



NATURAL SCIENCES_ SENIOR PHASE_ MWAZVITA CHIKOPO_ 01-10-2021

To: TEACHERS

Topic: CHEMISTRY IN EVERYDAY LIFE

Message Objective(s):

- To share information on common household materials and plants that can be used as alternative pH indicators in the laboratory.

Message:

The natural world has given us numerous plants, from beets to grapes to onions, that can be used to test the pH levels of a solution. These natural pH indicators include:

- ✓ **Beets:** A very basic solution will change the colour of beets or beet juice from red to purple.
- ✓ **Blackberries:** Blackberries, black currants, and black raspberries change from red in an acidic environment to blue or violet in a basic environment.
- ✓ **Blueberries:** Blueberries are blue around pH 2.8-3.2, but turn red as the solution becomes even more acidic.
- ✓ **Cherries:** Cherry juice is red in an acidic solution, but they turns blue to purple in a basic solution.
- ✓ **Curry Powder:** Curry contains the pigment curcumin, which changes from yellow at pH 7.4 to red at pH 8.6.
- ✓ **Geranium Petals:** Geraniums contain the anthocyanin pelargonidin, which changes from orange to red in an acidic solution to blue in a basic solution.
- ✓ **Grapes:** Red and purple grapes are deep red in an acidic solution and change to violet in a basic solution.
- ✓ **Onion:** Onions are olfactory indicators. You don't smell onions in strongly basic solutions. Red onion also changes from pale red in an acidic solution to green in a basic solution.
- ✓ **Red (Purple) Cabbage:** Red cabbage contains a mixture of pigments used to indicate a wide pH range.
- ✓ **Rose Petals:** The oxonium salt of cyanin turns from red to blue in a basic solution.
- ✓ **Turmeric:** This spice contains a yellow pigment, curcumin, which changes from yellow at pH 7.4 to red at pH 8.6.

From: Mwazvita Chikopo

Reference: (links to website)

- <https://www.tswelopele.org.za/>
- <https://www.wozamatrics.co.za/>