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## EFFECT OF GROUND BLACK PEPPER (*Piper nigrum*) AS FEED ADDITIVE ON THE PERFORMANCE OF BROILERS



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### ABSTRACT

This study evaluated the effect of ground black pepper as feed additive on the weight gain, feed conversion ratio, feed cost to produce a kg gain in weight and morbidity and mortality rate of broilers. A total of 160 straight-run day-old broiler chicks were randomly distributed to four treatments using the Completely Randomized Design (CRD). Each treatment was replicated four times with ten birds per replicate. The birds were fed with the same basal diets (chick booster, starter and finisher). Black pepper (BP) was mixed to the basal diets at different levels: 0g (T<sub>0</sub>), 5g (T<sub>1</sub>), 10g (T<sub>2</sub>) and 15g (T<sub>3</sub>) per kilogram of commercial feed. The dietary treatments were fed for 35 days from day old.

There were no significant differences among treatments in the initial and final weights and gain in weight of broilers. However, highly significant differences were observed in the feed intake, feed conversion ratio (FCR) and feed cost per kilogram of broiler produced. The birds given 15g of ground black pepper per kg of commercial ration had the best feed conversion efficiency of 1.68 and least cost of feeds (Php 45.46) to produce a kilogram of weight. Apparently, no morbidity and mortality were incurred in the birds receiving this dietary treatment.

This study shows that the inclusion of ground black pepper at a rate of 15g/kg of commercial ration in broiler diet resulted in reduced feed intake, improved feed efficiency of broilers, lower feed cost per kilogram of broiler produced and better health performance.

**Keywords:** *broilers, ground black pepper, body weight, feed intake, gain in weight, feed conversion ratio, morbidity, mortality*

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## LOSS OF TRADITIONAL ROOTCROPS KNOWLEDGE (TRK) AMONG SOME INDIGENOUS PEOPLES IN NORTHERN PHILIPPINES



Betty T. Gayao, Dalen T. Meldoz and Grace S. Backian

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### ABSTRACT

The documentation of traditional knowledge on root and tuber crops production and utilization was done prior to this study of determining the loss of knowledge on the production and utilization of traditional root and tuber crop commodities among the *Ibaloi*, *Bago*, *Tingguian* and *Iyattuka* indigenous peoples in northern Philippines.

Results of this study showed that loss of traditional knowledge on root and tuber among the indigenous peoples is a reality only among the younger generation, particularly those born starting in the 1980's. Loss of knowledge among the younger generation pertains both to conceptual and practical domain. Conceptual knowledge pertains to the diversity and variety of roots and tubers, growing landscapes, cropping practices and uses and local terms on roots and tubers. Practical skills pertain to cultivation and utilization practices.

There is no loss or little loss of knowledge for those born before the eighties. The one percent annual loss of knowledge among the 36-56 years middle age group is in practical skills on the cultivation and utilization practice, including the local terms for said cultivation and utilization practices. An exception is among the *Ibalois* who exhibited not a loss but an annual one percent increase in traditional roots and tubers knowledge.

Loss of knowledge for those born after the eighties is higher, ranging from 37-64% reflecting an annual loss of 2-3% among the 15-35 years age group of the *Bagos* and *Tingguians* and a one percent annual loss for the younger *Ibalois* and *Iyattukas*.

**Keywords:** *traditional root crops knowledge, Ibaloi, Bago, Tingguian and Iyattuka, indigenous peoples*

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# SOIL PROPERTIES OF AGRICULTURAL FARMS IN TWO AGRO-ECOLOGICAL ZONES OF THREE MUNICIPALITIES OF BENGUET



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## ABSTRACT

The study was conducted in two agro-ecological zones of La Trinidad, Buguias and Atok, Benguet. The objectives of the study were to determine the physical and chemical properties of soils of agricultural farms; to determine the pesticide residues in soils and plants; and to determine toxic heavy metals in soils of agricultural farms. The two agro-ecological zones comprised of mid-mountain zone with elevation ranging from 1,100 to 1,500 meters above sea level represented by La Trinidad and Buguias, Benguet and high mountain zone with 1,600 to 2,000 meters above sea level elevation represented by Atok, Benguet.

