

1st Research Innovation Conference, Association of State Colleges and Universities-Solid North



December 4 - 5, 2014
Ivory Hotel, Tuguegarao City

THEME: "Sustaining Excellence in State Universities
and Colleges in the Solid North through Multi Disciplinary
Research and Innovations."



SCHEDULE AT A GLANCE

1st ASCU-SN 2014

4-5 December
Ivory Hotel, Tuguegarao City

Keynote Speaker

Dr. Urdujah A. Tejada, CESO II

Regional Director, DOST II

Plenary Speakers

1. Dr. Florentina S. Dumlao

President, NVSU

2. Dr. Romeo R. Quilang

President, CSU

Sessions:

*Session A: Agriculture/Aqua
Marine/Environment*

*Session B: Engineering/
Industry/Health and
Applied Science*

Session C: Education

*Session D: Social Sciences
and Governance*

THEME:

"Sustaining Excellence in State Universities and Colleges in the Solid North Through Multi-disciplinary Research and Innovations"

Research and Innovation Conference

DAY 1

TIME:

08:00-09:00 AM

09:00-10:00 AM

10:00-11:00 AM

11:00-12:30 AM

12:30-01:30 PM

01:30-06:00 PM

02:00 PM

07:00 PM

DAY 2

TIME:

08:00-11:00 AM

11:00-12:00 PM

12:00-01:00 PM

01:00-04:00 PM

04:00 PM

PROGRAM:

Registration

Opening Program

Plenary

Sessions

Break

Sessions

Executive Meeting

Socialization

PROGRAM:

Workshop with

Presentation

Closing Program

Break

Tour

Departure

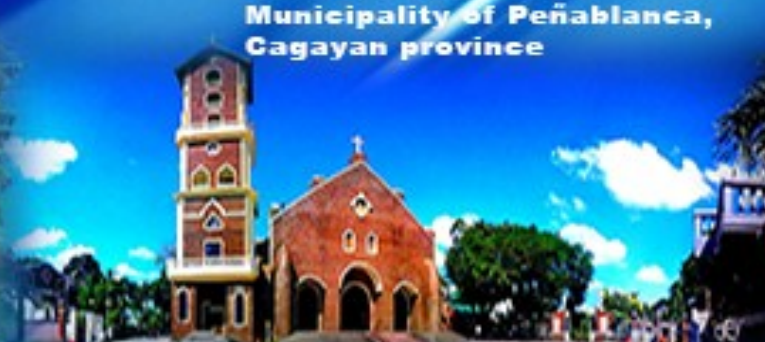
ASCU-SN OLYMPICS 2014



ASCU-SN Olympics 2014



Callao Cave is one of the limestone caves located in the Municipality of Peñablanca, Cagayan province



Piat is a fourth class municipality in the province of Cagayan

1st Research & Innovation Conference **ASCU-SN 2014** 4-5 December Ivory Hotel, Tuguegarao City **PROGRAM**

DAY 1

Part I 09:00 am OPENING PROGRAM

Invocation	CSU Athena Performing Bureau
National Anthem	CSU Athena Performing Bureau
Presentation of Participants	Secretariat
Welcome Remarks	Dr. Romeo R. Quilang CSU President Hon. Engelbert Caronan Tuguegarao City Mayor
Introduction to Keynote Speaker	Dr. Florentina S. Dumlao NVSU President
Keynotes Speech	Dr. Urdujah A. Tejada, CESO II Regional Director, DOST II
Awarding of Certificates & Plaque of Appreciation	All Presidents

Part II 10:00-11:00 am PLENARY SESSION

PLENARY PAPER 1:
 Academe - Local Government Linkage towards Sustainability Development
 Dr. Florentina S. Dumlao, President, NVSU

PLENARY PAPER 2:
 The CSU-DOST-02 Food Innovation Center : Platform for Collaborative Processed Food Research & Innovation Program in Norther Luzon Regions
 Dr. Romeo R. Quilang, President, CSU

Part III 01:00-06:00 pm SESSION

SESSION A: Agriculture/Aquamarine/Environment
 SESSION B: Engineering/Industry/Health and Applied Sciences
 SESSION C: Education
 SESSION D: Social Science
 SESSION E: Multi-Sectoral

02:00 pm EXECUTIVE MEETING

07:00 pm SOCIALIZATION

DAY 2

08:00-11:00 am Part IV
 WORKSHOP WITH PRESENTATION

01:00-04:00 pm Part V
 TOUR

• TOUR

Basilica Minore of Our Lady of Piat
 Piat is a fourth class municipality in the province of Cagayan



Callao Cave is one of the limestone caves located in the Municipality of Peñablanca, Cagayan province

