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MACRO FLORAL DIVERSITY IN THE IFUGAO RICE TERRACES WATERSHEDS

Napoleon K. Taguiling, PhD.

ABSTRACT

An inventory using 0.4-ha plots on the macro floral resources in the muyong or private woodlot, communal, and mossy forests within the watersheds supporting the Ifugao Rice Terraces was conducted to identify the species, species richness, diversity and ethnobotanical uses of the resources.

*Results revealed a total of 39 families, 67 genus and 136 tree species. Euphorbiaceae was the most common family followed by Moraceae, Rubiaceae and Myrtaceae. Inventory of trees with diameter of 10 cm and above showed high species richness with 77 species, and high density at 825 -1,281 individuals/ha. Muyong or private woodlot showed a higher diversity index (3.29) compared to communal (2.97) and mossy forest (2.99). The trees with high species importance value include *Litsea guercoides*, *Lithocarpus ovalis*, *Eurya* sp., *Neonauclea media*, and *Symplocos* sp.*

Ethnobotanical survey revealed 118 economically important species. Of these, 69 species are used for housing construction, 43 species for wood carving, 99 species for fire/fuelwood, 63 species for lumber/furniture, 5 species for fiber/ties, 30 species for live fence, 4 species for dyes, 9 species for ornamental, 1 species for fertilizer, 5 species for pesticide, 24 medicinal species, 16 species for human food, and 27 species with sociocultural values and are used in farming, religious rites, wedding, hunting, burials, and the like.

The watersheds supporting the Ifugao Rice Terraces are still rich in macrofloral diversity and can serve as a vital resource for developing sustainable livelihood options while conserving the species diversity in the area. Potential livelihood projects for biodiversity conservation include seedling production of indigenous tree species and mass production of economic plants.

Keywords: Macro flora, Inventory, Ethnobotanical survey, Species richness, Species diversity index.

FIELD EVALUATION OF POWDERED ROCK LIME TO CONTROL GIANT EARTHWORMS (*Pheritima elongata*) OF THE IFUGAO RICE TERRACES

Teresita D. Allig

ABSTRACT

A field evaluation on the use of powdered rock lime was tested in three (3) municipalities of the province of Ifugao for its effectiveness as control measure against the giant earthworms July 2008 to March 2009.

The study made use of 3 trials at different dilution rates of 100, 200 and 300 grams powdered rock lime in 8, 10 and 12 liters of water.

Results revealed that all the dosage rates used were effective control measure. However, dosage rates of 200 and 300g of powdered rock lime are better control in terms of the length of time in killing the earthworms. Dosage rates of 200 and 300g powdered rock lime killed giant earthworms faster and significantly different from that of the 100g powdered rock lime.

The shortest time the earthworms died was registered at dosage rate of 300g with an average of 8.25 minutes followed by dosage rate of 200g with an average of 9.44 minutes although there was no significant difference between the two dosages. At the dosage rate of 100 grams, earthworms died the longest at an average time of 13.11 minutes. It was observed that earthworms died faster at higher dosage rates and took longer time to die at lower dosage rates. In all the dosage rates of 100 to 300 grams, earthworms bleed, shrink very rapidly except the head and the posterior end of some giant earthworms which were cut into two.

Key words: Giant Earthworms, powdered rock lime, dosage rate

**HARPULIA ARBOREA: EFFECTIVE VERMICIDE AGAINST GIANT
EARTHWORM (*Polypheretima elongata*) DESTROYING
THE IFUGAO RICE TERRACES**

Napoleon K. Taguiling, PhD and Donato L. Ngabit

ABSTRACT

*An experiment following the Complete Randomized Design (CRD) research method was conducted under laboratory and field conditions to determine the effect of Uas (*Harpulia arborea* (Blanco) Radlk.) bark in controlling giant earthworm (*Polypheretima elongata*) destroying the world-famous rice terraces in Ifugao. Treatments were dosages of pounded fresh Uas bark. The time it takes the dosage to cause mortality to the giant earthworm was observed.*

Under laboratory condition, results indicate significant differences on the time it takes the dosages to control giant earthworms. The 100 gram concentration gave the shortest time to effectively control giant earthworm at 39 minutes while the 25 gram dosage gave the longest at 93 minutes. Results revealed that higher concentration of dosage effectively control giant earthworm at shorter time.

