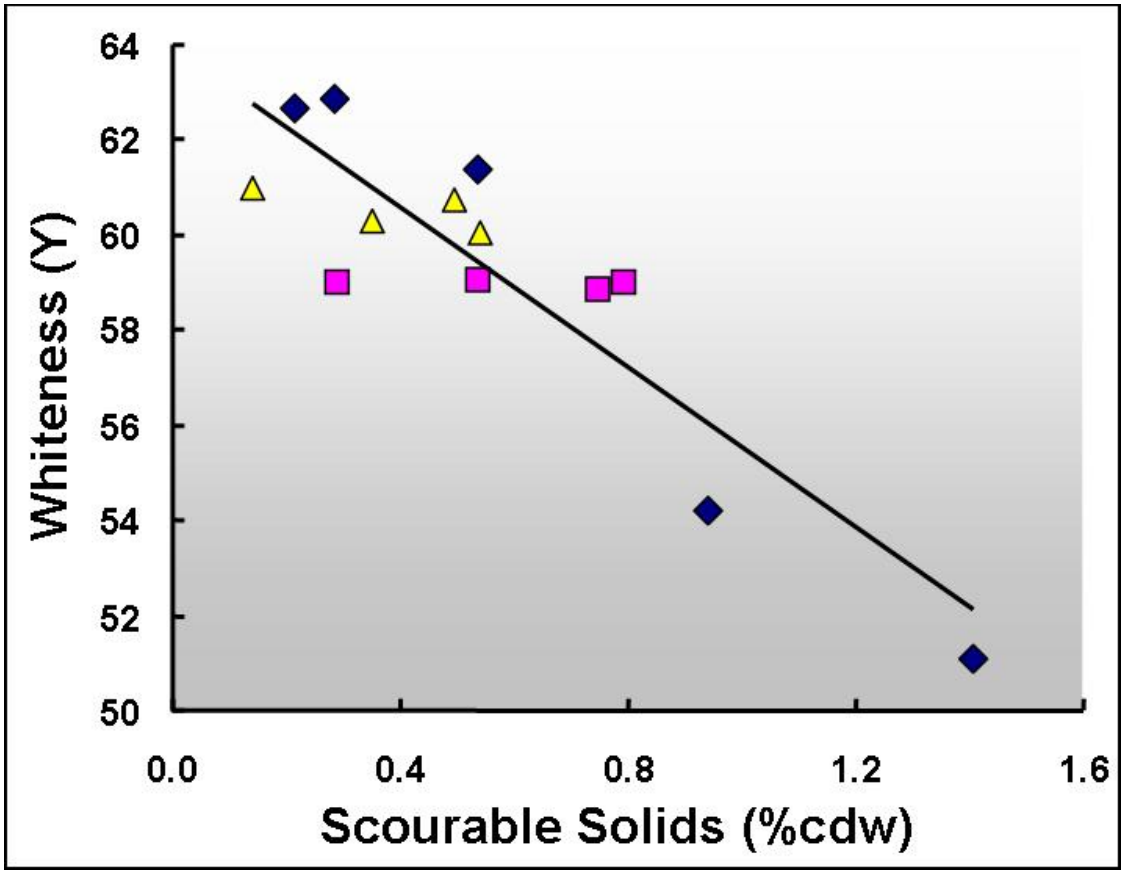
洗净毛影响的特点
Effect on Scoured Wool Properties

