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PRESENTATION

Session:
Ginning News

Title:
Comparing Gin and Mill Cleaning in terms of Quality and Processing Performance

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Conference Organization

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Comparing Gin and Mill Cleaning in terms of Quality and Processing Performance

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Purpose & Objectives of Ginning

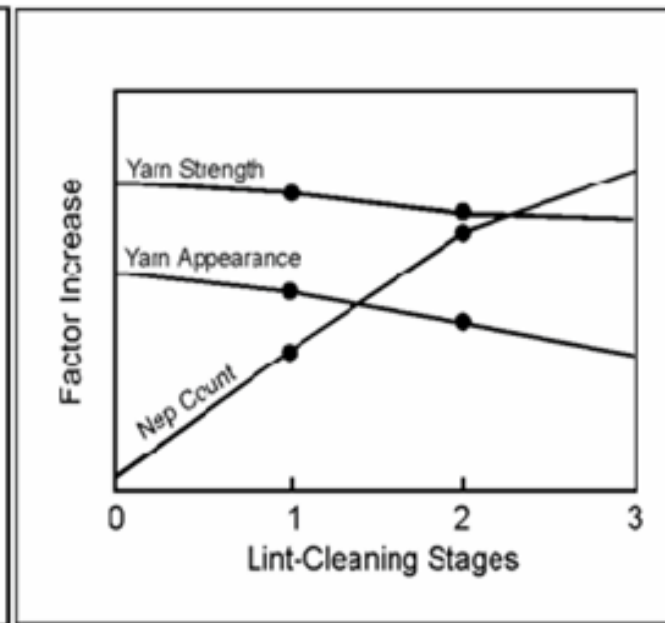
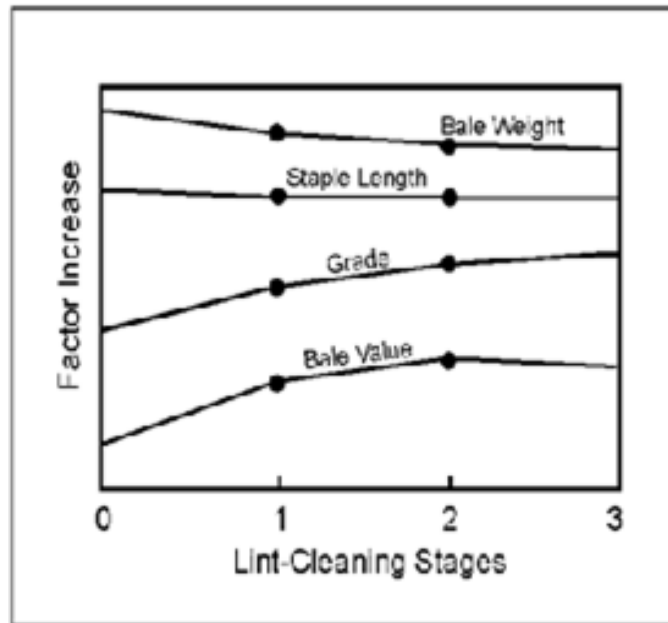
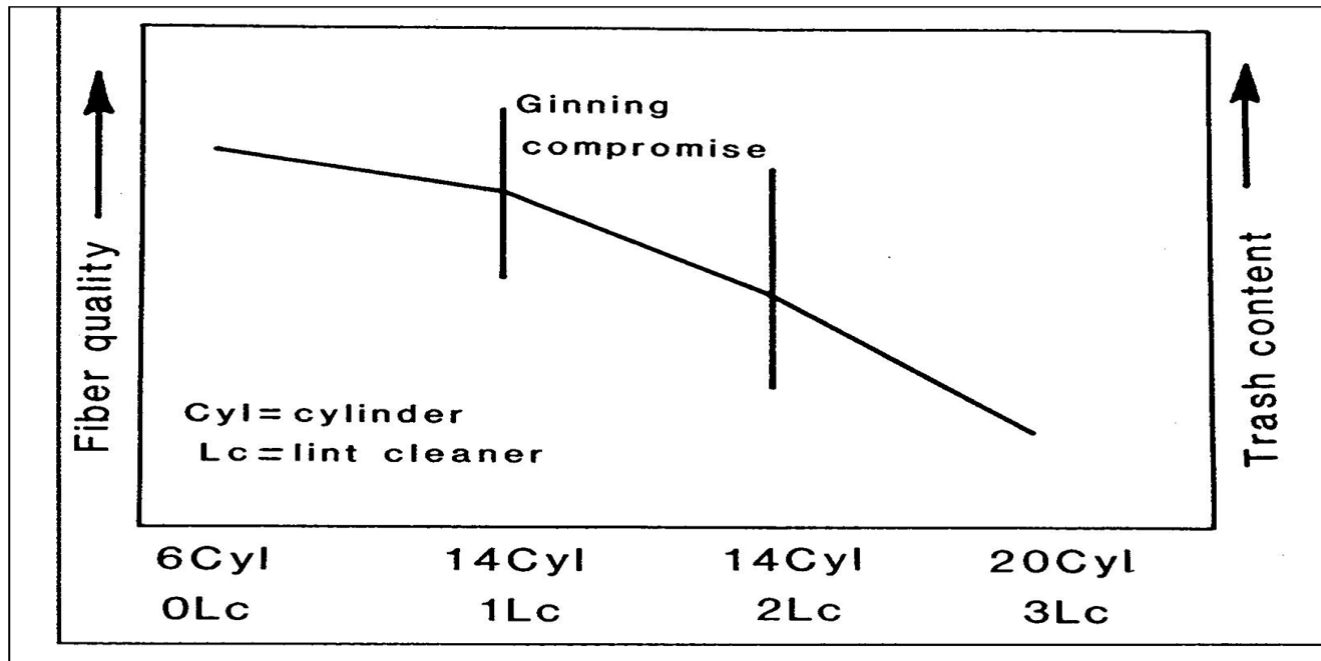
Purpose

