

2nd International Conference on **Agricultural & Horticultural Sciences**

Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

Design and development of bio-sorbents for oil adsorption

N Ankitha, Preethi B, Swati Sharma and Nagashree N Rao
R V College of Engineering, India

Kapok fiber, *Ceiba pentandra* (L.) Gaertn., Family Bombacaceae trees, which originated in tropical India, are found widespread in several plantations in Southeast Asia. Kapok fiber is significantly hydrophobic. The chemical composition was analyzed, and the chemical structures were characterized to understand the high hydrophobicity of the fibers.

Marine oil pollution results from land runoff, vessels and pipelines accidents, offshore petroleum exploration and production operations, shipping activities and illegal bilge water discharges. The world is facing a great risk from petroleum product contamination in the environment. The risks are greater during transportation, transfer and storage. Numerous oxygenated products such as aromatic, aliphatic, benzoic and naphthanoic acids, alcohols, phenols and aliphatic ketones result due to the photolysis of oil.

The use of sorbent materials for oil removal is an attractive principle. Natural sorbents such as cotton, wool, milkweed and kapok fiber are used. Kapok fiber show better performance than most other sorbent materials. The hydrophobic-oleophilic properties of kapok fiber are determined by factors such as the chemical constituent of the sorbent, the amount of the surface wax, the physical configuration of the fiber such as the hollow lumen, the twists and the crimps, and the surface roughness and its porosity.

Kapok fibers have been investigated for their properties and performance as oil sorbent for diesel and engine oil. The oil sorption capacity and kapok reusability were evaluated. Kapok fiber can adsorb 86% of engine oil and 43% of diesel. The suitability of kapok fibers as a sorbent for developing composites by comparing its oil adsorption capacity with other sorbents like cotton, polyurethane and polypropylene was carried out. Design and development of a composite blanket to adsorb oil and the relevance of kapok fibers as cheap and biodegradable oil sorbent was assessed. The study on the use of kapok fibers in oil adsorption lays a foundation for designing a large scale kapok fiber sorbents to be used in case oil spills and to combat environmental damage caused by oil spills.

Biography

N Ankitha is pursuing final year Biotechnology BE from R V College of Engineering. She has won national level paper presentation at NITK Surathkal. She has participated in the International Conference on Biotechnology and Human Welfare at Sastra University, Thanjavur. Her current project is related to Kapok Fibers and design and development of Bio sorbents.

ankithanarayan3@gmail.com

Management of root and bulb rot of garlic

R L Kalasariya, M A Vaddoria, Y A Kavathiya and J R Talaviya
Junagadh Agricultural University, India

The garlic (*Allium sativum* L.) is an important vegetable crop grown all over the country. Its productivity is quite low and the crop is known to suffer from several diseases. Among them, root and bulb rot is an important one. It causes severe damage to the crop, particularly in the Saurashtra region of Gujarat. Hence present investigation was carried out to find out best management of the disease. Among different treatments highest bulb yield 7778 kg/ha and lowest disease incidence 7.39% was observed in seed treatment of *Trichoderma harzianum* at 30 g/kg seed + soil application of *T. harzianum* at 2.5 kg in 500 kg FYM/ha + drenching with *T. harzianum* at 5 g/lit at 15 DAS.

Biography

R L Kalasariya completed his BSc (Agri) and M.Sc. (Entomology) & continuing with Ph.D. (Entomology) at the age of 27 years from Junagadh Agricultural University, Gujarat and his working as Senior Research Fellow, Vegetable Research Station (Onion & Garlic) at Junagadh Agricultural University, Gujarat.

rkalasariya@ymail.com