

THE HAPPY SEEDER AND ITS BENEFITS: RESULTS FROM THE DEMONSTRATION PROJECT IN PUNJAB

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ABOUT THE PROJECT

PAMETI-UNEP project was a demonstration project, fully funded by UNEP/CCAC and supported by ICCI, was carried out from 2017 to 2019. The project titled “Climate & Clean Air Coalition to Reduce Short-Lived Climate Pollutants” **informed, educated, motivated, and convinced the farmers to manage the crop residue by making use of all the available technologies**

BRIEF OUTLINE OF THE PROJECT

1. Implemented in six villages viz Bhoewali, Qiampur, and Rajjian villages of Amritsar district and Tungaana, Uppli, and Kanoi villages of Sangrur district
2. Happy Seeder, Mould-Board Plough, and PAU Straw-Cutter-Cum-Spreader were provided in these villages, to help the farmers manage the crop residue. A project staff of 2 project fellows and 4 demonstrators was employed.
3. Intervention such as farmer awareness camps, farmers-scientists meetings, field days, school awareness camps, door to door campaigning, farmer training camps, village-level workshops, visit to demonstration plots in PAU, BISA, and of progressive farmers and demonstrations of the machinery & equipment, and distribution of farm literature were carried out by the project staff to convince the farmers about the ways, means and relevance of managing the crop residue

BACKGROUND OF THE ISSUE

- + 2.9 million ha under HYV of rice-wheat rotation
- + Timelines of different field operations is a key element
- + Managing heavy rice stubbles is a major problem – 21 mt each year i.e. nearly 7t/ha (Hindrance in tillage & sowing)
- + 3.5 million ha under wheat , produces straw almost 20 mt i.e. 5-5.5 t/ha (Hindrance for paddy at the time of transplanting)
- + About 85% wheat straw is managed with straw making machines and 15 % is burnt in the field. But that 15 % is spread over in the 80% of wheat area
- + Apparently burning of stubbles seems to be a rapid and cheap option (Match box as Magic box)

ILL-EFFECTS OF BURNING

1. Soil health: Depletion of soil nutrients
2. Environment: Release of harmful gases
3. Human health: Respiratory issues
4. Animal health: Productivity of milch animals affected
5. Biodiversity: In addition to trees - their greenery and birds, it also affects micro flora and fauna
6. Traffic: Reduced vehicular movement

WHY FARMERS BURN THE CROP RESIDUE

- ↕ The farmers, in Punjab & Haryana, burn the rice residue as there is a narrow window (around 20 days) between the sowing of the wheat crop after the harvesting of rice crop
- ↕ There is also lack of awareness about the benefits accruing from the practices of Conservation Agriculture (CA), and at places and times, the requisite machinery to manage the stubble is found lacking
- ↕ Even wherever the machinery is available, the lack of skill in using such machinery/implements also becomes an impediment in the rice residue management

ALTERNATIVES TO OPEN BURNING

- The alternatives to open agricultural burning of crop residue in the state can be broadly categorized in to in-situ and ex-situ management.

In-situ management would be to plough the residue back in to the soil. It is done by two ways:
1. Incorporation
2. Mulching

Ex-situ management is to collect the crop residue from the field and use it for purposes such as fuel in biomass based power generation plants, biogas plants and brick kilns, as mulch in crops, as fodder & bedding for animals, composting for mushroom and in other industrial purposes such as briquetting/pelleting etc.

The burning of crop residue is becoming increasingly untenable, considering residue quantum burnt and its ill-effects.

TRAININGS AND DEMONSTRATIONS

Rice Residue Management Trainings

- * Conducted under PAMETI-UNEP project in collaboration with Department of Agriculture and Farmers' Welfare Punjab
- * Training for Farmers and Officials from the State's Agricultural Department, Soil Conservation Department and Department of Cooperation, Punjab

Demonstrations

- + Conducted at the farmers field by the project staff
- + The working of CRM machinery & implements was explained to the farmers through the PAMETI staff stationed at the respective villages
- + The project staff also took up the queries of the farmers with respect to the working of the implement

SNAPSHOTS OF TRAINING AND DEMONSTRATIONS



NUMBER OF TRAININGS AND DEMONSTRATIONS

- ± Total in-house RRM trainings conducted at PAMETI: 11
- ± Total persons trained in above trainings (Farmers & Extension functionaries): 395
- ± Total off -site (on farmers' fields) persons trained via farmer field days, demonstrations, farmer-scientist meetings, village visit etc.: 1120
- ± Total persons trained (395+1120) = 1515
- ± Total Demonstrations conducted: 39

BENEFITS OF USING HAPPY SEEDER

General observations

1. Time saving
2. Labor savings
3. Electricity saving
4. Suppression of weed population
5. Moisture retention
6. Decline in lodging
7. Soil health: Soil pH and Soil physical condition
8. Saving in Costs
9. Energy (fuel & oil) savings
10. Increase in productivity
11. Opportunity for additional crop
12. Environment cleaning
13. Reduction in terminal heat stress
14. Water saving: Saving of pre-sowing irrigation and reduction in 2nd and 3rd irrigation time

LEARNINGS FROM THE PROJECT

1. Farmer felicitation: Honouring the farmers boosts the CRM activities.
2. “Learning by doing” & “Seeing is believing.” There is no bigger motivation for the farmers to see the results on a fellow farmer’s field.
3. Changing the mindset: Regular social interaction and training of the farmers
4. Apprising and training the farmers about modern agronomic practices to be followed by using CRM implements such as Happy Seeder etc.
5. Regularly updating the farmers’ knowledge about the advancement in the field of CA
6. Supporting and hand-holding the farmers by some trained person in the village

AREA MANAGED IN THE ADOPTED VILLAGES

Area in acres managed by Happy Seeder provided under the project

2018

Amritsar	456
Sangrur	569.5

2019

Amritsar	385
Sangrur	497.5

Total 1908

Average use of Happy Seeder

2017-18: 169 acres/season

2018-19: 145 acres/season

SPECIAL HIGHLIGHTS OF THE PROJECT

1. Reducing open burning by 90% in the pilot villages.
2. Three villages in Amritsar viz Rajjian, Bhoewali and Qiampur were felicitated by the State administration for being no-burn villages in 2019
3. The percentage of area burnt in the villages of Sangrur was far below the State's Average of 43% in 2019
4. Successfully demonstrated the scalability of model of promoting no-burn alternatives by constantly engaging the farmers and the stakeholders

THANK YOU!