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ETHNOBOTANICAL KNOWLEDGE IN PROTECTING DRINKING WATER SUPPLY IN MARINDUQUE

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1. ABSTRACT

Philippine islands are mineral-rich areas, like Marinduque, thus this study looks on ethnobotanicals use in protecting natural springs from heavy metals. The study involved 21 informants, ages 70-84, about these ethnobotanicals and then followed by a guided walk where the natural springs are located. The plants were taken with pictures and identified taxonomically. Grab samples of water were collected where the natural springs were lcated. The water samples were subjected to metal analyses using atomic absorption spectral (AAS) for copper, zinc and lead ions present. Eleven of the identified herbs were grown in a medium with known concentrations of Cu^{+2}, Pb^{+2} and Zn^{+2} in the laboratory for a week and analyze for heavy metals. The study revealed 56 plant species represented by 33 botanical families. The most are Moraceae (7), Euphorbiaceae (4), Araceae, Urticaceae and Zingiberaceae (3 species each). Species of *Dracontomelon, Dillenia, Nauclea* and *Duabanga* together with the *Ficus* are most preferred by the old folks in cleaning natural springs. The water samples from vegetated natural springs showed permissible to negligible amounts of heavy metals as compared to those with no plants at all. The ferns, *Pteris vittata, Pityrogramma calomelanos* and *Dicranopteris linearis* showed high potentials in accumulating heavy metals, while among the herbs and grasses are *Desmodium heterophyllum, Amaranthus viridis* and *Scoparia dulcis*; and *Cyperus diffusus* and *Scirpus grossus* respectively.

Keywords: ethno botany, drinking water, heavy metals, natural springs, traditional knowledge

TRADITIONAL PRACTICES IN EXTRACTING GOLD AND THEIR QUALITY IN THE RIVERS OF MARINDUQUE

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Abstract

Small-scale mining, especially alluvial gold panning is an artisanal, informal economic activity in mineral-rich provinces of the Philippines like Marinduque. Thus, this study documented the gold panning techniques and local materials use by gold panners using fieldwork, focus group discussion and sampling techniques, involving 43 gold panners. The panners' traditional prospecting and panning techniques were documented and the extracted gold from the rivers and creeks were appraised in karats. Result revealed that gold panning is primarily done during summer in the 27 rivers and creeks, 14 in Boac, three each in Gasan, Mogpog and Sta Cruz and two each in Torrijos and Buenavista. The karat value of extracted gold is ranging from 14 to 22 k, highest samples were extracted in Mayatbo Creek of Boi, Boac; Tumagabok, Boac and Pakaskasan and Cagpo Creek in Torrijos. Fabricated implements are used by the gold panners, which they made. They are all aware of the environmental consequences of their activities, such as erosion of river beds, felling of trees, affecting the quality of water and changing their natural courses.

Keywords: alluvial panning, artisanal, gold panning, Marinduque, small-scale mining.