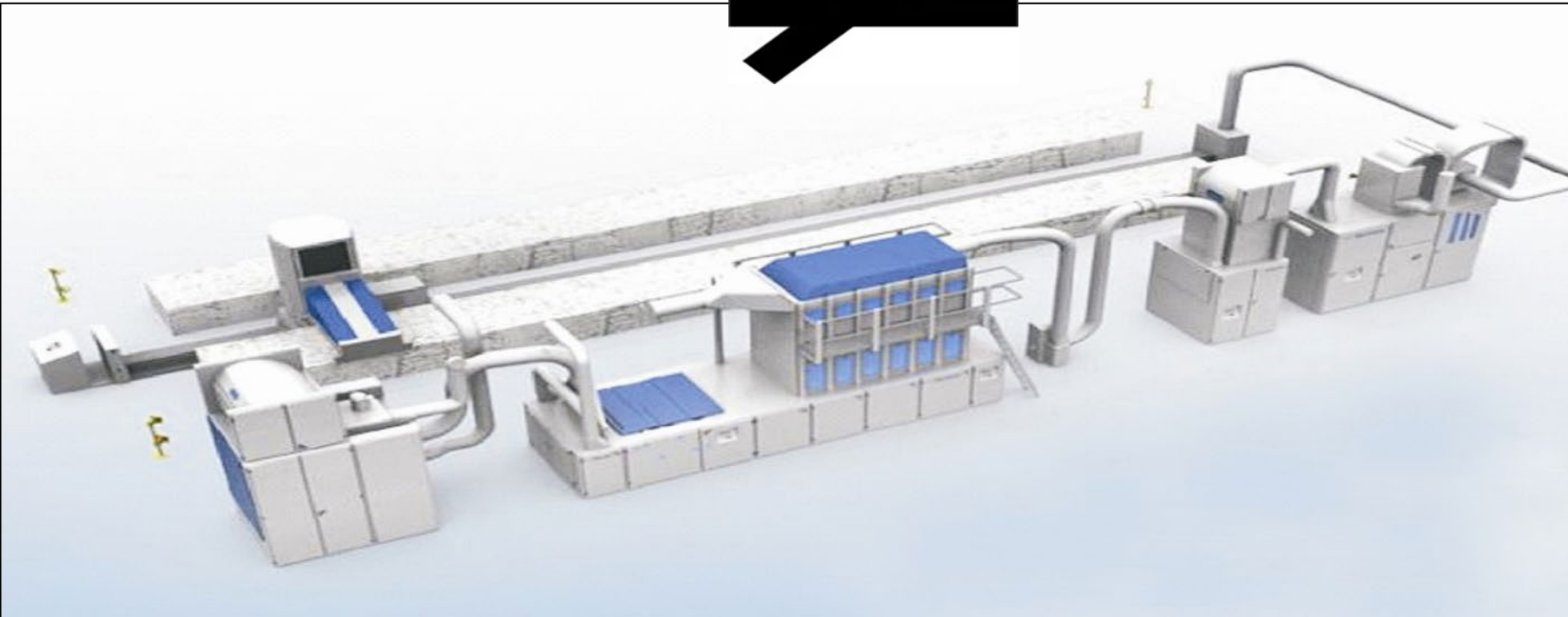
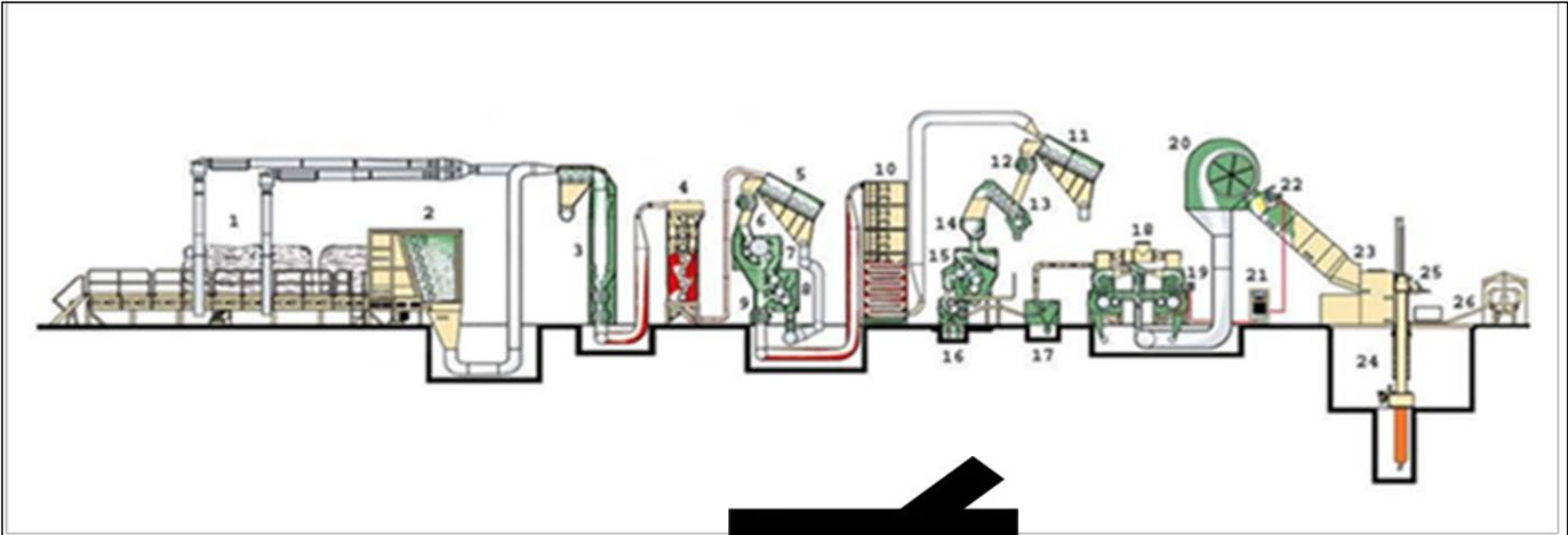
Is to separate fibre from seed and produce cotton lint that is a saleable and processable commodity.

