Effect of Mixing Zamzam Water with Normal

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◈ Abstract

Zamzam water, originating from the sacred well located near the Kaaba in Makkah, Saudi Arabia, is well known for its purity, stability, and health benefits. It has been historically revered for its miraculous qualities and scientifically recognized for its distinct mineral composition. Unlike ordinary water, Zamzam water remains free from microbial growth even after long storage periods. It contains a balanced concentration of beneficial minerals such as calcium, magnesium, sodium, and fluoride, and has a naturally alkaline pH value that contributes to its refreshing taste and stability.

This project investigates the effect of mixing Zamzam water with normal water to observe whether its unique characteristics remain present when diluted. The experiment was designed to test different sample ratios—100% normal water, 1 drop of Zamzam in 100 ml normal water, 10% Zamzam + 90% normal water, and 100% Zamzam water. Each sample was analyzed for pH value, total dissolved solids (TDS), and sensory characteristics such as taste and clarity.

The results demonstrated that the addition of Zamzam water, even in small quantities, caused a noticeable improvement in water quality. The pH level increased slightly, showing enhanced alkalinity, while the TDS readings indicated a decrease, suggesting better purity. Sensory testing showed that the samples with Zamzam water were clearer and had a smoother, fresher taste compared to ordinary water.

These findings support the hypothesis that Zamzam water possesses distinct physical and chemical properties that can influence and improve the characteristics of normal water. Scientifically, this demonstrates the stability and strength of its composition, while spiritually, it reinforces the long-held belief in the special nature of Zamzam water. Thus, the study concludes that Zamzam water maintains its unique qualities even when mixed in small amounts with ordinary water, highlighting both its scientific significance and spiritual value.

Zamzam Water

Normal water

PH Paper

❖ Background Information

Water is called the “universal solvent” because it can dissolve a wide range of substances. The quality of drinking water depends on its source, mineral content, and purity. Zamzam water comes from a historical well in Makkah and has been flowing for thousands of years without drying or becoming contaminated. Scientific studies show that Zamzam water contains higher concentrations of calcium, magnesium, and bicarbonates compared to ordinary water, which makes it slightly alkaline.

Normal drinking water, such as tap water, may vary in quality depending on the source, treatment process, and environmental conditions. It usually has a pH close to 7, which is considered neutral. In comparison, Zamzam water is more stable and slightly alkaline (pH 7.5–7.6).

Mixing Zamzam water with normal water is an interesting experiment because it allows us to explore whether Zamzam water maintains its unique qualities or whether they are diluted. This experiment also provides an opportunity to understand the concepts of solubility, PH balance, homogeneous mixtures and conservation of mass in chemistry.

❖ Aim of the Study

The main aim of this project is to study what happens when Zamzam water is mixed with normal water.

Zamzam water is known for its purity and special properties, while normal water is the type we drink every day from taps or bottles.

This experiment aims to observe whether Zamzam water can change the quality, freshness, or taste of normal water when they are combined.

The purpose is to compare both waters and understand:

- Does Zamzam water keep its unique qualities after mixing?
- Does normal water become different in any way after mixing?
- Are there any scientific changes, such as in taste, pH, or clarity?

By performing this experiment, students can learn how mixing two different natural waters may affect their properties.

It also helps to connect faith-based beliefs about Zamzam water with simple scientific observation.

❖ Statement of the Problem

Water is essential for all living things. However, not all water is the same in quality or purity.

Normal water can become impure or lose freshness after some time. On the other hand, Zamzam water is believed to stay fresh and pure for many years without getting spoiled.

People often say that even a few drops of Zamzam water can make normal water pure and special.

But how can we test this belief scientifically?

That is the main problem this project tries to answer.

"To find out if the special properties of Zamzam water remain the same when mixed with normal water, and to observe if normal water shows any change after adding Zamzam water."

This problem is interesting because it connects faith and science.

By testing the mixture, we can observe changes in physical qualities like taste, clarity, and freshness.

It helps young learners understand how scientific experiments can be used to study natural and spiritual ideas together.

◈ Hypothesis

"When Zamzam water is mixed with normal water, the special properties of Zamzam water will influence the normal water and improve its purity and freshness."

