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'Clean' technology to produce white pepper

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Enables easy removal of skin from black pepper

Process also yields methane gas as a by-product

THIRUVANANTHAPURAM: Scientists at the National Institute for Interdisciplinary Science and Technology (NIIST) here have developed two key technologies for environment-friendly production of white pepper and extraction of coir.

Developed by V.B. Manilal of the Process Engineering and Environmental Technology division, the microbial process for production of white pepper enables easy removal of skin from black pepper. It is claimed to be simpler, more cost-effective, pollution-free and faster than the conventional method of mechanical stripping or chemical treatment. The process also yields methane gas as a by- product.

The patented method has been put into operation by the Mananthavady-based Wayanad Social Service Society (WSSS). According to Dr. Manilal, the technology helps to achieve better quality of white pepper that is much in demand. "It is designed to overcome the drawbacks of the conventional methods of retting or manual decortication."

The microbial process uses enzymes to degrade pectins, the cementing tissues present in between the skin and oil glands on the pepper kernel. The WSSS is in the process of building a bigger plant to meet export demand. The new unit will also have a biogas plant.

Extraction of plant fibre

The other technology for clean bio-extraction of coir and other plant fibres also uses microbial technology to produce enzymes for clean separation of fibres from their matrices. The organic residue generated by the process is converted to methane that can be recovered for fuel.

According to NIIST Director T.K. Chandrasekhar, the landmark technology has wide application for extraction of plant fibres like jute, sisal, banana and pineapple leaf. It replaces the traditional method of retting in which the plant materials are left to decay in humid conditions or in water to free the fibre from matrices.

The emission of methane and sulphide during the retting process is a major source of environmental pollution and contribute to greenhouse gases.

Ajit Haridas, Scientist-in-charge of the Environment Technology section, said the bioprocess technology would help achieve better quality, speed and pollution control. The process was fine tuned after a series of laboratory and pilot plant experiments.