



To understand the role & importance of pot water that helps in providing healthy water: A study with special reference to Jalandhar district

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Abstract

As we all know that water play an important role in our life. The life without water is impossible. The role of water purifier is to clean the water and provide us safe water but the water purifier removes all the impurities as well as minerals from the water, which is simple water without any minerals. So this is the serious concern that we are getting simple water without any minerals or healthy water, we are getting only simple water which can fulfill our thrust level but without any minerals. The pot water helps us to add minerals in it naturally and helps us in giving healthy water.

Keywords: water, water purifier, pot water, minerals, impurities, TDS

Introduction

The region is named after Jalandhar, a devil king, who finds a talk about in the Puranas. "According to a further story Jalandhar is said to have resulting its name from the dialect term 'Jalandhar' means area within the water, i.e. territory laying between the two rivers Satluj and Beas, as it was waters by three rivers, Satluj, Beas and Ravi". The Administrative set up of Jalandhar city, Jalandhar District consists of 5 tehsils 1). Jalandhar-I, 2. Jalandhar II, 3. Nakodar 4. Phillaur and 5. Shahkot, further sub-divided into 10 development blocks, as Jalandhar East, Jalandhar West, Bhogpur, Adampur, Nakodar, Shahkot, Phillaur, Nurmahal, Lohian and Rurka Kalan. According to District Statistical Office, the district has 956 inhabited villages.

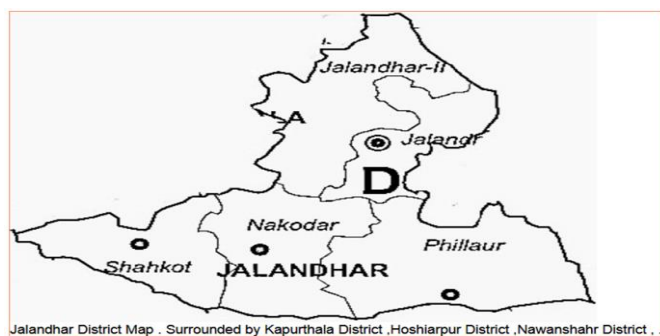


Fig 1

Pure Water

The United Nations predictable report on World Water Day has exposed appalling results. It says, that 2.1 billion people, or 28% of the global population lacks access to safe water and the number is likely to boost with climate change, global conflicts and drying up of water resources.

In the context of district's water level, the picture is equally grim. There are a total ten blocks in Jalandhar and all have been declared as the dark zones due to over exploitation of

water resources. Reportedly, the aqua reservoir ground water layer has gone to 3rd layer, which is also the 2nd last layer of ground water. Water purification is the process of removing undesirable chemicals, biological contaminants, suspended solids and gases from water. The goal is to produce water fit for a specific purpose. Most water is disinfected for human consumption (drinking water), but water purification may also be designed for a variety of other purposes, including fulfilling the requirements of medical, pharmacological, chemical and industrial applications. The methods used include physical processes such as filtration, sedimentation, and distillation; biological processes such as slow sand filters or biologically active carbon; chemical processes such as flocculation and chlorination and the use of electromagnetic radiation such as ultraviolet light.

Purifying water may reduce the concentration of particulate matter including suspended particles, parasites, bacteria, algae, viruses, fungi, as well as reducing the concentration of a range of dissolved and particulate matter. These standards usually include minimum and maximum concentrations of contaminants, depending on the intended purpose of water use.

Reverse Osmosis - RO

In RO water purifier, it passes water through the pump to increase water pressure then pass that pressured water through RO membrane (semi permeable). During this process dissolved solids and TDS present in water are eliminated. RO water purifier converts hard water to soft water. The disadvantage of RO water purifier is it produces a lot of waste water. TDS is a common terminology in use whenever you discuss water purification.

Water is the Best Health Drink in the world that contains no fat, no calories, and no cholesterol. There are a lot of hazardous contaminants found in the drinking water that includes toxic elements, pesticides, radiological hazards and other pollutants.

Health Authorities often check the following to make sure that the water is safe.

