

## **Fertilizer- producing no-pit latrine**

Fecal contamination is a major contributor to mortality among children. The double-vault dry alkaline fertilizer family (DAFF) latrine was adapted from the successful Vietnamese double-vault latrine by the Centro Mesoamericano de Estudios sobre Tecnología Apropriada (CEMAT) in Guatemala. The Guatemalans call them LASF: letrinas aboneras secas familiares.

Besides contributing to an improvement in health by breaking the cycle of fecal contamination and the spread of diseases such as diarrhea, hepatitis, typhoid, and parasitic infections, the DAFF latrine also provides farmers with fertilizer for their crops. This economic incentive has provided a major breakthrough for CEMAT in overcoming resistance to latrine use by the rural population, who believe that defecating in the fields improves the soil's fertility. The high-quality organic fertilizer produced by the DAFF latrine reduces farmers' costs and helps to avoid the long-term environmental problems caused by chemical fertilizers.

Other advantages of the DAFF latrine include the fact that it requires no digging, uses local materials, does not pollute soil or water (a hazard of pit latrines), and produces fewer microorganisms than pit latrines (thereby reducing the risk of disease).

The DAFF latrine is an aboveground, two-chamber system. A portable toilet seat is placed over the

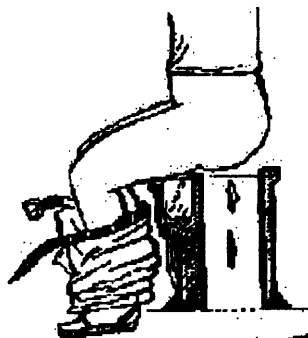
opening of one chamber. Each chamber funnels off urine into a special container. The urine is mixed with water and allowed to stand for 3 days, at which time it can be used as a liquid fertilizer. After each defecation, wood ash or a mixture of soil and lime is placed in the chamber. This keeps the deposit dry, inhibits odours, reduces the presence of flies, and helps speed composting to fertilizer. The toilet seat is moved to the empty chamber when the first is full. The first chamber is sealed for 6 months, while heat and evaporation eliminate the moisture, thereby killing the bacteria. The contents are transformed into a safe, rich fertilizer. An opening in the back wall of the chamber gives easy access to the fertilizer.

During 1982-86, CEMAT transferred the DAFF latrine technology to 10 national and international NGOs and five public national institutions working in the field of sanitation. At the international level, the technology was transferred to Mexico, the Dominican Republic, and Panama. At a session in Mexico, 43 community leaders from seven countries were trained in DAFF latrine technology.

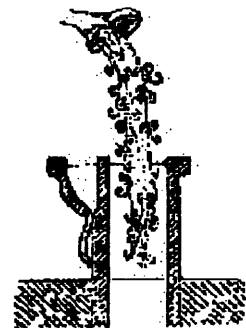
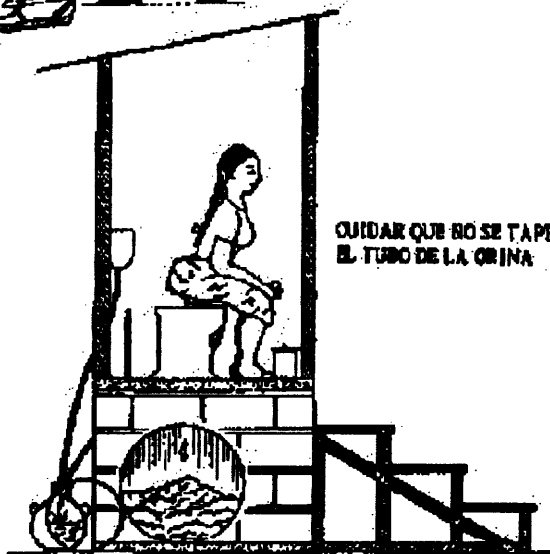
Later in 1986-87, a survey conducted in Guatemala showed that 16 institutions had installed 3000 DAFF latrines in different parts of the country. CEMAT has implemented a project to provide support to these groups in the promotion of the latrines, including: how to promote social acceptance; sanitary control and maintenance; and research on the performance of the fertilizer.

USO

SEPARAR LOS EXCREMENTOS  
DE LA ORINA



QUIDAR QUE NO SE TAPÉ  
EL TUBO DE LA ORINA



AGADIR CINIZA CADA VEZ  
QUE HACER SU NECESIDAD  
(POPOCACA)

**National workshops have been organized to discuss the benefits and limitations of the latrines; videos and demonstrations have been used to inform farmers.**

### **Prerequisites**

**Local materials for building (soil, adobe, brick, cement or stone, bamboo or cane, grass); availability of ash, lime, or dry organic soil. Community involvement and training is essential for social acceptance.**

## Potential users

Rural farmers anywhere; NGOs and community groups concerned with health promotion and agricultural improvements. The technology is especially useful in areas where it is difficult to dig pit latrines.

## Cost

Cost depends on materials used. The entire unit can be built with cement, mud, and grass for less than \$100.

## Contact

Dr Edgardo Caceres Executive Director, CEMAT la Av. 32-21, Z. 12, AP 1160 Guatemala 01012, Guatemala Tel.: (502-2) 762-355; 762-018 Fax: (502-2) 762355

## Resources and publications

- Ficha No.1: La Letrina Abonera Seca Familiar, CEMAT, 1990, 37 pp. Updated manual in Spanish on the building, maintenance, use, advantages, and agronomic use of the DAFF latrine.
- LASF - Una Letrina para la Familia, Jacobo Schiere, Comité Centra Menonita, Guatemala, 1989, 67 pp.; US \$8.
- Social, Sanitary and Agricultural Evaluation of Dry Alkaline Family Fertilizer Latrines in Guatemala, CEMAT, 1988, 15 pp.; US \$2.
- Boletín RED, CEMAT. A trimestrial Spanish-language newsletter dedicated to disseminating information on appropriate technology for Latin American peasants. Subscriptions (incl. airmail): Latin America, US \$5 per year; other, US \$7 per year.