- 残留污染物质
  Residual Contaminants

- 颜色
  Colour

颜色中灰分的影响效果
Effect of Dirt on Colour

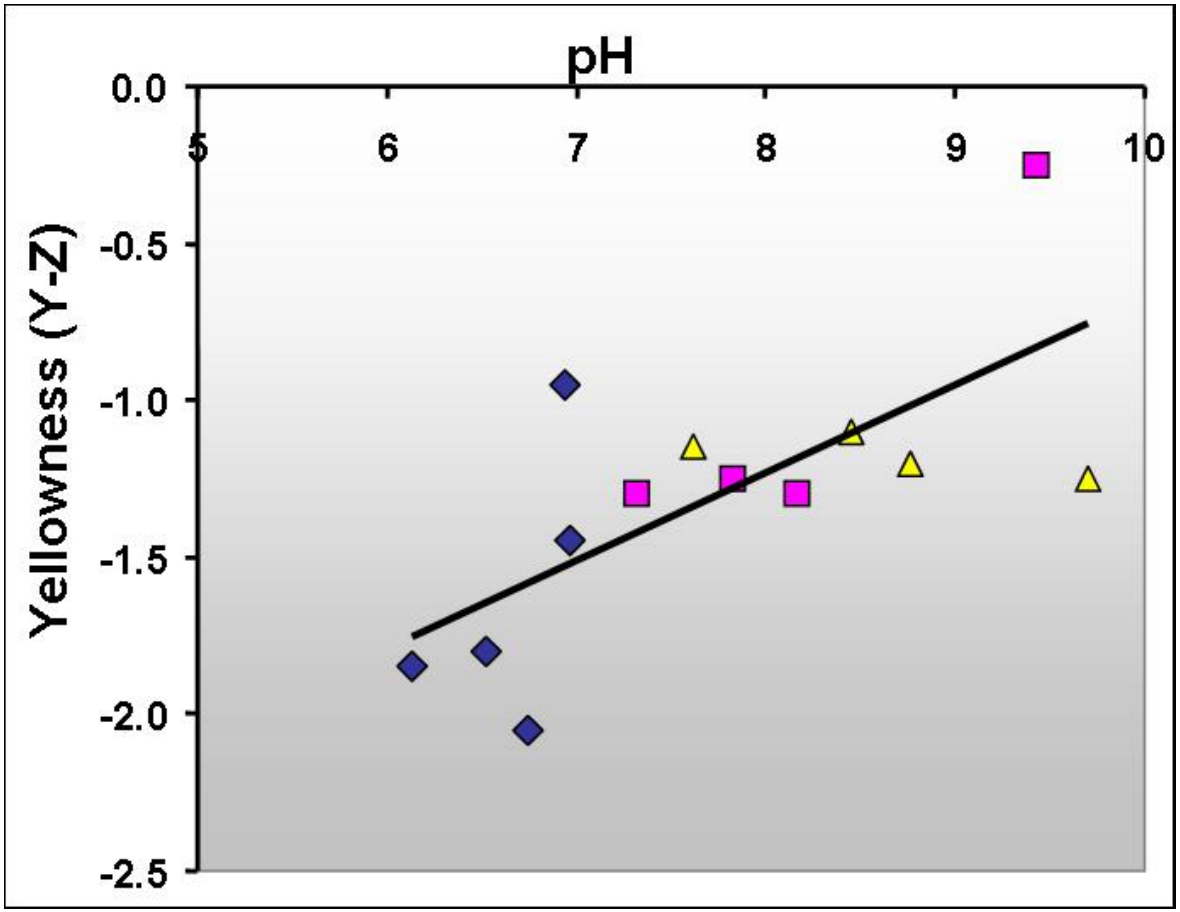
白度



可洗固体物质

洗净毛发黄过程与pH的影响
Effect of pH on Yellowness

发黄率

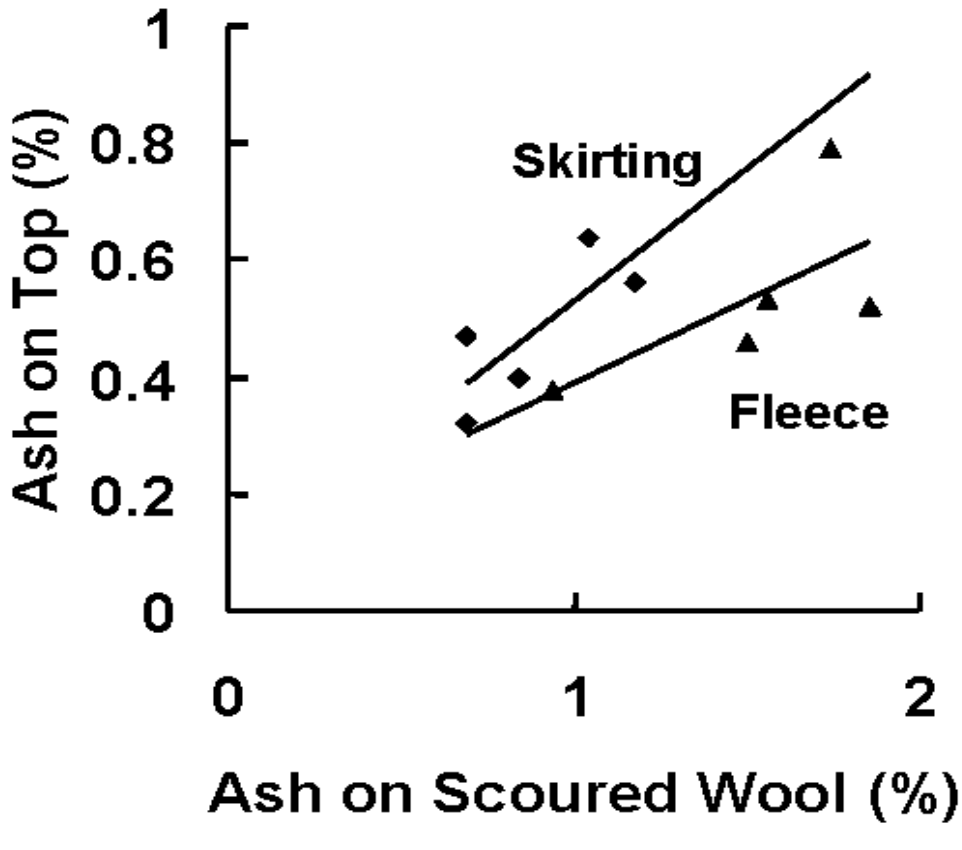


残留污染物质的影响
Effect of Residual Contaminants

- 污染物质的累积
  Accumulation
  - 降低加工效率
    reduced processing performance
  - 维护保养困难
    maintenance issues
- 加工中的添加剂
  Processing additives
  - 变成废料
    loss in wastes
  - 改变纤维性质
    change in properties
- 灰尘
  Dust
  - 健康问题
    Health issues
  - 制成率
