

Eric Millour | Collège Charles Le Goffic | Lannion | FRANCE

## Can you eat expired yoghurt?

The aim of this project is to find a solution to the problem of food waste. We chose a very specific product: plain yoghurt : no sugar, no coloring, no fruit...

**Initially**, we were interested in understanding and defining the parameters involved in producing a yoghurt.

Which milks to use? What bacteria to add?

We **experimented** by modifying yoghurt production parameters:

- Fermentation temperature,
- Type of milk : whole, semi-skimmed, pasteurized, UHT,
- Changing the protein content,
- Pre-heating the milk.

To test the consistency/firmness of our yoghurts, we developed a **manual texturometer**.

**Secondly**, we studied the role and function of lactic ferments, and the complexity of the chemical transformations that take place when milk is turned into yoghurt!

**Finally**, we set out to develop a method that would enable us to check that our yoghurt would still be eatable when opened. We chose to **estimate its pH** using a natural color indicator: red cabbage juice.

We stabilized it with **agar-agar gel** and inserted it in a **straw**. This straw can then be attached to the yoghurt pot.

This project enables us to work across disciplines. **Microbiology**, **Technology** (packaging), **Chemistry** and **Physics** can all be addressed.

**Conclusion:** If the yoghurt is kept cold and the container is not damaged then the yoghurt can be eaten after the use-by date.

