EFFECT OF FRESH WATER SHELL (*BATISSA VIOLACEA CELEBENSIS*) ON IRON LEVEL IN THE GROUND WATER, KENDARI, SOUTH EAST SULAWESI

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ABSTRACT

Background: Iron in rural ground water supplies is a common problem: its concentration level ranges from 0 to 50 mg/L, while WHO recommended level is <0.3 mg/L. The iron occurs naturally in the aquifer but levels in groundwater can be increased by dissolution of ferrous borehole and handpump components. Iron-bearing groundwater is often noticeably orange in colour, causing discoloration of laundry, and has an unpleasant taste, which is apparent in drinking and food preparation. There are only a few studies of fresh water shell (*batissa violacea celebensis*) as an alternative to reduce the iron content in groundwater has not been done much. This study aimed to test the effectiveness of fresh water shell (*batissa violacea celebensis*) in decreasing iron level in the ground water.

Subjects and Method: This was a quasi-experiment study before and after with no control design conducted at Wowawanggu village, Wua-wua sub-district, Kendari, South Sulawesi. A total sample of 3 boreholes was selected for this study by purposive sampling. The dependent variable was iron level in the ground water. The independent variable was fresh water shell (*batissa violacea celebensis*). Differences in mean between groups were tested by One Way ANOVA and post hoc test.

Result: Differences in mean between groups were statistically significant with iron level in the ground water in the fresh water shell (*batissa violacea celebensis*) groups lower than the negative control group.

Conclusion: Fresh water shell (*batissa violacea celebensis*) is effective to decrease iron level in the ground water.

Keywords: iron level, ground water, fresh water shell, *batissa violacea celebensis*

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