    Yield

洗净毛与毛条中含灰量的影响比较
Relationship between Ash Content of Scoured Wool and Top

毛条中
含灰量



洗净毛中
含灰量

污染物质在毛条生产过程中的影响
Effect of Contaminants on Topmaking

纤维缠绕的影响
Effect of Fibre Entanglement

梳毛中纤维的损伤
Fibre Breakage in Carding

↓

增加落毛率
Increase in Noil (Romaine)

↓

毛条变短
Shorter Top

↓

低下的纺纱效率
Poor Spinning Performance

↓

经济损失
Economic Loss

引起纤维缠绕的原因
Causes of Entanglement

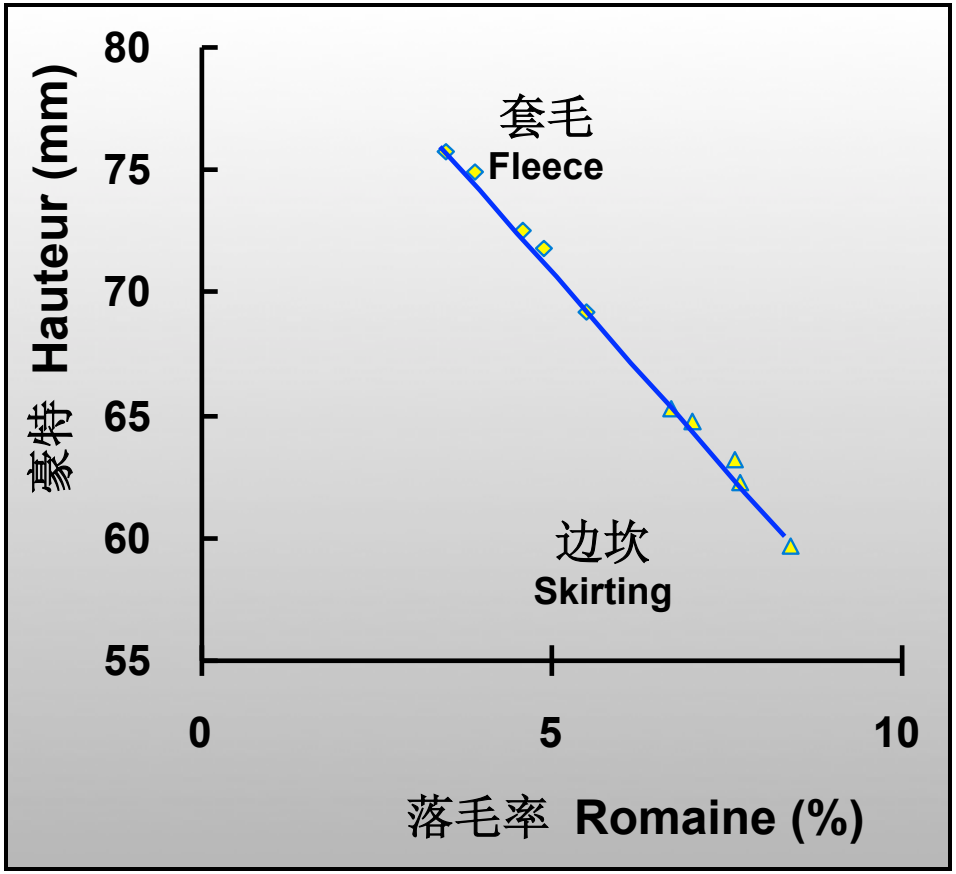
- 开松
  Opening
- 机械作用
  Mechanical
- 洗毛的条件
  Scouring Conditions
- 烘干条件
  Drying Conditions