Objectives

- to produce lint of enough quality and quantity to enhance and maximize the return to the grower
- to produce a fibre with minimum damage to satisfy the demand from the spinner.

Ginning is an essential link between the grower and mill.





The Arguments for and against

Cleaning at the gin, rather than at the spinning mill:

- Higher (i.e., better) grades.
- Lower Fibre Quality.
- Lower Lint Turn Out.
- Easier disposal of the trash at the gin than at the spinning mill.

Cleaning at the spinning mill, rather than at the gin:

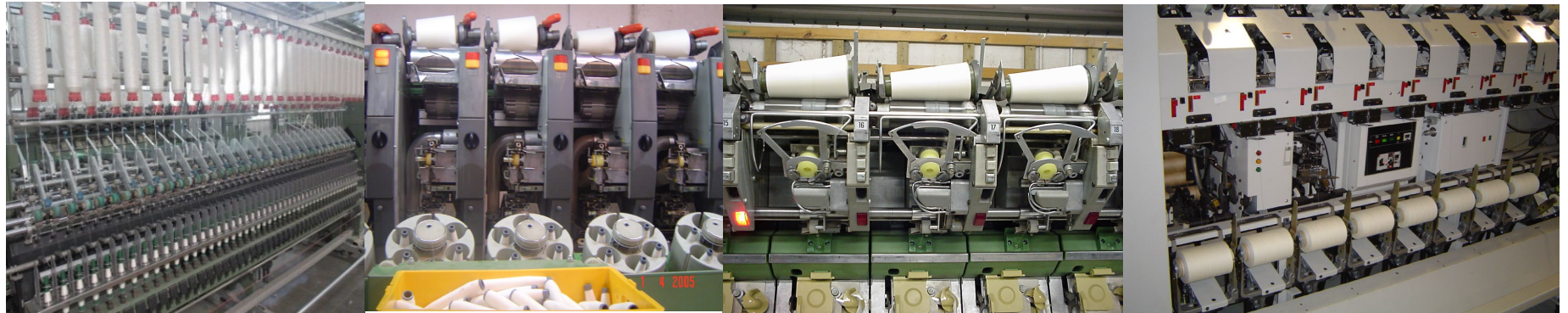
- Increased bale weights
- More-controlled cleaning conditions.
- Lower throughput, resulting in better cleaning capacity.
- Positive influence on fibre and yarn quality.
- Less stress.
- Reduced productivity due to increased waste %.

Trial Details

For direct comparisons:

- Two conventional modules from one field (~32 ton).
- One Gin using
 - Standard using two lint cleaners which is the most common.
 - Custom using one lint cleaner
 - Zero using no lint cleaners
- Three bales of each treatment = 9 bales
- Three Spinning Systems
- Four Yarn Counts
- Multiple Testing Instruments

