

Problem Statement: Krishi Manthan

A Case Study Competition

One of the most significant health hazard problems that have been identified in the agricultural domain is **stubble burning** which has recently added even more problems as far as pollution is considered. The seriousness of the problem can be analysed by the fact that stubble burning in Punjab and Haryana together produced around 150 million tonnes of carbon dioxide and 9 million tonnes of carbon monoxide in addition to causing exposure to extremely high levels of Particulate Matter concentration to people in the immediate vicinity, particularly in Delhi.

Recently the Punjab government has received approximately 20,000 cases of stubble burning.

Most of the farmers of Punjab have already adopted modern farm machinery to harvest their crops. Now the Punjab government is pressuring farmers to buy more machines to tackle the problem of burning stubble which is not justified financially for the poor farmers and hence compelling them to take loans so increasing their debt even more.

According to a farmer in Haryana burning paddy stubble is injurious to their health and environment but the farmers are economically too weak to sustain the huge capital investment required for the current machinery which manages stubble processing. Hence burning stubble is a compulsion.

Keeping in mind the above-mentioned issues proceed further.

- 1) Suppose “**Ballu**” a farmer of Ludhiana district in Punjab has been burning stubble after each harvesting season. He cultivates paddy with following specifications-
 - Total farm area of 10 acres
 - Crop spacing of 20 cm × 15 cm
 - A single stubble consists of 10-15 wheat straws of approximate height 15 cm.
- a) Carefully analyse the various drawbacks of burning the total stubble left out in his farm after harvesting paddy and justifying them with relevant mathematical calculations.

b) Now Ballu has realized that stubble burning has really adverse effects and hence he is searching for an alternative to stubble burning. So now he

approaches various experts working over this problem in various domains of science viz. Advanced farm machinery, biotechnology, crop production technology, chemical science etc.

Implement any one of them and analyse the current financial scenario given below in order to provide the best alternative solution minimising the net expenses incurred.

- Ballu has been paying a fine of Rs. 2500/acre to the government for stubble burning.
- The Labour cost for cutting stubble in his area is Rs 5000/acre.
- The total cost of employing the currently available machines in Punjab for this purpose is Rs. 7500 which includes the expenses of (Rent of machine+Diesel+Stubble processing)

2) As of the current scenario, the Punjab government provides a subsidy of Rs. 50,000 to the farmers who are equipped with agricultural machines which cut the stubble but the initial investment required by these machines is too high compared to the subsidy given.

Suppose Ballu is in the Ministry of Agricultural and Rural development of Punjab, what policies he should inculcate regarding stubble burning to reduce the sufferings of the farmers and provide a feasible economic solution to them.

Rules:

1. Only those teams are allowed to participate who have registered online.
2. A maximum of five members are allowed in a team and a minimum of 3. Teams can be formed irrespective of colleges.
3. Teams must mail their abstract (In pdf form of not more than 10 pages) to **contact@prkrt.co.in** with the subject of the mail as **“Prakriti2020_Manthan_Submission_abstract_team name”** before the deadline (On or before **8th March, 11:59 PM**).

4. The submission abstract or presentation must contain the team name, team members' name, contact number, and college they belong to.
5. All the teams must bring **3 printed copies** of the abstract for the judging team.
6. The presentation time of each team must not exceed **6 minutes** followed by 2 minutes of Q&A round.
7. Exceeding the time limit can lead to the imposition of penalties on the teams.
8. The decision of judges is final and binding. Team Prakriti reserves the rights to disqualify any team in case of violation of any of the above rules.
9. Certificate and prize money will be distributed in the Valedictory Ceremony of Prakriti.
10. Total Prize Money:- INR 10000.

Your queries will be answered here:

Amit Kumar Jha: +91 9304037602

Ateet Khandelwal: +91 8436948901