开松过程中纤维的缠绕
Effect of Opening on Entanglement

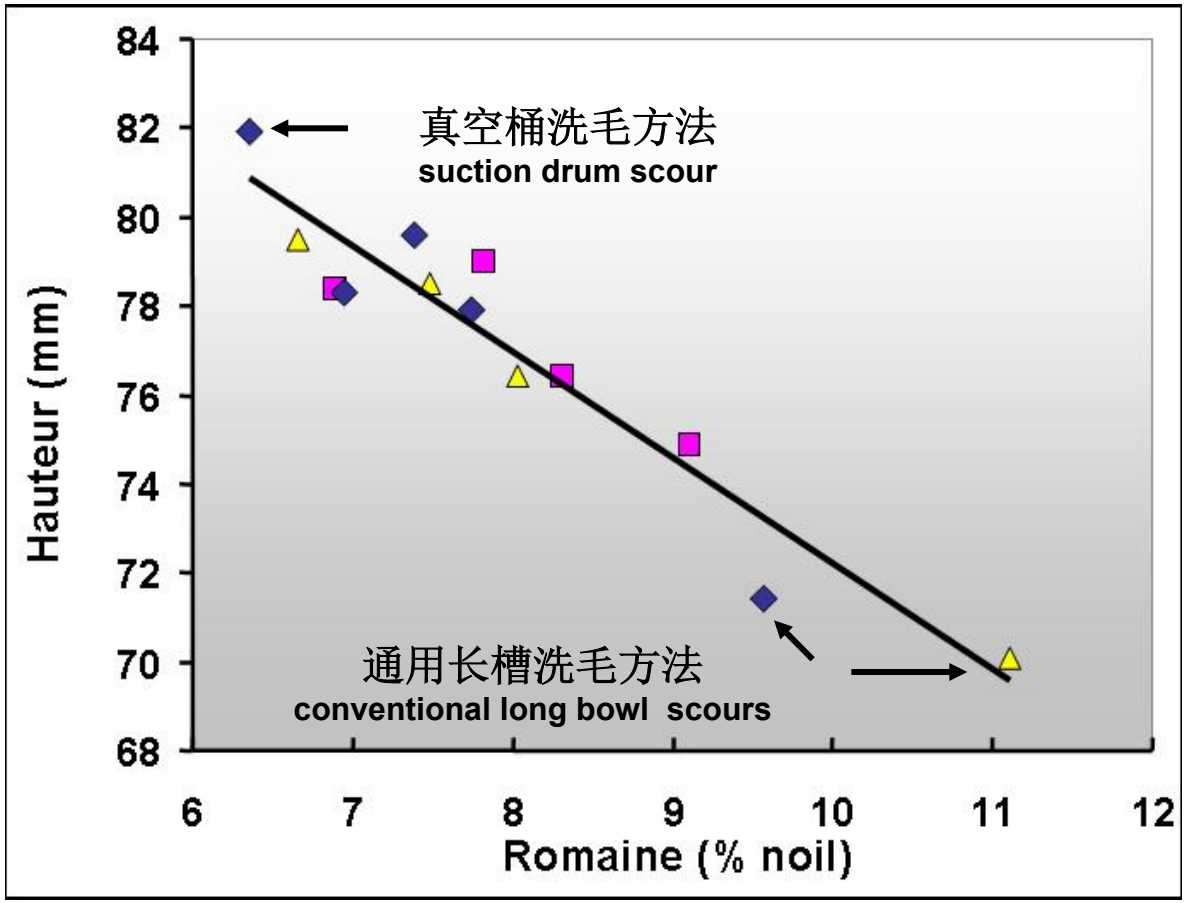
Diameter (micron)	Greasy opened	Hauteur (mm)	Noil (%)
20.3	no	71.0	5.5
	yes	70.1	6.6
21.3	no	68.6	6.3
	yes	65.7	7.3
22.0	no	74.6	4.3
	yes	75.2	4.4
25.7	no	86.0	3.0
	yes	82.1	3.6

