

Understanding the role of fiber length in HVI strength measurement

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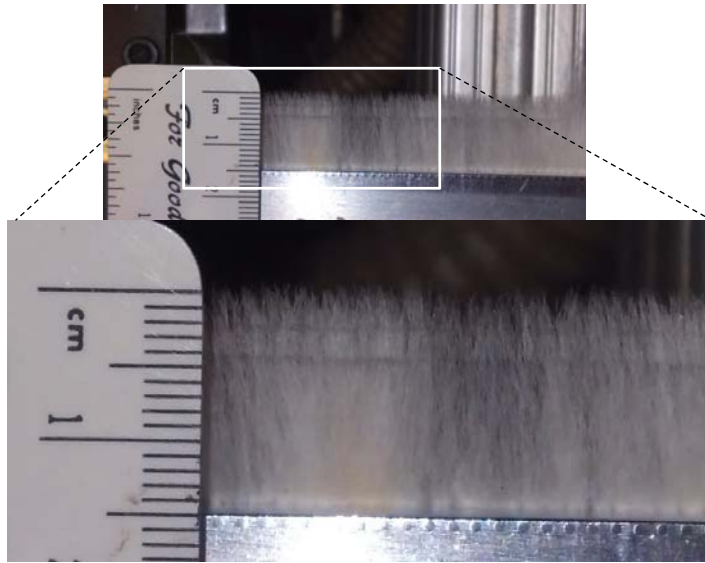
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Materials

- 5 samples, made from 1 sliver cut to length
- HVI results shown

Sample ID	UHML (mm)	Uniformity (%)	Mean Length (mm)	SFI (%)	Strength (cN/tex)
1	23.04	73.30	16.89	29.69	30.20
2	23.78	75.12	17.86	25.55	30.97
3	24.83	77.46	19.23	20.87	31.46
4	25.78	78.70	20.29	18.51	31.81
5	26.43	79.57	21.03	16.08	32.48

- Single fiber testing performed to verify no true change in strength due to cutting to length



Examination of broken beard

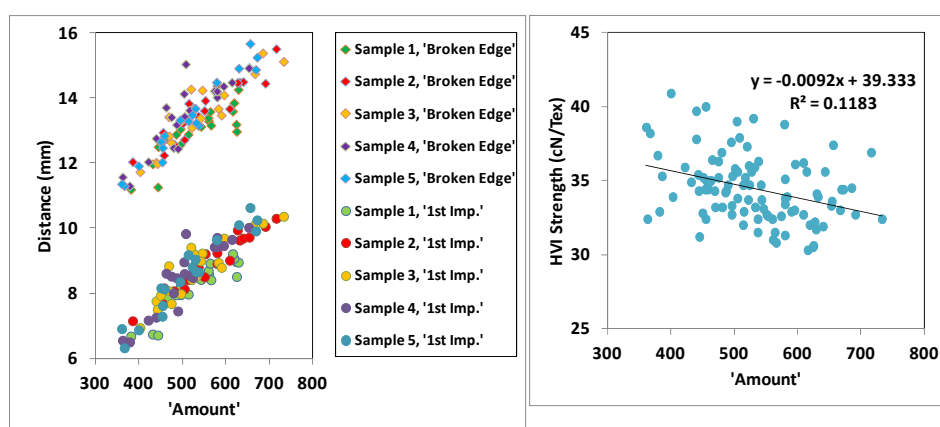
Measured Distances From Clamp (mm)

Sample ID	Second Impression				Broken Edge			
	Mean	SD	Min	Max	Mean	SD	Min	Max
1	10.28	0.85	8.39	11.43	12.94	0.76	11.20	14.27
2	11.16	0.87	9.25	12.64	13.70	0.92	11.99	15.52
3	10.86	1.03	8.79	12.64	13.45	1.00	11.74	15.39
4	10.72	1.09	8.45	12.31	13.46	1.06	11.31	15.05
5	10.89	1.13	8.90	13.04	13.55	1.21	11.37	15.68

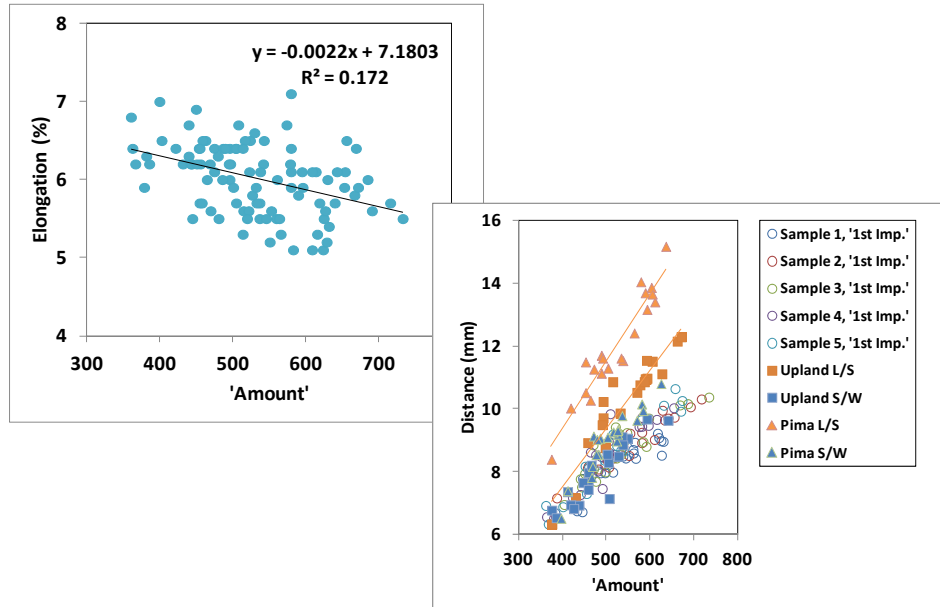
Confirmed with Calibration Cottons

Sample ID	Second Impression				Broken Edge			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Upland L/S	12.35	1.60	8.44	14.74	15.16	1.51	11.22	17.11
Upland S/W	10.05	0.98	8.75	11.86	12.83	0.91	11.52	14.65
ELS L/S	14.12	1.68	10.46	17.37	16.79	1.72	13.23	20.33
ELS S/W	11.10	1.02	8.70	12.87	13.95	0.97	11.74	16.00

Impact of "Amount"



Impact of “Amount”



Conclusions

- High Volume Instrument™ positions clamp in a manner to achieve a constant mass
- Fiber length characteristics impact position of clamps
- HVI elongation appears impacted by both fiber length characteristics and size of beard tested

Acknowledgments

- Work was supported by USDA, CSIRO and the Australian Cotton Research and Development Corporation