

Desiccator Technology for Crops Stubble Management



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Crop residues are the different parts of the plants (roots, shoots, grain, tubers, etc) left in the soil when crop is harvested. In Pakistan, 40 billion tons stubbles are produced annually, share by cereal crops is 75% and 25% by other crops. Crop stubbles sometimes have been used as wastes but they require attention for disposal. Most of the farmers get rid from this precious source of soil organic matter and nutrients by burning (82%), used as fodder (7%), composting (5%), cooking fuels (2%), soil incorporation (1%) and other different uses

(2%). Burning of fields after harvesting of wheat, rice and sugarcane crops is very common practice. This practice is not desirable due to many reasons such as polluting the surrounding area (smog), destruction of soil structure, evaporation of surface water, killing of beneficial microbes, nutrients losses and most important wastage of precious organic matter. Farmers have no other choice except burning because incorporation or mixing of these crops residues break implements used for the incorporation of crop residues. On the hands, proper management of crop residues can improve soil organic matter level that in turn improves fertility and productivity of the soil.

Different field experiments conducted at Institute of Soil and Environmental Sciences, University of Agriculture, Faisalabad provided encouraging results on use of 'desiccator' to dry and brittle residues within days and then ploughed under the residues, followed by urea, molasses and bacteria application for quick decomposition of residues and converting into compost in the soil. Residual effect this treatment was tested on succeeding maize and wheat crops.

The results revealed improvement in soil physico-chemical properties and maize growth parameters as 44% in plant height, 36% in cob length and 31% in grain yield over burning treatment (Fig 1). Overall results suggested that application of desiccator in combination with urea and decomposing bacteria can properly manage wheat residues to enhance quality and health of soil for next crop.

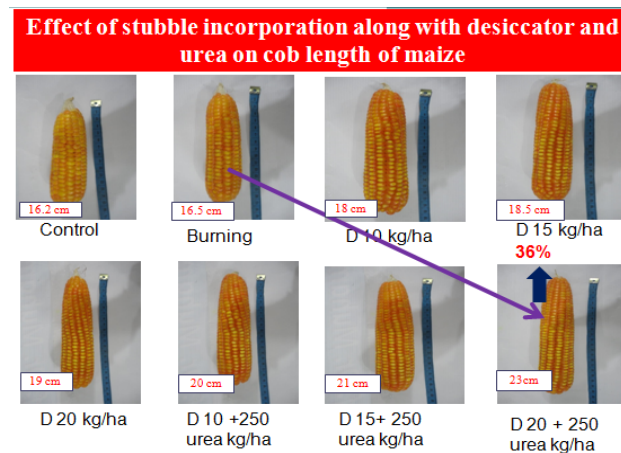
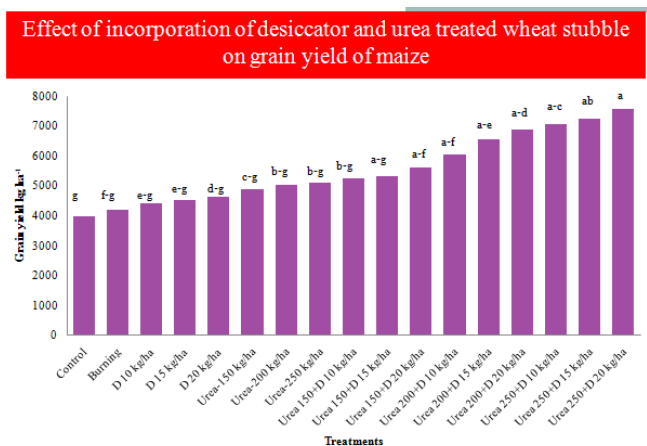


Figure 1: Effect of desiccator on wheat stubble management and succeeding maize crop

Out Come:

- Overcoming environmental pollution
- Improvement in health, fertility and productivity of soil
- Improvement in fertilizer and water use efficiencies
- Enhancing yield of succeeding crops up to one year
- Reduce economic losses
- Ensure sustainable crop production and food security

Message:

Stop burning of precious source of organic matter



- Crop residues are source of SOM- Heart of soil
- Maintain it to keep soil alive and productive