Under field condition, results revealed that 3-9 kilograms of Uas bark was very effective in controlling giant earthworms in 2 to 4 hours. Higher concentration gave shorter time to cause giant earthworms to come out from their holes. Lower concentrations were equally effective but it takes longer time to control giant earthworms.

The study suggests that Uas bark is a very effective organic and environment-friendly botanical vermicide for the control of giant earthworm infesting the Ifugao Rice Terraces.

*Keywords: Organic Vermicide, *Harpulia arborea*, *Polypheretima elongata* (Giant Earthworm)*

**GROWTH AND YIEL OF CORN AS AFFECTED
BY DIFFERENTS ROW INTERCROPPING PATTERNS
WITH INDETERMINATE TOMATO**

Lydia C. Medina, Betty A. Pimentel

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Keywords: Giant Earthworms, powdered rock lime, dosage rate

HOUSEHOLD DYNAMICS, AWARENESS AND PROBLEMS OF CONSUMERS AND FARMERS ON ORGANIC VELERO

Nancy Ann P. Gonzales, RN, MAN, PhD

ABSTRACT

Eating more organic food is the safest, cost saving, and less harmful to the environment. It is then important to determine the awareness of consumers and the problems encountered by farmers on organic VELERO production thus the study.

The survey method of research was employed in the study. There were 805 respondents who are mostly farmers and government employees from all the municipalities of the province of Ifugao. The questionnaire was used to gather data.

Results indicate that the respondents are aware about organic VELERO and they claim that these are chemical free and are healthy food products. The preferred organic VELERO products are beans, pechay, cowpea, pigeon pea, and yam. Lack of capital, pests, diseases and lack of market outlets are the major problems of farmers.

Keywords: Home dynamics, organic VELERO, farmers, consumers

**ROOT AND SHOOT DEVELOPMENT ON THE PROPAGATION OF BAMBOO
(Bambusablumeana *laakvar*) BY ONE NODE CULM CUTTINGS AS INFLUENCED
BY THE LUNAR CALENDAR**

Lydia C. Medina

ABSTRACT

This study was conducted purposely to find out if lunar planting has a direct influence on the root and shoot development of bamboos propagated by one node culm cuttings.

Result of the study revealed that 150 DAP (days after planting) one node culm cuttings planted on the first quarter of the moon obtained the highest percentage of survival and the most number of shoots developed. However one node culm cuttings planted in time with the New Moon were the tallest among the treatments and produced the longest roots at 150DAP.

Significant difference was obtained on the number of survived cuttings at 150 DAP. However there was no significant difference on the number of shoots developed by the one node culm cuttings planted on different schedules during the lunar month.

A highly significant difference was obtained on the length of the shoots at 60DAP but at 90-150 DAP there was a highly significant difference on the length of developed shoots among treatment means. Likewise the length of the roots at 150 DAP showed a highly significant difference among treatment means. Findings of the study revealed that the lunar calendar as a guide in propagating planting materials of bamboo could significantly influence the development of roots and shoots.

KEYWORDS: *plant propagation, bamboo, lunar planting, Moon, moon phases,*

COLLECTION, CHARACTERIZATION AND FIBER IDENTIFICATION OF ABACA VARIETIES IN FUGATO

Mary P. Caclini, PhD

ABSTRACT

The study aimed to establish an abaca germplasm collection, characterize, and identify the fibers of the abaca varieties in Ifugao Province.

A gene bank was established in IFSU-Lagawe Campus planted with twelve collected varieties taken in six municipalities of Ifugao. From the twelve varieties, four varieties were characterized through an on-site documentation with the participation of the local folks in the community in locating the abaca plants. General appearance and agronomic characteristics were recorded. Laboratory tests were also done to identify the fiber, determine tensile strength, morphological characteristics and chemical properties of the abaca.

There are abaca samples in the province that show similarity in general appearance with known abaca varieties in the country.

