

42. ECO-INFO –

GREYWATER REUSE IN THE GARDEN

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If you are considering using untreated wastewater from the house to water the garden, there are environmental, health and regulatory issues associated with this practice, which you should take into account. Greywater reuse is often practiced without a clear understanding of the health risks or the environmental degradation that may be caused. This document considers the reuse potential of untreated greywater for irrigation of gardens in sewered areas.

WHAT IS DOMESTIC GREYWATER?

Domestic greywater is household wastewater, which has not come into contact with toilet waste. It includes wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, laundry tubs and kitchen sinks.

Greywater contains impurities and microorganisms derived from household and personal cleaning activities. The actual characteristics of the greywater produced by any household will be influenced by the factors as the number of occupants, the age distribution, their lifestyle characteristics and water usage patterns.

Because of the high potential for disease causing microorganisms and other substances, NSW Health defines greywater as “a potentially infectious and polluting liquid, which should drain to the sewer to promote sanitation and hygiene”.

PUBLIC HEALTH CONSIDERATIONS

All forms of greywater are capable of transmitting disease. The actual risk of disease transmission varies between households and between sources of greywater. For example, untreated laundry wash water from soiled nappies or wash water from domestic animals is likely to have a higher risk of disease transmission. The following table shows the relative disease risk of the different sources of domestic greywater.

Source	Low	Med	High
Laundry wastewater	■	■	■
Laundry rinsewater	■	■	■
Bath/shower	■	■	■
Kitchen sink	■	■	■
Dishwater	■	■	■

The mode of disease transmission is associated with direct ingestion of microorganisms from contaminated hands, or indirectly through contaminated items such as grass, soil, toys and garden implements. Transmission may also occur through the inhalation of irrigated spray, penetration through broken skin, by insect vectors or by tracking from domestic pets.

Untreated greywater, which is stored, will turn septic giving rise to unpleasant odours and provide conditions for microorganisms to multiply.

ENVIRONMENTAL CONSIDERATIONS

Grey water contains many impurities that primarily come from household detergents and cleansers.

Many of these chemicals may be harmful to soils and vegetation, including sodium, total salts and boron. Others such as phosphorous and nitrogen are harmful to the environment because they encourage the rapid growth of algae and weed in lakes and rivers.

Under the Protection of the Environment Operations Act 1997, it is an offence to allow greywater to enter waterways directly or through the stormwater system. Greywater must therefore be contained within the confines of the premises from which it is generated.

HOW CAN I REUSE MY GREYWATER?

There are two main options for greywater reuse, Greywater Diversion Devices and Domestic Greywater Treatment Systems.

Greywater Diversion Devices simply divert greywater (excluding kitchen greywater) without storage or treatment. NSW Public Health guidelines stipulate that untreated greywater must be dispersed at least 100mm below ground level. Problems with diversion include the inability to store greywater resulting in the need of the application area to cope with influxes of wastewater and blockages of the application network caused by the accumulation of oils, grease and bacterial slime.

Greywater Treatment Systems collect, store and treat greywater to the standards specified in the NSW Health Accreditation Guidelines. Only when greywater is disinfected to the required standard may it be utilised by surface irrigation in a properly designed application area. All greywater treatment systems require NSW Health Accreditation. There is a high capital cost in purchasing and maintaining such a system on an individual household basis.

DO I NEED COUNCIL APPROVAL TO REUSE GREYWATER?

Under the Local Government (Approvals) Regulation 1999, any onsite sewage management system (including any permanent greywater diversion device or greywater treatment system and their land application systems) requires approval to operate from the local authority.

Any greywater treatment system will require both an approval to install and an approval to operate an onsite sewage management system.

CONCLUSION

To reuse greywater sensibly it is necessary to install suitable equipment and land application systems. There is therefore a cost to homeowners to design, install and maintain reuse systems which both protect public health and which do not harm the natural environment. It may be better in the first instance to consider such measures as water conservation techniques and rainwater harvesting for garden irrigation. These items are generally less costly and do not have environmental and public health issues to consider.

WHERE CAN I GET ADDITIONAL INFORMATION?

NSW Health, 2000. Greywater Reuse in Sewered Single Domestic Premises <http://health.nsw.gov.au/public-health/ehb/general/wastewater/wastewater.html>.

Department of Local Government, 1998. Environmental & Health Protection Guidelines: Onsite Sewage Management for Single Households.

Enquiries about greywater reuse in Wyong Shire can be directed to Council's Customer Service Centre on ph: 4350 5555.