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Experimental Report – E02/03/15

EFFICACY TESTING OF PRODUCT

One Drop point of use water purifier

LABORATORY TESTS

Tested By:

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1 Supplies Provided to Laboratory

- Product

2 Test Protocol

- An untreated sterilized tap water sample was spiked with a bacterial suspension containing *Vibrio cholerae*, *Escherichia coli* and *Pseudomonas aeruginosa*.
- The spiked sample was analysed to detect the levels of all the bacteria added before treatment with the product.
- The same sample was split into 3 and treated with the product as follows: 1, 2, and 4 drops per liter respectively.
- All three treated samples were analysed for the same parameters as the before sample at: 30 min, 60 min, 90min, 120min, 240min, and 24hours.
- The results can be found in tables 1 to 4 below.

3 Comments

The results of the experiment show that a total kill was achieved for all the microbes after the addition of 1 drop of the product per liter after 24 hours contact time. There is a general decrease in the bacterial number as the dosage is increased and with increased contact time. *Vibrio cholerae* appears to be the most susceptible to the treatment with the fastest rate of decrease in number with *Pseudomonas aeruginosa* the most resistant to the treatment amongst the three microbes tested.

Over all it appears that the product was effective at rendering the water fit for human consumption after 24 hours contact time with 1 drop per liter based on the microbes tested. Increased dosages appears to bring the contact times down, with a contact time of 90 minutes required for a dosage of 2 drops per liter to achieve a total kill of the microbes in question.

4 Results

Table 1: Before treatment

Determinant	Result
Escherichia coli (cfu/100ml)	100 000
Vibrio cholerae (cfu/100ml)	88 000
Pseudomonas aeruginosa (cfu/100ml)	91 000

Table 2: 1 drop per liter

Determinant	30 minutes	60 minutes	90 minutes	120 minutes	240 minutes	24 hours
Escherichia coli (cfu/100ml)	13 000	2 600	850	120	0	0
Vibrio cholerae (cfu/100ml)	2 100	500	160	2	0	0
Pseudomonas aeruginosa (cfu/100ml)	64000	8 000	3 000	1 800	210	0

Table 3: 2 drops per liter

Determinant	30 minutes	60 minutes	90 minutes	120 minutes	240 minutes	24 hours
Escherichia coli (cfu/100ml)	540	62	0	0	0	0
Vibrio cholerae (cfu/100ml)	70	10	0	0	0	0
Pseudomonas aeruginosa (cfu/100ml)	2 500	450	0	0	0	0

Table 4: 4 drops per liter

Determinant	30 minutes	60 minutes	90 minutes	120 minutes	240 minutes	24 hours
Escherichia coli (cfu/100ml)	0	0	0	0	0	0
Vibrio cholerae (cfu/100ml)	0	0	0	0	0	0
Pseudomonas aeruginosa (cfu/100ml)	20	0	0	0	0	0



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