- PH
- Presence of Dissolved Oxygen
- Color
- Hardness
- Presence of the Bacterial Growth, Algae, algae
- Total Dissolved Solids (TDS)

Total Dissolved Solids - TDS

A water molecule in its purest form contains 2 atoms of Hydrogen and 1 atom of Oxygen. But, the water available from natural sources like rivers, lakes, and groundwater does not confirm to this molecular formula. This is because water contains a lot of organic and inorganic salts dissolved in it. This water contains calcium, magnesium, sodium, potassium, sulfates, carbonates, nitrates, and fluorides among many other salts. This seems to be a very long list, but the positive aspect is that you need a majority of these salts for your overall growth. You need a certain proportion of these solids in your drinking water. However, water can contain other contaminants such as heavy metals like arsenic, lead, and even mercury. These chemicals are dangerous and require elimination. TDS up to a certain level is acceptable for human consumption. It is only when the TDS proportion exceeds 500 (500 ppm) does it become hazardous. You would require the use of water purifiers to eliminate the excess TDS. In India, If the TDS level is above 500mg/liter, the water is considered as disagreeable. But, due to the lack of water resources, people are drinking water that has greater TDS Levels.

Literature Review

Phadatare & Gawande (2016) [10]: The research shows that water is the one of the most important natural resource on this

Results & Discussions

Table1: Showing TDS level at different stages

Location	Normal Water (TDS)	Filter Water (TDS)	Pot Water (TDS)	Duration (Hrs)	Name of Machine
Jalandhar City	285	8	30	12	RO+UF
	245	8	80	24	RO
Kapurthala	280	42	50	24	RO+UV
	340	30	52	12	RO+UV
Nurmahal	436	16	36	12	RO+UV
	419	35	71	24	RO
Nurmahal	401	15	60	12	RO+UV
	415	41	69	24	RO+UV
Nakodar	321	25	85	24	RO+UV
	421	27	54	12	RO+UV
Shakot	403	22	48	12	RO
	472	91	102	12	RO+UF
	442	95	120	12	RO+UV+UF

From the above table it is clear that TDS of normal water are quite high in jalandhar and nearby areas. As it has been discussed that by world health organization standard water with TDS level is between 200-250, but it has been seen that in some areas of jalandhar the normal water level in some area

planet and it has been seen that we are having only 3% of the fresh water available with us with the passage of time the water we are having becoming polluted so having quality, fresh water is very rare. This research totally focused on the pure water or on the quality water depending on the conditions, the quality of the water are going down day by day.

Shrivastava *et al.* (2015) [11]: The water quality of the rivers become the major concern in India, the main aim of this paper is to focus on the pollution level of the river water, the different parameters were used to make water drinkable especially true for rivers being used as drinking water sources. Arivoli *et al.* (2016) [12]: The study focused on the increase in the pollution load due to domestic sewage and industrial effluents and anthropogenic activities and discharge of wastes to the discharge into river at Erode district. In the present study water samples were collected from the whole city was divided in four regions for well-organized sampling and interpretation. “Water quality management is urgently required to achieve the water quality standards determined by WHO. Correlation coefficient showed highly significant positive and negative relationship”.

Objective of the Study

The role of pot water that helps us in providing healthy water

Methodology

The present research was conducted on a sample consisting from the Jalandhar city and nearby areas and purposive random sample randomly drawn from different location near by Jalandhar city. The water sample has been tested after 12 hours & after 24 hours after putting it in the pot. The sample is taken from various RO, RO+UV, RO+UV+UF machines has been taken and its effects has been seen in the water pot.

is near to 250 but it does not mean that the water is safe to drink because this type of water contain lot of impurities with it. So it is better to have water after having filtration for water purifying machines.

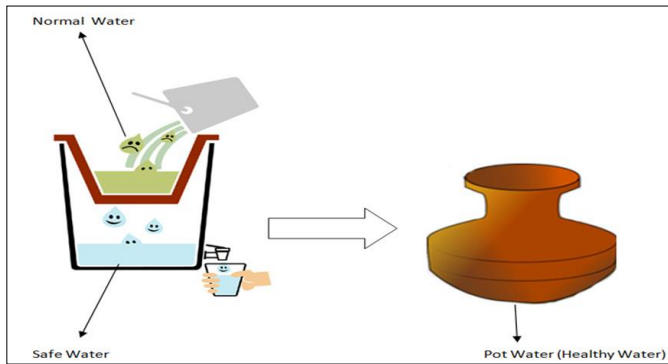


Fig 1: Showing the Safe water & Healthy water

The above figure shows that how normal water converted into pure water by filtration process and then water put into pot for 12 to 24 hrs and how the pot water automatically converted its healthy water by adding minerals in it.

Table 2: TDS level of Jalandhar city

Jalandhar City			
Duration	Normal Water (TDS)	Filter Water (TDS)	Pot Water (TDS)
12hrs	285	8	30
24hrs	245	8	80

The table 2 shows that in Jalandhar city the TDS level of normal water is 285 & 245 after purification process the TDS Level of water comes down to 8 by removing all impurities as well as minerals from the normal water. Then the filtered water put in the pot water for the 12 hrs and the TDS level increase to 30. Another sample of normal water taken from different area of Jalandhar the TDS level of normal water came 245. After filtration process the TDS Level of water comes down to 8, then again put that filtered water in pot for 24 hrs and the TDS level increase to 80.