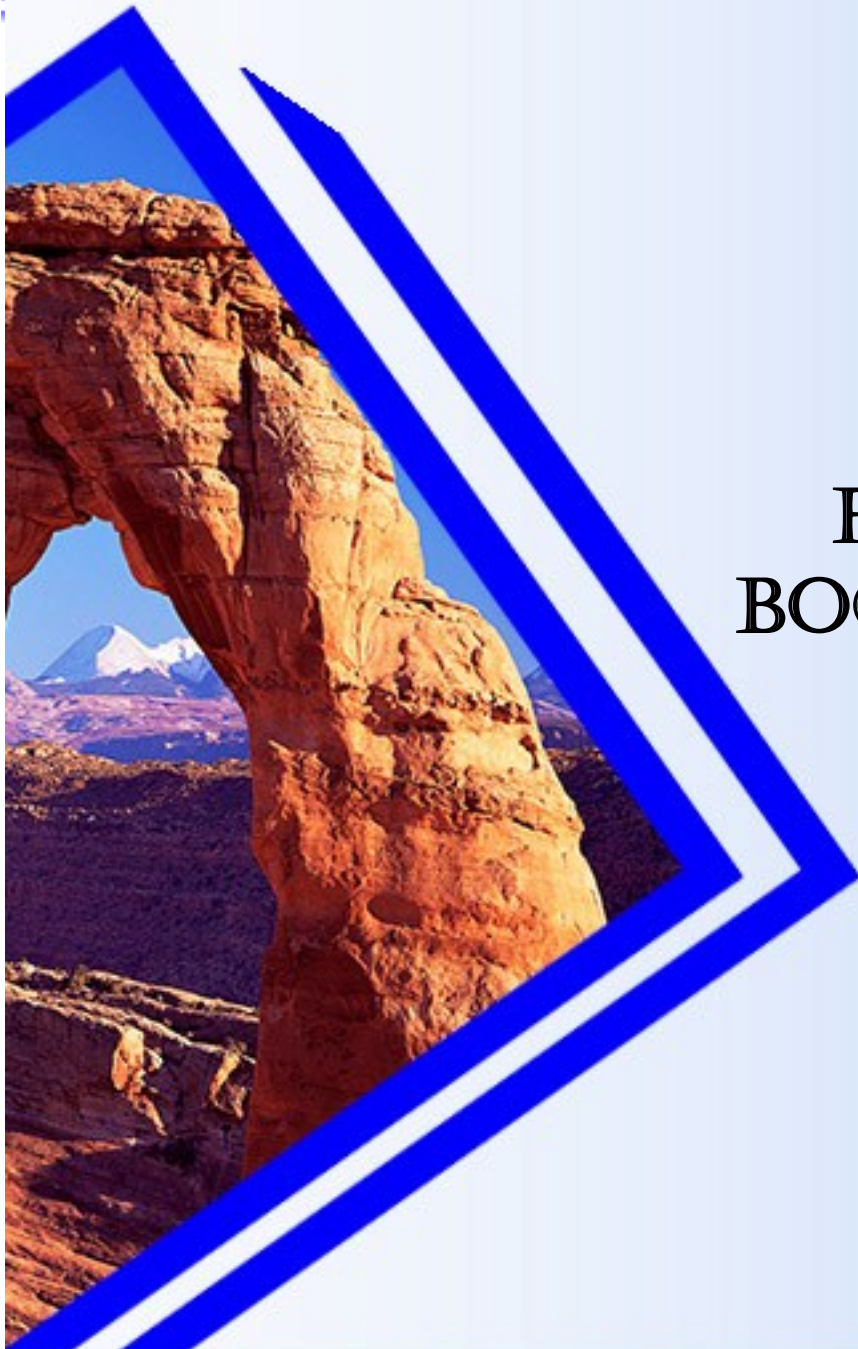


• HOME SWEET HOME

Masters of Ceremony
 Prof. Chirbet Miguel and Prof. Michael Lavadia



FIRST ASCU –SN BOOK OF ABSTRACT





004

SESSION A : AGRICULTURE AND AQUA MARINE

Standardization and Commercialization of Chevron Products
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Abstract

Prior to product development, researches were done to check different formulations of the three non-traditional chevon-based recipes that Filipinos have come to love - grilled chevon with satay sauce, goat curry, and goat mini kebabs. Based on initial research on recipes and ingredients, cooking protocols for each of the recipes were established and sample products were cooked and were subjected to sensory evaluation by a trained panel, who assessed overall acceptability using flavor, meat color and sauce, thickness of sauce, tenderness, general acceptability and other sensory qualities. The recipes were modified as necessary and trials were repeated as needed. The most acceptable recipes were utilized for production.

The three phases used as a process flow are: Phase I, the establishment of product recipe; Phase II for post sensory evaluation and Phase III for assessment of the implications of product attributes to product positioning. Trained panelists determined the sensory qualities (descriptive and acceptability attributes). Among the parameters that were evaluated are taste, flavor, texture and after-taste of each product formulation. Results of the evaluation were used to further undertake improvements of the formulated products until an acceptable and desirable formulation were established.

The three final recipe were subjected for further sensory evaluation for all groups of tasters, children (7-12), adolescent (13-19), and adult (20-60). Result showed that the three introduced "variants" recipe received a fully acceptable descriptive result of evaluation with an average weighted mean of 4.25 for chevon curry, 4.36 for chevon satay and 4.25 for chevon minikebab.

