CHAPTER 6
6. CONCLUSION

1. It is not only the retting water but also the soil quality parameters significantly influenced jute fibre quality. Important retting water quality parameters were: pH, COD, Hardness, Fe content and microbial count. Important soil parameters were: pH, OC, micronutrient content, microbial count and enzyme activities.

2. Continuous retting in same stagnant water bodies produced poor quality of jute fibre.

3. Most of the pectinolytic bacterial isolates from jute retting water were Gram +ve rods and spore formers. The genus Bacillus was dominant. Other notable microorganisms were Agrobacterium, Microbacterium, Acinetobacter, Serratia, Stenotrophomonas, Citrobacter and Enterobacter. These organisms were not previously reported as jute retting bacteria.

4. Retting bacteria with high pectinolytic and xylanolytic activities, and with little or no cellulolytic activities are good choice for retting purpose.

5. Selected bacterial strains with above characteristics in consortia are helpful in improving strength and fineness of jute fibres and reducing the retting period. The selected consortia should be effective irrespective of localities.

6. The BIOLOG and PCR-DGGE analyses depicted that bacterial communities in retting water changed with the progress of the retting process, with subsequent change in their metabolic profile.

7. Jute retting involves the participation of diverse microorganisms, both viable culturable and viable non-culturable, with variable metabolic activities. Further studies should be conducted to explore the contribution of viable but non-culturable bacteria in jute retting process.