Results of laboratory test showed that three out of the four abaca samples are true abaca while one of the samples was a spurious one. The tensile strength of the three samples are less than 35 Kgf/g.m which did not pass standard for rope making but passed standard for handicraft. The morphologic characteristics of the three abaca samples possessing extremely long fiber greater than 3 mm length indicates that the three varieties are good raw materials for pulp and paper making. Chemical analysis of the fibers also indicates that the three abaca varieties passed standards for pulp and paper making.

KEY WORDS: *Abaca, Germplasm Collection, Characterization, Identification*

**NATURAL PRODUCTS AND THEIR HEALTH PROTECTING
COMPOUNDS AGAINST *Pediculus humanus capitis***

Nancy Ann P. Gonzales, RN, MAN, PhD

ABSTRACT

Human louse, Pediculosis humanus capitis infestations is a worldwide problem and children particularly those of elementary school age, are most likely to acquire it because of their close contact and social interactions with each other. A number of treatments employing chemical treatments like kwell shampoo which is expensive and combs were tried yet a 100% destruction of head louse is not assured. The challenge of using natural products that is readily available and of low cost is an alternative in treating head louse.

The Randomized Complete Block Design (RCBD) with One Factor was applied in the study. The single factor considered refers to the different botanicals. Kwell shampoo was set as the control. Five Blocks were prepared with 10 lice per block. In each block, five (5) replications were made. The lice of elementary school children were collected and were tested at ISCAF. The Analysis of Variance was used in treating the data.

*The test presents that Kwell shampoo do not significantly differ with Lantana (*Lantana camara*), trumpet flower (*Datura arborea* Linn), sunflower (*Tithonia diversifolia*), and marigold (*Tagetes, erecta* Linn). These natural products have the same effects in controlling head louse to that of kwell shampoo. Lantana has the shortest time in destroying head louse at an average time of 86.62 seconds.*

Keywords: Natural Products, Compounds, Pediculus humanus capitis

INDIGENOUS MEDICINAL USES AND PHYTOCHEMICAL ANALYSIS OF NATIVE ANGEL WINGS BEGONIALES (AWB), “Nangol”

Nancy Ann P. Gonzales, RN, MAN, PhD

ABSTRACT

An enormous quantity of modern medicines have their origins in those humble herbs gathered from the waysides and stream beds from the remote places of the world. The Department of Health promotes the use and the conduct of researches on herbal medicines. This research deals with one important medicinal plant that addresses this challenge.

The study made use of the qualitative type of research with laboratory analysis. There were 811 Respondents from the municipalities with cold to moderate temperatures who were interviewed. The phytochemical analysis of the plant was performed at the Saint Louis University Research Unit.

The indigenous medicinal uses of Angel Wing Begoniales are: for the treatment upper respiratory diseases; for wounds and skin irritations, diarrhea, stomach ache, tonsillitis, mouthwash, nail cuticle remover, refresher/reliever and as water substitute. The phytochemical analysis reveals the following physiological active constituents: polyphenol, cyanidine, deoxysugars and alkaloids. These are excellent chemical potentials for healing diseases.

Keywords: Indigenous Medicinal uses, phytochemical analysis, Angel Wing Begoniales

**INDIGENOUS MATHEMATICS IN THE RICE FARMING PRACTICES
AT THE IFUGAO RICE TERRACES: PROSPECT FOR
USE IN MATHEMATICS EDUCATION**

Mary P. Caclini, PhD

ABSTRACT

The study aimed at identifying the indigenous mathematics that had been used by the early Ifugaos in their farming practices at the rice terraces and exploring the possibility of using the indigenous knowledge in mathematics instruction.

The descriptive method was used in the study using twelve key informants from the three major ethnolinguistic classifications in Ifugao such as Tawali, Ayangan, and Kalanguya. The respondents from the Tawali speaking group were those from Hungduan, Hingyon, Kiangon, and Bocos of Banaue. The Ayangan respondents came from Mayoyao, and Ducligan of Banaue while the Kalanguya group were represented by the Kele-i speaking people of Asipulo.

The Ifugaos have indigenous mathematics used in rice farming practices namely: lunar and agricultural calendar, reckoning of time, days of the week, linear measures, counting system, and geometrical figures. The agricultural calendar, the counting system for palay harvest, the days of the week, and the geometrical figures are the most useful indigenous mathematics among the Ifugao farmers in the rice terraces.

