

MICROSTICKIES: EFFECT OF PRETREATMENT EFFECT OF DILUTION

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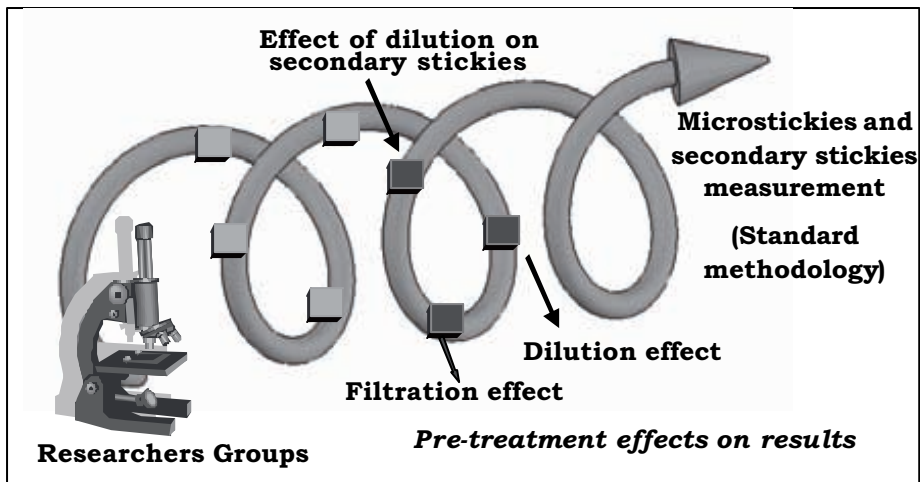
OBJECTIVE

OBJECTIVE

EXPERIMENTAL TRIALS

RESULTS

CONCLUSIONS



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EXPERIMENTAL TRIALS

OBJECTIVE	EXPERIMENTAL TRIALS	RESULTS	CONCLUSIONS
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MACROSTICKIES

→ Ingede Method 4

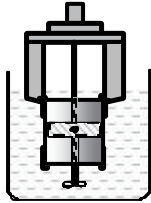


Sommerville

MICROSTICKIES
SECONDARY STICKIES



Deposition Rotor
(UCM Patent, 1998)



External deposition



Internal deposition

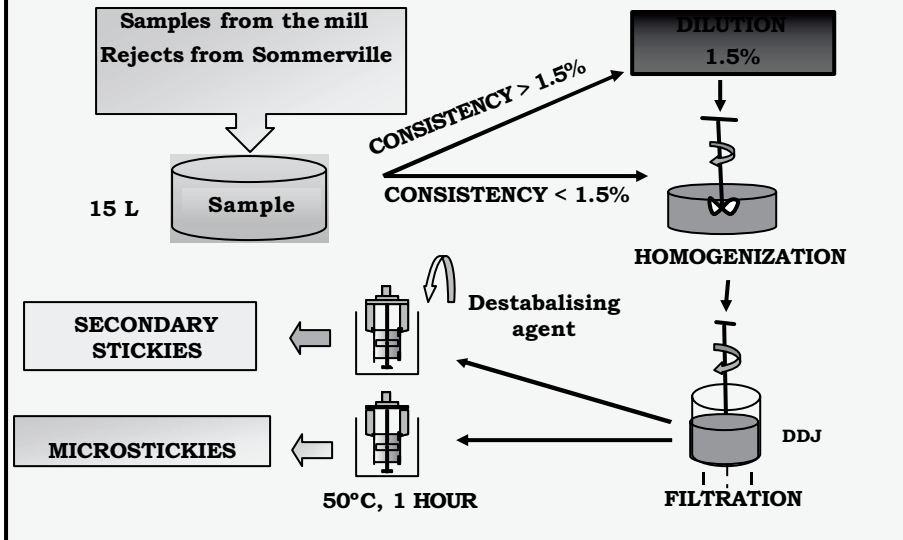


Image Analysis

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PRE-TREATMENT PROCESS: MICROSTICKIES-SECONDARY STICKIES

OBJECTIVE	EXPERIMENTAL TRIALS	RESULTS	CONCLUSIONS
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EXPERIMENTAL TRIALS

OBJECTIVE	EXPERIMENTAL TRIALS	RESULTS	CONCLUSIONS
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PRE-TREATMENT EFFECTS	EFFECT OF DILUTION
Filtration	Process samples
Dilution	

