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FACTS
on environmental protection

Filters for holiday home wastewater treatment

Greywater filter to meet provisions of new legislation

BEST PRACTISES

PHOTO: NORDICPHOTOS/SKOY

Diffuse pollution places a load on inland waters and the Baltic Sea, especially in the archipelagos. By the year 2014, all holiday homes in Finland will be required to have a system for filtering their wastewater.

Controlling diffuse pollution from wastewater

THE CHALLENGE

In Finland, together with industry, wastewater from rural areas and holiday homes is one of the biggest sources of the phosphorus load on waters, second to agriculture.

Inadequately-treated wastewater can also be detrimental to the hygiene of small inland waters and can contaminate groundwater.

The requirements for treating wastewater from buildings that are outside the municipal sewerage systems were revised in 2003. Under the new decree, the equipment used must have sufficient treatment capacity. The wastewater treatment systems for buildings must be brought into line with the new legislation by the year 2014.

About one million Finns live part of the year in holiday homes that are outside municipal sewerage systems, and many of these homes are in places where it is difficult or even impossible to install a greywater filter underground.

Innovative above-ground greywater filter

THE SOLUTION

Biolan Oy's greywater filter is an on-site treatment plant designed for use at holiday homes. It cleans water used for washing, bathing, dishes and laundry. Installed in a heated space or equipped with a heating cable, it is suitable for year-round use.

The greywater filter is especially suitable for rocky plots and for plots where the groundwater level is high, as the installation is always above ground. Wastewater can be piped directly to the filter without the need for separate septic tanks. According to research by the Finnish Environment Institute, the filter meets the provisions of the new decree for on-site wastewater treatment.

The filter medium used in the on-site wastewater treatment plant is Warnstorfia moss,

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which retains its moisture even when the system is not in use. The microorganisms that grow on the surface of the moss effectively filter out the impurities and nutrients in wastewater, both mechanically and biologically. The Warnstorfia moss can be collected from eutrophic waters during rehabilitation work.

The filter is easy to install and easily serviced. The organic filter material is easily replaced and can be composted after use.

Biolan designed the filter mainly for the domestic market, as Finland has a large number of holiday homes. The aim is to gain one-fifth of the market for filter systems sold for new holiday homes, although the biggest market will naturally be in renovation projects to comply with the new decree. Exports are not planned at the moment, but may have possibilities in the future.

PHOTO: BIOLAN

An innovative approach

Expanding the product range to include wastewater treatment plants was a strategic decision made by Biolan. Greywater filters are a natural succession from composting equipment and dry closets. In this way, customers can be offered a full wastewater treatment system.

In the work of developing the greywater filter, three important goals were set right from the start: ease of use, above-ground installation and a compostable organic filter medium. The company wanted to create an innovative product that would be as environmentally-friendly as possible.

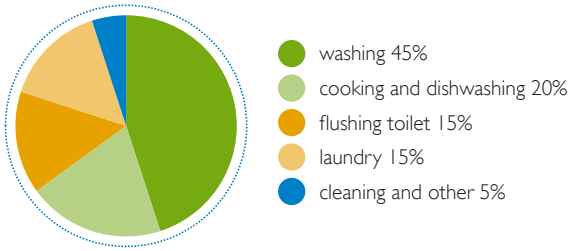
One of the main factors contributing to the success of the project was the support received from public funding, which allowed additional staff to be employed for product development. Wastewater treatment was a new area for the company, and the challenge was to seek out the necessary knowledge and experience.

The company's broad range of horticultural and environmental know-how was a big advantage in the development work, but finding a suitable organic filter medium turned out to be the most challenging part of the project. After testing several materials, the solution came from an unexpected source. The company produces substrates for plant propagation, and it had been found that Warnstorfia moss is both permeable to water and retains nutrients effectively.

The manufacture of the plastic filter fits in well with Biolan's other production, but the collection of Warnstorfia moss still needs further product development. So far, the moss, produced as a by-product of lake rehabilitation products, cannot be recycled, as its clay content is too high. Therefore, it has to be collected separately for Biolan's needs.

THE SUCCESS FACTORS

Wastewater produced by Finnish households
(source: Effective water protection for rural areas)



Under the new decree, a wastewater treatment system must remove the following substances:

- 90% of organic substances
- 85% of phosphorus
- 40% of nitrogen

THE COMPANY

Biolan Oy, founded in 1974, is a company that manufactures, develops and markets growing media, fertilizers, soil improvement materials and products for composting. As well as its own products, Biolan Oy markets those of its subsidiaries to Finland, the EU, the Middle East, Asia and North and South America – a total of some 50 countries.

The importance of exports is growing, and at the moment they account for about 20% of Biolan's net sales. The parent company employs some 60 people.

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