Kingdom of Bahrain

The National Initiative for Agricultural Development
المبادرة الوطنية لتنمية القطاع الزراعي

Greywater Technology

The National Initiative for Agricultural Development

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What is Greywater?

Greywater is the water discharged from kitchen sinks, bathroom sinks, tubs, washing machines, etc. where it is treated and used in irrigation. This represents about 50-80% of the waste water in homes. This Greywater is gathered in a special tank, treated, recycled and used in irrigation whether fields or home plantings.

Greywater contains only a small amount of pathogens and decomposition of its contaminants in the soil. It contains less amount of Nitrogen which is the biggest contamination for drinking water.

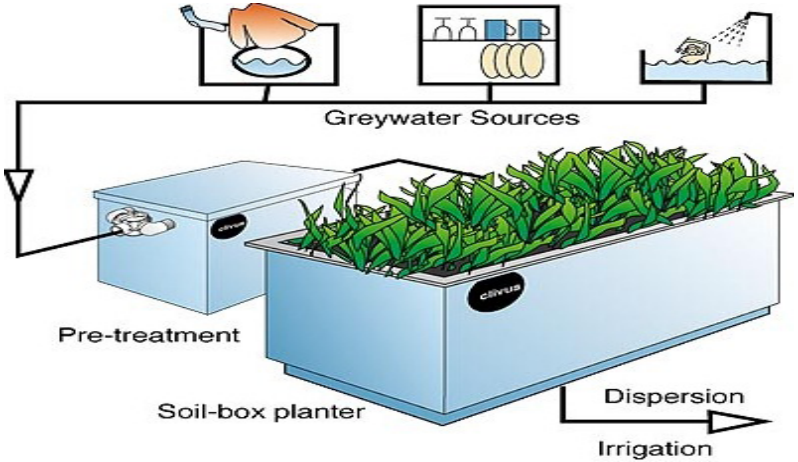
The Benefit of this Technology

The By reusing the wastewater you have achieved the following benefits :

- Keeping the environment safe.
- Enhance groundwater recharge.
- Promoting awareness of the nature recycle
- Greywater helps expanding the green areas and growing the plants due to its nutrients.

- It covers until 30% of the house needs of water.
- This Tech lessens the burden on sewerage stations.

Facts: Financial advantages: According to a case study in California, a house of 3 bedrooms generates 160 gallons of Greywater per day and about 58,000 gallons per annum. A whole family of 4 individuals can use 22,000 gallons of flushed waters from washing machines every year which is the amount of a large pool.



What can I do in my house?

After separating bathroom waters (black water) from the greywater, you can easily install this tech. (Please, contact us for more info about the local companies who can install this Tech.)

Does this tech affect the water pressure?

Of course not. This system does not interfere with the municipality water line and thus does not affect the water pressure going thru houses or compounds.

Does greywater affect Agriculture?

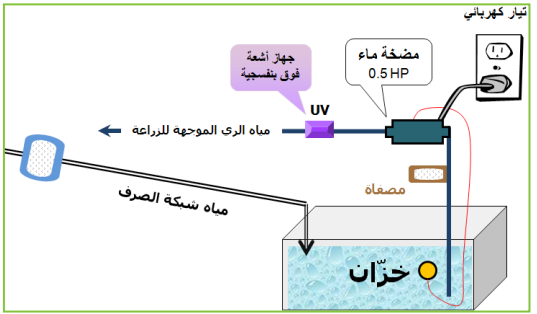
Greywater is highly alkaline since it mixes with other soaps, chemical substances. It contains Phosphorus, potassium and nitrogen which works as nutrients.

Gray water can be used to irrigate trees and ornamental plants, taking into account not to pour water directly on the leaves and stems. It is not recommended to use gray water to irrigate cultivated plants in the containers, due to the accumulation of contaminants in the soil and the containers that damage the roots. It is prohibited to irrigate leafy vegetables or crops that are eaten raw, such as lettuce roots, herbs and carrots.

Overall, if using gray water to irrigate plants that are eaten, it is necessary to limit the use of water in the plants that grow fruit above the soil surface.

Did you know?!

- In some cases, there is no need to treat the greywater, especially if we don't use some substances. (Environmental Studies Center, a study by the ministry of Planning in Jordan 2004).
- Santa Barbara city was the first to develop a special law about gray water in 1989. Now, each U.S. state has responsibility to enact laws on water and disposal. Some States also developed specific U.S. legislations that allow re-use of greywater. California has issued in 1977 codes to regulate the re-use of home greywater. In Arizona, they allow its use on home gardens, and this is what has become common in the State to irrigate ornamental trees and shade trees. At present it has popularized the use of such water in many U.S. states.



- In Japan, the use of such tech is compulsory in the buildings over than 30,000 km2 or buildings that consummate more than 100 m3 a day.
- Advantage of gravity can be used to direct water towards the compilation of the basin by the electric switch and closing the electrical circuit. The higher the floating ball on the surface manages the electric pump automatically and directs water through irrigation hoses. The pump stops automatically if the level of the ball lowered to a certain limit. The figure below explains this process in detail.

  NOTE: You can dispense the UV to kill bacteria and the filter which tops the tank directly. Several ways can be adopted to run the filter which precedes the tank.