For mid-mountain zone represented by La Trinidad, Benguet for wet season sampling and Buguias, Benguet for dry season sampling, most of the soil samples collected showed favorable values of bulk density, porosity, pH, organic matter, available phosphorus and exchangeable potassium for crop production. On the other hand, pesticide residue analysis on soil samples showed that only Cypermethrin and Chlorpyrifos have values higher than the maximum allowable concentrations. Toxic heavy metals like Mercury and Lead have values lower than maximum residual limit. Likewise, only Chlorpyrifos was detected in plants but its value is below the maximum allowable concentration.

For the high-mountain zone represented by Atok for wet and dry season sampling, the results of the analysis showed that values of bulk density, porosity, pH, organic matter, available phosphorus and exchangeable potassium are also found favorable for crop production. For pesticide residue analysis in soil, the samples were found to have residues of Dieldrin, Endosulfansulfate, Cypermethrin, Chlorotalonil, Cypermethrin and Deltamethrin. However, only Chlorothalonil and Cypermethrin were found to have values higher than the maximum allowable concentration. Mercury and Lead were found to have values below the maximum residual limit. No pesticide residues were detected in crops.

**Keywords:** *organic fertilizers, soil properties, physical properties, agricultural farms*

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# EFFICACY AND PROFITABILITY OF ORGANIC FERTILIZERS ON ARABICA COFFEE SEEDLING PRODUCTION



**Emilia F. Dayap and Von Y. Amado**

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## ABSTRACT

This study was conducted to evaluate the efficacy of soil applied formulated organic solid fertilizers (FOSF) supplemented with sprayed formulated organic liquid fertilizers (FOLF) and to determine the cost and return on potted Arabica coffee seedlings under greenhouse conditions.

Results showed that a mixture of 100 g FOSF/pot having 1.7 kg soil and spray application of FOLF at a rate of 100 ml per 16 liters of water every 15 days is effective and economical in the production of vigorous Arabica coffee seedlings desired for planting.

**Keywords:** *organic fertilizer, Arabica coffee, seedling, FOSF, FOLF*

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# TRADITIONAL STORAGE AND UTILIZATION PRACTICES ON ROOT AND TUBER CROPS OF SELECTED INDIGENOUS PEOPLE IN THE NORTHERN PHILIPPINES



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## ABSTRACT

The indigenous people who reside on hills and mountains of the Philippines like the *Ivatans*, *Isnags*, *Kalingas*, *Tingguians*, *Applais*, *Bagos*, *Kankana-eyes*, *Iyattukas*, *Ibalois*, *Kalanguyas*, *Bugkalots*, *Aetas* and *Mangyans* are known as root and tuber crops growers and consumers. Unfortunately, there is lack of documentation and with the changing lifestyles of the younger generation, traditional root and tuber crops storage and utilization practices are at the risk of being forgotten, hence, this study. Secondary data gathering, interview-workshops with key informants and follow-up field visits were done to document and update information.

Indigenous peoples have no practices that prolong storage life of taro (*Colocasia esculenta*) and cassava (*Manihot esculenta*) though cleaned and washed. Taro corms and cassava storage roots can last for seven days if not mechanically damaged. For sweet potato (*Ipomoea batatas*), some varieties are stored in wooden boxes for six to eight months. Harvested roots and tubers of greater yam (*Dioscorea alata*), lesser yam (*Dioscorea esculenta*), tannia (*Xanthosoma sagittifolium*), arrowroot (*Maranta arundinacea*), canna (*Cannaceae*) and yacon (*Smallanthus sanchifolius*) are stored for four to six months provided the roots and tubers are washed, cleaned and dried then kept in shaded area of the household. This can be in the rice granary, in a wooden bin or in a pit under the house or under the shade then covered or mulched with dried grasses, banana leaves and/or sacks. All kinds of edible storage roots and tubers are consumed simply as boiled or steamed, roasted and fried. On the other hand, chopped, sliced or mashed, dried, ground and fermented roots and tubers are used as ingredients in traditional dishes like *guinataan*, *tupig*, *nilubyan*, *kisa*, *tapey*, *binobodan*, *nawnaw*, *saloposop*, *sukit* and others which are used for various purposes such as substitute to rice as staple food, emergency food, viand, snack food, fermented drink, flavoring and to some extent for therapeutic purposes.

