A water salinity management approach using micro-sprinkler irrigation in two coastal saline soils

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Introduction

Humans can safely ingest small amounts of salt, but the salt content of sea water is much higher than the human body can handle [1]. Drink liquids to help keep your body healthy and at healthy levels. Living cells depend on sodium chloride (salt) to maintain chemical balance and body reactions. However, too much sodium can be fatal [2]. Therefore, to get rid of all the excess salt ingested by drinking seawater, you must urinate more water than you drink. Even if you are thirsty, you will eventually die from dehydration [3]. Have you ever thought about your business when someone with a strong scent got in the elevator? Was Lady Stetson/Drakkar Noir with that person? No, everyone smelled blown all over the elevator [4]. This net transport of matter from areas of high concentration to areas of low concentration is taking place all the time. However, when it comes to diffusion and salt water, human cells have biological membranes that can prevent salt from freely entering cells. Our bodies are able to normalize sodium and chloride concentrations to some extent [5]. However, it is difficult to deal with extremely high levels of salt in the blood. This is because the cell membrane is semi-permeable.

Description

Sodium, chloride, and other substances cannot easily diffuse in and out of cells, but water can [3]. If the outside of the cell has a higher salinity than the inside, water moves from the inside to the outside of the cell to correct the imbalance. The attempt to equalize the concentration of substances on both sides of a semipermeable membrane is called osmosis [5]. When seawater is consumed, the consequences of infiltration are surprisingly disastrous. Remember that seawater is about four times more salty than body fluids [1]. If left unchecked, the net movement of water from the inside of the cell to the outside will cause the cell to shrink significantly, and shrinkage is never good [4]. Regulatory mechanisms can be lethal. In the case of seawater, the main culprit is changes in extracellular sodium concentration. The body tries to remove excess sodium from the extracellular fluid in order to restore isotonicity, which is essential for cell survival [2]. However, human kidneys can only produce urine that is slightly less salty than salt water. So, in order to remove the extreme amount of sodium absorbed in saltwater, we urinate more water than we actually drink.

Conclusion

This means that when you swallow sea water, you are not actually taking in water; you are suffering a net loss that leads to fluid depletion, muscle spasms, dry mouth, and thirst, attempts to replace lost fluids by increasing heart rate and constricting blood vessels, allowing blood pressure to flow to vital organs. They are also most likely to experience nausea, weakness, and even delirium. As dehydration progresses, coping mechanisms fail. Not drinking water to reverse the effects of excess sodium reduces blood flow to the brain and other organs, leading to coma, organ failure, and ultimately death. Of course, ingesting a small amount of salt water will not kill you. However, the takeaway message is clear. Salt and water are best taken separately. If you take salt, you should take plenty of fresh water with it. We all know that we need to drink enough water, but he adds salt at least once a day for even greater benefits.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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References

1. Chu LL, Kang YH, Wan SQ. Effects of water application intensity of micro-sprinkler irrigation on water and salt environment and crop growth in coastal saline soils. J Integr Agric. 2015; 14(10):2077-89.
2. Li XB, Kang YH, Wan SQ, et al. Reclamation of very heavy coastal saline soil using drip-irrigation with saline water on salt sensitive plants. Soil Tillage Res. 2015; 146:159-73.
3. Qadir M, Ghafoor A, Murtaza G. Amelioration strategies for saline soils: A review. Land Degrad Dev. 2000; 11:501-21.
4. Sarfraz H, Alamgir A, Muhammad S, et al. Performance evaluation of indigenous floppy sprinkler irrigation system for various crops water management. J King Saud Univ Sci. 2021; 33(8):101636.
5. Sun JX, Kang YH, Wan SQ, et al. Soil salinity management with drip irrigation and its effects on soil hydraulic properties in north China coastal saline soils. Agric Water Manag. 2012; 115:10-9.