LUMA CENTRE FINLAND
ChemistryLab Gadolin

Unit of Chemistry Teacher Education
University of Helsinki
Science Education Centre
LUMA Centre Finland

BLUEBERRY TRIO

Focus group: Suitable for all school levels

Length: 45 minutes

Aim: To learn about acids, bases and indicators in an inspiring and tasty way

Key words: Acid, base, indicator, molecular gastronomy, food science

SAFETY AND WASTE DISPOSAL

- This molecular gastronomy practical is not to be carried out in a laboratory
- Biodegradable waste is to be disposed of in the biowaste container

BEFORE THE PRACTICAL WORK: QUESTIONS FOR STUDENTS

What is molecular gastronomy?

What is an acid?

What is a base?

What is an indicator?

What is the difference between a strong and a weak acid?

What is the pH-scale?

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Ingredients for the quark layer

- 1 dl cream
- 250 g quark
- 0.5 dl sugar
- 1 tbsp lemon juice
- 1 dl (frozen) blueberries

Ingredients for the whipped egg white layer

- 1 egg white
- 1 tbsp sugar
- 0.5 dl (frozen) blueberries

Equipment

- 2 bowls
- 1 tablespoon
- 1dl measuring cup
- 1 whisk
- 4 drinking glasses (for the portions)
- 4 teaspoons (for eating)

Procedure

To prepare the quark layer:

1. Whip 1 dl of heavy cream until soft to medium peaks form.
2. Add the quark, the sugar, the lemon juice and the blueberries to the whipped cream and mix thoroughly.

To prepare the egg white layer:

3. Whip the egg white until you get a thick foam that forms firm peaks that keep their shape when you remove the whisk.
4. Add sugar to the whipped egg white and mix carefully.
5. Add blueberries and carefully mix just until the egg white turns into a blue colour. Do not overmix.

To prepare the portions:

6. Cover the bottom of the drinking glass with blueberries.
7. Add a layer of the quark you have prepared.
8. Add a layer of the blueberry egg white mixture you have prepared.

AFTER THE PRACTICAL WORK: QUESTIONS FOR STUDENTS

Why does the white egg turn into a foam when whipped?

Why does the cream turn into a foam when whipped?

Why do the quark layer and the egg white layer have different colours?

REFERENCES

Linnea Peurakoski (*nee* Töyrylä), Master's thesis: Argumentaation tukeminen yläasteen happamuuden kemian opetuksessa molekyyligastronomiaa soveltaen. University of Helsinki.