



Clean environment through Eco Friendly Bio Plastic grow bags



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OBJECTIVE

- To replace plastic nursery grow bags with Eco friendly bio plastic grow bags

PLAN OF ACTION

- Preparation of bio-plastic bag using a weed *Maranta arundinacea*, water, glycerin and vinegar.



Making Bio Plastic

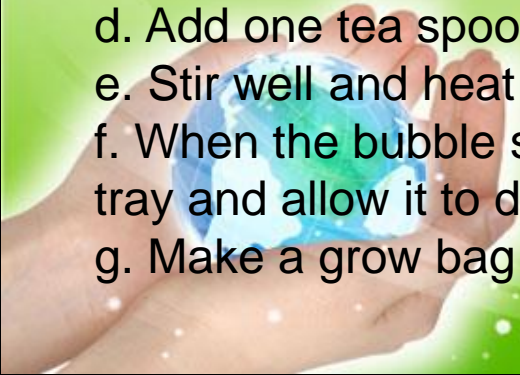


Preparation of Arrow root starch

- a. Peel out the skin of rhizome.
- b. Grate the rhizome.
- c. Soak it in water.
- d. filter the rhizome and keep the filtrate undisturbed for some time.
- e. Allow to settle the starch at the bottom of the beaker.
- f. Remove the water from the starch settled below and dry the starch.

Preparation of Arrow root starch

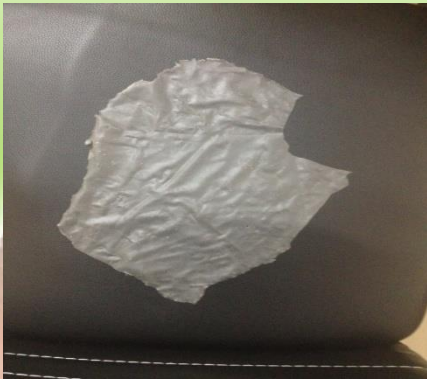
- a. Making biodegradable plastic using arrow root starch.
- b. One table spoon arrow root starch powder.
- c. Add four table spoon of water.
- d. Add one tea spoon of glycerin and one tea spoon of vinegar.
- e. Stir well and heat the solution slowly on a stove.
- f. When the bubble starts forming remove it from the stove and spread it on a tray and allow it to dry.
- g. Make a grow bag with this bio plastic.



Results and Discussion



Eco friendly bio plastic grow bag prepared. These bags are bio degradable which need not be removed while planting the sapling. The usual plastic grow bags in nurseries are not bio degradable and will have to be removed before planting the sapling.



Advantages and Disadvantages



Advantages:

1. **Maranta arundinacea (arrow root):** is a type of weed which is a good source of starch. it is easily available and does not require any special care or attention for growth. It also has medicinal properties.
2. All the ingredients used for the preparation of this bag is eco friendly, no harmful gases or bi products are produced during the preparation.
3. If this bag can be produced commercially we can reduce the pollution to some extent.

Disadvantages:

1. Low tensile strength.
2. Difficulty to mould in the required shapes



STUDENTS AT WORK



BIO PLASTIC





THANK YOU

