**Lignocellulose biodegradation**

Today our planet is facing serious aftermath of human activities in the form of pollution. The science think tanks are trying to reverse the ill effects of their inventions. They are trying every possible way to cut down the pollution from our environment. The landfills are the basic source of bio fuel production. These landfills are on an incredible rise since the population on planet is increasing tremendously.

Bio fuel has turned out to be an alternative for carbon fuel. It is equivalent to carbon fuel in terms of efficiency and performance. This is considered to be a future solution to the landfills. Around the world there are numerous facilities that are being run on bio fuel. These facilities not only consume their own garbage but also promote environment friendly microbial flora to flourish around and consume other waste products. This not only increases the soil fertility but also enhances the metabolic activity of these environment friendly microbes.

One such category of these biodegrades is the anaerobic fungus which is a potent decomposer of lignocellulosic bio mass. They are efficient biomass degraders and are known to be promising agents for the fuel and chemical production from lignocellulosic bio mass.

DR. Mostafa Elshahed from department of microbiology and molecular genetics, State University of Oklahoma shed light on the usefulness of this aspect of biodegradation in an interview. He explained lignocellulose bio mass as the dried plant reserves that are left to decay. He further added the importance of this bio mass for the production of bio-ethanol. He classified the lignocellulose as the virgin biomass, waste biomass and the energy crops. Decomposition of all of these result in the release of monomers of sugars that serve as the basic nutrient for other microbial flora in the environment. Dr. Elshahed has the experience of studying this field of biodegradation for quite some time. He explains the effect of temperature on these anaerobic fungus as well. His studies have been published in well reputed journals of microbiology and science.

He further urges that biodegradation must be explored on natural ways and further added the importance of adopting natural ways to get closer to the nature. Production of bio fuel from such sources is cheap and effective. He urges for providing facilities and knowledge for the ordinary people so that the process does not come to a stop and we keep on exploring nature at its best.

During his research, he found certain members of the fungi kingdom very helpful in lignocellulose biodegradation, hence converting the plants into useful fuel. He also checked certain parameters like temperature, moisture, pH etc. that affect the enzyme based activity of fungus during this process. He also worked to identify the 16s ribosomal RNA analysis of the members of the phylum Neocallimastigomycota and studies its phylogenic properties.

“Future holds a good promise with this nature’s gift of keeping balance in the environment” said Dr. Elshahed. I think we being responsible humans must help people like him to explore the nature at it wildest.

Refernces:

* Biofuel production from lignocellulosic biomass using of members of the anaerobic fungi (Phylum Neocallimastigomycota): A dual bioprospecting and strain development strategy. PI
* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5222902/