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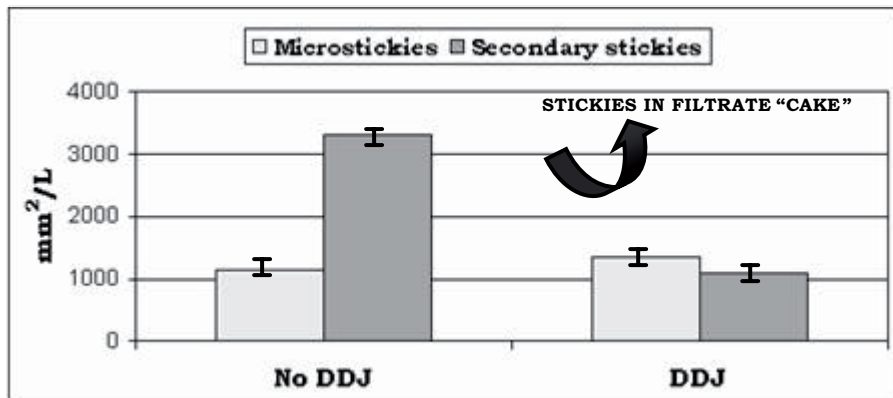
RESULTS: FILTRATION EFFECT

OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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FILTRATION EFFECT



DECREASE OF SECONDARY STICKIES



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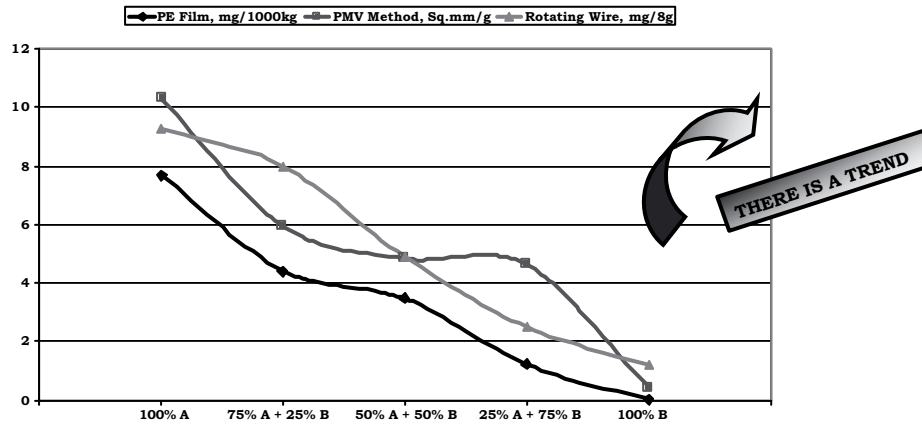


RESULTS: FILTRATION EFFECT



OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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METHODOLOGIES WITHOUT FILTRATION



Doshi et al., 2003

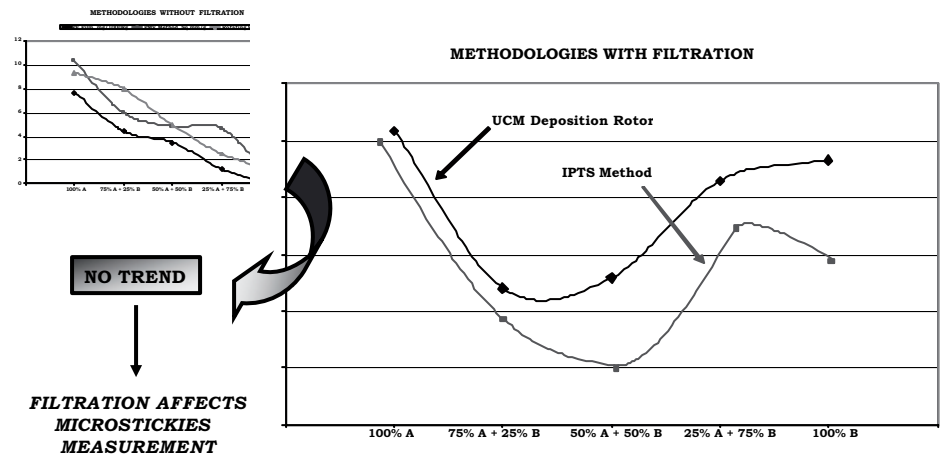
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RESULTS: FILTRATION EFFECT



OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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Doshi et al., 2003

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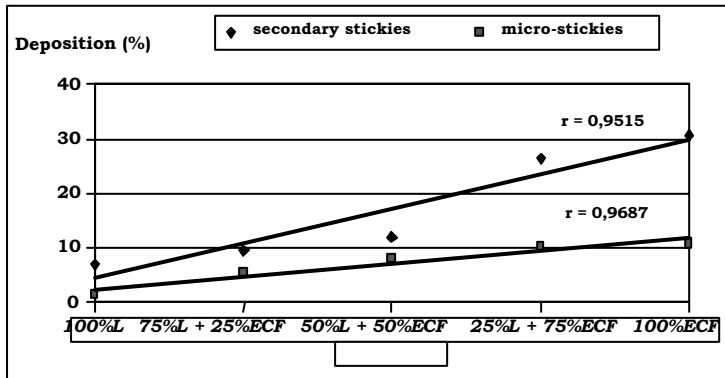


