

FIBERCARE®  
REFINING  
CASE STUDY

## **Case Study 1**

Refining Capacity Improvement & Refining Energy  
Reduction with FiberCare® on Fine Paper  
Production at Mill 1

## Trial Situation

Mill targets: Increase refining efficiency

- Increasing refiner throughput
- Reducing refining energy

Mill problem: Lower Refining Capacity

## Trial Situation

Paper grade: 120g/m<sup>2</sup> offset paper

Machine speed: 150m/min

Furnish: 30% bleached softwood kraft pulp / 25% APMP

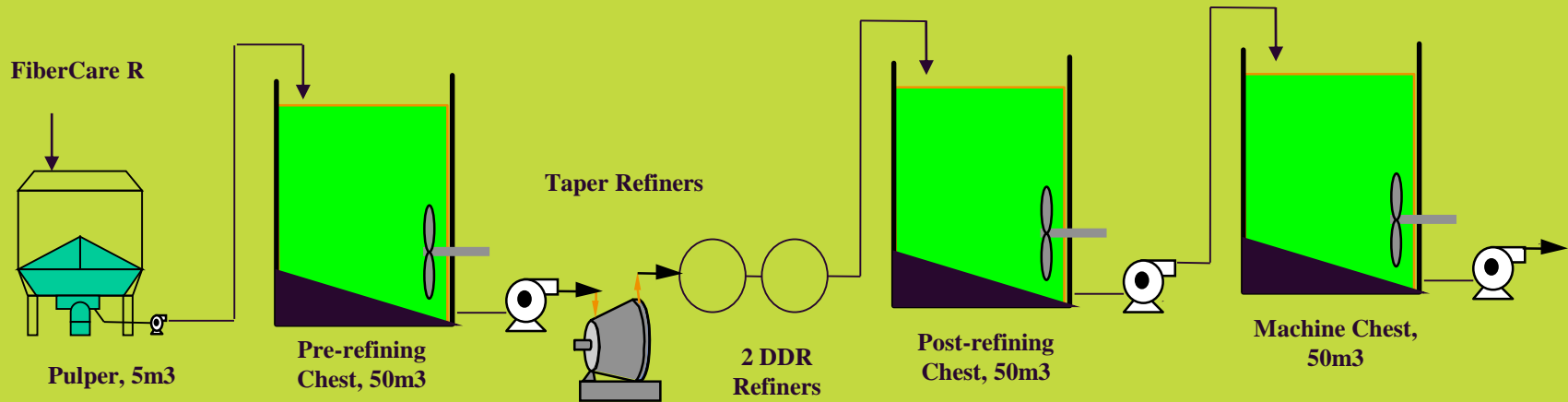
Aspen pulp / 45% wheat straw pulp

Enzyme treated pulp: Bleached softwood kraft pulp

Pulp and white water situation:

- Pulp in Hydraulic Pulper: T = 20.3°C, pH = 7.56
- White water: T = 18.7°C, pH = 7.89
- Post-refiner Pulp: T = 25- 30°C

