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GRAHAK SATHI

Easy Home Tests for Detecting Adulteration in Food Items



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Food adulteration is the deliberate act of adding inferior, harmful, or unauthorized substances to food products, compromising their quality and safety. Adulterants may be introduced to increase quantity, enhance appearance, or extend shelf life, often at the cost of consumer health. These substances, ranging from harmful chemicals to non-edible fillers, can cause a wide variety of health problems, from digestive issues to long-term diseases such as cancer, kidney damage, and even organ failure. As consumers, it is essential to be aware of what we eat and ensure that the food we eat is safe for consumption.

Grahak Sathi brings you "Easy Home Tests for Detecting Adulteration in Food Items" which are suggested by Food Safety and Standards Authority of India (FSSAI). In this e-book, you will find simple methods to check the purity of common food items right in your home. By knowing how to identify the presence of commonly used adulterants, you can make safer choices for yourself and your family.



Milk and Milk Products

Detection of water in milk

- Put a drop of milk on a polished slanting surface.
- Pure milk either stays or flows slowly leaving a whole trail behind.
- Milk adulterated with water will flow immediately without leaving a mark.



Detection of detergent in milk

- Take a glass and add 5 to 10ml of milk with an equal amount of water.
- Shake the contents thoroughly.
- If milk is adulterated with detergent, it forms dense lather.
- Pure milk will form very thin foam layer due to agitation.



Detection of starch in milk and milk products (chenna, paneer)

- Boil 2-3ml of sample with 5ml of water.
- Cool and add 2-3 drops of tincture of iodine.
- Formation of blue colour indicates the presence of starch.
- Milk can be tested with tincture of iodine without adding water or boiling.



Detection of potatoes, sweet potatoes and other starches in ghee/butter

- Take ½ teaspoon of Ghee/Butter in a transparent glass bowl.
- Add 2-3 drops of tincture of iodine.
- Formation of blue colour indicates the presence of mashed potatoes, sweet potatoes and other starches.



Mawa

Some easy tests before buying mawa

Touch Test - Pure, fresh and unadulterated mawa has an oily and grainy texture. Rub some mawa on your palm. Pure mawa is greasy and smells like pure ghee.



Taste Test - Pure mawa tastes slightly sweet, and does not stick to your mouth. If it tastes odd, it is probably adulterated. Stale dairy products, including mawa, emit a musty smell and taste slightly sour.

Detection of starch in mawa

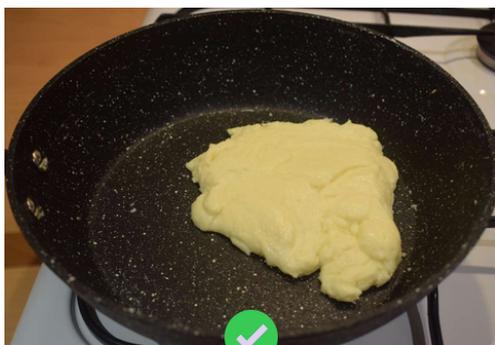
- Mix a little bit of mawa with 3 teaspoons of hot water.
- Add a small amount of iodine or iodized salt to the mixture.
- If the mawa turns blue, it is adulterated with starch.

Detection of urea in mawa

- Take 1 teaspoon of mawa and mix it with water.
- Add half a teaspoon of soyabean or arhar (tuar) dal to the mixture and mix well.
- After 5 minutes, dip a red litmus paper in it for 30 seconds.
- If the paper changes from red to blue, it indicates the presence of urea.

Detection of water in mawa

- Add sugar to a bowl of mawa and boil the mixture.
- If the mixture starts to leave water, it is adulterated.



Pure



Adulterated

Sugar and Honey

Detection of chalk powder in sugar/jaggery

- Take a transparent glass of water.
- Dissolve 10g of sugar/jaggery in water.
- If sugar/jaggery is mixed with chalk, the chalk powder will settle down at the bottom.



Detection of sugar in honey

Method – 1

- Take a transparent glass of water.
- Add a drop of honey to the glass.
- Pure honey will not disperse in water.
- If the drop of honey disperses in water, it indicates the presence of added sugar.



Method – 2

- Take a cotton wick dipped in a pure honey and light with a matchstick.
- Pure honey will burn.
- If adulterated, the presence of water will not allow the honey to burn. If it does, it will produce a cracking sound.

Silver Leaves (Vark)

Detection of aluminium leaves in silver leaves (vark)

Method 1

- Take a small piece of the vark.
- Crush it between your fingers.
- Pure silver leaves will crumble into a fine powder.
- Aluminium leaves will break into small shreds.



Method 2

- Take a piece of the vark and roll it into a ball.
- Burn the ball using a flame.
- Pure silver leaves will burn away, leaving glistening balls.
- Aluminium leaves will turn into grey ash.



Saffron (Kesar)

Detection of coloured corn fibres in saffron (kesar)

Method 1

- Take a small amount of saffron and try to break it gently.
- Real saffron does not break easily.
- Artificial saffron, made from coloured corn cob fibres, will break easily.



