

# Here is the TRAISELECT System or The Selective Treatment of Greywater



Welcome to the TRAISELECT system, or the selective treatment of grey water. TRAISELECT is not a commercially-available system. It is a concept made available to all, and its set-up does not require any special skills. This system is mainly used by households who have adopted the use of dry toilets instead of flush toilets. It is used to purify soapy household water, but cannot be used to purify water containing human excreta.

Grey water is conveyed to an ordinary septic tank, here – a grey water tank that we call a greywater batch reactor. As household grey water is usually warm or hot, purification occurs more rapidly than what happens in a conventional septic tank.

For better performance, you must not include a grease trap. Thus, kitchen grease will float on the surface, preventing water's contact with air, while harbouring and feeding bacteria that decompose soaps and other laundry and dishwashing products.

Dead bacteria settle on the bottom to form a sludge. This sludge ferments to produce a bit of methane, nitrogen and carbon dioxide. In fact, sludge decomposes at the same speed it is formed, and thus, no maintenance is required. You bury the greywater tank, and forget about it. In the absence of air, nitrogen contained in greywater is transformed into atmospheric nitrogen. The water issuing from the reactor in fact contains less nitrates than what you will find in most centralized mains water systems.

Greywater that has thus been pre-treated by the reactor is discharged through the overflow into the aeration tank. In this tank, air bubbles generated by the aerator help reduce the pre-treated water's smell.

Further purification occurs within the planted trench filter. This trench covers an area of about one square meter per person. The pre-treated water passes through a filter made up of plant roots that fill the voids within the trench's stone and pebble substrate. It thus drains to a collection pit, from which it overflows into the constructed wetland for final treatment. The wetland measures about 1.5 to 2 square meters per person, has a depth of 80 centimeters in the middle, and 30 centimeters all around. It is made watertight with a plastic lining.

Plants are mainly placed in the pond for decorative purposes and further physical filtration. We must insist on the fact that the TRAISELECT system is not a purification system using plants. In this pond, daylight is the primary bio-filtration catalyst, which provokes the coagulation and sedimentation of whatever residual soaps and bacteria remain. The sludge thus formed is taken up by other bacteria that transform it into water and carbon dioxide. The perimeter of the pond is ideally lined with peat bricks, when available, to act as the pond's overflow.

The whole system takes up little space, and the purified water at the system's discharge is clear, odour-free, and very often complies with drinking water standards.

For further reading, don't hesitate to visit the website [www.eautarcie.org](http://www.eautarcie.org), where you will find all analytical data on the quality of greywater purified by this system.



Online since 12/04/11

[http://www.youtube.com/watch?v=r7efH9DVlws&list=UUuJd6J\\_uoKbEzwNVadrYglxQ&index=1&feature=plcp](http://www.youtube.com/watch?v=r7efH9DVlws&list=UUuJd6J_uoKbEzwNVadrYglxQ&index=1&feature=plcp)