

Make your own indicator

Try this

An indicator is a substance which changes colour when in solutions of different pH. Most indicators simply turn one colour in acid and another in alkali, although they are often an in-between colour when neutral. Universal indicator only turns as many colours as it does because it is a mixture of several different indicator substances.



In some species of hydrangea the flowers change colour depending on the pH of the soil.

Many plants contain naturally occurring indicators and these can be extracted easily. Autumn is a particularly good time of year to try making your own indicators, although some of the plants are available at most times of the year from the supermarket.

Ask permission before you use equipment at home and be careful with hot water.

You will need

- Plant material – dark colours often work well. Try red cabbage, blackberries, elderberries, tea, rose petals
- 2 heat proof bowls or small saucepans
- Knife
- Hot water – a kettle is the easiest source
- Sieve
- Acidic substances such as vinegar or lemon juice
- Alkaline substances such as baking powder or toothpaste
- If you live in an area with very hard water, you may find that using de-ionised water gives better results. This can be bought from the supermarket in the laundry section (it is put in irons to stop them from scaling up).
- Small pots for testing. Old yoghurt pots or similar are fine.



Red cabbage extract acts as an indicator and changes colour in acid and alkali.

Basic method

- Put the substance to be tested into the bowl or saucepan. With something like cabbage it is a good idea to cut it up a bit first.
- Pour boiling water over it and leave it for a few minutes. The water should become stained with the plant extract.
- Place the sieve over another bowl and carefully pour the liquid through the sieve to remove the solid pieces of material.
- Test your extract to see if it is an indicator. Put a little of a known acidic or alkaline substance into the pot and add a little indicator. If the colour changes, then it is an indicator.

Even easier method

The juice of many soft fruits such as elderberries will work even if they are not put in boiling water first. Simply squish the berry to get some juice and add a little acid or alkali.

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