**Health problem addressed**

Endemic diarrheal disease, caused by waterborne bacteria, viruses and protozoan parasites, is a leading cause of mortality or morbidity in the developing world, affecting 4 billion people leading to 1.8 million lives lost (WHO 2007, combating waterborne diseases at the household level).

**Product description**

The water purifier physically removes waterborne bacteria, viruses and protozoan parasites from water flow circulating in the device (antimicrobial efficacy LRV: Escherichia coil > 6; MS2 virus > 4; Cryptosporidium oocysts > 3). Furthermore, the water purifier reduces turbidity by filtering particles larger than 0.02 microns.

**Product functionality**

The water purifier employs a backwashable hollow fiber ultrafiltration membrane and is designed to mechanically remove enteric pathogenic bacteria, viruses, protozoan cysts and turbidity from drinking water without electric power. Water is pushed through the ultrafiltration membrane through gravity (1m water column).

**Developer’s claims of product benefits**

The inside-out flow characteristic of the hollow fibers in the water purifier allows an optimal longevity of the product. This specific configuration together with a specific design of the product allows an easy cleaning of the ultrafiltration membrane. The device therefore works efficiently with turbid water, over the long term.

**Operating steps**

Prefilter removes particles larger than 80 nm. Gravity pushes the water down the plastic hose towards the purification cartridge. The purification cartridge, which contains an ultrafiltration (hollow-fibre) membrane of 20nm porosity, stops all solid particles (microbes: bacteria, viruses, protozoan parasites and turbidity).

**Development stage**

The water purifier is commercially available and has been used in emergencies such as in Indonesia, Haiti, Pakistan as well as programs in Kenya. It has been technically evaluated and tested in low-income settings. Regulatory approval is completed. Free sales certificate available in Vietnam.

**Future work and challenges**

- Use and maintenance
  - User: Self-user.
  - Training: Owner’s manual.
  - Maintenance: Self-user.

**Environment of use**

- Setting: Rural and urban. At home.
- Requirements: Attach the device to the wall or to the ceiling at home.

**Product specifications**

- Dimensions (mm): 1700 x 190 x 170
- Weight (kg): 0.53 (dry)
- Life time: 3 years
- Shelf life: 2 years

- Other features: Portable and reusable.

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