**Experimental Data Sets – Photosynthesis**

This document contains data sets obtained in investigations looking at photosynthesis in *Egeria najas.* This looks at the bubbler investigation. The following independent variables are included:

* Light intensity
* Temperature
* Carbon dioxide concentration

**Photosynthesis – pondweed – Effect of light intensity**

In this experiment, a length of *Egeria najas* was submerged into a boiling tube of bicarbonate solution at room temperature. A lamp was placed at varying distances from the plant. After 5 minutes equilibration, the number of bubbles produced from the stem of the plant in 1 minute was recorded.

|  |  |
| --- | --- |
| **Distance of plant from lamp (cm)** | **Number of bubbles produced by plant per minute** |
| **1** | **2** | **3** | **Average** |
| 10 | 22 | 30 | 29 | 27 |
| 20 | 18 | 29 | 24 | 24 |
| 30 | 6 | 5 | 6 | 6 |
| 40 | 0 | 1 | 4 | 2 |

**Photosynthesis – pondweed – Effect of temperature**

In this experiment, a length of *Egeria najas* was submerged into a boiling tube of bicarbonate solution. The boiling tube was then placed in an incubator at various temperatures. A lamp was placed 10 cm from the plant. After 5 minutes equilibration, the number of bubbles produced from the stem of the plant in 1 minute was recorded.

|  |  |
| --- | --- |
| **Temperature (ᴼC)** | **Number of bubbles produced by plant per minute** |
| **1** | **2** | **3** | **Average** |
| 10 | 11 | 4 | 0 | 5 |
| 20 | 22 | 23 | 29 | 25 |
| 30 | 38 | 42 | 45 | 42 |
| 40 | 40 | 52 | 68 | 53 |
| 60 | 11 | 12 | 10 | 11 |

**Photosynthesis – pondweed – Effect of carbon dioxide concentration**

In this experiment, a length of *Egeria najas* was submerged into a boiling tube of bicarbonate solution of varying concentrations, at room temperature. A lamp was placed 10 cm from the plant. After 5 minutes equilibration, the number of bubbles produced from the stem of the plant in 1 minute was recorded.

|  |  |
| --- | --- |
| **Concentration of bicarbonate indicator (%)** | **Number of bubbles produced by plant per minute** |
| **1** | **2** | **3** | **Average** |
| 0 | 5 | 4 | 2 | 4 |
| 1 | 22 | 23 | 29 | 25 |
| 2 | 28 | 26 | 26 | 27 |
| 5 | 40 | 35 | 29 | 35 |