



Edible mushroom production on recycled fibre rejects

The aim for this project was to develop an integrated industrial chain using fiber rejects (current wastes from pulp and paper industry) for a combined mushroom and fuel production. Fiber rejects are used as initial substrates for mushroom production and spent mushroom substrates are recycled as biofuel.

This project studied the possibilities of developing an integrated industrial chain using fibre rejects for a combined mushroom and fuel production in Sweden – fibre rejects as growing substrates for mushroom production and recycled spent mushroom substrates (SMS) as biofuel.

Major results include:

1. Fibre reject from waste paper is identified as suitable feedstock for immediate use for mushroom substrates, and the resource is as much as 2 100 tons of dry mass from SCA Obbola alone annually
2. Oyster mushrooms grow and fruit well on the selected reject substrate and the yield was as high as 469 g fresh weight per kg dry substrate
3. Produced oyster mushrooms have good nutrition and no problems of heavy metals
4. The SMS can be good fuels for direct combustion but co-firing is preferably recommended.

Our results show not only new knowledge but also a promising possibility and potential to develop a process integration of combined mushroom and fuel production using recycled fibre rejects from forest industries.

Project facts

Project name: A new approach for edible mushroom production on recycled fibre rejects and the use of spent mushroom substrate for heat and electricity production

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