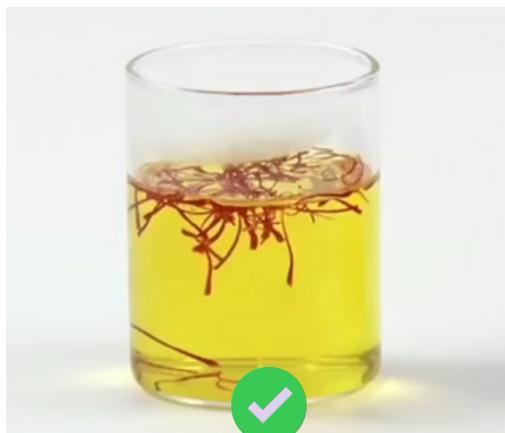
Saffron



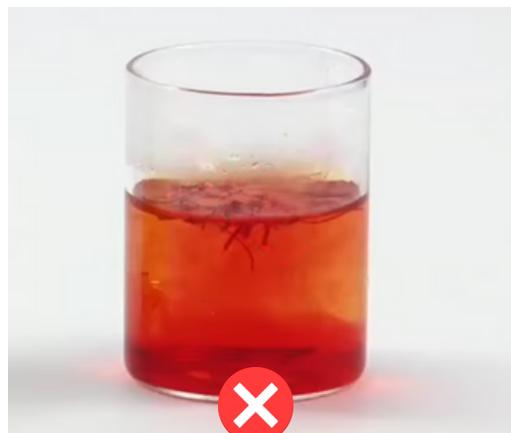
Coloured corn fibres

Method 2

- Take a transparent glass of water.
- Add a small amount of saffron.
- In adulterated saffron, colour will quickly dissolve in the water.
- In real saffron, colour will release slowly and become darker as it dissolves.



Pure



Adulterated

Chilli Powder and Turmeric

Detection of saw dust in chilli powder

- Add a small amount of chilli powder to a glass of water.
- If sawdust is present, it will float on the surface of the water.
- Pure chilli powder will sink and settle at the bottom of the glass.



Detection of artificial colours in chilli powder

- Take a transparent glass of water.
- Sprinkle a small amount of chilli powder on the water surface.
- If artificial colours are present, you will see colour streaks descending immediately.



Detection of lead chromate in whole turmeric

Lead chromate is a chemical yellow colour containing lead and chromium. It is added to whole turmeric to make the colour bright. It is a harmful neurotoxic when inhaled or consumed.

- Add small quantity of whole turmeric in a transparent glass of water.
- If the turmeric is pure, the water will not change colour.
- If it is adulterated with lead chromate, the water will quickly turn bright yellow.



Detection of artificial colour in turmeric powder

- Add a teaspoon of turmeric powder to a transparent glass of water.
- If it is pure turmeric, the water will turn light yellow and haldi powder will settle slowly.
- If the powder is adulterated, the water will quickly turn dark yellow as the powder settles.



Asafoetida (Hing)

Detection of foreign resin in asafoetida

Method – 1

- Burn small quantity of asafoetida in a stainless-steel spoon.
- Pure asafoetida will burn like camphor (kapur).
- Adulterated asafoetida will not produce bright flame like camphor.



Pure



Adulterated

Method – 2

- Powder a pinch of asafoetida and take it in a transparent glass.
- Add one teaspoon of water and mix thoroughly by shaking.
- Milky white solution with no sediments represents pure asafoetida.



Pure



Adulterated

Detection of soap stone or clay in asafoetida

- Shake little portion of the sample with water and allow to settle.
- Pure asafoetida will not leave any soap stone or sediment at bottom.
- If asafoetida is adulterated, soap stone or sediment will settle down at the bottom.



Pure



Adulterated

Detection of starch in asafoetida

- Take a glass of water and add some asafoetida to it.
- Add some tincture of iodine to it.
- If there is no change of colour, the asafoetida is pure.
- If the water turns blue, the asafoetida is adulterated with starch.



Pure



Adulterated

Black Pepper and Cloves

Detection of papaya seeds in black pepper

- Add black pepper seeds to a glass of water.
- Pure black pepper settles at the bottom.
- Any added papaya seeds will float on the surface of water.



Pure



Adulterated

Detection of used cloves in cloves

Used cloves are those from which the essential oil has been removed, making them ineffective and tasteless. Some sellers add artificial scents, but these disappear when cooked, leaving the cloves flavourless.

- Add cloves to a glass of water.
- Pure cloves will settle down at the bottom.
- Used cloves will float on the surface of water.



Pure

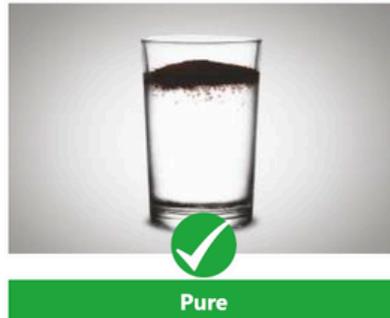


Adulterated

Coffee Powder and Tea Leaves

Detection of clay in coffee powder

- Add half teaspoon of coffee powder to a transparent glass of water.
- Stir and leave it for 5 minutes.
- In pure coffee, no clay particles will settle at the bottom.
- If it is adulterated, clay will settle at the bottom.



Detection of used tea in tea leaves

- Place some tea leaves on a filter paper.
- Add a few drops of water to the tea leaves.
- Unadulterated tea will not leave colour streaks.
- If it is adulterated with used tea, it will leave colour streaks on the paper.



Detection of iron filings in tea leaves

- Spread tea leaves on a plate.
- Move a magnet through them.
- If tea is adulterated with iron filings, these will stick to the magnet.
- Pure tea will not stick to the magnet.



About CERC

Consumer Rights protection and justice for consumers have been the focus of Consumer Education and Research Centre (CERC) right from its inception in 1978. CERC is India's only Consumer Rights Organisation that provides 360 degree service to the consumer in terms of Education, Empowerment and Protection.

A broad range of activities are undertaken in the organization – grievance redressal through mediation and litigation, consumer education and awareness building through various publications and outreach activities, testing and analysis of consumer products in our in-house product testing laboratories, advocacy for laws and regulations that better protect consumers, as well as a number of projects executed in various areas pertinent to consumer protection and empowerment. Promoting sustainable consumption too is a major area of activity in CERC

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