Trial

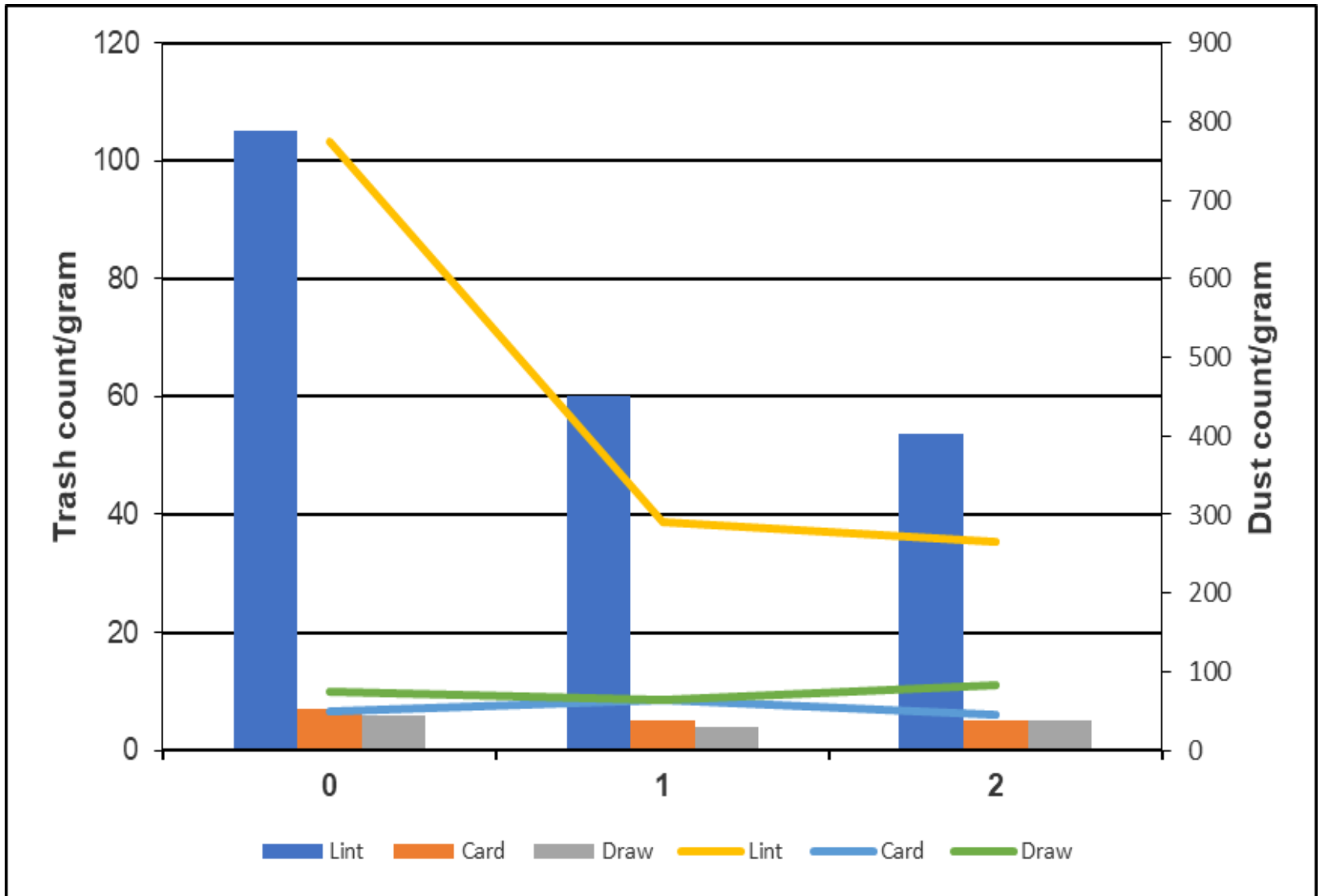


Fibre Quality

LC	HVI					FMT2		Visual		
	MIC	UHML	UI%	SFI%	STR	MR	FINE	CG	TG	PRP
2	4.71	29.3	83.5	3.83	31.3	1.04	176	21	3	Smooth
1	4.75	29.3	83.7	4.03	31.3	1.06	174	31	3	Smooth
