

## ENVIRONMENTAL POLLUTION- ALTERNATIVE METHODS TO CONTROL POLLUTION

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### ABSTRACT

Environmental concerns are gaining lot of interest due to increasing environmental pollution. Pollution is caused from various sources like fuel, lubricants, industrial waste, chemicals, noise etc.

One of the major source of pollution is lubricant as it directly affect the environment when it is handled improperly, as lubricants from petroleum based oils have very poor biodegradability and also have high toxicity.

Environmental pollution can be controlled by the use of biotechnology in the field of alternative lubricants from different available biomass. The current paper deals with the ways of reducing the environmental pollution by various alternative resources.

### ALTERNATIVE METHODS TO REDUCE POLLUTION

#### Types of pollution

1. Water pollution
2. Air pollution
3. Land pollution
4. Soil pollution
5. Noise pollution

#### 1. INTRODUCTION:

**1.1. POLLUTION PREVENTION:** Pollution prevention is source reduction and other practices that reduce or eliminate the creation of pollutions through the increased efficiency in the use of raw materials, energy, water or other resources, or the protection of natural resources by conservation. Pollution Prevention's basic principle is that waste is the result of inefficiency, whether it is from management, production, materials selection, operations. Or from the organization's/society's general culture. Therefore, by reducing waste through increased efficiency, an organization can increase its productivity. Likewise, the environmental and health benefits from pollution prevention are clear: waste that is never created does not pollute, and therefore cannot harm the Public's Health source reduction otherwise released into the environment associated with the release of such substances, pollutants or contaminants.

Recycling, energy recovery, treatment, and disposal are not included within the definition of pollution prevention. Examples which do not constitute pollution prevention may include, but are not limited to, the following.

- Sending waste or toxic chemicals off-site for management other than environmentally sound recycling:
- Incineration or other thermal treatment:
- Treatment to reduce toxicity:
- Use of Equipment to reduce water content and volume.
- Installation of end-of-pipe equipment to comply with pollution control regulations.

#### 2. ROLE OF INDIVIDUAL IN POLLUTION PREVENTION

This section describes how consumers can incorporate pollution prevention measures such as water conservation and energy efficiency into their daily lives. Individuals can undertake a wide range of pollution and prevention activities that offer environmental and economic benefits. The extraction and use of raw materials creates pollution and used energy. By changing the way we use products and resources Specific benefits of Pollution Prevention activities include.

Cleaner air water,  
Less solid waste in landfills,  
Conservation of natural resources,  
Reduced soil erosion,  
Savings on electric and water bills,  
Increased property value.

The following activities help consumers prevent pollution in their communities and allow to incorporate Pollution Prevention into the daily life.

**Reduce driving time:** cars are big contributors to air pollution problems. Consider other possibilities whenever feasible: carpool, bike, walk, or use mass transit part of your daily routine. If you drive, buy an energy-efficient automobile and keep its engine well tuned.

**Be careful with auto waste:** Used oil can contaminate water supplies; used auto batteries contain lead. Lead sulphate, and sulphuric acid that can leak into oil. Take used oil, auto batteries, and auto tires to a recycling center or an appropriate disposal facility.

**Plant trees and shrubs:** Trees in your yard may reduce heating and cooling costs and curb soil erosion. In addition, they beautify your property and may increase its value. Be sure to compost leaves, grass and brush clippings and apply only as much fertilizer as needed.

**Limit household hazardous waste:** purchase products containing toxic ingredients only when you cannot avoid using them and buy only as you need. Store hazardous products and materials carefully. Recycle unwanted hazardous products such as oil-based paint or find alternative uses.

**Be carefully with pesticides:** Apply pesticides such as insecticides and herbicides carefully if they must be used. When using pesticides in or around your home, purchase only the amount needed and follow the instructions on the carefully. Whenever possible, use natural pest-control methods rather than chemical pesticides. Reduce run-off by maintaining ample grass cover and shrubs.

**Beware of the dangers of lead to children:** keep kids away from surfaces covered with lead-based paint and renovations of older building. Test your drinking water tube sure it does not contain harmful levels of lead or other contaminants.

#### **Be an environmental consumer**

The following items will help you become an environmental consumer:

- Reuse and recycle paper, glass, plastic, aluminum, scrap metal, and yard wastes;
- Look for recycling symbol on products you buy. Such symbol identify recycle or recyclable products;
- Avoid buying products that use unnecessary packaging – either plastic or paper;
- Buy household goods and foods in bulk to minimize packaging waste;
- Buy rechargeable batteries for flashlight, toys and household items;
- Carry your own reusable shopping bag;
- Consider using reusable mugs, glasses, dishes, cloth towels;
- Encourage your community and your institution to begin recycling;
- Maintain and repair products;
- Patronize local businesses and locally produced foods and goods, both to promote a vital local community and prevent pollution generated by travel and shipping.

More efficient water use begins individual, in the home place of work. Heating and pumping water requires chemicals and energy. When we waste less water, we conserve fuel and reduce the pollution generated by burning fuel and treating water with chemicals. Taking these and other steps, and encouraging others to do so, makes good economic sense as well as environmental sense.

