

# Ecological burial involves freeze-drying, composting the corpse

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Promessa founder Susanne Wiigh-Mäsak has developed an ecological burial process that allows the body to be restored to the earth as naturally as possible. Image credit: Promessa, Niklas Johansson.

(PhysOrg.com) -- Ever since the 12th century, the most common way to bury the dead has been to lay the corpse in a casket and then bury the casket several feet underground. Since then, we have learned that casket burials cause environmental and health problems due to the fact that the corpses do not receive enough oxygen to quickly decompose into compost. Instead, the corpses undergo a slow rotting process by bacteria that feed on sulfur, and remaining products can harm the nearby drinking water.

A Swedish company called Promessa Organic AB thinks there is a better way to lay the dead to rest. The company's founder, biologist Susanne Wiigh-Mäsak, has developed an ecological form of burial in which the corpse is transformed into [compost](#) in about 6-12 months. The organic burial process avoids embalming fluids and greatly reduces the environmental impact on the air, water, and soil.

The first part of the ecological burial method involves removing the water that makes up 70% of the human body. To do this, the company freeze-dries the corpse in liquid nitrogen within a week and a half after death. The corpse is first frozen to  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) and then submerged in liquid nitrogen. Next, sound waves at a specific amplitude vibrate the brittle corpse, transforming it into an organic white powder. The powder is sent through a vacuum chamber that evaporates the water, greatly decreasing the corpse's mass. If the person had metal surgical implants, a metal separator can remove these parts from the dry powder. If required, the powder can also be disinfected.

At this point, the organic powder is hygienic and odorless, and the remains can either be cremated or buried. Since the powder will not decompose if kept dry, there is no hurry for a burial. At the time of burial, the remains are laid in a coffin made of a biodegradable material such as corn starch and placed in a shallow grave. Depending on the wishes of the next of kin, a bush or tree can be planted above the coffin. Within 6-12 months, both the coffin and its contents will become loam, a high-nutrient soil that nourishes the plant growing above. As Promessa's website notes, this process "can instill greater insight in and respect for the ecological cycle, of which every living thing is a part. The plant stands as a symbol of the person, and we understand where the body went."

Wiigh-Mäsak, who owns a greenhouse and grows 15,000 organic plants, had been thinking about the idea of an ecological burial for many years

until she finally decided to develop the idea into a reality.

“The calm hours spent in my greenhouse gave me peace of mind, and it suddenly became obvious to me how human beings could also be fully integrated with the natural ecological cycle that we are an inherent part of,” she writes on Promessa’s website.

Promessa has won awards from the Green Organisation as well as received recognition from UNESCO for the environmental benefits of the Promession process.

Currently, the company is building its first facility to offer ecological burial as an alternative to casket burial. The first Promatorium in Sweden should open in the spring of 2011, with additional facilities to follow in the UK and South Korea.

**More information:** [www.promessa.org.uk](http://www.promessa.org.uk) and [Promessa's Facebook page](#)  
via: [io9](#)

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