**Keywords:** *storage and utilization, roots and tubers, indigenous people*

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## THE PRACTICE OF MICRO-TEACHING AMONG PRE-SERVICE TEACHERS: FOR POLICY FORMULATION



Joel V. Lubrica and Maria Azucena B. Lubrica

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Benguet State University

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### ABSTRACT

The supplementation of micro-teaching with video-recording can provide benefits to pre-service teachers along pedagogical content knowledge and reflective practice. This idea is based on the perceptions of pre-service science teachers after they have viewed video-recordings of their micro-teaching.

Although the participants felt some anxiety when informed that their micro-teaching will be recorded on video, they also perceived that some actions, both on the part of the subject teacher and on the micro-teacher, can be done to alleviate this anxiety.

There was a significant negative relationship between micro-teaching grade and perceived drawbacks of being under a video camera *i.e* the higher the grade, the lesser the perceived extent of disadvantages of being video-recorded. In general, the benefits of video-recording outweighed its drawbacks. Thus, the combination of micro-teaching and video-recording can assist in student development, in relation to both pedagogical content knowledge and reflective practice. Consequently, an institutional policy that requires the supplementation of micro-teaching with video-recording may be considered.

**Keywords:** *video-recording, micro-teaching, pre-service science teachers*

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## MOTIVATIONAL FACTORS AND THE SELF-PROJECTIONS OF STUDENTS IN PURSUIT OF NURSING EDUCATION



Jude L. Tayaben, Doris S. Natividad, Maureen E. Gay-as,  
Louisa F. Laron and Carol Ruth L. Valles

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### ABSTRACT

Understanding motivating factors and scholastic experiences of nursing students are important.

Exploratory-qualitative design was used involving nursing students as informants during the key informant interview and focus group discussion.

The motivational driving forces based on the findings of the study were personal, family and relatives, community and socio-economic forces. In this order, care for self and family, interest of parents and relatives, serving the community and working abroad provides higher income were key motivational factors in choosing nursing as a profession.

As revealed by the study, culturally- sensitive environment, student assistance, peer counseling and mentoring, student clubs and socialization activities are important in meeting the needs of the students of a state university. These areas are important in enhancing student admission and retention policies that would provide more socially- acceptable and effective school environment and develop a framework for career guidance factors.

**Keywords:** *Benguet schooling experiences, nursing students motivations, Benguet nursing education and State University*

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# AWARENESS AND SUPPORT OF BENGUET CONSTITUENTS ON CORDILLERA REGIONAL AUTONOMY



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## ABSTRACT

With the aim of getting a ‘pulse’ on the awareness and preparedness for the renewed move for Cordillera regional autonomy, two pulse surveys were conducted by Benguet State University in the province of Benguet in 2012 and 2013. The two pulse surveys was part of a region-wide survey initiated by RDC-NEDA with the objective of gathering inputs where information, education and campaign are needed. Using modified multi-stage random sampling for municipalities and barangays involving four and five municipalities in 2012 and 2013 respectively and a systematic random sampling of households for respondents, results showed that 20% (2012) and 22% (2013) of the residents in Benguet are aware of the renewed move for regional autonomy. Similar results were shown in a more recent survey in 2014, this time conducted by a commissioned service provider, the MNADUNOP Development Studies. Majority are still unaware of the contents and passage of House Bill 5595 passed in Congress for the third attempt for move for regional autonomy and so cannot give opinion about the matter and there is reliance on the decisions of officials, their organization or church membership. Radio and television broadcasting as well as print media (newspapers) appears to be the primary tool for communicating regional autonomy; however these may not be enough to reach other sectors of the voting population. Once again, the people of Benguet remain doubtful of the renewed move for Cordillera regional autonomy despite the three times revision of the House Bill for the establishment of a Cordillera Autonomous Region.