0	4.72	29.5	84.2	3.33	32.0	1.06	171	31	4	Rough

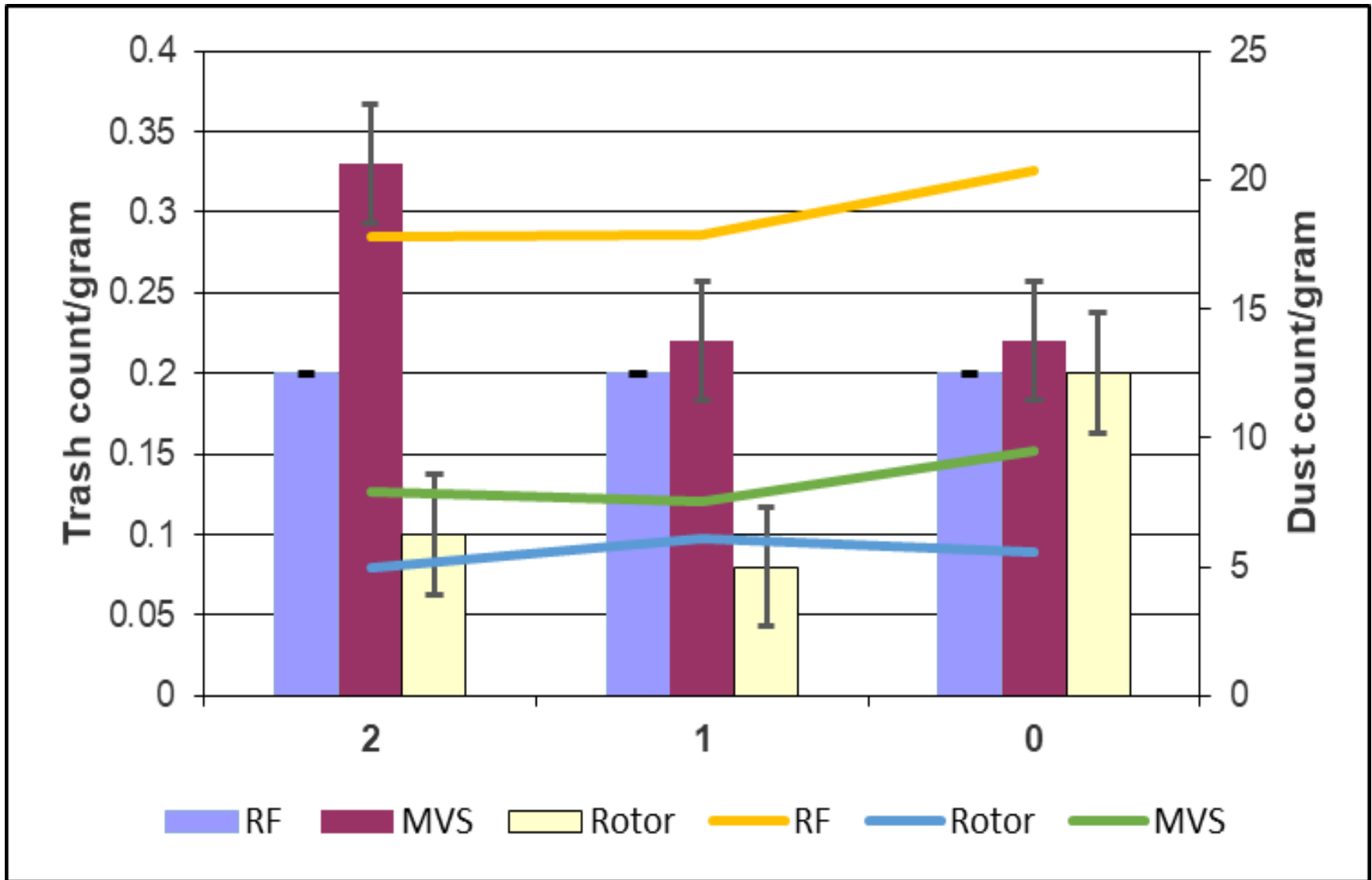
LC	AFIS						MDTA-3	
	FN	NS	TC	TS	DC	VFM%	T%	D%
2	177	733	54	333	266	1.24	1.21	0.05
1	174	737	60	342	290	1.38	1.46	0.06
0	131	708	105	282	774	2.54	3.10	0.10