#### **In the bathroom**

- Install a water-efficient showerhead
- Take short showers and draw less water for baths
- When you buy a new toilet, purchase a low flow model
- Check your toilet for “silent” leaks

Turn off water while brushing teeth and shaving.

#### **In the kitchen or laundry**

- Compost your food scraps rather than using a garbage disposal

Run your washing machine with full load of clothes. Wash with warm water instead hot, rinse with cold water instead of warm. Wash when cold water when you can. Hang your wash out to dry whenever sunlight is available.

#### **Outdoors**

- Install a drip-irrigation water system for valuable plants;
- Use drought-tolerant plants and grasses for landscaping and reduce grass-covered areas;
- Try to water only in the evening or very early morning to minimize evaporation;

If you see porous pavement (gravel is a good example) instead of asphalt for driveways and walkways, the rain can recharge groundwater supplies instead of running off and contributing to erosion.

The following tips promote pollution prevention and will help to curb energy use at home.

**Purchase energy efficient products and equipment** By choosing energy efficient products you can reduce your energy bill up to 30% and your electric lighting charges by 40% while cutting pollution.

**Insulate the house** : Make sure your house is well insulated and, if heated or cooled, never leave windows or doors open. Raise shades on winter days; lower them in the summer. Seal all leaks. Block windows doors open with weather-strip tape and install blinds to reduce outside heat transfer.

**Insulate pipes and fixtures:** Insulate the hot water heater and heating and cooling pipes. Seal little holes around water pipes and stuff insulation into big holes around plumbing fixtures.

**Replace your showerhead:** By using a low-flow shower head, you reduce water consumption and energy to heat the water. They pay for themselves in only four months.

**Turn unused appliances and equipment off:** Turn off equipment and lights at night and when not in use. Unplug appliances when they are not in use.

**Use florescent lighting:** By replacing the light fixtures with energy conserving Install a water-efficient showerhead bulbs you will save 75% of energy used with incandescent bulbs. If you currently have florescent lighting, consider using a more efficient type that has electronic ballast that burns cooler

**Clean or replace filters regularly:** be sure to check furnace, air –conditioner, and heat pumps filters regularly. by cleaning your heating, ventilation and air- conditioning equipment, your units will last longer, your units will last longer, avoid costly down time, and improve indoor air quality

**Increase natural light:** paint your exterior and interior walls in a light colors so lighter is reflected. Paint the edges of the window in white so more light reflected inside. During the day, open blinds to bring in natural light instead of turning on lights

**Reduce paper usage :**by double sliding on copiers, reusing single –sided paper, using electronic mail, and circulating documents with routing slips, an organization can save a significant amount of energy and natural resources. One ton of waste paper saves enough energy to power an average home for 6 months.

**Use public transportation or carpool** Not only this save energy costs, but also it extends the life of your vehicle.

- Foster prevention awareness across society, but especially among our children;
- Engage environmental justice, labour,consumer, and other social sectors as partners in prevention;
- Promote pollution prevention oriented community college and university instruction, especially for technicians,engineers,scientists and business students who will be the primary prevention stewards;
- Partner with the public health community to demonstrate that “pollution prevention is disease prevention”;
- Campaign prevention as the environmental principle of first choice in the community.

## 2. RESULT & DISCUSSION

**2.1. Materials:** \_Water samples were collected from different borewells situated in different places in Thanjavur district. Samples of about three litres from each site were collected in polythene cans and were analysed in the laboratory using standard method.

### 2.2. Methods of Water analysis

**2.2.1. pH:** The pH of the ground waters ranged from 7.3 to 8.0 and the mean value was 7.73. Except one sample all other ground waters were found to be in the pH range less than 8. All the samples are almost in the neutral range.

**2.2.2. Total dissolved solids:** The values of total dissolved solids (TDS) were calculated from EC in micro Siemens/cm, using the formula

$$\text{TDS} = \text{EC} \times 0.64 \text{ Mg/l.}$$

**2.2.3. Fluoride:** Fluoride content of water sample was estimated by taking 100 ml of water sample in a conical flask and to that 0.5 g of animal charcoal and 0.1 g of powdered calcium sulphate were added .It was shaken for half an hour and filtered with Whatman No – 42 filter paper .To 100 ml of the filtrate 5ml of acid Zirconium alizarin reagent was added with constant stirring. The colour obtained was compared with a series of standard fluoride solution treated similarly.

The permissible level of fluoride percentage is 300 ppm.

Physico Chemical analysis.1					
Borewell	EC	pH	TDS	Ca	Mg
1	773	7.9	494.7	4.3	4.1
2	1070	7.5	684.8	7.9	1.5
3	343	8	219.5	2.4	0.8
4	790	7.4	505.6	2.4	0.4

## 3. CONCLUSION:

Government should take measures to prevent pollution strictly. It should bring an act to avoid deforestation and it should bring awareness among the people, the problems that the future generations will face. The government should insist on planting trees in every house and in public places. It should bring several acts to avoid pollution and implement them strictly.

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