These went through Heat penetration tests packed in stand-up pouch (SUP) in water retort with overpressure. Ph of the product is ≥ 6.0 which is considered as low-acid food. Stand-up pouch, laminate of PET (12 micron)/foil (7 micron)/Nylon (15 micron)/retort CPP (60 micron)/ 100mm x150mmx64mm (LxWxT). Calculated processing schedule for chevon curry and satay in 85 grams stand-up pouch at retort temperature of 240 °F (115.6°C) and assumed F_{250} or F_0 value of 6.0 minutes.

Moisture and ash content for chevon curry and satay were analyzed using gravimetric method. Moisture content for curry is 64.47g/100g while satay has 53.51g/100g moisture content.

Using cost and return test for profitability, the three recipes are found to be profitable. These gave a positive return of cash expenses of 36.22% for the curry, 30.82% for the goat satay and 17.92% for the goat minikebab.

Keywords: standardization, commercialization, product development





010 COLLECTION AND EVALUATION OF HIGH VALUE CITRUS SPECIES UNDER DMMSU CONDITION

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ABSTRACT

This study was conducted to collect and evaluate various high value citrus species from within and outside of Region I and to identify the most productive high value citrus for Region I.

Among the nineteen species collected there were only ten species that are on its bearing stage. Results of the study revealed that on oranges across years of fruiting, showed that on their fourth year of fruiting it produced the highest yield with a mean of 82.53 kg/tree, Perante orange obtained the highest percentage survival with 91.11%. On the mean yield of pummelo, highest yield was obtained on its sixth year of fruiting with 162.31 kg/tree. Red chandler recorded the highest percentage survival with 96.67%. King mandarin maintained a 100% survival across years. Perante orange, Red chandler, Siamese pummelo, Magallanes and King Mandarin gave the best performance as to yield and survival and are recommended for planting. On the economic analysis, pummelo species (Magallanes, Red chandler, Siamese) gave the highest net return.

Keywords. High value citrus, collection and evaluation, oranges, mandarin, pummelo

016 VARIETAL PERFORMANCE OF SWEET POTATO DURING WET AND DRY PLANTING SEASONS IN LA UNION PROVINCE, PHILIPPINES

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Sweet potato is a popular and commonly grown root crop in the province of La Union. It is one of the staple foods of Filipinos in some areas of the country like Ilocos Region. It is popularly known as “Kamote Lanut”.

Eight promising varieties of sweet potato recommended by Northern Philippines Root Crops Training Center (NPRCTC), La Trinidad Benguet were evaluated during the wet and dry season planting to determine location specific varieties suited for each season. The specific objective of the study was to to evaluate the agronomic characteristics and to determine the most adaptable varieties with high yield potential and resistant to pests.

Results revealed that sweet potato varieties Bengueta, Inubi, Tocano and PSBSp22 are recommended for both wet and dry season planting. Super Beurelli variety is highly recommended for wet season planting. Varieties NSIC 30 and Japanese Ubi are recommended for dry season planting for higher yield and resistant to weevil infestation respectively.

Yield of the eight sweet potato varieties ranges from 15.11 to 35.43 tons per ha and with maturity period of 80 to 95 days from planting for both wet and dry season.

Keywords: Infestation, Sweet Potato, Varieties, Weevil, Yield





COST EFFECTIVE MICROPROPAGATION TECHNOLOGY FOR

GINGER, *Zingiber officinale* Rosc.

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Contact No.: 09267144691



ABSTRACT An attempt to reduce the cost of micropropagation through the use of alternative gelling agents and reducing the volume of culture media in in vitro production of ginger, Native variety was done. The seaweeds collected from the coastal areas of Ilocos (gracilaria and eucheuma), and the commercial agar bar were compared with that of tissue culture grade agar. Likewise, the volume of culture media was reduced by one-half the conventional practice.

Results indicated that the different gelling agents did not significantly affect the number of shoots, shoot length, number of roots and length and width of leaves. However, the number of leaves and length of roots were significantly affected. Cultures grown in gracilaria-gelled media produced the least number of leaves and shortest roots. Though proliferation rate was similar, regardless of the solidifying agent used, the commercial agar, eucheuma or gracilaria proved to be a good substitute for powdered agar, giving a reduction in cost of gelling agent of about 61-67%. Reducing the volume of media from 20ml to 10ml per 60ml capacity culture vessel showed similar performance of ginger cultures. With this, a substantial reduction of 50% in cost of culture media was realized.

Keyword: micropropagation, gelling agent, agar, *Zingiber officinale*, seaweed

LEAF BIOCHEMICAL COMPOSITION OF SEVEN MULBERRY GENOTYPES

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The study was conducted at the *Sericulture Research and Development Institute* to determine the biochemical constituents of the different mulberry genotypes and select superior genotypes with high quality characters

.Seven mulberry genotypes viz: Alf-004, Alf-018, Alf-025, S61-011, S61-019, S54-019 and Batac were evaluated in terms of biochemical parameters along with leaf yield. The study was performed in Randomized Complete Block Design (RCBD) replicated three times and analyzed using ANOVA. For the selection of superior genotype, the performance on the eight biochemical traits and phyto-chemical screening were considered. Evaluation Index (EI) value was calculated following the method of Mano, et.al (1993).