Trash Results in Spinning Mill



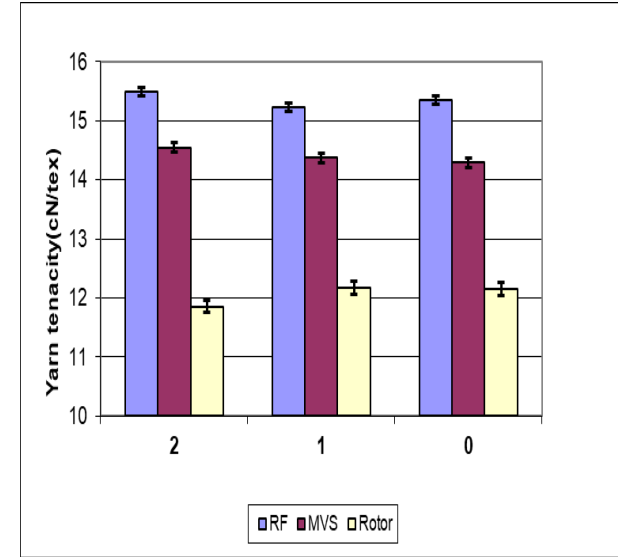
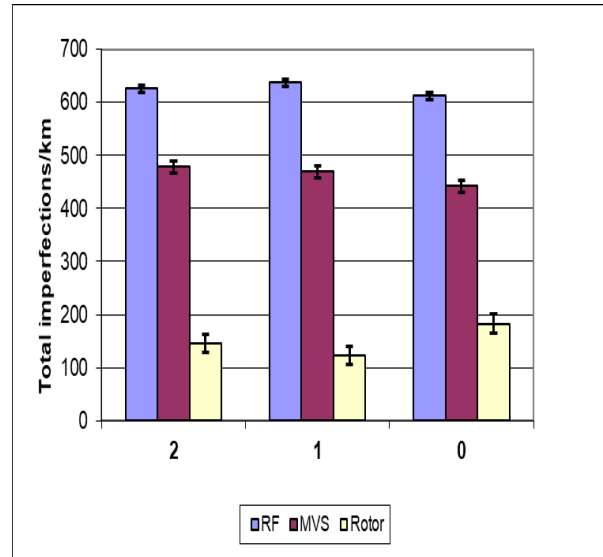
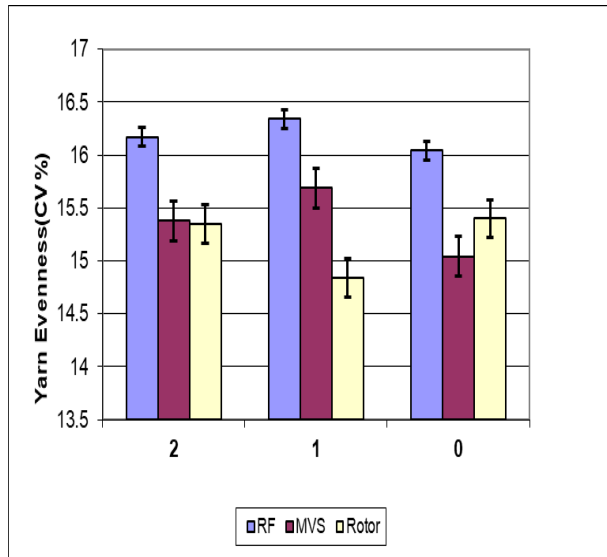
trash (TC) ($> 500 \mu\text{m}$), dust count (DC) ($< 500 \mu\text{m}$),