RESULTS: FILTRATION EFFECT



OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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Samples: ECF + LABELS → UCM Deposition Rotor



However, other times a linear trend is observed



More investigation to standarize a methodology for microstickies measurement

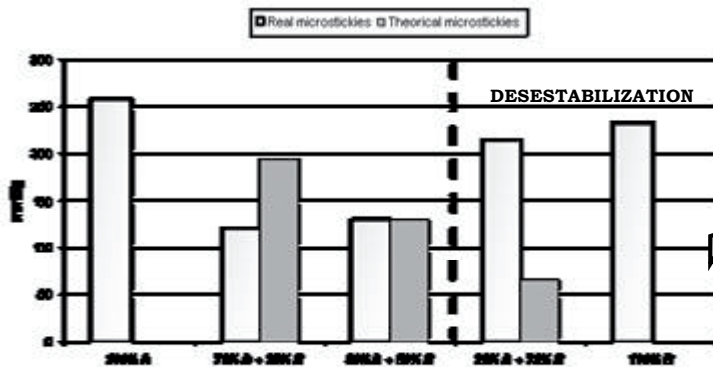
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RESULTS: DILUTION EFFECT



OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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Samples

A → with stickies
B → free - stickies



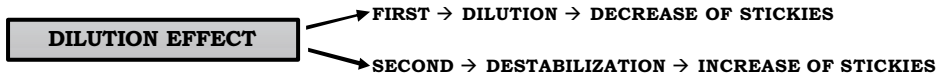
Mixtures of pulps produce stickies shocks → increase of microstickies

Doshi et al., 2003

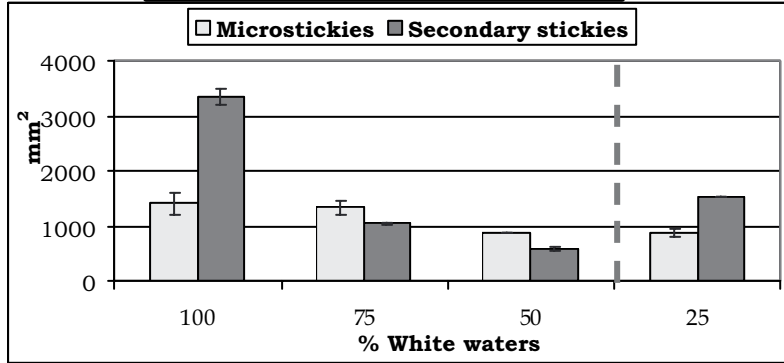
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RESULTS: DILUTION EFFECT

OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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WW DILUTION WITH FRESH WATER



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RESULTS: DILUTION EFFECT

OBJECTIVE	EXPERIMENTAL TRIALS	PRETREATMENT RESULTS	CONCLUSIONS
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Pulp (%)	pH	Conductivity (mS/cm)	Cationic demand (µeq/L)	Turbidity (NTU)
100	8,1	2,01	1454	5700
75	8,1	1,81	816	4800
60	7,6	1,66	521	3400
50	8,4	1,06	485	3300
25	7,9	0,90	190	1400
15	7,0	0,53	112	860
0		0,20	6	0

Vertical arrows on the right side of the table indicate a downward trend in conductivity, cationic demand, and turbidity as pulp percentage decreases. A curved arrow on the left side points from the 100% pulp row towards the 0% pulp row, indicating a transition to destabilization.

DESTABILIZATION

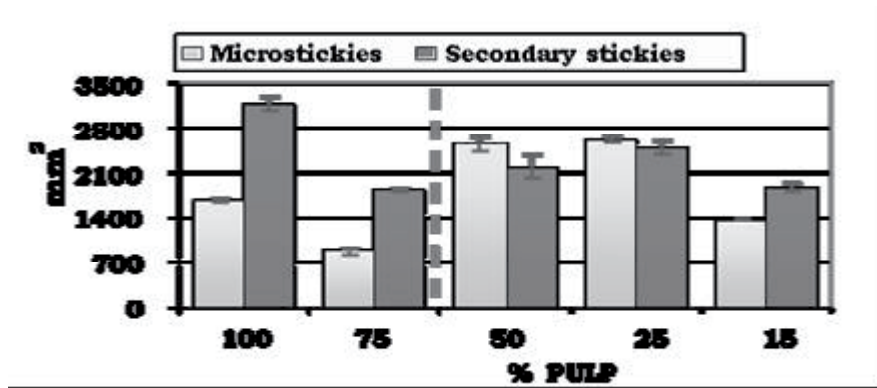
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RESULTS: DILUTION EFFECT