**Keywords:** *autonomy, cordillera region, pulse survey, house bill 5595, indigenous peoples*

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# MODELS FOR PACKING CIRCULAR OBJECTS INTO RECTANGULAR SPACES



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## ABSTRACT

Novel mathematical models for packing identical circular objects into rectangular spaces are here presented. The study explores on different packing patterns that tend to increase the population density of a given rectangular space by way of systematic repositioning of the objects and by applications of some trigonometric concepts in determining the effect of repositioning to the vertical distances between the centers of the objects across the contiguous rows. The results showed that if the dimension ( $rc$ ) of a rectangular space is  $rc = 8 \times 5$ , where the unit of measure of the space is the diameter of a circular object, then the default arrangement of the objects can be repositioned so that the content of the space is maximum. The results also showed that a rectangular space attains its maximum content if row,  $r$ , is a multiple of  $\lceil 7.464 \rceil$  and column  $c \geq 5$ . In order to determine whether the population density of a rectangular space can be increased by applying some packing patterns, two mathematical models are developed, through which the exact number of objects that can be accommodated in a space is calculated. This study shows that there are deterministic mathematical models of calculating the maximal number of identical circular objects that can be packed into rectangular spaces. In cases, however, where the rectangular container provides empty space either on the row or column or both with length less than the diameter of one circular object, then adjustment on the models may be made. Hence, it is recommended that such particular cases have to be further explored in future study.

**Keywords:** *packing models, circular objects and rectangular spaces*

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## THE IMPLEMENTATION OF WASTE SEGREGATION SCHEME IN LA TRINIDAD, BENGUET



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### ABSTRACT

This study assessed the implementation of the waste segregation scheme in La Trinidad. Assessment of the practices related to the implementation showed that most of the variables were rated highly a factor. The top five were as follows: residents segregate their waste religiously; residents dispose their garbage according to schedule; local government officials involve associations in the implementation; residents' associations support the scheme by including this in their program of activities and sanctions are given to those who do not follow the scheme. Majority of the respondents or 53% considered the scheme a success.

Resulting logistic regression model showed that respondents who considered that the practice of residents disposing their garbage according to schedule as highly a factor in the waste segregation scheme were 1.3 times more likely to consider the implementation a success; those who considered the practice of barangay officials meeting the residents and explaining to them the scheme as highly a factor in the waste segregation scheme were 5.8 times more likely to consider the implementation a success; residents from Ambiong were 4.5 times more likely to consider the implementation a success and those from Tawang were 1.3 times more likely to consider the implementation of the scheme a success.

**Keywords:** *waste segregation scheme, implementation, logistic regression analysis and residents' practices*

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## GENDER DIMENSIONS OF AND CHALLENGES IN LOCAL HEALTH LEGISLATION



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### ABSTRACT

Gender mainstreaming continues to form part of the Philippine government's battle cry in its efforts to promote gender responsive policies and programs for the advancement of gender equality in the country. The success of these health legislations and programs start with the process and the persons involved in their formulation. Members or representatives of the target beneficiaries of these laws and programs should actively participate in setting health agenda and priorities.

This research was conducted to provide information on the gender dimensions of and challenges in local health legislation with focus on the health ordinances of Municipality of La Trinidad, Benguet, Philippines. Using textual analysis, health concerns addressed by existing municipal ordinances were identified. Interviews with key persons were conducted to understand the formulation and enactment of these health ordinances as well as to identify the problems met in their implementation.

Findings highlight the absence of women in the formulation and enactment of health ordinances. In the municipal health care delivery system, however, most of the personnel are women. Also, there is an apparent lack of adequate consultation between health legislators and the key persons charged with the implementation of the health ordinances resulting to several problems in the implementation process which include lack of personnel, lack of facilities and equipment as well as budgetary constraints. Raising these issues at the local level can make a significant difference in the delivery of health care services to intended beneficiaries.

**Keywords:** *gender mainstreaming, health legislation*

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# MODELS OF SCREENING BACHELOR OF SCIENCE IN APPLIED STATISTICS AND BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY FRESHMEN APPLICANTS



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## ABSTRACT

The study determined the initial mathematical models of screening freshmen applicants for Bachelor of Science in Applied Statistics (BSAS) and Bachelor of Science in Information Technology (BSIT) programs based on their input variables such as IQ and prior achievements in English, Mathematics and Science. It also investigated the impacts of these variables on the students' college first semester performances during SY 2011-2012. The respondents were classified and profiled based on their data and corresponding models were formulated using Discriminant Analysis method. The difference of the respondents' college performances were tested using T-test. The profile of the BSIT students showed that group 1 has higher IQ and lower grades while group 2 has lower IQ but higher grades. The model yielded showed that grade in Science has the stronger discriminating power. IQ has still the greatest discriminating power. The model's Y-value of 84.86 serves as the reference value. Group 1 has Y-values higher than 84.86 while group 2 has Y-values lower than 84.86. The profile of the BSAS students showed that, except for their IQ, the two groups are not completely separated. The model showed that grades in English and Mathematics have stronger discriminating powers, next to IQ which has the greatest discriminating power. The model's Y-value is 104.03 and group 1 has Y-values higher than 104.03 while group 2 has Y-values lower than 104.03. In both BSIT and BSAS, groups 1 and 2 showed no significant difference in their first semester college performances, indicating that at the moment group assignment is yet to be a determinant of academic achievement. The primary implication of the study is that screening can be made objective, efficient and cost-saving by mathematically modeling the process.

