

With a pH meter you measure the level of acidity. Such a measurer can be made with red cabbage juice. This contains a magical substance that changes colour at different pH values. You can extract it by grinding the cabbage and using the dark purple juice as a pH meter! Follow the instructions on the inside of this leaflet and do it yourself!

Detergents and soap are usually alkaline. Milk or water are normally neutral. Lemon juice and sodas are very acid, which you can clearly taste. If you combine acid with something alkaline it will become (more) neutral.

The acidity of a product is expressed by its pH value. The lower this value, the higher the level of acidity (and thus the more acidic your product is).

- pH 1 is very acidic
- pH 7 is neutral (tap water)
- pH 14 is very alkaline (the opposite of acid)

Introduction

The instructions for making your own yogurt and additional information can be found at togethersciencebus.eu.

You can also make pieces of indicator paper to measure pH values. You can cut coffee filter paper in strips, put them in the red cabbage juice and let them dry. Put a drop of liquid (or yogurt) on the paper with a small spoon or pipette. Just wait and see the change in colour on the paper. Then compare the colour with the pH scale on the flip side!

Variation in measuring acidity:

Yogurt is an acid product with a pH value between 3.7 and 4.5. This will decrease the chance that fungi or yeasts will spoil the yogurt. And bacteria will have limited growing opportunities.

This is what you need to make your own pH meter:

- Fresh red cabbage
- Blender
- Funnel
- Coffee filter (paper)
- Ruler
- Bottle
- Waterproof marker
- Transparent cup or jar (glass or plastic)
- Spoon
- (Kitchen) scale

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DO-IT-TOGETHER SCIENCE BUS



collecting folk remedies
do it together & find out how things work

Make your own pH meter

other side for ingredients

Make your own pH meter

How acid is a liquid or the soil? Make your own pH meter and measure the pH values of for example your yogurt, milk, water or your garden soil.



For testing the values of yogurt, water or other liquids:
follow steps 1, 2, 3 and 4.



For testing soil:
follow steps 1, 2, 5 and 6.

1



Pour two glasses of water in the blender and add 4 leaves of red cabbage. Grind this as fine as possible, no large lumps should remain.

2



Put a coffee filter in the funnel and pour the mixture from the blender in it. Collect the juice in a bottle.

3



Put two marks on the plastic cups. One at 3 cm from the bottom and one at 6 cm from the bottom. Write the name of the liquid you will be testing on it as well. **TIP:** you can remove waterproof markings with 96% alcohol.

4



Pour the red cabbage juice until the first mark. Next, pour in the liquid you want to test until the second mark.

5



Make a mark on the plastic cup at 6 cm from the bottom. Weigh 5 grams of the soil you want to test and put this in the cup.

6



Pour the red cabbage juice until the mark and stir with a plastic spoon. Wait until the soil descends to the bottom to clearly see the colour of the liquid.

7



Reading the results on the pH scale:

The colours indicate the following:

- Red or pink: acid.
- Purple or blue: low acidity or neutral.
- Green or yellow: alkaline.