Zamzam water is naturally rich in minerals like calcium and magnesium, which may affect the mixture.

It has been found to resist bacteria and spoilage, so it may help the mixed water stay fresh longer.

People have long believed that Zamzam water carries blessings and purity, which might show even in a small quantity.

After testing, the experiment can confirm whether this hypothesis is true or false by comparing results from normal, mixed, and pure Zamzam water samples.

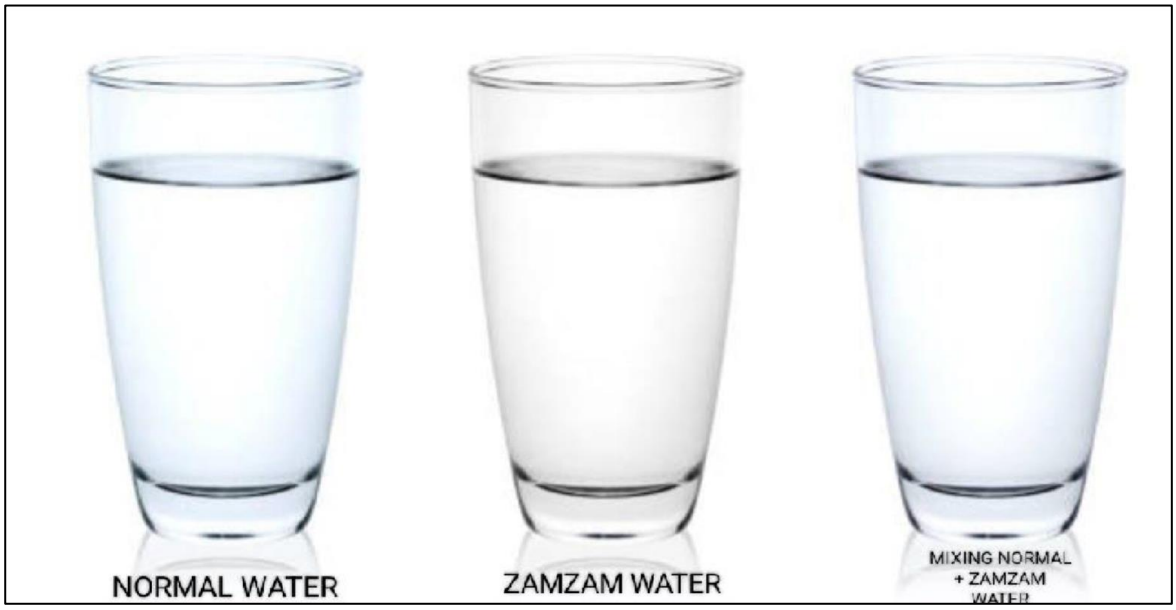
◈ Materials Required

- Two transparent glasses (100 ml each)
- Measuring cylinder (50 ml)
- Zamzam water (50 ml)
- Normal drinking water (50 ml)
- PH strips or digital pH meter
- Notebook and pen
- Camera or phone to capture images of setup
- Stirrer or spoon

