

ABSTRACT

Germ, pollutants and pesticides represent major risk to drinking and surface water, especially in areas that do not have the proper resources to purify water. Apple, Banana, Orange and Lemon peels contain ions that replace heavy metals ion. They are good absorbents also. Peels overcome the alkalinity and hardness of water. During analysis the lead and cadmium ion are presents in water. So these two ions can be removed by peels. Apple peels extract heavy metals ion from water and heavy metals in water are generally positively charged and the carboxylic acid ions in the banana peels become negatively charged. The two compounds are drawn towards each other just like with a magnet. So by applying this technique bore and contaminated water can be purified and alkalinity can be 50%-60% less.

METHODOLOGY

TESTING OF SAMPLE:

- Testing hardness of water by EDTA titration.
- Mixture analysis to detect heavy metals.
- Amount of lead find by gravimetric analysis.
- Conductometry and pH metery also used to find how much electrolyte and check acidity or basicity of water.

TREATMENT OF WATER WITH PEELS:

- Lead and cadmium contamination found in water that is removed by peels

INTRODUCTION

Water pollution is the main ecological problem. Many diseases such as diarrhea, skin disease and stomach disease are born due to the water pollutants like heavy metals, pesticides, organic pollutants and biological pollutants. The use of banana peel is seen as very attractive for water purification because of low cost and the fact that no chemical modification is necessary for the process to work during experiment shows that banana is more effective for alkalinity and heavy metals. It also maintains the pH of water. Citrus peel waste also make this material more absorbent. These altered peels are then given an additional chemical treatment "to add functional groups to the material, thus making it selective in order to remove metals and organic pollutants present in water. The peels of tomatoes can remove heavy metal. This method of water purification can also be used for large scale applications.

COMPARE WITH STANDARD (acceptable range):

TESTING	DISTILLED WATER
pH	7 (neutral)
conductance	550 μ s
Lead	10ppb
cadmium	1-26 μ g/l

BEFORE TREATED WATER:

TESTING	SAMPLE#1
conductance	17.4ms
pH	8
Hardness	0.0644M or 1159.2ppm
Heavy metals concentration	Lead: 0.0016M Cadmium: 0.0014M

Lead: 33120ppb
Cadmium: 157.5 μ g/l

AFTER TREATED WATER:

TESTING	SAMPLE#2 TREATED WITH BANANA PEELS	SAMPLE#3 TREATED WITH APPLE PEELS
conductance	5.8 μ s	8.5ms
pH	6.9	6
hardness	0.0385M or 693ppm	0.0392M or 705.6ppm
Heavy metals concentration	Lead: no traces found Cadmium: no traces found	Lead: no traces found Cadmium: no traces found

RESULTS AND DISCUSSION

This experiment showed that fruit peels would be effective for hard and impure water to clean. Banana and apple peel maintain the pH of water and remove the impurities and heavy metals also. It overcomes the hardness and alkalinity of water. Lemon and orange peels are effective but these two increase the pH of water turn to acidic. So by using these two peels the water nature become acidic so cannot be used as a potable purpose. Apple and banana peels shows as a good absorbent. The use of banana skins is seen as very attractive for water purification because of low cost and the fact that no chemical modification is necessary for the process to work. Apple peel is very effective to adsorb heavy metals and impurities. By the experiment bore water which is very hard and show 1159.2 ppm hardness. Water alkalinity become 50% to 60% less by treated these peels and water hardness will also be removed.



CONCLUSIONS

The study purpose to purify water with Apple and banana peels. It is used for large purpose to purify water with fruit peel; this method is easiest and cheapest. Banana and apple easily available in all months. The peels method is very effective for those areas that haven't pure and potable purpose water. So make cheapest purification plant by through this technique. By these peels alkalinity of bore water would be less.

REFERENCES:

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