



11. Oxygen from plants

Team Nitro

Reviewer: Amir Al Mousawi

Summary

Problem statement:

Oxygen from plants Suggest an experimental method to measure how much oxygen is produced by a green plant.

Summary:

The Reporter studied how the amount of oxygen is influenced by the wavelengths of light and proposed 4 experimental methods to actually measure the quantity.

The Report

- Pros

- + explained photosynthesis
- + different types of chlorophyll
- + explained light absorption with different wavelengths of light
- + good number of repetitions of the experiment
- + valid results
- + used a plant that produces a large quantity of oxygen, to properly highlight the oxygen quantity;
- + 4 methods: oximeter, ph, Ivanov and Kosovic, bubble area

- Cons

- did not explain the Ivanov and Kosovic method in the theory;
- the method with phenolphthalein doesn't actually measure the quantity of oxygen formation, only confirms the presence of photosynthesis;
- the amount of oxygen produced should be the mass or the number of moles over the time the oxygen is produced;
- did not discuss if the oxygen quantity is influenced if we let the plants a longer time in artificial light
- wasn't very well heard

The Opposition

- Pros

- + highlights that the theory was well done and the conclusions were valid

- +

- +

- Cons

- the strong and weak points of the reporter mentioned in the opponent's PowerPoint were very generic
- did not respect the time (finished too early)

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The discussed topics

- Opponent question

- 1) if the day-night cycle influences the oxygen quantity
- 2) if the plant used would be a cactus (not based on the report)
- 3) how the oxygen is produced (the question was very well answered in the theory of the report, did not need to ask again)
- 4)

- Reporter answer

- 1)no, if we put the plants under artificial light (agreed for short periods, but it would disturb the oxygen quantity for long periods of time)
- 2) all green plants have a different quantity of oxygen produced, but the principle is the same (agreed)
- 3) photosynthesis (agreed)
- 4)