LAB 8A:
RESPIRATION RATES OF GERMINATING AND NON-GERMINATING PEAS

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Purpose:

To compare the respiratory rates of germinating and non-germinating peas by measuring their oxygen consumption for a period of time.

Materials and Methods:

The procedures and materials used in this experiment can be found on page 175-176 of the *Introductory Biology Part I Laboratory Manual* by Dr. Clare Hasenkampf and Mary Olaveson (2003).

Results:

According to experimental data, the germinating peas consumed significantly more oxygen compared to the non-germinating peas. The germinating peas showed nearly an oxygen consumption rate of almost 0.0825mL/minute (Figure 1.0). The non-germinating peas however, did not consume any oxygen or consumed very little to be noticed over the period of 1 hour (Figure 1.0).
Conclusion:

From this experiment, it can be concluded that the germinating peas are undergoing aerobic respiration as their oxygen consumption rate is considerably high. The non-germinating peas however, did not consume much oxygen at all. Since the germinating peas are germinating, they require more extensive and readily available energy or ATP. Thus they have high oxygen consumption rates or respiration rates for oxidative phosphorylation. In contrast, the non-germinating peas, are not germinating and therefore they do not need significant amount of ATP production, as oxidative phosphorylation yields large amounts of ATP. Therefore, the non-germinating peas have a significantly low rate of respiration in comparison with the germinating peas.