

Artificial Hydro Production for Removing the Scarcity of Water in field of Agriculture

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Abstract: Water scarcity is one of the biggest problems faced now a days. So we've done a project to remove it. We can convert seawater to freshwater in low cost and high efficiency. The below given method converts seawater to freshwater without electricity and remove the salt. Already there are many methods to do this but it's not available to all people that is why scarcity comes. Even the third world war could happen due to water scarcity. To prevent all this only way is to convert the sea water using chemical methods This method has three stages. At first chlorine stage, then sodium stage, then other impurities will be removed finally the water will be salt free. By implementing this method 100% water scarcity could be abolished.

Keywords: scarcity of water, sea water, chlorine, sodium.

1. INTRODUCTION

“Artificial Hydro Production For Removing The Scarcity Of Water in field of Agriculture“ . As it is already mentioned this project is used to remove the scarcity of water . The main objective of this project is to convert seawater to freshwater . To do so we use a method called **Combination method**. The common methods to purify water is desalination process, reverse osmosis. The earth contains 71% of water and the rest is land . In 71% of total water 96.5% is seawater . and only 2.5% of freshwater available on the entire earth by nature and We use only 1% of that water . And the rest 1.5% is trapped in glaciers and snowfields . There are many uses of freshwater like

1. Domestic agriculture ,
2. Recreation ,
3. Industrial and hydro power generation

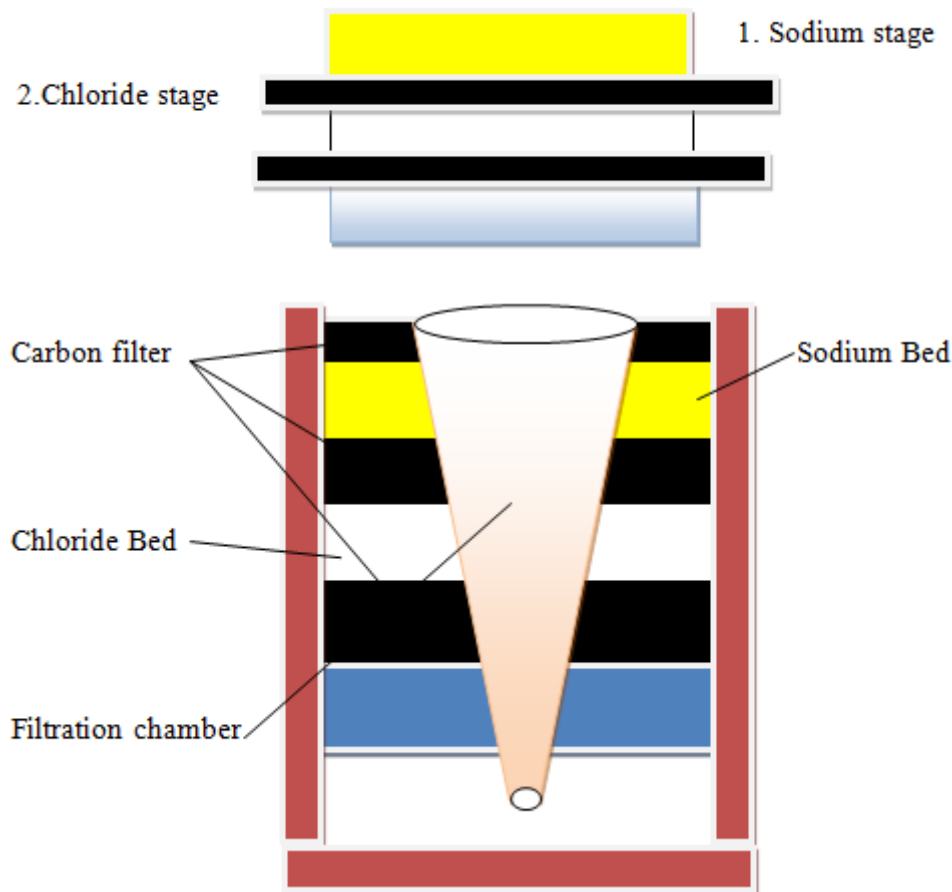
we can't drink seawater directly since there are many side effects occurs due to sea water intake as it contains large amount of sodium and chloride level which can cause kidney failure, and other ailments that's why we purify the water .

same as that on the other hand The mangrove plants only grow in saline water . So we can use the filtered water for agriculture. The elements present in sea water are sodium , chloride , magnesium , bromide , sulphur , phosphorous and negligible amount of other particles . The sodium and chloride particles present in seawater is harmful to plant growth . The magnesium present in it is very helpful for plant growth. It also has a 1.13% potassium and 3.65% magnesium at average . The sulfate present in it also helps the plant growth . The value of freshwater is 5.5 -7.5 . The water we get also have the ph between these values . So it is absolutely fresh water.