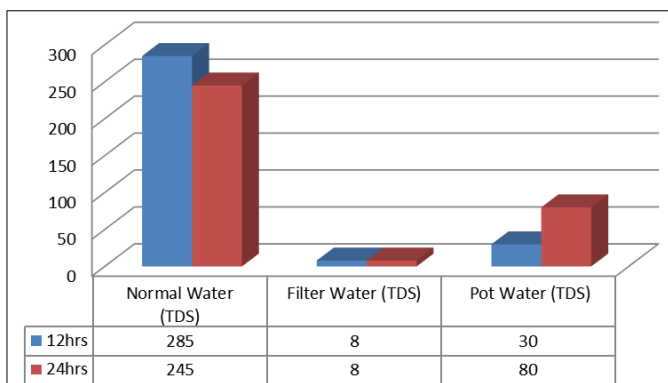


Fig 2: Showing TDS Level

The above figure 2 shows the sample of normal water taken from different places of jalandhar city, then after purification process the level of TDS came down then water put in the pot and their is increase in the TDS level.

Table 3: TDS level of Kapurthala

Kapurthala			
Duration	Normal Water (TDS)	Filter Water (TDS)	Pot Water (TDS)
12hrs	340	30	52
24hrs	280	42	50

The table 3 shows that in Kapurthala the TDS level of normal water is 340 & 280 after purification process the TDS Level of water comes down to 30 & 42 by removing all impurities as well as minerals from the normal water. Then the filtered water put in the pot for 12 hrs and the TDS level increase to 52. Another sample of normal water taken from different area of kapurthala the TDS level of normal water came 280. After filtration process the TDS Level of water comes down to 42, then again put that filtered water in pot for 24 hrs and the TDS level increase to 50.

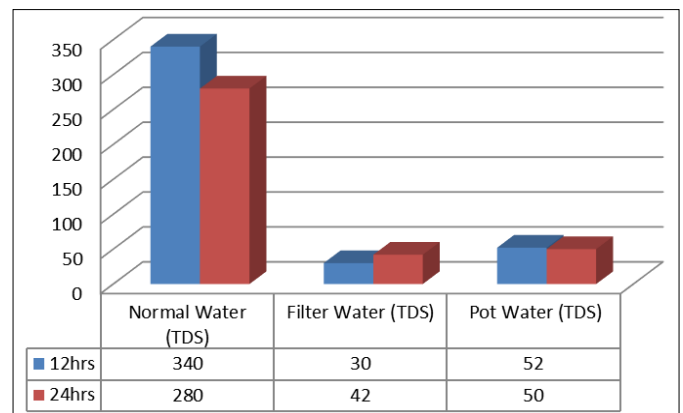


Fig 3: Showing TDS Level

The above figure 3 shows the sample of normal water taken from different places of kapurthala, then after purification process the level of TDS came down then water put in the pot and their is increase in the TDS level.

Table 4: TDS level of Nurmahal

Nurmahal			
Duration	Normal Water (TDS)	Filter Water (TDS)	Water Pot (TDS)
12hrs	436	16	36
24hrs	419	35	71

The table 4 shows that in Nurmahal the TDS level of normal water is 436 & 419. After purification process the TDS Level of water comes down to 16 & 35 by removing all impurities as well as minerals from the normal water. Then the filtered water put in the pot for the 12 hrs and the TDS level increase to 36. Another sample of normal water taken from different area of Nurmahal the TDS level of normal water came 419. After filtration process the TDS Level of water comes down to 35, then again put that filtered water in pot for 24 hrs and the TDS level increase to 71.

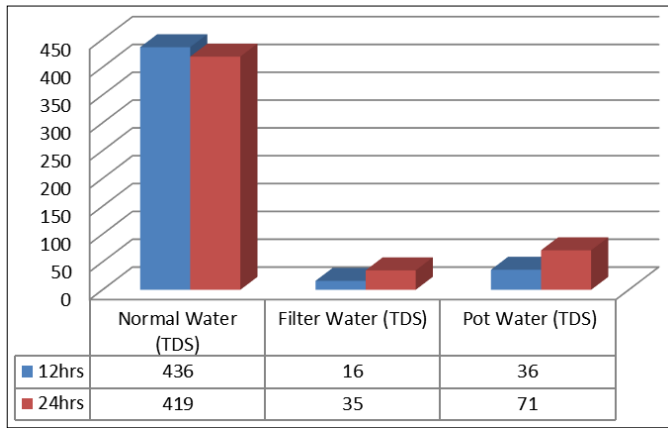


Fig 4: Showing TDS Level

The above figure 4 shows the sample of normal water taken from different places of Nurmahal, then after purification process the level of TDS came down then water put in the pot and their is increase in the TDS level.

