New Data on Moringa Seed to Purify Water

Use of moringa seed on a small scale (household level) to purify water has been mentioned in EDN #117 and #216. Dr. Geoff Folkard at the University of Leicester in England sent us articles concerning very recent work in Malawi. "This is the first time that *Moringa oleifera* seed has been used as a primary coagulant [to clarify water in a treatment plant] at this scale (flow rate 16 m^3 per hour)."

The water plant normally uses alum, an imported chemical, to clarify the water. They only had enough seed to run the plant six hours. Water quality was monitored before and after the switch from alum to moringa was made. There was no deterioration in performance. They used twice as much moringa as alum (50 mg/ml of moringa seed vs 75 mg/ml).

Laboratory trials show that using alum and moringa together (they call it co-coagulation) can give superior results to either used alone. Moringa seed (either *M. oleifera* or *M. stenopetala*) were equivalent to alum and even superior in water of unusually high turbidity. (If you are interested in the chemistry involved, the active ingredients in moringa seed have been identified as two small water soluble proteins with a net positive charge.)

"For many countries, imported alum is the major cost element in the provision of potable water. Malawi currently spends in excess of £220,000 each year on imported alum. Switching to moringa would both save foreign exchange and generate farm and employment income.

Dr. Folkard is now working on extracting the oil from moringa seed. Preliminary tests indicate that the cake remaining after the oil is extracted is still able to clarify water. He is conducting further tests. Because the oil is quite valuable, this could have a big impact on the economic viability of a moringa based water treatment program.

http://edn.link/4fmgm3