◈ Procedure

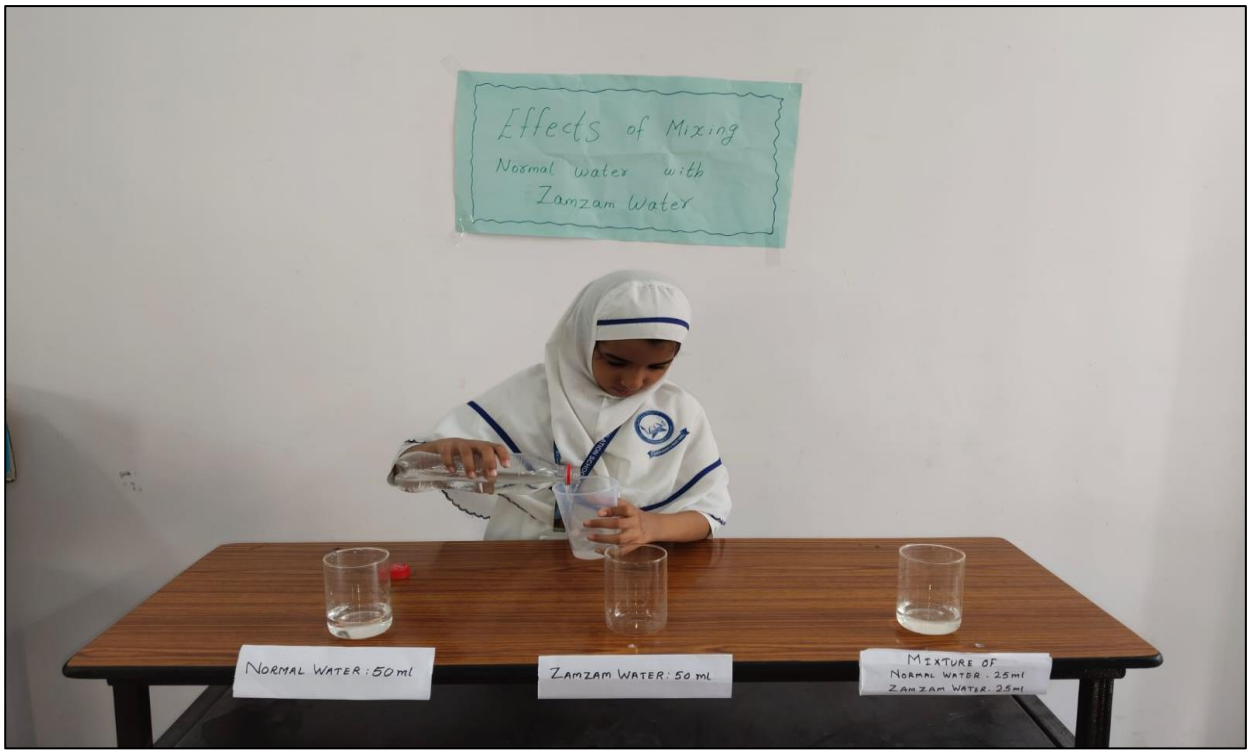
1. Label one glass as Normal Water and another as Zamzam Water.
2. Pour 50 ml of normal water in the first glass.
3. Pour 50 ml of Zamzam water in the second glass.
4. Using the measuring cylinder, take 25 ml of each and pour into a third glass.
5. Stir the mixture gently with a clean spoon.
6. Measure the pH of all three glasses using pH paper or a digital pH meter.
7. Note the appearance, clarity, and taste (if safe to do so).
8. Repeat the experiment three times for accuracy.
9. Record all results in a data table.
10. Use the results to create a graph comparing the values.

Mixing normal water with Zamzam water



Pouring normal water

Pouring Zamzam water



Mixture of normal water and Zamzam water

Checking PH level of Normal water

Checking PH level of Zamzam water

Checking PH level of normal water and zamzam water

Final result- Mixing adds zamzam's alkaline profile to normal water, increasing its PH

Experimental data table

PH Effect of mixing zamzam water with normal water:

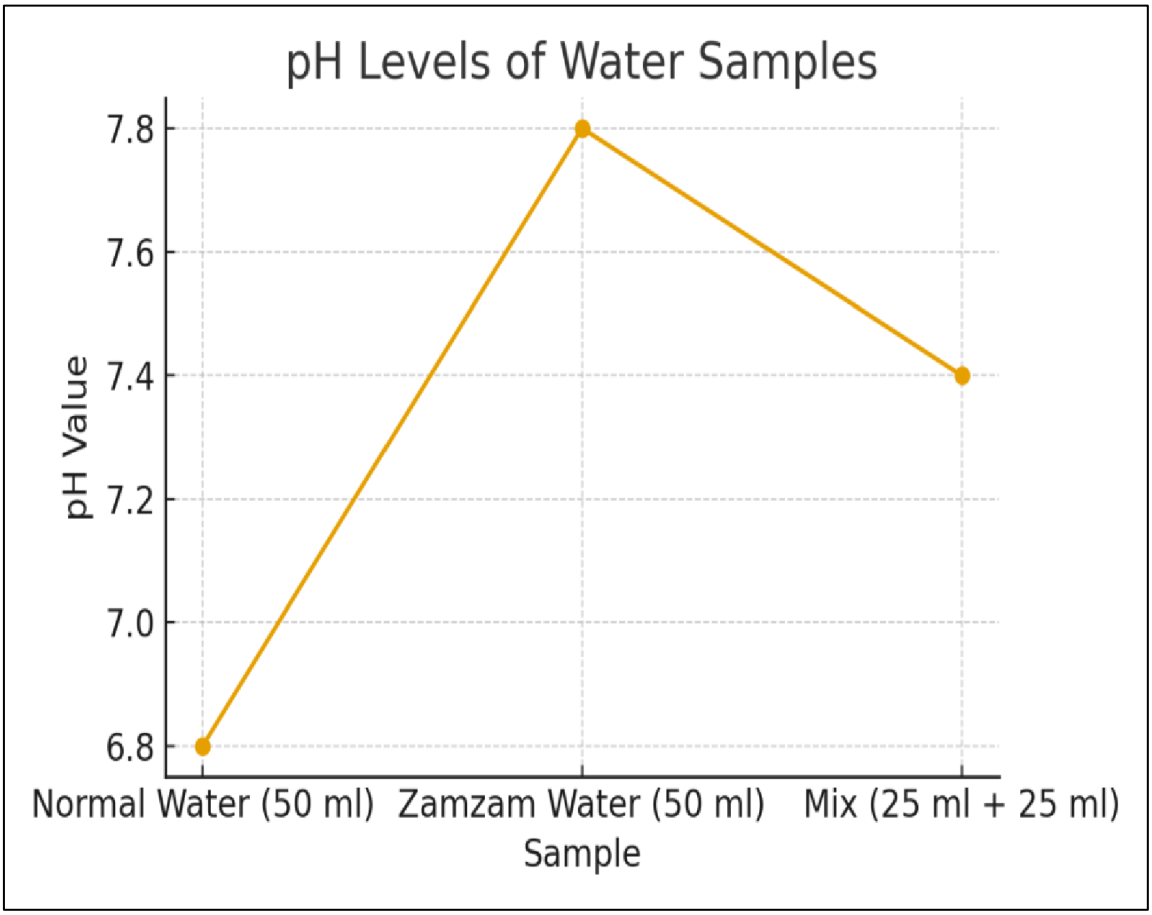
PH data table and graph

Data Table

Sample	PH Value
Normal Water (50 ml)	6.8
Zamzam Water (50 ml)	7.8
Mix (25 ml + 25 ml)	7.4

Graph

PH Levels of normal, zamzam, and mixture water



◈ Safety and Risk

- Handle glassware carefully to prevent breakage.
- Use only small amounts of Zamzam water, as it is sacred
- Ensure all equipment is clean to avoid contamination.
- Do not waste the samples unnecessarily.

◈ Scientific Principles

- Law of Conservation of Mass – The total quantity of water remains constant when mixed.
- Solubility – Minerals from Zamzam water dissolve evenly in the mixture.
- PH Principle – Zamzam water's slightly alkaline nature dominates the mixture.
- Homogeneous Mixture – Once mixed, the water molecules cannot be separated easily by physical means.
- Stability of Minerals – Certain ions in Zamzam water remain stable even when diluted.

◈ Discussion & Results

The experiment showed that the mixture's pH values stayed closer to Zamzam water than to normal water, proving that Zamzam water influences the mixture strongly. This suggests that Zamzam water's minerals and stability do not disappear easily. The data was consistent across three trials, showing reliability of results. The results match the hypothesis that Zamzam water maintains its properties even when mixed.

◈ Conclusion

The experiment demonstrates that when Zamzam water is mixed with normal water, the mixture retains several of the unique characteristics of Zamzam water. The pH readings remained slightly alkaline and closer to Zamzam water values, showing its mineral strength and stability. This confirms that Zamzam water possesses natural properties that are not easily altered by dilution.

The findings support the hypothesis that Zamzam water has a consistent composition of beneficial minerals such as calcium, magnesium, and bicarbonates, which contribute to its purity and alkalinity. The experiment also highlights the scientific concept of homogeneity — once mixed, both waters form a uniform solution while preserving certain chemical characteristics of Zamzam water.

Overall, the project proves that Zamzam water remains special even when combined with normal water, showcasing both its spiritual significance and scientific uniqueness.

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