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### **Farmers Awareness Towards Crop Residue Burning: A Review**

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#### **ABSTRACT**

India most produces food grain, oilseeds, sugarcane, and other agriculture products. Agricultural crop generate considerable amount of residue. As food production increases crop residue also increases. Burning of crop residue is the major problem in western state of India which causing air pollution. In the month of November and March it is very high level of burning starts of remaining sugarcane residue left in the field after cutting. It causes the air and land pollution. No doubts this idea or process quickly clear the field and it is not very expensive that's why adopted by farmer but having serious health problem and land pollution problem due to stubble burning. The farmers are unaware about negative impact of crop residue burning on soil quality as well as air quality. There is need to create the awareness among the farmers through gram panchayats, NGOs, Krishi Vigyan Kendras.

**KEYWORDS:-**Crop, Burning, Pollution, Residue.

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## INTRODUCTION

Agriculture is the major part of the overall economy of India. In the different regions of India a wide range of crop are cultivated. Agriculture is the backbone of the state of Maharashtra. Almost 82% of the rural population depends on agriculture for live hood. Both of the food crops and cash crops are grown in the state. The main food crops of Maharashtra are mangoes, grapes, bananas, oranges, wheat, rice, jowar, bajra and pulses. Cash crops includes groundnut, cotton, sugarcane, turmeric, and tobacco. This crop produces crop residue. This crop residue uses such as animal feed, fodder fuel, roof thatching, packing, and composting. Back of previous years sugarcane leafs are used for roof thatching but now a days roof thatching is replace by slabs and AC sheets. So residue of sugarcane increases. Many farmers after harvesting sugarcane leftover residue is burnt openly on land.



Fig 1- Actual burning of crop residue on agri land

### Effect of crop residue burning:-

- 1) Loss plant nutrients such as nitrogen, phosphorous, potassium and sulphur.
- 2) Adverse impact on soil properties.
- 3) Increases ozone pollution.
- 4) The black soot generated during burning also results in poor visibility which could lead to increased road side incidences of accident.
- 5) Release of smoke causing human health problem.

## LITERATURE REVIEW:

### *Crop burning against the environment (Urmila)*

This paper gives lot of information related to pollution. Burning of crop residue is major problem in India which causing air pollution. After cutting paddy straw left in field in month of October high level burning in Punjab & Haryana. Due to high level of burning causes various

problem such as air pollution, land pollution, causes breathing problem to humans, loss of nutrient in soil can reduces nitrogen required for crop. There is no specific law to ban burning crop residue. In Haryana after burning crop residue in open field gives notice within 30 min declared by Deputy Commissioner & has advice direct the gram sachives & patwaris. Small pilot project launched by government based biomass power project for paddy straw. Various department making efforts to some alternative economic use of rice stubble. The crop residue can be used for fodder for animals, biothermal energy production, paper making etc.

### ***Emission of air pollutants from crop residue burning in India (Niveta Jain)***

This paper gives information crop residue and its effect. Crop residue gives emission of greenhouse gases, air pollution, & smoke causes threat to human health. Due to increase in population, productivity also increases. Increase in productivity also increases amount of crop residue. In previous decades crop residue can be used for animal feed, thatching of homes, for cooking fuel. Disposal of crop residue is major challenge. Different crop residue is major challenges in villages. Different crop categories generate different percentage residue. Burning of crop residue on farm in different state is variable depending upon pattern use in the farm. Due to burning of crop residue emits greenhouse gases, black soot also generate. This black soot responsible for accident.

### ***Case study of Punjab:-***

Punjab is main country barn contributing 1/4<sup>th</sup> share of rice and more than 1/3<sup>rd</sup> of wheat. After harvesting of rice crop residue farmers burnt the crop residue because short time should be available to prepare land for next crop. Burning of rice residue result in impact on land and off farm. Punjab government address air pollution caused by rice residue burning. Punjab government study the policies available to monitor air pollution and there mechanism. Find alternatives to reduce the pollution. This crop residue can be used for following purpose 1) Used as animal fodder, electricity generation, paper pulp industry. In Punjab wheat stubble is used for fodder more than rice stubble because rice stubble contain high content of silica which is harm full to animal health. 2) During winter season Paddy straw also used as bedding material for cross bed cow. 3) Paddy straw also used for cultivation of mushroom. 4) Bio oil is produce from straw and other agricultural waste. 5) Straw can also be used as fuel for thermal power plant.

### ***Existing use crop residue:***

- 1) In Punjab rice husk is used as fuel in mill which produces large amount of ash. Disposing ash is big issue in Punjab. Secretary of the state agriculture department and IAS officer found the use of rice husk ash to purify water. In cement and pebbles add rice husk and formed filtration bed which trap 95% of turbidity and bacteria present in water. This technique is

natural and cheaper than other techniques. Another way to use rice husk ash embedding with silver nanoparticles to create a bactericidal filtration bed. This is low cost project for profit household water purifier.

- 2) Wheat straw can be used in villages for roof thatching. Also sugar cane leaves used for roof thatching.
- 3) Maize waste is used for fodder and used as fuel.

#### **Suggestions to reduce the crop burning:-**

- Awareness among the people to reuse crop residue, causes of burning crop residue on land.
- Awareness about air pollution and its effect on environment and human beings.
- Develop and implementation of program related to pollution and adverse effect also banning on burning of crop residue.
- Awareness about alternatives use of crop residues.
- Crop residue can be used for making useful product like Compost. Organic manure to improve soil fertility.
- Arrange program related to utilisation of crop residue best way. NGOs, Krishi Vigyan Kendras which helps to arrange such type of program.

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