Results of the analysis revealed that Alf-004 possessed higher MC, CP, Ash, Total N, K and Leaf yield. Alf-018 was noted for higher CP and Total N. Alf-025 was noted with high MC, CP, leaf yield and Total N while S61-011 for TC and Ash. S61-019 was recorded to possess higher MC, TC, Total K and Ash. Batac was noted best for CF and TC whereas, S54-019 was identified best for MC, CP and Total N.

Based on the evaluation index value, the identified and selected superior genotypes having higher leaf biochemical composition were Alf-004, Alf-018 and Alf-025.

Keywords: biochemical traits, evaluation index, genotypes ,mulberry and phyto-chemical screening





SPROUTING AND ROOTING EVALUATION OF 15 NEWLY EVOLVED MULBERRY HYBRIDS UNDER LA UNION CONDITIONS

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Fifteen promising mulberry hybrids were evaluated along with check variety Batac for comparison as to their sprouting, rooting (survival), number of roots, length of roots and shoot and root to shoot ratio by length and weight. Results revealed that significant variations were observed among the treatments in all the parameters gathered. Alf-47 and Bat 73 recorded both 100% sprouting. Survival rate was significantly high Batac 37. Most number of roots and longest root in Bat 73. Longest shoot was produced by Alf 58. Alf 74 recorded heaviest root and shoot. Highest root-shoot ratio by weight was recorded in Alf 32 while length) in Bat 73. Evaluation indexing in each trait for each hybrid resulted to seven hybrids; Alf 32, Alf 63, Bat 73, Alf 58, Bat 37, Alf 74 and Alf 54 were identified and could be used for further breeding program that showed higher evaluation index value

(above 50 EI and higher than Batac).

Keywords: Sprouting, rooting(survival), number of roots, length and weight of root and shoot, root-shoot ratio by length and weight

019

TITLE: Adequate and Effective Extension Services in Sericulture

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ABSTRACT

This investigation focused on the adequacy and effectiveness of extension services of the Sericulture Research and Development Institute (SRDI), and the problems encountered in implementation of these services. Nineteen sericulture farmers assisted by SRDI served as respondents. The main data gathering instrument used was the survey questionnaire.

Results showed that extension services were adequate and effective in terms of technology transfer and piloting. Extension services as to technical assistance were adequate but ineffective. While extension services in terms of training were both inadequate and ineffective. Serious problems such as poor monitoring and evaluation, lack of farmers' participation in organizing cooperatives, high price of inputs and low price of produce, inadequate funds to expand mulberry plantation were encountered. Problems encountered were significantly related to the effectiveness of the extension services as to training and technical assistance.

The study recommended that trainings on integrated pests and disease management should be provided to the farmers. All stakeholders in sericulture should have closer coordination, and a regular farmers' and extension workers' meeting should be organized. A result-based and consistent monitoring and evaluation should be done. Extension workers should attend trainings on extension approaches and effective communication, and in nurturing and mobilizing community organizations.

Key words: Sericulture, extension services, adequacy, effectiveness





RESPONSE OF HYBRID RICE VARIETIES TO NUTRIENT MANAGEMENT

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²Center Director, Abulug Seed Farm, Abulug, Cagayan

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ABSTRACT

Four newly-released hybrid rice varieties were evaluated using fertilizer recommendations based on nutrient manager and soil analysis from August 5 to November 12, 2011 at the Cagayan, Philippines. The five varieties served as the main plot, while the two recommendations as subplot arranged in split-plot design with three replications.

Significant differences in plant height were noted wherein NSIC Rc 208H and NSIC Rc 268H were the tallest. It exhibited the longest panicle; most number of productive tillers, filled spikelets and highest yield per hectare. No significant differences in the weight of 1000 grains crude protein content, brown rice recovery and milling recovery. The NSIC RC 208H and NSIC Rc 228H produced the highest head rice and lowest broken rice.

Nutrient management did not influence the plant height at maturity, length of panicles and number of productive tillers. Tallest plants were observed under the Nutrient Manager fertilizer recommendation (F1) over the routinary Soil Laboratory analysis recommendation. Both the nutrient management used did not affect the number of filled and unfilled number of spikelets per panicle, grain weight per hill, crude protein content and milling quality. No interaction between Variety x Nutrient Management in terms in terms of growth, yield and milling quality. The study recommended the NSIC Rc 268H produced the higher grain yield under the Soil Laboratory fertilizer recommendation.

NUTRIENT MANAGEMENT OF TRANSPLANTED SWEET CORN

An Adaptation Strategy for Climate Change and Variability

NATIVIDAD C. CALPATURA¹ and RUFINO B. CALPATURA²

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ABSTRACT

A study was conducted to evaluate the nutrient management effect on agronomic characteristics of transplanted sweet corn and on the fertility status of the soil at Baniket, Angadanan, Isabela from February 12 to April 17, 2012. Treatments include two sweet corn varieties as main plot and seven nutrient management practices as sub-plot, and a control.

