

Molarity of sucrose
solution lab report
(conclusion and
evaluation)
assignment



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Conclusion The research question that I asked myself before the experiment was " What is the osmotic potential of potato? " The answer I got after the experiment was that the osmotic potential of potato is very high because this experiment exactly showed what happened when there is Osmosis present and the following information will prove it. Our results greatly showed that there has been osmosis present. Osmosis is the diffusion of water through a partially permeable membrane from a region of lower solute concentration to a region of higher solute concentration.

And the results we got shows that osmosis occurred in this experiment. In 0.0 mols of sucrose the mass of potato has increased so there has been diffusion of water from 0.0 mols of sucrose which is the lower concentration to 3.71 grams of potato which is the higher concentration. Also in 1.0 mols of sucrose the mass of potato has decreased and it should decrease when there is osmosis present because in this case 1.0 mols of sucrose is the higher concentration and the 3.58 grams of potato is the lower concentration.

Basically the potato chips lose more mass in the higher concentrated solution and gain mass in the lower concentrated solution. From 0.0 mols of sucrose to 0.3 mols of sucrose there has been gain in mass for the potatoes. However from 0.4 mols of sucrose to 1.0 mols of sucrose there has been gain in mass for the potatoes. Also 0.3 mols of sucrose is the point where there has been almost no change or very little change in mass of potato. There has been no loss and gain in mass or very little change and gain mass.

This means that at this point the concentration of the sucrose and potato are equal. As you can see from the graph that the gain of mass is very little compared to the loss of the mass and this proves that our prediction was right. We predicted that the cell or the potato cannot be very concentrated, because this would result in the cells filling up with water. The prediction was right the potato didn't concentrate a lot when the concentration of the sucrose was low. However if you see when the concentration of the sucrose is high then the potato loses a lot of mass.

Basically the loss is greater than the gain. Evaluation In my opinion the experiment was very successful. In the end of this experiment I acquired accurate results from where I can answer my research question and to create formative graphs. The range of time that I used for the experiment to last was enough to allow osmosis to occur. I think the amount of concentration was good enough to make my experiment successful. However if I get to do this experiment again then I would longer the time that I used for the experiment to last.

I left the experiment for 2 days to let the osmosis occur but I think if there is next time then I would leave it for like 3 or 4 days so, I would get more accurate results. Also the cutting the potatoes into rectangular pieces of 10mm by 10mm by 40mm was very difficult part of this experiment. Our group tried to cut it as accurate as possible but it was very hard to do so. So, there might be some errors. This error could have affected the surface area and so well the overall rate of osmosis. If I were to repeat the experiment then I would have used a special cutting machine which cuts the potatoes exactly the same each time.

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Also I could weigh each rectangular potato on a more accurate scale like 0.00 g or 0.000 g. Some of the results I got vary but the amount it varies is very little. Like if you look at the table then you can see that from 0.0 mols of sucrose to 0.3 mols of sucrose the change in mass of the potato is positive. So, it means that the mass of the potatoes has increased and it is right thing to occur. However suddenly in 0.2 mols of sucrose the mass of potato has decreased but it shouldn't happen because there is an increase in mass on the next mols of sucrose which is 0. . This error might have been done by us. When we dried the potatoes after the experiment, we might have dried some more and some less and this has effect on the mass because the one dried most might have less mass than the one that is dried less. So, if I get to do this experiment again then I would use a drying machine which dries every potato very accurately. So this will remove the problem that we have before, the problem was that we dried some potatoes differently like one is dried more than the other one.