# Trial Situation



Enzyme: FiberCare R

Adding point: Pulper

Enzyme dosage: 110g/t

Enzyme treatment time: around 2 hours before refining

## Trial Situation

Bleached softwood kraft pulp refining

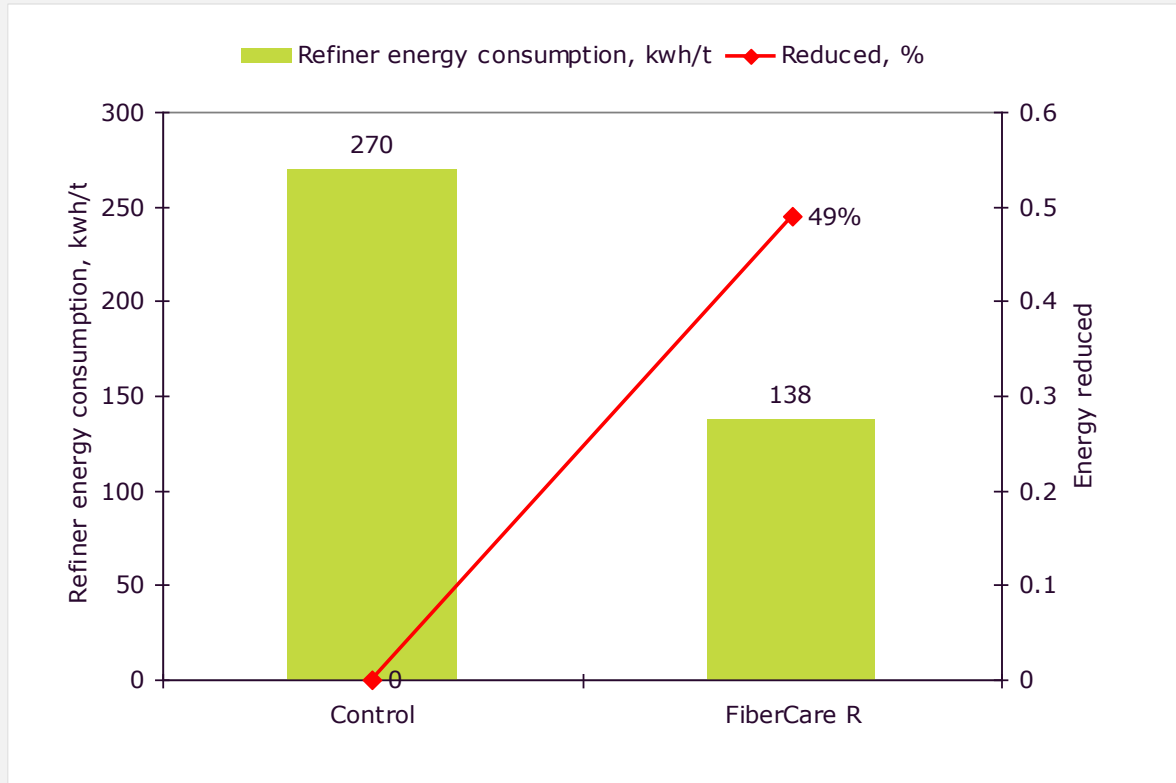
- Before refining: 13°SR
- After refining: 30-32°SR,  
12-12.5g (wet weight)
- Refiners: 1 set of taper refiner + 2 sets of DDR refiners

# Trial Situation-Refiners

	Pre-trial	FiberCare R
<b>Taper refiner</b>	160A	105A
<b>1<sup>ST</sup> DDR refiner</b>	208A	190A
<b>2<sup>ND</sup> DDR refiner</b>	200A	185A
<b>Refining time</b>	120min	73min

- Same refining pulp consistency: 3.2%
- Final refined pulp: 32°SR, 12.2g
- No change in pipe valve openness
- Same amount pulp for refining: 1.6t

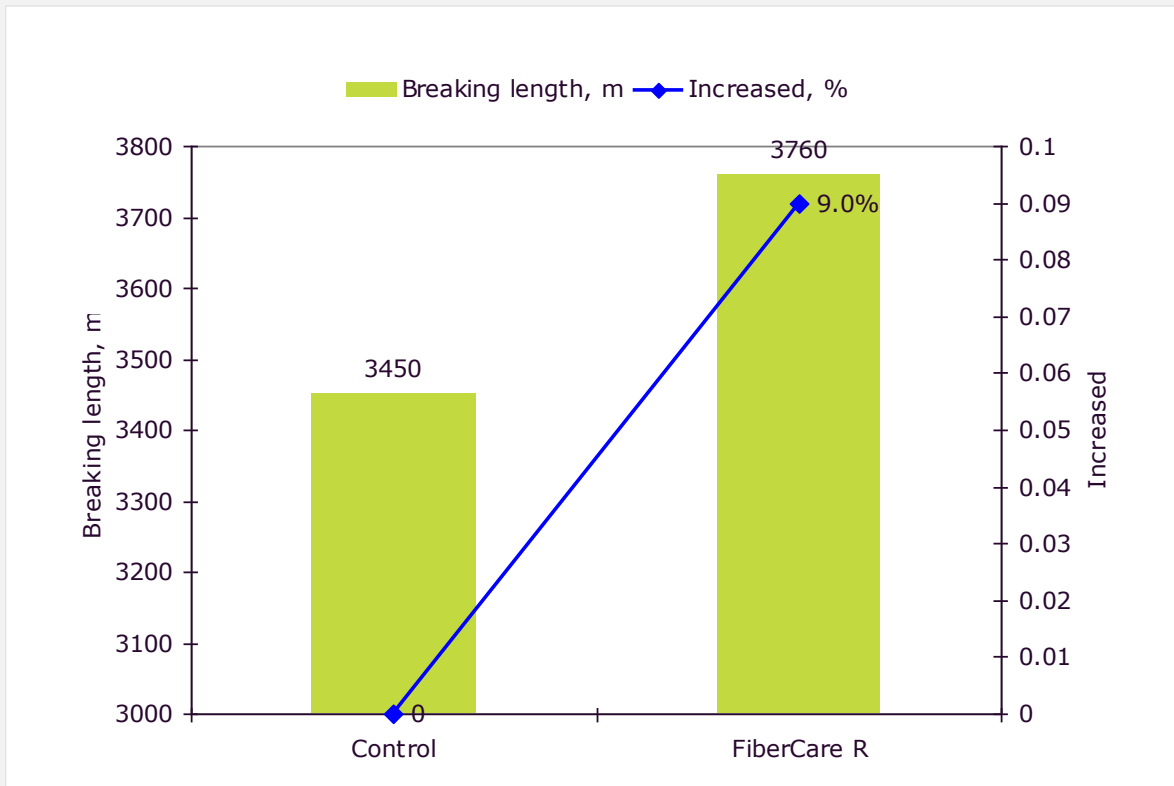
# Trial Result-Refiner energy consumption