Macho F₁ variety had higher biomass weights, growth rate, ear weights, ear length, and ear yield per sampling area. Both varieties showed comparable ear diameter, sugar content of ear. The plants received inorganic fertilizer especially on plants with full recommended rates produced taller plants and taller ear height, total dry matter weight, crop growth rate, weight of ear with and without husks, ear length and diameter and yield per sampling area. The nutrient management showed no influence on the sugar content of ear and stem. The nutrient management showed no effect on the bulk density of the soil and fertility status of the soil.

The variety x nutrient management interaction significantly influenced the height of the plants, ear heights, total dry matter weight, crop growth rate, ear weight per plant and yield sampling area, and ear diameter. However, no significant interaction on ear length, and sugar content of ear and stem. Highest return of investment was obtained in V₁F₁ (Macho F₁ x 100% RR NPK (120-20-7 kg NPK ha⁻¹). Based on the results, Macho F₁ variety performs better as transplanted sweet corn.





PRODUCTIVITY OF GRAFTED CUCUMBER USING WAX GOURD AND SQUASH ROOTSTOCKS

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¹Professor and Chairman, Crop Science Department, College of Agriculture, ISU

²Agriculturist, Quirino Experimental Station

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ABSTRACT

A study was conducted aimed to assess the potential of grafting as a cultural production modality to enhance the productivity of hybrid cucumber cultivars under an open field condition in the town of Cordon, Isabela, Philippines from December 2013 to February 2014. Specifically, it was conducted to: 1). determine the potential of scion-rootstock combinations which produce the number and heaviest fruit yield per plant, 2). Identify which of the scion-rootstock combinations with longer fruiting time. The treatments used were the cucumber varieties (Ambassador F1 and Pepinito F1) as scion for Factor A, Wax Gourd and Squash as rootstocks for Factor B laid out in Randomized Complete Block Design with three replications.

The ambassador F1 scion obtained the highest survived grafted seedlings than the pepinito F1 variety. There were no misshapen fruits observed in the grafted plants for both rootstocks. The ambassador F1 variety scion grafted onto a rootstock of Wax Gourd consistently produced the most number and heavier fruits yield with longer fruiting time per plant as compared to the plants grafted to the squash rootstock. The non-grafted plants consistently produced the least number of marketable fruits, weight of fruits per plant hence, the least in fruit yield per plant with shorter fruiting time.

Keywords: grafting, rootstock, scion, misshapen fruit





GROWTH AND YIELD OF FINGER PEPPER (*Capsicum annuum* L.) APPLIED WITH INORGANIC FERTILIZER AND SPRAYED WITH MATURE COCONUT WATER

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Tel. No. (072) – 242 – 1117 & Cp. No. 0915-591-9552



ABSTRACT: Vegetable production has a great contributions to the coffers of the national government as the United Nations Development Program reported in 2006 that the vegetable industry in the Philippines contributes >30% to total agricultural production. The World Health Organization reported that 2.7 million lives could be saved annually with sufficient fruits and vegetables consumption of 400 grams per day. In the Philippines, Food and Nutrition Research Institute reported too that one person consumed only 110 g per day.

One of the factors on the low consumption was the limited supply due to poor yield brought by the depletion of the soil nutrients which could be augmented by spraying the vegetable plants with mature coconut water which is very rich with various nutrients, vitamins, minerals and phytohormones that are needed by the plants.

Results revealed that finger pepper plants applied with 75% of the recommended rate of inorganic fertilizer and sprayed with 100% concentration of mature coconut water produced the highest fruit yield (37,912.00 kg ha⁻¹) and highest net income (PhP839,660.10 ha⁻¹), while the plants applied with 50% of the recommended rate of inorganic fertilizer and sprayed with 100% concentration of mature coconut water attained the highest ROI (886.93%).

Keywords: *Mature coconut water, inorganic fertilizer, finger pepper, growth, yield*

043

Growth and Yield of Banana var. Lakatan as Influenced by *Azospirillum* spp. Inoculation and Vermicompost

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ABSTRACT

Bio-organic fertilizers such as *Azospirillum* spp. inoculation and vermicompost are low-cost and environment-friendly. Two studies were conducted to determine the effects of bio-organic fertilizers (*Azospirillum* spp. and Vermicompost) on the growth and yield of tissue cultured banana under nursery condition and at field outplanting.

Results revealed that Ammonium Sulfate (AS) supplement (4tbsp/16li) water increased the number of leaves on the 1st 4wks but no subsequent significant effect was noted onwards. AS supplement increased leaf area of seedlings 2MAP. Plant height, length of leaves, number of leaves and number and length of roots were not significantly increased.

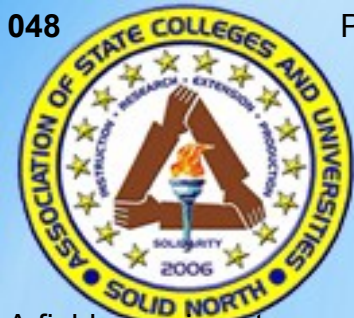
The second phase was conducted to determine the residual effects of bio-organic fertilizer on field planting of outpotted tissue cultured seedlings previously applied with bio-organic fertilizers.

