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**Parent perception, physico-clinical signs
and academic performance of IDA-screened
pre-schoolers***

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Denice M. Diso^b & Lee Anne Margaret C. Rivera^b*

Abstract

This is a cross-sectional study on Iron deficiency anemia (IDA) among 59 pre-schoolers in a public school in Baguio City, focusing on parent perception, physico-clinical signs, and academic performance. A structured interview tool was used to elicit the perception of parents regarding their child's hematology and nutritional status. Hematology screen tests were used to identify pre-schoolers with IDA. Physical assessment as well as teacher's assessment of the child's academic performance were done to gauge the effects of iron deficiency anemia. The findings are as follows: anemia was evident in 39.98 percent of the pre-schoolers studied; perception by parents regarding their child's hematology and nutritional status likely contributed to the occurrence of anemia; an estimate of the recommended daily allowance (RDA) for iron showed evidence of iron deficiency in the diet; the prevailing physico-clinical sign of iron deficiency was the abnormal features of their nail plate; and, indicators of academic performance were generally lower in anemic pupils.

Keywords: iron deficiency anemia, anemic pre-schoolers, blood indices

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**The Antibacterial Property of the Active Constituents Isolated from the
Leaves and Flowers of Sampaguita, *Jasminum sambac* (Family Oleaceae)**

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Abstract

The study aimed to determine if the Sampaguita plant possesses antibacterial activity and, if so, identify the constituents responsible for such antibacterial action as well as the quantity of

each constituent. Phytochemical tests confirmed the presence of alkaloids, glycosides and tannins in the crude extracts from the plant's leaves and flowers. These active constituents were isolated from the crude extract using organic solvents such as acetone, chloroform and petroleum ether. Confirmatory tests were done for alkaloids (Mayer's test and Wagner's test), for glycosides (Froth test, Leibermann-Burchard Test, Bate-Smith and Metcalf Test and Wilstatter "Cyanidin" Test), and, for tannins (Ferric Chloride Test). The antibacterial property of the isolated constituents was determined using the Disk Diffusion Technique with Amoxicillin as the control, and which were tested on *Staphylococcus aureus* and *Escherichia coli*. The findings are (1) alkaloids, glycosides and tannins can be isolated from the flowers and leaves of sampaguita; (2) the glycosides are responsible for the antibacterial property of the sampaguita flowers and leaves; and, (3) there is a significant difference in the antibacterial property of amoxicillin and the glycoside constituents.

Keywords: Antibacterial activity, glycoside, *Staphylococcus aureus*, *Escherichia coli*, zone of growth inhibition

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Comparison of Indoor Radon Gas Level Based on Construction Materials, Ventilation and Altitude

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Abstract

This is a study on the indoor existence of Radon (Rn-222) in the Philippine setting, conducted in several study areas that were selected on the basis of (a) altitude, (b) construction materials, and (c) ventilation. The Rn-222 indoor gas concentration was determined using an EPA approved instrument - the Safety Siren Pro-Series 3 Electronic Radon Gas Detector. Rn-222 indoor concentration was not affected only by the mentioned factors but others as well like temperature, relative humidity, wind direction and precipitation, and geographical location. The results showed that the level of indoor Rn-222 in all the places under study is below 4 pCi/L which is acceptable, although still not safe as to EPA standard. Ventilation did not have a significant effect on the level of indoor Rn-222 but it has reduced it, while altitude and construction materials in turn gave a significant difference on the level of indoor Rn - 222.

Keywords: Alpha-particle, carcinogen, EPA standard, natural ionizing radiation

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Effectiveness of Papain Plasma as an Alternative for Serum in Electrolyte Assays

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Abstract

The study aimed to determine the effectiveness of papain plasma as an alternative specimen for serum in sodium, potassium and chloride assays in the laboratory. The effectiveness was tested by comparing the values obtained in plasma with papain with those values obtained in serum. Blood was obtained from nine 3rd year Medical Technology students. The specimens were processed to plasma prepared with papain and serum. Sodium, potassium and chloride ions were assayed in these specimens using Ion Selective Electrode (ISE). Mean values (mmol/L) of sodium in serum was 140.644, potassium was 4.030, and chloride was 105.367. Mean values (mmol/L) of sodium in papain plasma was 140.022, potassium was 3.993 and chloride was 105.656. By T-test, it was determined that there were no significant differences in the values obtained for sodium, potassium and chloride in serum compared with papain plasma. Thus, it is proven that papain plasma is an effective alternative specimen for serum in these three electrolytes assayed.

Keywords: Papain-treated plasma, serum, electrolytes sodium, potassium and chloride

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Selecting the Best Layout for an Amplifier Cell

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Abstract

Conducted in a large manufacturing corporation in Baguio City, this study aimed to assess the best layout alternative for an Amplifier Cell on the basis of the following criteria: shortest in terms of distance traveled by the parts processed in the cell, greatest ideal efficiency based on a line balance, the minimum/least total product movement, close direct cluster relationship, and a relationship-satisfaction rating of not less than 50%. The assessment involved several approaches: Systematic Layout Planning, Part Quantity Analysis, Direct Cluster Approach, Block Plan, and Line Balancing. A total of 13 alternative layouts were

arrived at, with one of these being recommended as the best layout while two others, as alternatives.

Keywords: Layout Alternatives, Systematic Layout Planning, Block Plan, Direct Clustering Algorithm, Line Balancing, Part Quantity Analysis

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Shortest Path Application Using Expanded Dijkstra's Algorithm Covering Luzon, Philippines

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Abstract

This study focuses primarily in providing tools/results in determining shortest paths from multiple paths given two distinct locations. The integration of the Dijkstra's shortest path algorithm with a computer system can become a vital part of minimizing travel cost and time efficiency of tourists and land travelers. The study aims to provide a framework and computer application, integrating Dijkstra's algorithm, the key locations or landmarks around Luzon, the description of tourists spots around the landmarks and the programming tool to create a platform in accessing and providing information to end users.

Keywords: IT application in tourism

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