

Shredder:

Shredder is an attachment to the side of a tractor and run among the dry residues after the crop is harvested.

This helps in cutting the residue into small pieces of about 1 inch in length and putting them back into the soil. Further, ploughing helps in properly embedding these shredded pieces into the soil.

Why Farmers burn the residue?

With Severe shortage of labor and high wages, it has become expensive for farmers to cut the residue and dispose them outside the farm. Secondly, burning is the easiest way for the farmers to get rid of the residue.

The bulky nature of the straw and the high cost of transport make it economically unattractive to transport the straw from field to Homesteads for various uses.

Burning of farm residue is harmful in many ways

Foremost among them is to adversely affect the health of the people who dwell near the farms. Burning creates severe air pollution. People are affected by smoke and polluted air in farming areas and hundreds of Kilometers away from farms. In a study conducted by the Institute of Social Economic change, it was found that the people in rural Punjab spend about USD 1.2 million every year on the treatment of ailments caused by the burning of farm residues.

Loss of Carbon and Plant Nutrients

The loss to farmers, however, goes beyond medical expenses as their fields also lose out on essential nutrients and moisture. Farmers lose all the carbon and other nutrients when they burn the straw. Burning the residues year after year leads to severe degradation of the soil in the farmers' fields.

To put things into perspective, every tonne of straw holds about 15 to 20 kgs potassium, 5 to 8 kg of nitrogen, 1 to 2 kg of Phosphorous, 8 to 12 kg of Sulphur as well as significant amounts of other nutrients like Zinc, Iron and Manganese. If the residue is incorporated into the soil instead of burning, it would enrich the soil and maintain its fertility.

The irony of the situation is that the farmer then spends huge amounts on chemical fertilizers to replenish soil nutrients which not only adds to his cost of cultivation, but also cause the farm to become non- productive after a few years of continuous application.

GHGs emission

Residue burning releases CO₂ and other greenhouse gases which contribute to the depletion of the Ozone layer – aggravating global warning and climate change.

It is not legal

In many states of India, it has now become illegal to burn farm residues. However farmers continue to burn them as it is one such law that is difficult to enforce on millions of farmers in the country. Farmers resort to burning during the day instead of the night to avoid being detected by the authorities.

Griffith Sustainably Sourced (GSS) Steps in

Four years back as a part of our Rainforest Alliance requirement, we introduced our farmers to the ill-effects of burning crop residues and began to educate them to avoid this practice. Instead, they were asked to plough back the stems into the soil. However, this was not practical as the handful of farmers who tried this, came back saying that the long stems severely interfered with the planting operations. This was a genuine concern as the stems take more than 3 years to completely decompose.

We then advised them to move the residue to a compost pit and convert them into compost. Again the farmers showed resistance, understandably as this needed them to spend money on labor and transportation of the residue. Also, they needed to find a place to compost the residue.

We then thought about the idea of bringing in a shredding machine and this was implemented forthwith. However, farmers were once again reluctant, initially to try this out. The main reason was that the tractors owned by all of them did not have sufficient power to run this shredder effectively. This machine required tractors with higher than 45 horsepower and most tractors in use had a HP lower than 40.

Persistence Pays.

Any change introduced to farmers in not accepted easily. We need to keep pegging away till we see some acceptance creeping in. Giving up is not an option. Our Field Officers then looked around and found a tractor with the necessary HP capacity to run the shredder effectively. This was last season and in spite of all our training and addressing all the issues, only a couple of farmers initially came forward to use the shredder. However, with the persistent efforts of our Field Officers and their supervisors, 11 farmers used the shredder.

In fact, we charge farmers for the use of Shredder @ about USD 7.10 per day (Which cover max. 5 to 6 acres per day) . They also pay the tractor hiring charges directly to the tractor owners or farmers themselves drive the tractors.

With some modification to the shaft of the shredder that connects it to the tractor, at the beginning of this year, the machine is now finding greater acceptance among the farmers. Our farmers also grow cotton as an alternate crop. Currently, we have covered 65 acres of cotton farms, where harvesting was completed during February. The chilly harvesting would be completed by April and we expect many more farmers come forward to use the machine.

The Impact

Our Team has thus far in this season, prevented Cotton Plant waste being burnt on 65 acres of farm. Thereby, we facilitated, in a small way to maintaining cleaner air and also to help enrich the soil without the use of chemical fertilizers. This is Griffith Foods' contribution to give back to the community we operate in. As we diligently keep on pressing the use of the machine, we hope that by the end of this season, we would have impacted a large number of farms and acreage. The best is yet to come.....