Results revealed that girth(cm) of pseudostem at shooting, number of leaves at 6MAP, at shooting and at harvest, plant height at 7MAP, number of days from planting to shooting, shooting to harvest, and from planting to harvesting were comparable either with or without addition of bio-organic fertilizer. These growth parameters of banana were likewise not significantly different among the different sub-treatments. Yield in terms of length of peduncle (cm), length of fingers (cm), diameter of finger (cm), number of hand per bunch, number of fingers per hand, weight of middle hand, total number of fingers/bunch were comparable regardless of *Azospirillum* spp. used. Likewise, application of Vermicompost (1-2 kg/plt). + 50%SLRR are not significantly different to the application of 100%SLRR using chemical fertilizers.

Yield of 14.78-14.55 kg/plt was obtained with and without additional Bio-organic fertilizer while *Azospirillum* spp. inoculation produced 12.88-15.59kg while Vermicompost produced 14.09-15.09kg/plt respectively while plants applied with 100% SLRR using Urea obtained 15.08kg/plt.

Keywords: *Bio-organic, inorganic, biofertilizers, inoculation, tissue culture*





SOIL MACROFAUNA

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Thomas Aquinas Research Center, Espana, Manilaprecy.delima@gmail.com**ABSTRACT**

A field experiment was conducted to investigate the soil macrofauna of dragon fruit plantations in two experimental sites in Indang Cavite in August 2012. The two sampling sites were treated with chemical fertilizers and compost being used as major fertilizer. Research and laboratory works were done at the Thomas Aquinas Research Center, University of Santo Tomas, Manila. Species level identification of the organisms sampled was done at the National Museum of the Philippines. *Amyntas gracilis* is the most abundant species in the three levels of depthness of the monolith in the dragon fruit plantation which uses inorganic inputs. The most abundant species in the three levels of monolith in vegetation with organic input are the *P. nitidella* (0-10 cm), *A. gracilis* (11-10 cm) and *C. formosanus* (20-30 cm). *A. gracilis*, *D. austral*, and an organism that belongs to Subfamily Melolonthinae are common in the two plantations. Difference in soil macrofauna biodiversity and body size was noted between the two sampling sites. The vegetation where inorganic pesticide and fertilizer were not applied had more diverse soil macrofauna and possessed larger body sizes.

Keywords: soil macro fauna, dragon fruit, organic fertilizer, biodiversity, Philippines

Detection of Carbamates and Organophosphorus Pesticides and Residues in Selected Vegetables in Northern Philippines

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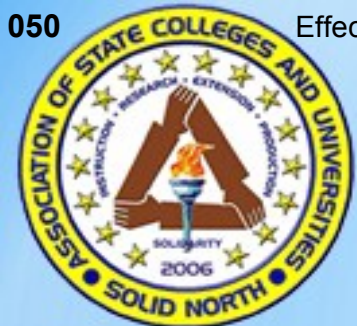
09066012007

ABSTRACT

Acute pesticide poisoning is a serious public health problem in developing countries like the Philippines. Pesticides like organophosphates (OP) and carbamates are the most widely used pesticides in the world. The presence of these pesticides and their residues from two vegetable provincial producers: La Trinidad, Benguet and Bambang, Nueva Vizcaya in Northern Philippines were determined using the Colorimetric Spot Technique. The source (Factor A) and the type (Factor B) of vegetables were examined using the Randomized Complete Block Design (RCBD) in Factorial with three replications to allocate treatments. Results showed that the source and type of vegetables were not statistically significant on the amount of pesticide residue. Source and vegetable combination interaction had no statistical significance on the amount of pesticide residue. However, cabbage (T1) was found to have the highest amount of organophosphate pesticide residue followed by Chinese pechay (T2) and cauliflower (T3). In terms of location or vegetable source, both Benguet (S1) and Nueva Vizcaya (S2) showed the presence of pesticide residue. String beans, Baguio Beans and tomatoes registered positive with the Carbamate Detection Kit. The study concludes that none of the treatments analyzed exceeds the safe level of toxic substances as to source and type.

Keywords - carbamates, organophosphates, colorimetric spot technique, cruciferae, pesticide, residue





ABSTRACT

This study aims to determine the effect of seed treatment, N- fertilization, and herbicide application on the efficacy of Bio-N on corn (Zea mays) productivity. The experimental design followed the Randomized Complete Block Design (RCBD). Analysis of variance was used. The effect of vesicular – arbuscular mycorrhizal fungi (VAMF), N Fertilizer and Biocides on the efficacy of Bio-N on Corn productivity was studied under field conditions. Results showed potential benefits of these microbial biofertilizers with their combination with suboptimal and optimal amount of N fertilizer. Significant findings were revealed in terms of yield. Three fourth of the recommended rate of inorganic fertilizer with mykovam (T9) yielded 7895 kg/ha (7.895 MT) followed by ½ of the recommended rate of inorganic fertilizer without herbicide application (T19) with 7571 kg/ha (7.571 MT) which are very near to the potential economic yield of 8 tons per hectare. The effect of biocides is not straightforward. On rhizosphere species biodiversity, the study revealed that native microorganisms were not affected. Results showed potential benefits among small corn growers, subject to further investigation on local and regional adaptation on varietal responses of corn. The results obtained in this study will establish an information base that may be useful for the Department of Agriculture in their research about varietal performance for corn and on rhizosphere studies.