**Keywords:** *mathematical models, BSAS and BSIT freshman applicants*

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## 21<sup>st</sup> CENTURY SKILLS AMONG THE FACULTY OF A TEACHER EDUCATION INSTITUTION IN BENGUET



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### ABSTRACT

Globalization and the increasing pervasiveness of digital technologies are the pressing characteristics of the world at the turn of this century. This study was conducted to assess the proficiency of the faculty staff and their cognizance to deliver the knowledge needed by the 21<sup>st</sup> century learners. The study employed the quantitative and qualitative method of inquiry, using questionnaire, interview and document analysis to gather data.

Results revealed that the faculty are very proficient of the 21<sup>st</sup> Century Skills along learning and innovation, information, media and technology skills and life and career skills with a mean of 3.34. The male respondents are very proficient in critical thinking and problem-solving skills (3.73). The females are very proficient in social and socio-cultural skills (3.47). Those with 1-5 years in teaching are very proficient in initiative and self-direction (3.37); those with 6-10 years in teaching are proficient in social and cross-cultural skills (3.41); those with 11-15 years in teaching are very proficient in productivity and accountability (3.93) and those with 16 and above years in teaching are very proficient in social and cross-cultural skills (3.92). The challenges faced are integration of ICT in facilitating lessons, eliciting student's creativity, critical thinking and problem solving skills, slow acquisition of new equipment, lack of facilities to utilize, poor media literacy and diversified learners.

**Keywords:** *21<sup>st</sup> century skills, 21<sup>st</sup> century teacher, proficiency*

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## EXPLORING THE SEXUAL SCRIPTS OF ADOLESCENTS

**Ann Heather B. Kiwang**

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### ABSTRACT

Discussions on matters of sex and sexuality continue to be a cultural taboo in Philippine society. This is in spite of the studies which reveal an incessant increase in cases of teen pregnancy in the Philippines. As an educational institution, schools must take an active role in helping students understand and deal with their sexuality issues. This study aims to provide a deeper knowledge and understanding on the sexual scripts of students. Using an open-ended questionnaire, the sexual desires and sexual behaviors of selected students enrolled in Social Science 12 were known.

Findings reveal gendered sexual desires among the students. Most of the females define their sexual desires within the context of a relationship or a potential relationship while males seem more inclined to define sexual desires in relation to sexual satisfaction. Male's definition of sexual desires, compared to females, is more physiological than emotional. Furthermore, many of the female students have negative perception of themselves for experiencing sexual desires. Also, there is an apparent difference in the context within which male sexual behaviors occur compared to females. Most of the sexual experiences of males were triggered by porn movies or magazines they watched. Many claim to have felt proud and satisfied after a sexual experience. On the other hand, sexual experiences of females occurred mostly within the context of a romantic relationship. Some felt more loved and secure. Others felt disgusted and embarrassed.

Sex continues to be a cultural taboo in daily conversations in the family and in school. Religion remains a strong influence in the perception of the students about sex.

**Keywords:** *sexual scripts, cultural scripts, interpersonal scripts, intrapersonal scripts*

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## INFORMATION FOR CONTRIBUTORS

(Abridged/improved from the editorial policies of the Benguet State University)

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Durano, M. 2008. From profit to provisioning: A gender equitable public policy. Development Alternatives with Women for a New Era. QC: Miriam College.

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Carrasco, C. and M. Serrano. 2011. Lights and Shadows of Household Satellite Accounts: The Case of Catalonia, Spain. *Feminist Economics* 17 (2): 68-85. IAFPE: Routledge Taylor and Francis Group.

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Aguilar, N. O., B. L. Cardenas and M. A. O. Cajano. 2000. Spore and Seed bearing Plants of Mount Pulag, Benguet, Philippines. Museum of Natural History. UPLB, College, Laguna, Philippines.

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