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PULP DILUTION WITH FRESH WATER



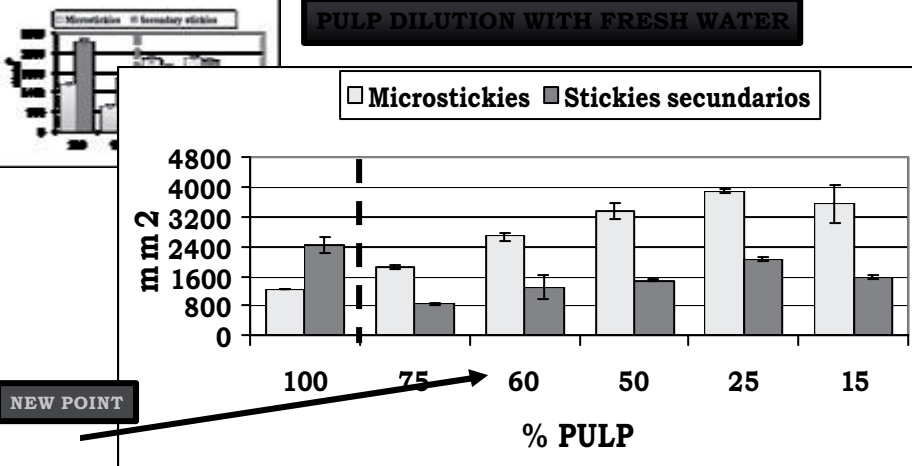
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RESULTS: DILUTION EFFECT



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PULP DILUTION WITH FRESH WATER



SAMPLING BEFORE MILL STOP → MORE CONTAMINANTS
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RESULTS: DILUTION EFFECT

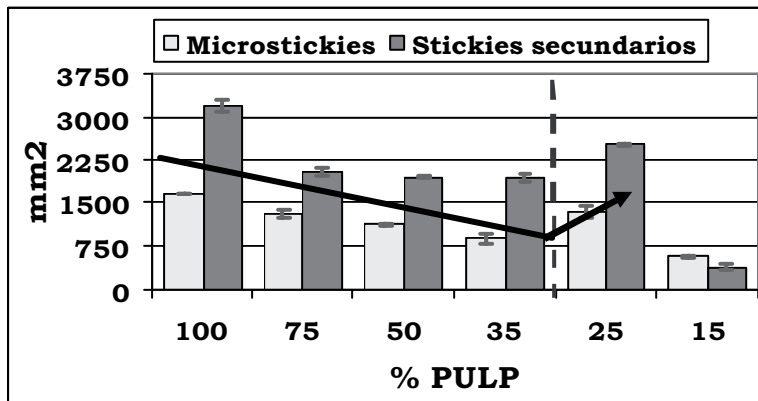
OBJECTIVE

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PULP DILUTION WITH PROCESS WATER



Destabilization happens at higher dilutions

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RESULTS: DILUTION EFFECT IN PROCESS

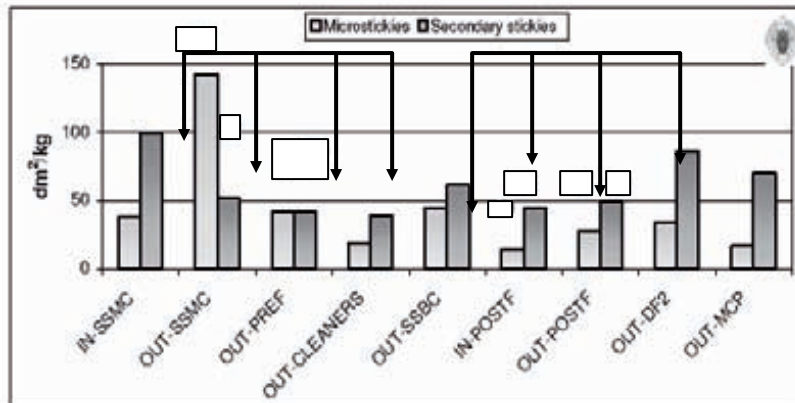
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EFFECT OF DILUTION RESULTS

CONCLUSIONS

Dilution produces an increase of microstickies along the deinking line



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CONCLUSIONS

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- Pre-treatment processes may affect the microstickies measurements.
- The produced effects depend on the sample nature.
- Dilution produces an increase of microstickies and secondary stickies due to a shock of CD
- The shock is produced with a 40% of CD variation
- Therefore

Dilution

White Water/Fresh Water $< 1/4$

Pulp/Fresh Water $< 3/5 - 3/4$

Pulp/Process Water $< 1/4$

TO AVOID
DESTABILIZATION



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