

# Lab Report

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## Title Page

**Title:** The Effect of Salt Concentration on the Rate of Osmosis in Potato Cells

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## Abstract

This lab report investigates the impact of varying salt concentrations on the rate of osmosis in potato cells. It aims to demonstrate how osmotic balance influences cellular behavior in different saline environments.

## Introduction

The introduction explains the biological concept of osmosis and its importance to cellular function. It outlines the hypothesis that increased salt concentrations in the surrounding solution will decrease the mass of potato strips, due to water leaving the cells.

## Objectives

- To observe the effect of osmosis on potato cells in hypertonic, isotonic, and hypotonic solutions.
- To quantify how different concentrations of salt affect these cells.

## Materials and Methods

## **Materials:**

- Potato
- Table salt
- Distilled water
- Beakers
- Electronic scale
- Knife
- Ruler

## **Method:**

1. Cut potato into uniform strips.
2. Prepare salt solutions of varying concentrations (0%, 5%, 10%, 15%).
3. Submerge potato strips in each solution for 30 minutes.
4. Measure and record the initial and final mass of the potato strips.

## **Results**

The results section includes data tables and graphs showing the initial and final masses of the potato strips, along with the percentage change in mass for each salt concentration. The data clearly shows that higher salt concentrations lead to greater mass loss in potato strips.

## **Discussion**

This section interprets the results, confirming the hypothesis that higher salt concentrations cause cells to lose more water. It discusses the relevance of osmosis in biological processes and potential errors in the experimental setup.

## **Conclusion**

Summarizes the findings of the experiment, stating that the results support the hypothesis and offering suggestions for further research, such as exploring different types of cells or longer exposure times.

## **References**

Lists all the sources consulted for background information and methodology, ensuring academic integrity and allowing for further reading.

## **Appendices**

Includes additional details such as calculations, full experimental notes, and raw data logs, which are crucial for replicating the experiment.