Keywords - biofertilizer, BioN, diazotrophic, mycorrhiza, VAMF, biofertilizers, corn, field experiment, Ilagan, Isabela, Philippines

Convenient Chevron Products: Developing Opportunities for Commercialization

FREDISMINDA M. DOLOJAN, NENITA RODAVIA and ISABEL F. SALVADOR

ABSTRACT

The three final recipe were standardized and subjected for further sensory evaluation for all groups of tasters, children (7-12), adolescent (13-19), and adult (20-60). Result showed that the three introduced “variants” recipe received a fully acceptable descriptive result of evaluation with an average weighted mean of 4.25 for chevon curry, 4.36 for chevon satay and 4.25 for chevon minikebab.

These went through Heat penetration tests packed in stand-up pouch (SUP) in water retort with overpressure. Ph of the product is ≥ 6.0 which is considered as low-acid food. Stand –up pouch, laminate of PET (12 micron)/foil (7 micron)/Nylon (15 micron)/retort CPP (60 micron)/ 100mm x150mmx64mm (LxWxT). Calculated processing schedule for chevon curry and satay in 85 grams stand-up pouch at retort temperature of 240 °F (115.6°C) and assumed F_{250} or F_0 value of 6.0 minutes.

Moisture content for curry is 64.47g/100g while satay has 53.51g/100g moisture content.

Using cost and return test for profitability, the three recipes are found to be profitable. These gave a positive return of cash expenses of 36.22% for the curry, 30.82% for the goat satay and 17.92% for the goat minikebab.





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ABSTRACT

*Foliage insects play significant ecological roles in the sustainance of a stable corn agroecosystem. These are flying insects or often found attached to the plants. These insects exhibit high sensitivity to chemicals and could easily be affected by any environmental perturbances brought by human or natural interventions. Their populations may vary at different stages of the corn plants growth cycle and their abundance could increase or drastically decline in response to the effects of agricultural inputs. Knowing which species populated the cornfield at a specific corn plant stage may help us identify species that are potential bioindicators for any corn agroecosystem disturbances. Hence, six hectare field experiments were established in Isabela province for two cropping seasons in 2009-2010 to monitor and assess foliage dwelling insects at different stages of the corn plants. Sticky traps were used and deployed in experimental fields to capture foliage insects within the cornfields. Insecticide-treated plots were established and visitation of foliage insects were monitored in both insecticide treated and untreated plots. As a result of compreshensive analysis, eight insect foliage species (*Cheilomenes sexmaculatus*, *Draeculacephala mollipes*, *Erythroneura vitis*, *Euphorocera claripennis*, *Salticus sp.*, *Heppelates sp.*, *Phytodictus vulgaris* and *Scirtes sp.*) which are abundant at tasselling and maturity corn growth stages are recommended as potential bioindicator taxa for a chemically disturbed corn agroecosystem.*

Keywords: Foliage insect, agroecosystem, bioindicator, abundance, insecticide

006

MANGROVE ESTABLISHMENT PROJECT IN ILOCOS SUR

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ABSTRACT

The Mangrove Rehabilitation/Establishment is one of the component projects under the Philippine National Aquasilviculture Program started in the year 2012 which aims to rehabilitate or establish mangrove in areas which are abandoned, undeveloped and underutilized in Ilocos Sur. The project also ensures livelihood and food security contribution to the community. These enable the beneficiaries of the project the inculcation of their responsibility towards resource management.

A total of 183,300 mangrove propagules were planted from the three municipalities of Ilocos Sur to wit; Santa, Narvacan and Sta. Maria. Community organizing and trainings were provided to the beneficiaries with regards to environmental and gender awareness, value formation and team building. Mangrove growth were periodically monitored in all sites with an average survival of 47.48% during the 1st year of implementation but replanted to come up the expected survival rate. The mangrove established is now a breeding and nursery grounds for a number of marine and brackishwater organisms including commercially important shrimp, crab and fish species and provided structure to land while preventing erosion. Stakeholders and collaborators participation were strengthened, a way to ensure success of the project.

Key words: Mangrove, Abandoned, Propagules, Brackishwater, Establishment

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2 in 1 *plus* MARICULTURE FARMING SYSTEM (A Livelihood Management Strategy for Coastal Families)

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ABSTRACT

Overfishing and degradation of coastal environment led to low fish catch and unproductive fishing efforts of sustenance fishermen. At present they remain as one of the poorest sector of the society. A need to provide additional source of income remains a challenge, hence the potential of seafarming both seaweed and sea urchin was explored. Coined as 2 in 1 *plus* mariculture farming system, it encourages family households to work together in a system of production and processing; optimizing coastal family productivity. The technology was developed through the integration of several experimental/ demofarm results and local practices on the culture and processing of seaweed and sea urchin. Return on expenses of each technology was determined. The 2 in 1 *plus*, as an integrated mariculture farming system maximizes the use of limited culture area and boosts productivity of a family. In a 200m² open-water grow out culture area, production of seaweed and sea urchin serves as an alternative source of livelihood producing food commodities for local market with export potential. Direct benefit is a return on expenses of 87 and 67% for fresh seaweed and sea urchin respectively, and about 14 to 65% of any product development a family would undertake as a value-added initiative. The said farming system promotes entrepreneurship enhancing financial stability and social progression within the family or to community in general. Sustained collaboration and involvement of key players in coastal fisheries management is sought for successful family or community-based adoption of the 2 in 1 *plus* mariculture farming system. The Local Government Unit (LGU) provides the path for its pilot implementation, and with appropriate training and market assistance as wheels of development, families adopting the mariculture farming system promote community-based fisheries enterprise in general (see figure below).



