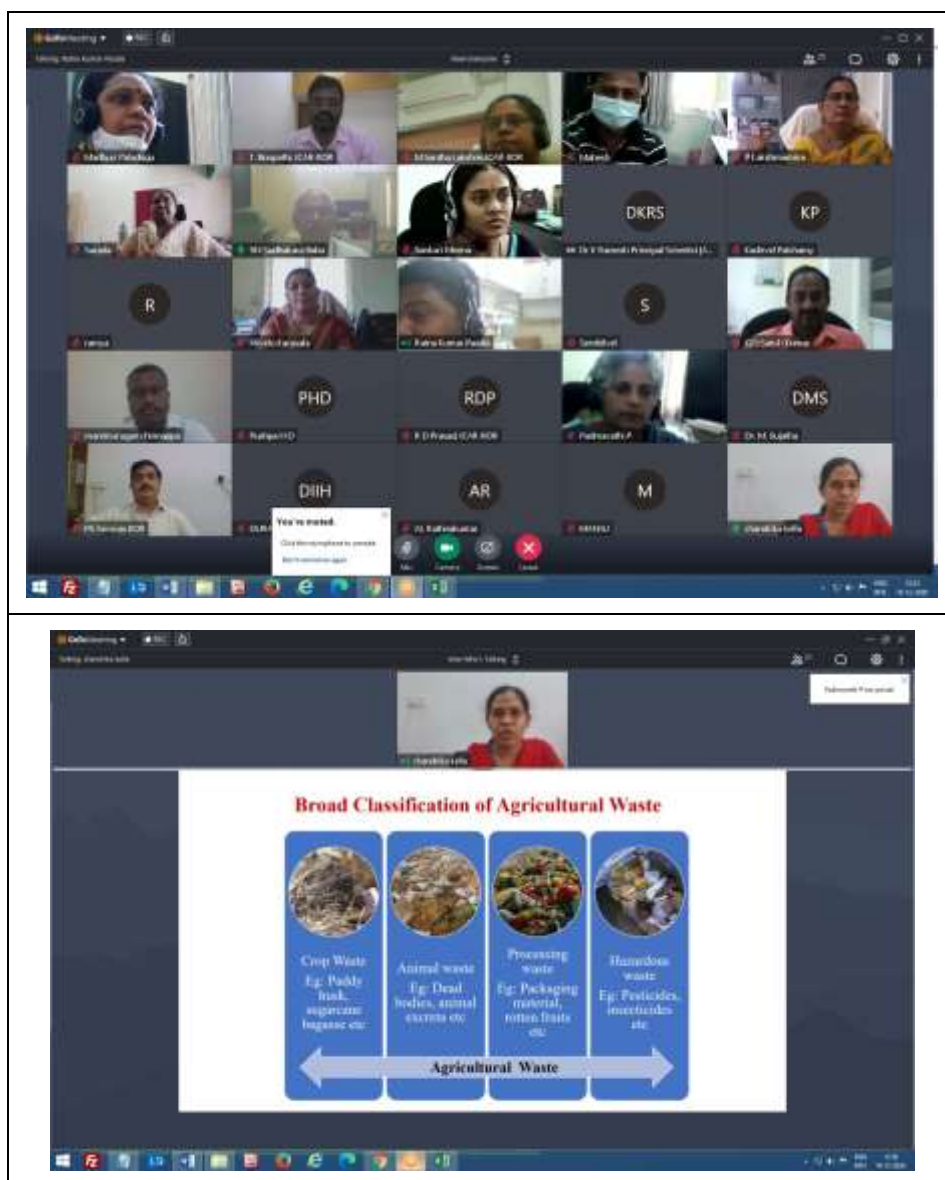


Report on ‘Swachhta Pakhwada ’
at
ICAR – Indian Institute of Oilseeds Research, Hyderabad
(December 19, 2020)

As per the directions from the council, ‘Swachhta Pakhwada’ activities are being conducted at ICAR-IIOR. The activities scheduled for December 19, 2020 were conducted at IIOR: a Talk on Agricultural Waste Management - “**Redesigning of lignin from agricultural wastes to commercial use in agriculture and food industry**” through VC presented by Mrs. Chandrika at 11.30 AM and it was participated by IIOR staff. Employees of ICAR-IIOR were participated with enthusiasm and great attentiveness. Swachhta Pakwada posters were also displayed to create awareness of Swachhta.

A talk on Agricultural waste management at ICAR- IIOR, Hyderabad



Zoom Meeting User Name: Sanyal

Chandrika Saha

Challenges with burning of AW

In India 488 Mt of total crop residue was generated during 2017, and about 24% of it was burnt in agricultural fields. This resulted in emissions of 824 Gg of Particulate Matter (PM₁₀), 812 Gg of PM_{2.5}, 58 Gg of Elemental Carbon (EC) and 239 Gg of Organic Carbon (OC). Additionally, 211 Tg of CO₂ equivalent greenhouse gases (CO₂, CH₄, N₂O) were also added to the atmosphere.

Basinda et al., 2018

Zoom Meeting User Name: Sanyal

Chandrika Saha

Composition of AW biomass

- Biomass from agricultural waste (field operations) comprises of carbohydrate polymers, cellulose, hemicellulose and an aromatic polymer called lignin.
- Cellulose & hemicelluloses are of carbohydrate category, the lignin fraction is a non-sugar molecule.
- Biomass consists of cellulose (40 to 43%), hemicelluloses (28 to 35%) and lignin (22 to 29%) depending on type of lignocellulosic material.

- Cellulose, a polysaccharide, is the most abundant organic polymer on earth, has linear chain of β (1-4) linked D-glucose units.
- Hemicelluloses are polysaccharides containing various monosaccharide subunits.
- Lignocellulosic materials consist of ~30% lignin by weight and 40% by energy.

Chen N. et al., May 2012; Energy (Pettak R H, Nokes D J. et al., 2007 & Bessiot B. et al., 2012).