**Growth of Algae**

**Effect of Fertiliser concentration**

In this experiment, flasks containing a culture of algae and different concentrations of liquid plant fertiliser were set up. Flasks were placed near a light source and left to grow for 10 days. The population size was estimated on day 10 by measuring absorbance using a colorimeter. In this case, absorbance is the extent to which cells in the culture scatter a beam of light of a particular wavelength (650 nm) as it passes through the culture.

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| **Concentration of fertiliser (%)** | **Absorbance of light by algae culture** | | | |
| **Trial 1** | **Trial 2** | **Trial 3** | **Mean** |
| 0 | 0.03 | 0.04 | 0.03 | 0.03 |
| 0.1 | 0.08 | 0.09 | 0.08 | 0.08 |
| 0.2 | 0.11 | 0.12 | 0.09 | 0.11 |
| 0.3 | 0.16 | 0.17 | 0.17 | 0.17 |
| 0.4 | 0.21 | 0.22 | 0.26 | 0.23 |

A control cuvette for each was used to zero the colorimeter each time readings were taken.

**Effect of light intensity on the growth of algae**

In this experiment, flasks containing a culture of algae were incubated in the presence of light. The intensity of light reaching the algae was varied using neutral density filters:

* Flask 1 was left uncovered
* Flask 2 was covered in a filter that transmits 71% of light
* Flask 3 was covered in a filter that transmits 50% light
* Flask 4 was covered in a filter that transmits 25% of light.
* Flask 5 was covered in black paper, allowing no light to transmit through to the algae culture.

Flasks were placed under a light bank and left to grow for 10 days. The population size was estimated on day 10 by measuring absorbance using a colorimeter. In this case, absorbance is the extent to which cells in the culture scatter a beam of light of a particular wavelength (650 nm) as it passes through the culture.

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| **Light intensity (%)** | **Absorbance** | | | |
| **Trial 1** | **Trial 2** | **Trial 3** | **Mean** |
| 0 | 0.00 | 0.01 | 0.00 | 0.00 |
| 25 | 0.08 | 0.09 | 0.09 | 0.09 |
| 50 | 0.11 | 0.14 | 0.15 | 0.13 |
| 71 | 0.22 | 0.21 | 0.23 | 0.22 |
| 100 | 0.31 | 0.28 | 0.27 | 0.29 |