G.A. Robinson 1986

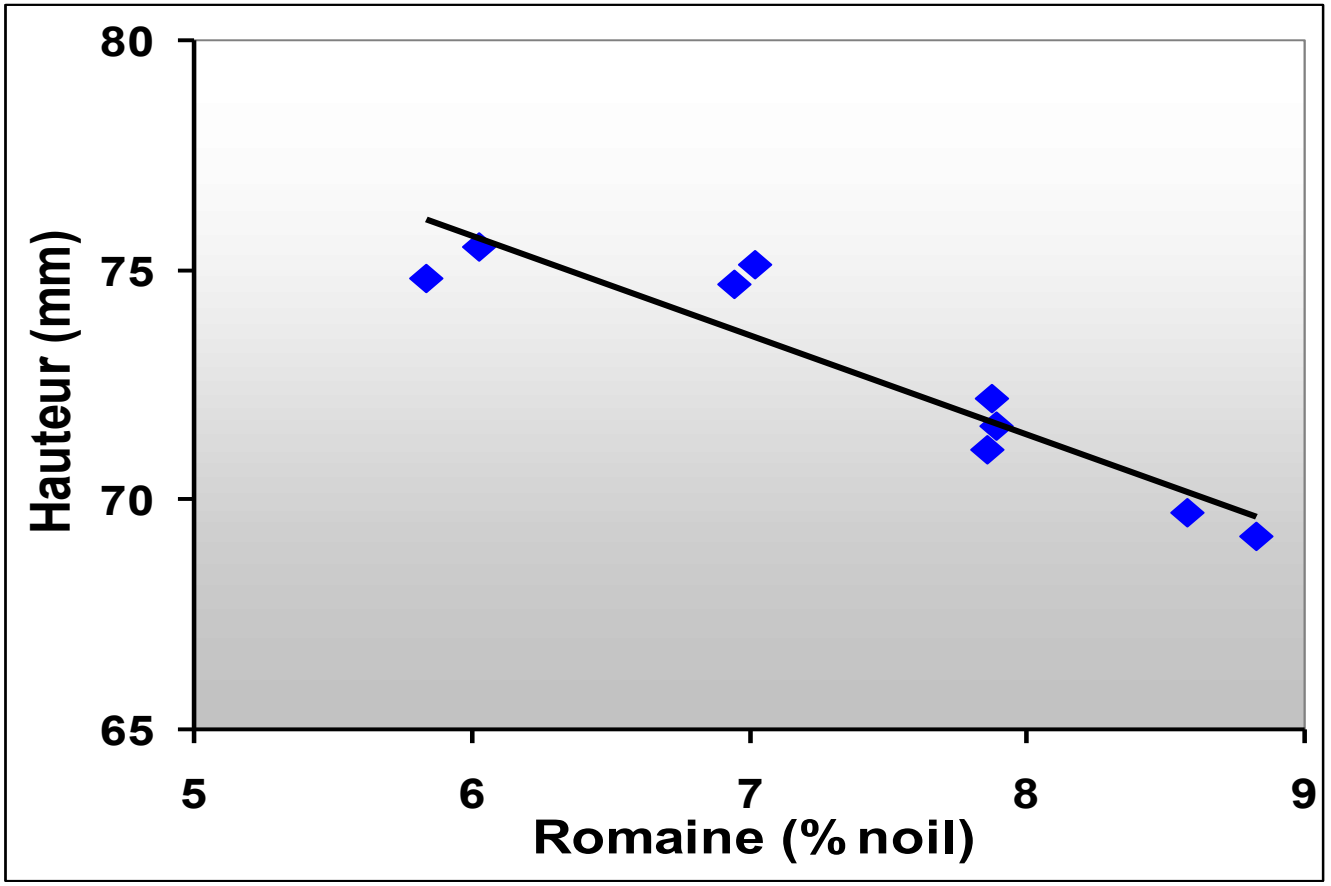
国际羊毛局对比试验中豪特与落毛之间的关系
Relationship between Hauteur and Romaine - IWS Trials



毛条的特点（政府项目第一期）
Top Characteristics (ACIAR – First Series)