Table 5: TDS level of Nakodar

Nakodar			
Duration	Normal Water (TDS)	Filter Water (TDS)	Pot Water (TDS)
12hrs	421	27	54
24hrs	321	25	85

The table 5 shows that in Nakodar the TDS level of normal water is 421 & 321. After purification process the TDS Level of water comes down to 27 & 25 by removing all impurities as well as minerals from the normal water. Then the filtered water put in the pot for the 12 hrs and the TDS level increase to 54. Another sample of normal water taken from different area of Nakodar the TDS level of normal water came 321. After filtration process the TDS Level of water comes down to 25, then again put that filtered water in pot for 24 hrs and the TDS level increase to 85.

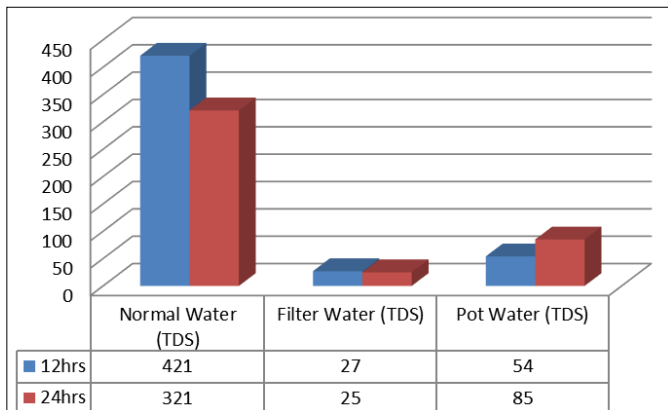


Fig 5: Showing TDS Level

The above figure 5 shows the sample of normal water taken from different places of Nakodar, then after purification process the level of TDS came down then water put in the water pot and the increase in the TDS level.

Table 6: TDS level of Shahkot

Shahkot			
Duration	Normal Water (TDS)	Filter Water (TDS)	Water Pot (TDS)
12hrs	403	22	48
24hrs	442	95	120

The table 6 shows that in Shaktot the TDS level of normal water is 403 & 442. After purification process the TDS Level of water comes down to 22 & 95 by removing all impurities as well as minerals from the normal water. Then the filtered water put in the pot for the 12 hrs and the TDS level increase to 48. another sample of normal water taken from different area of Shahkot the TDS level of normal water came 442, after filtration process the TDS Level of water comes down to 95, then again put that filtered water in pot for 24 hrs and the TDS level increase to 120.

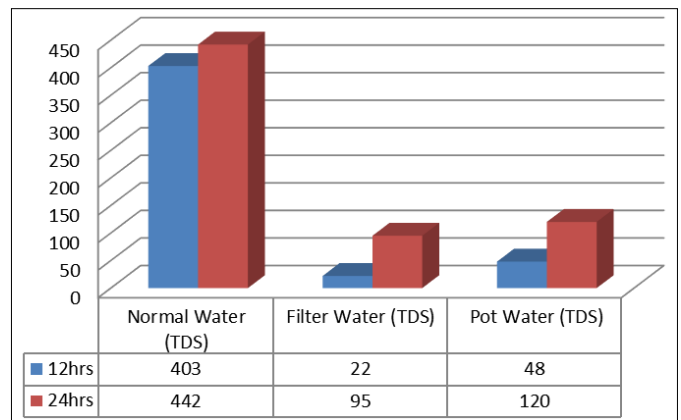


Fig 6: Showing TDS Level

The above figure 6 shows the sample of normal water taken from different places of Shahkot, then after purification process the level of TDS came down then water put in the pot and their increase in the TDS level.

Conclusion

The overall results shows that now days it is very important to have a safe and clean water and with the help of different water purification machines, we are getting safe water, which is free from all types of impurities but the basic problem is that these purifier also remove all kinds of minerals from the normal water which is very important for our body. The purified water that we are getting after filtration is without any minerals which can create number of deficiency in our body, even though we can get all those minerals from the different sources but it is to get those resources naturally i.e from water. So the pot water plays an important role in increasing the TDS level of water and helps in adding the minerals in it and provides us safe and healthy water. So all must use filtered water and then put that water in the pot so that we can get safe and healthier drinking water.

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