- Saved 132kwh/t refining energy with 0.11kg/t FiberCare R;
- Reduced 49% refining energy.

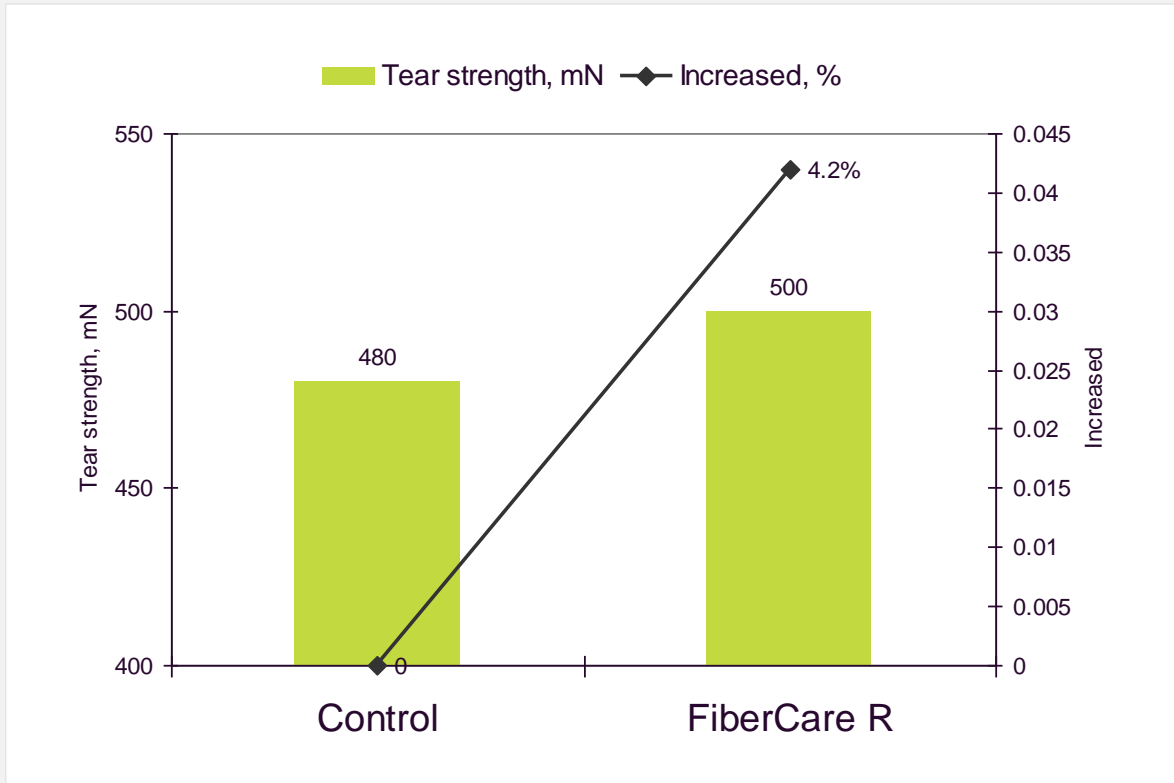


# Trial Result-Strength improvement



- Increased 9% breaking length with 0.11kg/t FiberCare R

# Trial Result-Strength improvement



- Increased 4.2% tear strength with 0.11kg/t FiberCare R

# Trial Conclusion

- 0.11kg/t FiberCare R
- Reduced 49% refining energy, saved 132kwh/t refining energy
- Increased 9% breaking length
- Increased 4.2% tear strength

THANK YOU