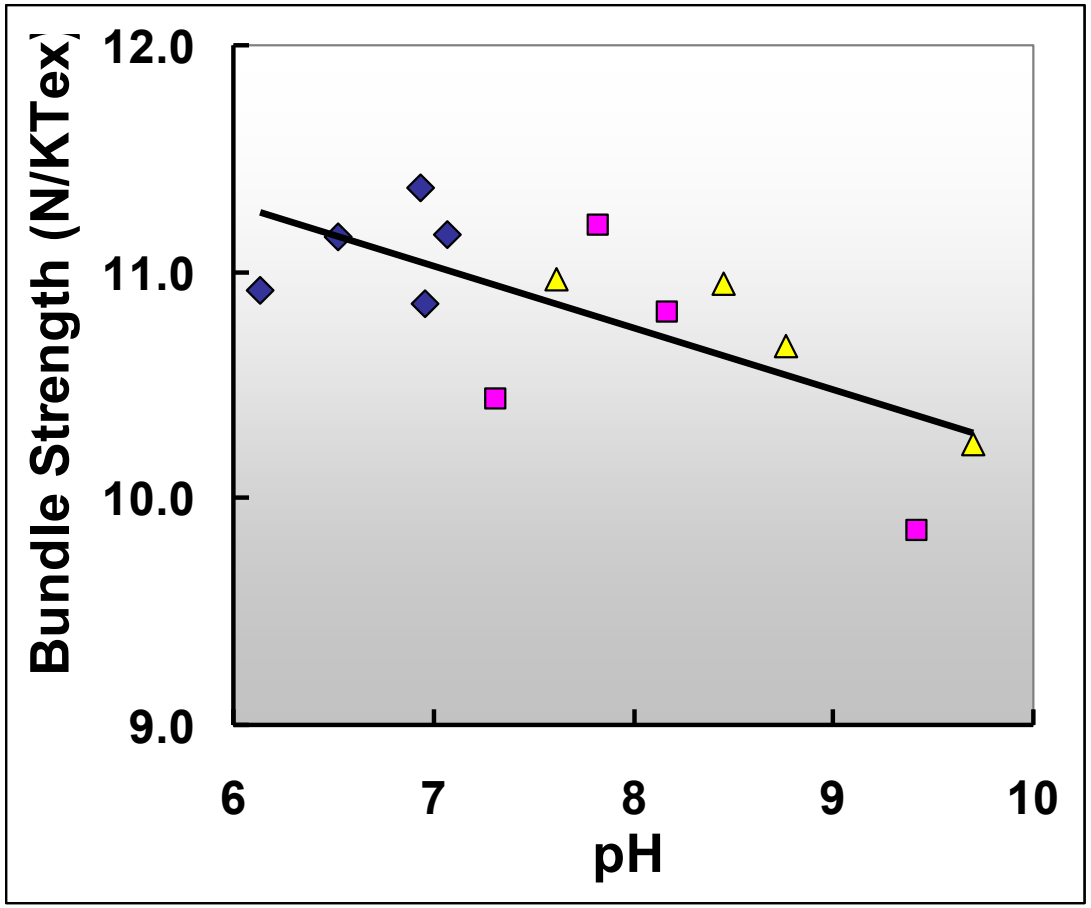


毛条的特点（政府项目第二期）
Top Characteristics (ACIAR – Second Series)