Trash Results in Yarn



trash (TC) ($> 500 \mu\text{m}$), dust count (DC) ($< 500 \mu\text{m}$)

Yarn Quality



All figures with average values and y-error bars of 1 standard deviation indicating variation.

Less Gin More Tonic?

Reducing LC leads to:

- Increased Trash.
- Reduced Grade.
- Increased Lint Turn Out.
- Fibre Quality improvement
- Modern Blowroom & Carding can cope with increased trash levels.
- No real differences in yarn quality and processing performance.
- Reduced productivity.

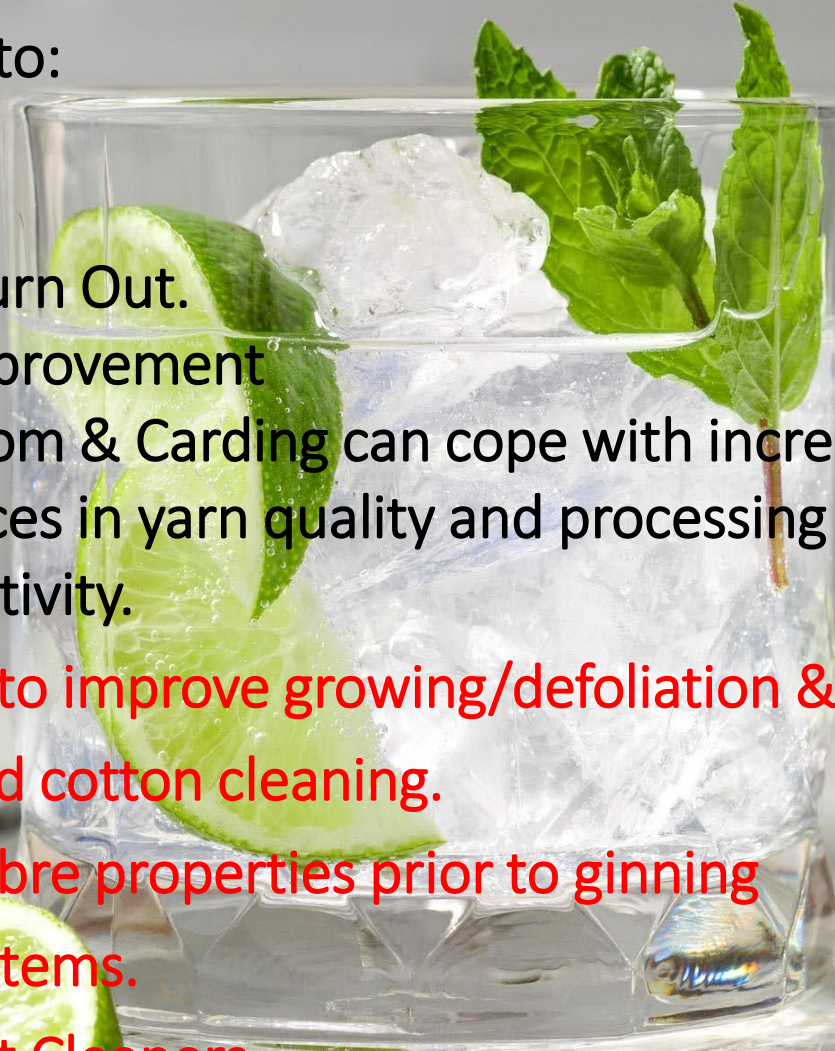
Grower education to improve growing/defoliation & harvesting practices

More focus on seed cotton cleaning.

Measurement of fibre properties prior to ginning

Process control systems.

Less aggressive Lint Cleaners.



Acknowledgements

- Australian Cotton CRC
- CSIRO
- Ginners



Mention of product or trade names does not constitute an endorsement by TTS over other comparable products. Products or trade names are listed for reference only.

Thank you

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