2. MATERIALS AND METHODS

The materials we use are ordinary chemicals like sodium-bi-carbonate, acetic acid, Natrium, chloride, seawater, some test tubes, pH scale .The sodium-bi-carbonate in liquid form as soda and solid form as baking soda. Then we use the chloride as another layer in second stage, where we use bleach in the place of chloride i.e. $Ca(Cl)^2$.Whereas the bleach is rich in chloride content. The procedure involves filtration method. So we should use the filter paper and also activated carbon ©.

The activated carbon should be the absolute activated carbon the first layer will be sodium mixture and followed by chloride layer and carbon .each layer will be separated with a filter paper. In first layer of the experiment we use sodium-bi-carbonate in both the liquid and solid state. For the second layer it is separated using a filter paper. The second layer that is the chloride layer is used to remove the natrium present in seawater. Then another layer will be separated using the filter paper, the next layer will be carbon layer it has the valence of four so it will remove further chloride and other impurities. The layer will also be separated using the filter paper and finally the freshwater will be obtained. The water will be salt free and will have all nutrition present in it essential for plant growth. It can also be consumed or also can be used to irrigate the crops.



3. RESULT

We've got more trial that finally end up with salt free water. At the first trial it is used that the three layer with natrium, as sodium-bi-carbonate, chloride as Bleach ($\text{Ca}(\text{clo}_2)$) and third layer as empty layer . Where the water came with less salinity and precipitate of salt. The second trial was carried with the sodium-bi-carbonate and chloride as the first. But the results are not similar. At the trial-1 the water came with less salinity but in this case the water doesn't have the salinity at all and it en up successfully we've planted some crops to check the plant grows or not actually it does . But it has a bit of chlorine odor. As the trial-2 is a quite success we use this, method to purify the water. But later we use sodium instead of sodium-bi-carbonate. And similarly we use Cl instead of Ca (clo) 2. The third layer of activated charcoal is used to remove the impurities present and to remove further chlorine. And we've used those water to the plants grow finally the plants germinated at the stipulated time. And we also planted another plant of the same type and used normal freshwater and it also have the same result . Thus the water we produce and the water we get is similar in taste , odour and properties . Thus assuming that the water produced is fresh . Hence it matches the properties of the ordinary water.

4. DISCUSSION

There are many methods used to convert impure water to freshwater firstly desalination process , it is the process where the water is heated and the water vapor obtained is then cooled to get pure water vapor similarly to distillation process . Next there is reverse osmosis it is reverse process of osmosis where the solvent gets through the semi permeable

membrane to get pure solvent the reverse osmosis the solvent get pure solvent the reverse osmosis process is used worldwide to purify water but not sea water. There is another method using grapheme where the water is passed through it and the water will be undergoing several stages to be purified. But in our case there is a minor drawback that this method cannot be applied where there is more sewage content. As most of the sewage content is mixed into the sea. So we need ocean water. Tin desalination process it takes about 56 cores to build it. Ant it also need more energy. As there are many desalination plants in moreover 120 countries it can purify up to an extent of 14 million liters per day as a whole but if we use this project in the same number of countries. We can double the amount of purification. So that there will be abundant amount of freshwater. And all can get water which includes farmers . Most of the farmers don't get enough water due to the high cost comparing desalination process and it can also do double the work. It doesn't need much electricity. It is not an existing method. By products could be obtained. It is low in cost so as to promote the conversion of seawater to be used the CH₃COOH present in it is drought resistant. Has a major success rate. It can be easily implemented

5. CONCLUSION

We conclude this project will be a revolutionary and effective process of filtering seawater. Everyone will be getting water after implemented to daily we can covert seawater to freshwater for sure. So no more suicide or deaths but to water scarcity occurs

REFERENCES

- [1] <http://oceanplasma.org>
- [2] <http://quora.com>
- [3] <http://lennntech.com>
- [4] <http://amnh.org>
- [5] <http://imd.gov.in>
- [6] Meacham Elimelech et al.,2011,the future of seawater desalination energy , technology and the environment . Science 333, 712-717.