



Septic tank baffle system- an effluent filtering device¹³

GENERAL UTILITIES NATIONAL THIRD

Rajesh T R (30) is a native of Panancheri panchayat in Thrissur district, Kerala. But in his life span of 30 years he has wandered and worked in most of India with the exception of Manipur and Kashmir. The eldest of a family of three sons, he left home to fend for himself and did everything from working in a lathe workshop to marketing various products from machinery to liquor. He is presently involved in construction work. He is married and has two younger brothers who are goldsmiths.

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ment Society



Genesis While working in the construction business, Rajesh T R felt that the present design of making baffles in septic tanks was too expensive and that he could come up with something simpler. He backed it up with research and borrowed books on engineering from the public library in Thrissur, of which he is a member. He could, however, lay his hands on only one book on Sanitary Engineering. After reading everything he could on the subject, he thought about it for about two weeks and developed a prototype, to which he later made a few modifications. He then installed it in a neighbour's house, where he had been entrusted with the job of constructing the septic tank. Five years since the installation, no problems have been reported

The Innovation

The septic tank is a combined sedimentation cum digestion tank where household sewage is treated. The lighter solids including grease and fat rise to the surface to form "scum" and the heavier solids settle down in the tank to form "sludge" which is gradually decomposed by bacteria. The liquid waste or effluent

goes into the drain field and undergoes oxidation. The baffle in a septic tank helps to reduce the disturbance of the settled sludge and keep the solids and scum in the tank. In the conventional septic tank, two baffles made of concrete are used. However, in Rajesh's innovation, only one baffle made of PVC pipes is necessary. This circular baffle which consists of three chambers works as a divider and filter.

Advantages

The system is cost effective, because, instead of a normal septic tank measuring 2.6m X 9m X 1.8 metres costing Rs.10, 000, by using this unit inside, the size of the tank can be reduced to 1.8m X 9m X 1.8 m. This results in a saving of Rs.3,500. Other advantages include a greater capacity for settling, digestion and storage of sludge, the clearer effluent that is relatively free from stench and particles of excreta, and above all the sheer simplicity of the idea.

The future of the innovation

Though friends and family believe in his ability and have supported him in his endeavours, Rajesh laments the lack of

institutional support for his ideas. He had initially approached a premier research institute in his area with his idea for the baffle system, but did not get a satisfactory response from them. NIF has applied for a patent on his behalf (806/CHE/2004, August 17, 2004). Rajesh has not approached the Panchayat or government authorities with his idea as he did not want to give undue publicity to his innovation, since it is still in the process of being patented. Rajesh hopes that NIF will be successful in finding someone who is willing to invest in it and commercialise it. He does not wish to set up his own business with this innovation as he has already tried his hand at running a couple of businesses which made huge losses and had to be shut down. NIF has sanctioned him Rs.62,500 from the Micro Venture Innovation Fund for making the prototype to conduct market survey of the innovation.

Aspiration

As a child, Rajesh wanted to become an engineer, but now his greatest dream is to get sufficient income so that he can devote his life to what he likes best- research. But rooted in reality, he admits that the exigencies of eking out a living have reduced his time for reading and keeping himself updated with the latest developments in the world of science. He foresees that if this state continues, in a number of years his mind would become stagnant and ideas might no longer flourish in it as they do now.

A stoic view on life

He states unhesitatingly that he has seen all sides of life – there have been times when he slept hungry on a pavement and times when he has been flush with funds. He has been through the crucible of life and is able to view most things with equanimity. With time he has also begun to understand what makes him tick- the fact that routine, mundane work does not interest him

and that he needs something challenging and difficult to work at his peak. When one subject captures his attention, he focuses on it to the exclusion of everything else. His ideas and their development give him satisfaction.

Rajesh has strong and passionate opinions on myriad subjects. One is about the present system of research which he feels is just an extension of a master's degree and M Phil. which makes the student feel obliged to take a Ph.D. There is no genuine interest in finding something new or devoting oneself to it as in the Western approach. His comments on the current system of education are scathing- it stifles independent thinking and children end up mindlessly mugging up details that make no permanent impression on them. They do it as a means to an end- getting the certificate or degree but not for learning. Belief in God has not been a part of his life since he was 12 years old, but at the same time he does not impose his views on his wife and family. He believes in certain universal truths and that one can find that peace within oneself and need not seek it in places of worship.

An asset to his community

Rajesh has proved invaluable to his community in solving various problems- be it of a technical or social nature. He often finds himself counselling friends and advising them on all matters- professional as well as personal, helping school children with difficult maths and science problems and volunteering for various social causes. According to Mr. Chandrasekhar, a school teacher whom Rajesh often consults, "*He has a brilliant mind and needs to be encouraged*". Mr. Vinayan, a community leader, who has constantly offered encouragement for his endeavours, concurs and hastens to add "*What makes Rajesh stand out is his humility and 'open-heart'- he treats everyone equally*".