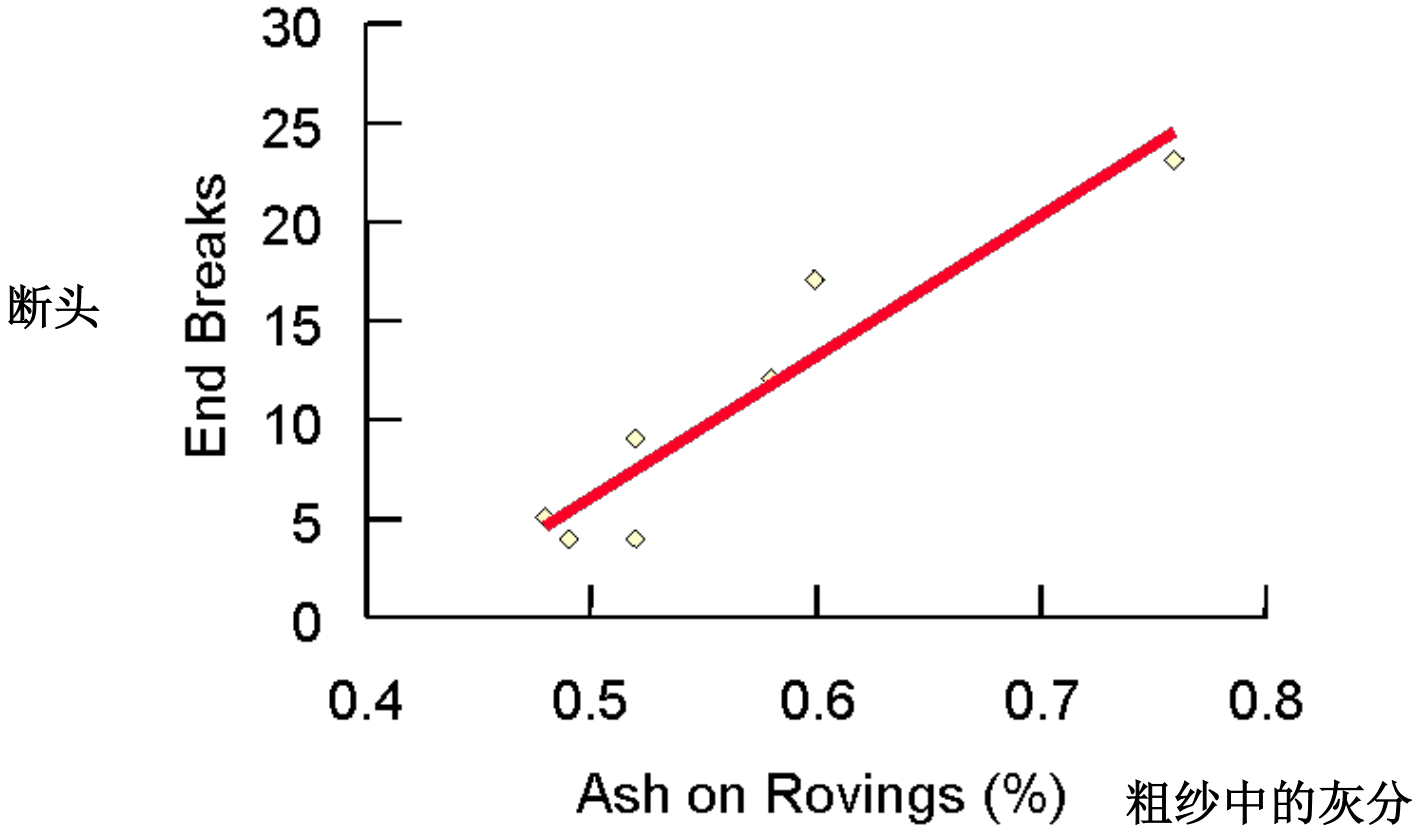
纤维的损伤
Fibre Damage

纤维束强



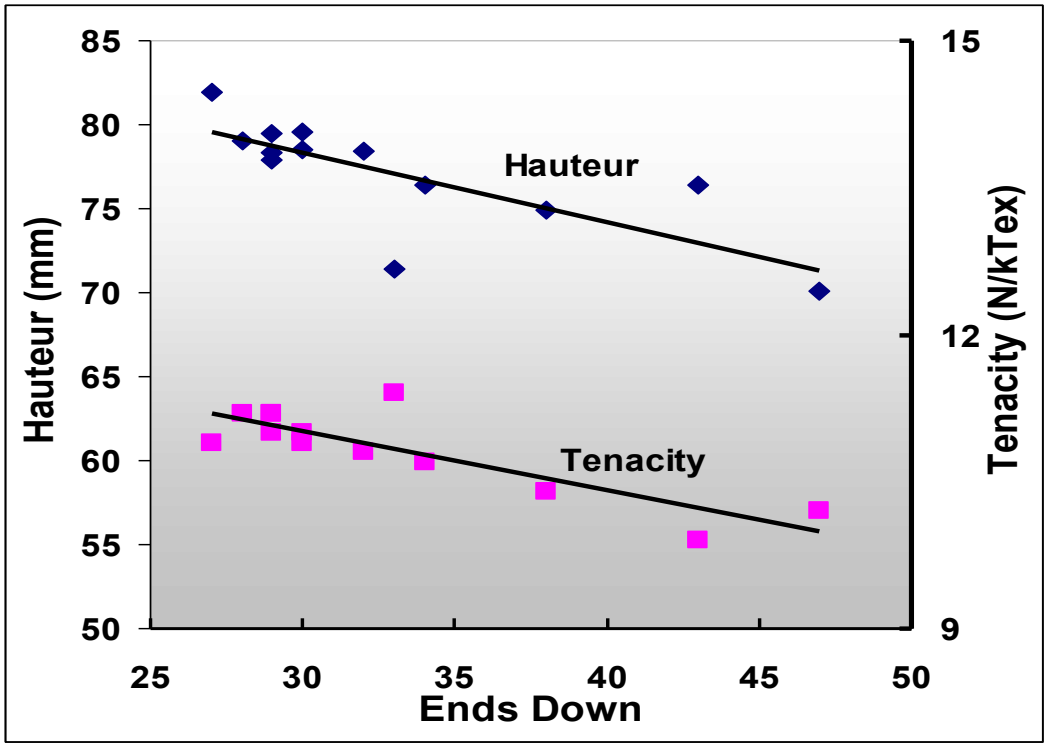
对纺纱的影响
Effect on Spinning Performance

灰分对纺纱的影响
Effect of Ash on Spinning



政府第一期项目
ACIAR Trials – First Series

豪特

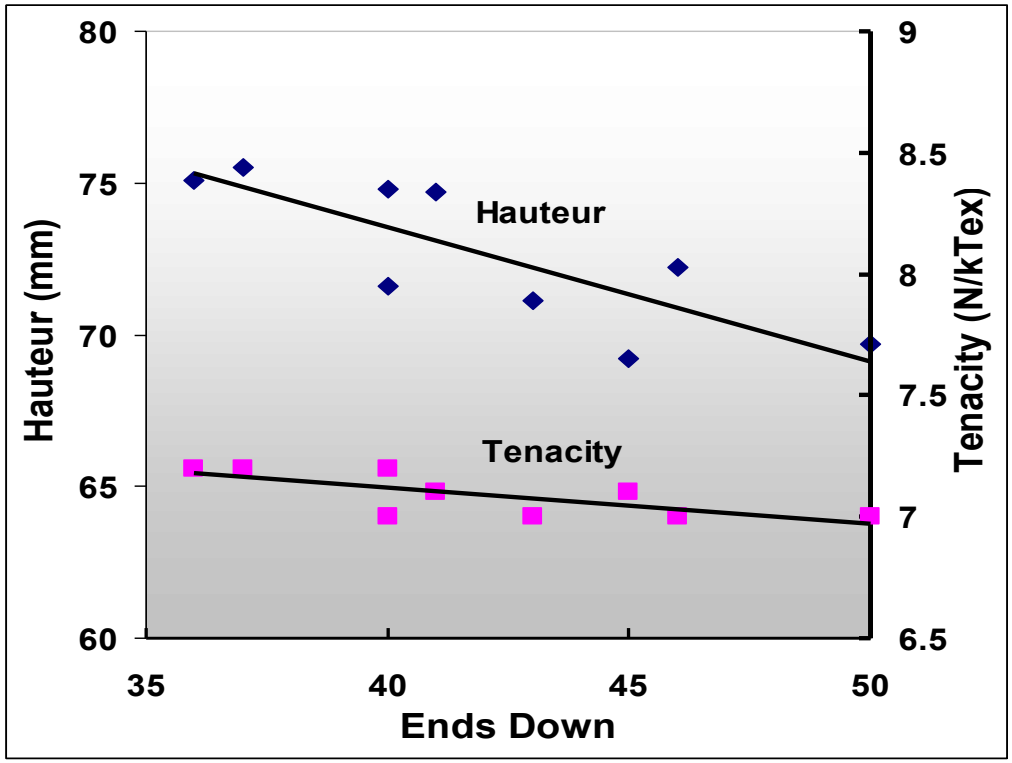


纱线强度

断头数量

政府第二期项目
ACIAR Trials – Second series

豪特



纱线强度

断头数量

又怎么样呢？
So What?

经济成本
Economic Cost

2000吨洗净毛
2000 tonnes scoured wool）

3%纤维损失
3% fibre loss

60吨毛条的损失 = US$240,000
60 tonnes top → US$ 240,000

171,000米面料
171,000 metres fabric → US$1.7 million

总结
SUMMARY

- 洗毛对毛条生产起着至关重要的作用
  Scouring has a significant affect on topmaking performance
- 纤维的缠绕可以造成巨大的经济损失
  Fibre entanglement can lead to substantial monetary losses
- 随着**pH**值的提高会增加纤维的损伤
  Risk of fibre damage increases with pH