

Brazilian Ecotoilet Makes Waste into Fertilizer or Mortar

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Brazilian inventor Mário Benedito da Silva, from Porto Velho, in the Brazilian northern state of Rondônia, is one of those people who live trying and creating innovative solutions to solve everyday problems.

He works with artesian wells, but later decided to incorporate his part as an inventor. He has already patented a bus sign saying "Help, robbery", to warn people that there is a robber on board.

Another invention, which is only on paper, is a cooker against accidents with children. The household appliance has a protective lip that makes it impossible for children to reach pans that are on the boil.

But the most recent invention by Silva is the "Ecological Toilet". Due to this innovation, he participated in the Amazontech 2008, in São Luís, Maranhão, and has attracted the attention of the audience with the device that protects the environment.

"Waste of water on the planet is very high and at the same time the main difficulty for governments has been finding solutions for domestic sewage and to basic sanitation. With this toilet we may attack the route of this problem," explained Silva.

The invention includes a platform with a stainless steel cylinder at the bottom part. The area also has an engine that is responsible for mixing the waste into a sand and lime mixture. In the system, there is the toilet and a mini production unit of liquid foam connected to a compressor which is a currently a modified nebulizer. There is also a urinal, as the idea is to maintain the feces separated from the urine.

The logic of the invention, explained by Silva, is to use little water in the toilet and to make use of the human waste. "As the waste is taken to an area close to the toilet, that is, to the cylinder that is just below it, we do not need a large volume of water, like the volume used in conventional toilets. In these, the job of water is to take the waste to septic tanks, which does not take place in the ecologic toilet," he explained.

Apart from reducing the use of water in conventional toilets, the invention allows for the use of human waste as fertilizer. "The toilet has two compartments: one for urine and another for feces. It is this division that allows the feces to fall alone in the box of sand and lime. This mixture may be used as fertilizer or may be turned to civil construction to make mortar, for example," he explained. According to Silva, the mixture has neither smell nor bacteria.

For a house with five people, a mixture of three kilograms of lime and three kilograms of water is enough to maintain the toilet for 30 days. After the period it is necessary to collect the powder that is mixed in the cylinder. The urine, in turn

goes to a ten-liter reservoir. The invention does not process the urine for reuse, but Mário says that in case a company is interested, it may filter the urine for use of the urea.

The cleaning of the toilet is done by the foam that is sprayed into the toilet by the compressor. In the toilet, there is an outlet for the foam that flows all over the basin and uses very little water. "The proposal is not to pollute and also find a solution for human waste, as in many cities sewage flows in open air, causing disease," he says.

Now, Silva seeks partners interested in making the ecological invention into a product. "I want to place it on the market and, for this reason, I am seeking businessmen who may buy the ecologically and environmentally correct idea," he says.

The ecological device was exhibited at the Rondônia state branch of the Brazilian Micro and Small Business Support Service (Sebrae) during the Amazontech 2008, which ended on Saturday, November 29.

Sebrae