JUST AGRICULTURE
multidisciplinary e-Newsletter

Practice of Stubble Burning - Woes of Policymakers

Dr.Smriti Singh
Assistant Professor, Sanjeev Agrawal Global Educational (SAGE)University, Bhopal

ARTICLE ID: 66

Crop residue burning (CRB) is popularly known as stubble burning. Stubble burning is a persistent issue in north India, every year it engulfs the whole of North India in its fumes. CRB results in severe negative aftermaths on both human health and the environment especially now when the Covid-19 pandemic is so rampant to cause respirational distress. Still, this practice is adopted by farmers in many parts of the country, because it is believed to be the most cost effective and time-saving solution for clearing out excess straw from the field. So, the farmers are in a state of hurry to sow their wheat crop and to clear the excess stubble in the field, they opt for burning instead of spending heavy cost on manpower

Stubble/ Residue/Chaff

Stubble or residue is the left over or remaining material after the harvest of crop. In other words all the plant parts other than economically important material is known as residue.

Stubble Burning

Stubble burning is deliberate act of burning the left over crop residues in the field in order to start land preparation for sowing of the next crop. Setting up fire in the harvested crop fields to clear excess crop residues, to prepare the field for next crop is known as stubble burning.

Farmers found burning crop residue insitu is the easiest way to clear an agricultural field and begin land preparation for the succeeding crop. Moreover, most farmers prefer to use combine harvester for harvesting paddy crop and it leaves the rice straw behind it in the field itself. The presence of this stubble creates problem in sowing of wheat crop. So the most convenient option left with the farmers is to burn that stubble and to get rid of it, to fulfil the compelling need of wheat sowing. Crop residues are a rich source of nutrients such as nitrogen, potassium, phosphorus and sulphur, etc. So if it is incorporated back into the soil it will enrich the soil. But burning of these residues results in the direct loss of these nutrients and creates a nutrient deficit in the soil. Residue burning increases the temperature of the soil

JUST AGRICULTURE
multidisciplinary e-Newsletter

to a very high level, which is beyond tolerance limits of most of the soil organisms, thus resulting in death of beneficial soil microorganisms and other beneficial organisms like earthworms. Burning of crop residues also poses a major and challenging threat to the environment in the form of release of potent greenhouse gases such as carbon dioxide, methane, carbon mono oxide and nitrous oxide.

Alternate solutions to stubble burning:

Whether knowingly or unknowingly, the practice of burning stubbles/debris is creating lots of environmental hazards that need to be addressed immediately to safeguard the interest of humans and nature. Some of the possible solutions that can be used to solve the above problem include:

- Scaling up the use of Happy Seeder: Happy Seeder is an innovative agricultural invention that which can sow the wheat seed even in the presence of paddy straw. This machine cuts the rice straw, then lifts it and then sows the wheat seeds on the soil and later on spreads the straw in the form of mulch. Moreover, it doesn't get jammed while moving in the paddy stubbles.
- Super Straw Management System (SMS) is equipment that is attached to the combine harvester and it cuts down the paddy straw into very small pieces and then spreads it on the field, which later acts as mulch and provides additional benefits to the crop.
- Diversification of crops by adopting crop rotation, silviculture, agroforestry etc can potentially reduce generation of paddy straw. Further, some of the other high-value crops such as fruit crops, maize, sorghum, and vegetables could be grown as a replacement of rice crop.
- After harvesting, paddy straw can be utilized in other ventures like recyclable straw for drinking, cardboards, animal bedding, use in thermal power plants, biorefineries, biochar production etc.
- Stubble can be utilized as a viable and successful medium for mushroom cultivation.
- The use of PUSA Decomposer developed by the ICAR Indian Agriculture Research Institute (IARI), New Delhi could be a viable option. It is a microbial consortia of eight types of micro-organisms that assist in producing enzymes essential to accelerate the decomposition of bio-mass.

JUST AGRICULTURE
multidisciplinary e-Newsletter

- Regular supply of crop left over can ensure effective linkages of fodder and feed markets to the areas with deficit supply of fodder for farm animals.

Conclusion

The problem of stubble burning is a serious issue that needs to be addressed in a very sensitive manner. There is a need to create awareness in farmers about the consequences of it and they should be educated properly about the alternatives of stubble burning. A provision of subsidy by the government on stubble managing farm equipments such as happy seeder and super SMS can also help in stopping it subsequently.