The rice farming practices in the Ifugao rice terraces involved a lot of mathematical concepts and indigenous mathematics where contextual lessons could be developed for mathematics instruction.

KEY WORDS: *Indigenous Mathematics, Farming Practices, Mathematics
Education*

THE UNDERGRADUATE CURRICULAR PROGRAMS OF THE IFUGAO STATE UNIVERSITY FOR SY 2009-2010

Faith B. Basilio, PhD

ABSTRACT

This study aimed to assess the undergraduate curricular programs of the Ifugao State University using the Accrediting Agency for Chartered Colleges and Universities in the Philippines (AACCUP) master survey instrument specifically the area on curriculum and instruction.

This study used the descriptive method of investigation. The respondents of the study were the faculty members and students of the three campuses of the University for SY 2009-2010. The data on this study were analyzed using means, t-test, ANOVA, and Mann-Whitney at .05 level of significance.

The findings of this study revealed that curriculum and instruction of the university is adequate and effective, but need to be enhanced for higher accreditation level and for institutional accreditation according to the standards of AACCUP.

It is recommended that urgent steps be undertaken to enhance the curriculum and instruction of the university to be able to come up with the standards of the AACCUP. Further research be conducted on the same topic but with participation of more stakeholders and to include the effect of curriculum and instruction on the academic performance of students to verify, amplify or negate the findings of this study. This is necessary so that if the findings are similar, generalization of wider application can be formulated.

INTEGRATING RAISE MODEL AND OBJECTIVE MATRIX AS PERFORMANCE MEASUREMENT APPROACH FOR HIGHER EDUCATION INSTITUTION

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ABSTRACT

The purpose of this paper is to establish an integrated model of RAISE (Relevance, Academic Atmosphere, Internal Management and Organization, Efficiency and Productivity) and Objective Matrix implemented at HEIs (Higher Education Institutions) in Indonesia. The flexibility and easiness to maintain the performance is very important for the top manager in rapid changing business environment. The performance management based on student learning focus is important to satisfy the higher education stakeholders. The satisfied student and stakeholder will increase the reputation of HEIs and indirectly will contribute to the increase of the organizations revenue.

A review of existing theories and practical experiences is undertaken to build the core conceptual model and a dashboard of indicators. The model is then applied to investigate the key performance indicators of HEIs using the business process paradigm developed by Directorate General of Higher Education of Indonesia (DGHE) called RAISE. Starting from a review of the recommendations provided in literature regarding performance measurement in HEIs, a list of general characteristics of a "good" indicator is defined.

The analysis presented by this paper shows that the integration model of RAISE as KPIs and the Objective matrix have a flexible and clear performance score indicator to guide all levels of organizations at the HEIs. Every performance target can be monitored and controlled using the objective matrix. The integrated model for performance measurement in this research is a useful guidance especially for HEIs to having integral and comprehensive view of their academic and business performance.

Keywords: *Higher education, Objective Matrix, business performance, performance measurement*

GENDER-ROLE BELIEFS AND PRINCIPLES OF ISCAF EMPLOYEES, SY 2008-2009

Elpidio B. Basilio Jr. and Faith B. Basilio

ABSTRACT

This study attempted to determine the gender-role beliefs and principles of the employees of the Ifugao State College of Agriculture and Forestry (ISCAF). Specifically, it sought to obtain information on the perceptions of ISCAF employees on their gender role policy beliefs, factual beliefs. Further, it sought to determine if the variables: age, sex, educational attainment, ethnic groups and religion had something to do with their perceptions on gender roles. Respondents of the study were all the employees of ISCAF for SY 2008-2009.

The study made use of descriptive survey method to determine the perceptions of the employees. The questionnaire prepared by Prasad (200) was the instrument used. The mean was used to identify the gender role perceptions of the employees. The means were subjected to the Friedman's Test and Analysis of Variance to signify if significant differences existed.

Findings disclosed that generally, the employees of ISCAF are cognizant of their gender role beliefs (policy, factual and moral). They believe that both men and women should have the same entitlements. Educational attainment and ethnic grouping are correlated with gender role perceptions. Moral beliefs are still considered as the standard when applying gender role beliefs.

Keywords: Gender role beliefs, policy beliefs, factual beliefs, moral beliefs.
