

PROJECT PRESENTATION

WAS MADE BY JANGIROV TIMUR

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GRADE: 8

SCHOOL: FIZTEX SCIENCE
AND IT SCHOOL

Water Purification Using Banana Peel and Coffee Grounds

Objective:

To determine which natural adsorbent — banana peel or coffee grounds — is more effective in purifying contaminated water.



hypothesis

If banana peel and coffee grounds are used as natural adsorbents in contaminated water, then banana peel will purify the water more effectively than coffee grounds, because it may have better adsorption properties due to its fiber structure and chemical composition.

materials



- Dried banana peel (blended or chopped)
- Dried coffee grounds
- Contaminated water (e.g. with food coloring or small particles)
- 3 clear glasses or cups
- Cotton pads (for filtering)
- Spoon or stick (for stirring)
- Timer (or phone stopwatch)
- Labels or markers (to mark each glass)
- (Optional) Notebook or table to record results
- (Optional) Camera or phone to take photos of water before and after

Method:

1. Dried and crushed banana peel and coffee grounds
2. Created two separate filters
3. Poured colored water through each filter
4. Compared the water after filtration

Creation process

1st:

i did cut the banana peel into cubes



2nd : Both materials were placed together in the oven and dried at 100°C for 30 minutes.



3rd: while adsorbents in the oven i contaminated the water with gouache



A : control

B : glass with coffee grounds

C : glass with banana peels

Creation process

the natural adsorbents were successfully prepared:
coffee grounds became dry and crumbly, and banana
peels were completely dehydrated, exhibiting a crunchy
texture.



While the adsorbents were drying, I
prepared the filter



results:



conclusion :

The experiment demonstrated that banana peel is a more efficient natural adsorbent than coffee grounds for removing colored impurities from water. This result highlights the potential of using organic waste as an accessible and sustainable solution for basic water filtration.

Such methods could be especially useful in low-resource environments and support further exploration in green engineering.

**Thank you
very much!**

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