



Initiative for Plastic Waste management for Water Conservation

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Abstract: *Plastics are one of the most dangerous threats to the modern world. Recycling of plastics in effective manner which can be used in agriculture for water conservation is being tried out in a small scale manner and it is found effective in conservation of water. More than 60 % of water can be saved instead of water loss due to evaporation.*

I. Introduction :

In modern days so many cities and towns have been developed within shorter span of time. As the years passed by resulting our society changed a lot . In recent years, the economy of the current world has attained significant economic and social development. Corporates now adopted with market based policies and the active public - private participation in the construction sector has contributed massively to this development process. Even though major financial and communal progress has been made, this has effected in the environmental degradation and depletion of our natural resources . The investigation of long term results of economic growth clearly indicates so many toxic wastes are daily emitted into our environment. The heart of the environmental issues are problem is the producer attitude and consumer needs. Without the financial system, most environmental problems are simply research questions of concern with no policy significance. Afcons is now working on trial basis on how to manage plastic waste into effective manner.

II. Plastics and its types :

There are so many wastes which degrades the environment so badly. of which plastics takes a significant place . It is calculated that approximately 10000 tons per day of plastics waste is generated (9% of 1.20 lakhs TPD of MSW in the country). This plastics waste comprises two major category of plastics (i) Thermoplastics and (ii) Thermoset plastics. Thermoplastics, constitutes 80% and thermoset constitutes approximately 20% of total post-consumer plastics waste generated in India. The Thermoplastics are recyclable plastics which include; Polyethylene Terephthalate (PET), Low Density Poly Ethylene (LDPE), Poly Vinyl Chloride(PVC), High Density Poly Ethylene (HDPE), Polypropylene(PP), Polystyrene (PS) etc. However, thermo set plastics contains alkyd, epoxy, ester, melamine formaldehyde, phenolic formaldehyde, silicon, urea formaldehyde, polyurethane, metalised and multilayer plastics etc. The environmental impacts due to the improper handling of plastics waste include the following aspects:

- Thrown plastics destroys beauty of the locality and choke drains and make significant public places mucky;
- Rubbish containing plastics, when burnt will cause air pollution by emitting poisonous gases;
- Waste mixed with plastics obstructs in waste processing facilities and may also cause problems in landfill operations; (<http://www.cpcb.nic.in/139-144.pdf>).

III. Waste to useful

All the plastics which are collected and can be recycled and rolled in a form of sheet with a minute pores. This plastics can be used in agriculture to cover the entire crops . As there are minute pores on the plastic sheet, which will allow air circulation. Also plastic sheet will condenses the water which gets evaporated from the soil and that water is again back to the soil itself. This will reduce the water supply for the plants and trees. This in turn reduces the energy consumption of water supply. More than 60 % of water can be saved due this method. This will result in conservation of natural resources and also prevent the soil from becoming Arid in the places where hot climate prevails

IV. Technical details

Size of the Polyethylene sheet = 10 mt x 5mtr x 0.1 mm (For Agricultural use)
= 10 mtr x 1 mtr x 0.1 mtr (For Plantations)

Pore size = 100 microns

Distance between subsequent pores 100 cm

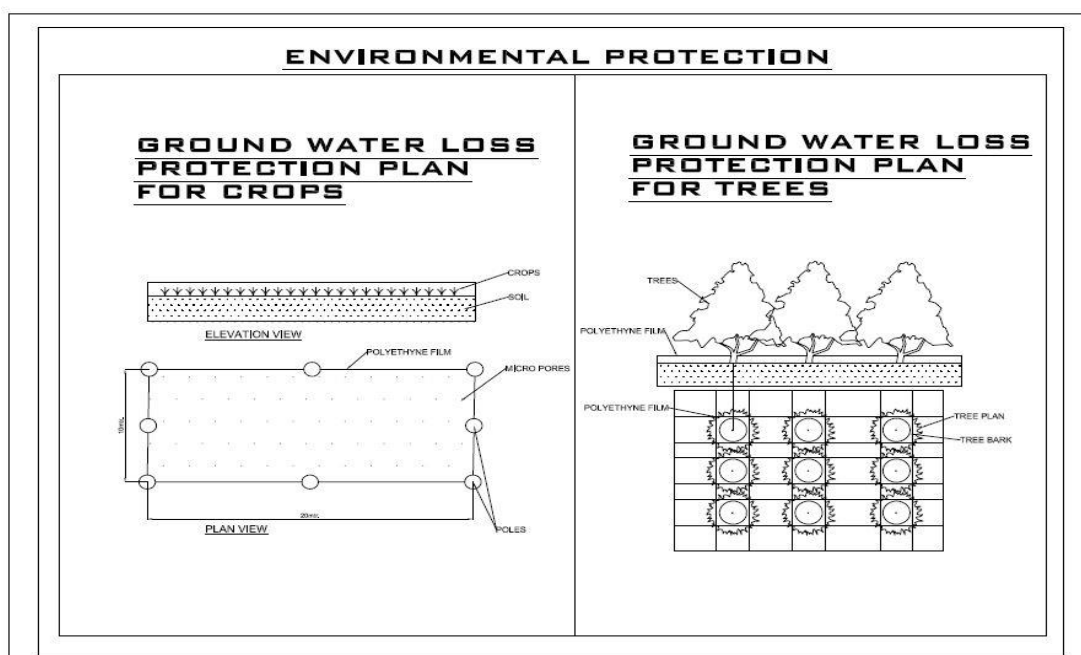


Fig. 1 Plan of protection for water using waste plastics

V. Economics

- Since all waste plastics are recycled to sheet form, it will be useful to the below all
 - People who collect from garbages will have a good income when selling local merchants
 - Local merchants will sell that plastics to Wholesale agents
 - Whole sale merchants will sell it to recyclers
 - Recyclers manufacture that and sell to markets
- Supply of water to crops and plantations gets reduced considerably, which in turn reduces the man power and electricity
- Even if the Plastic sheet is torned we can replace with a new one and old sheet can again be recycled
- Cost of purchase of water is avoided

A few hundred rupees on making this type of plastic cover will save many thousands of rupees for Electricity and man power.

Approximate Initial expenses for making 60ft x 40 ft Land = Rs. 300 (including posts etc.)

VI. Environmental Protection

Burning of plastics will produce toxic gases and it will contaminate the natural air. Dumping the plastics along with garbage in landfill areas will affect the movement of ground Water and also plastics takes so many years to degrade.

The Same type of sheet can be used for small ponds and wells for better water management in order to control the evaporation loss in the ponds during summer season.

VII. Conclusion

Plastics can be used in water shed management for the better conservation of water in all aspects. Instead of disposing or dumping the plastics this method will found better usage of wastes.

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