Keywords: *mariculture, seaweed, sea urchin, farming system, processing*



Proponents:

Project Leader- Simeon R. Rabanal Jr, Ph.D.

Study Leaders- Eunice A. Layugan, Ph.D.

Romeo C. Culasing, Ph.D.

Research Assistant- Eunice S. Daluddung

ABSTRACT

The Aparri- Cagayan River Estuary (ACRE) is the habitat of the endemic *Nematopalaemon tenuipes* “aramang”, which is an export commodity for community of Aparri, Cagayan and a food source for other marine fishes of economic importance. The study was done to determine aspects of the breeding and reproduction of *N. tenuipes* caught by filter nets from August 2013 to July 2014. The length and weight were measured and subjected to FISAT analysis while maturity (micro and macro analysis), fecundity, GSI and stomach contents were determined from collected samples. The results showed that *N. tenuipes* reached a maximum length of 91 mm, size at recruitment was at 19 mm. The Von Bertalanffy Growth constant was $k = 1.85$ indicating that aramang is fast growing and short-lived fish. The five distinct maturity stages of berried and non-berried aramang occurs throughout the observation period wherein nearly ripe (40%) and OR 4 (38%) were dominant respectively that implies that the species breeds continuously. The size at maturity was found to be 37 mm in TL with an estimated mean GSI of 7.35% and mean fecundity was 1058.85 eggs per female. It was further observed that the diet of the dominant fish, croaker and hairtail consisted mainly on shrimps and fishes, *N. tenuipes* was important part of their diet. Therefore, the abundance, and further investigation on the reproduction and biology of *N. tenuipes* must be assessed to determine the sustainable harvest of this species.

ABSTRACT

Alejos, Marlon S. University of the Philippines Visayas, 5023 Miag-ao, Iloilo, Philippines, August 2014. The influence of light intensity on larval stage of snubnose pompano (*Trachinotus blochii*, Lacepede 1801).

Light can have significant impacts on larval growth and survival of many marine fish species. Here, three experiments were conducted to investigate the influence of light intensity on larval stages of snubnose pompano *Trachinotus blochii*. Experiment 1 and 2 were conducted to determine the influence of different constant (Exp-1) and increasing constant light intensity (Exp-2) on feeding (ANR and FI), growth (TL, weight) and survival of snubnose pompano early developmental stage from 1 to 10 DAH (day after hatching). Experiment 3 was conducted to determine the influence of constant light intensity on growth (SGR, AGR, TL), survival and metamorphosis of snubnose pompano late developmental stage from 16 to 35 DAH (day after hatching). Five treatments with three replicate each were used in all the experiments. In experiment 1 and 3, treatments includes: T1(indoor-natural photoperiod, 12hL: 12hD), T2 (500 lx), T3 (1000 lx), T4 (2000 lx) and T5 (3000 lx). In experiment 2, treatments includes: T1(indoor-natural photoperiod, 12hL: 12hD), T2(300-500lx), T3 (300-1000lx), T4 (300-2000lx) and T5 (300-3000lx). For experiments 1 and 2, the larvae were fed with enriched rotifers (*Brachionus plicatilis*; 50-250 μ m) at a density of 30 individuals/mL starting from 2 DAH (17:00 h). The number of rotifers in the larval digestive organ, feeding incidence and total length of larvae were examined at 3 h interval between 04:00 and 22:00 on 3 DAH, and thereafter 6 h interval from 4 to 5 DAH and once on 8 DAH (10:00 h). Final growth and survival were determined after the experiments. For experiment 3, Larvae were fed with the combination of artemia (*Artemia* Instar I; 400-600 μ m) and artificial diet three times a day from 16 to 35 DAH. Morphological observation and growth assessment were done daily. Survival was determined by counting all remaining fish after 35 DAH. Results indicate that snubnose pompano are visual feeders and exhibit diel rhythm with the presence of 24 h light. In contrast, larvae at natural photoperiod (12hL: 12hD) normally undergoes diurnal rhythms. In experiment 1, better larval feeding, growth and survival were obtained at 500 lx. Larvae at higher light levels (2000 and 3000 lx) failed to survive and 100% mortality occurred on early 4 DAH while few remained at 1000 lx. In experiment 2, better and consistent larval feeding was obtained at medium increasing constant light levels (300-500 lx). Negative effect of higher increasing constant light intensity was observed after 5 DAH. Higher larval survival was obtained at medium increasing constant light levels (300-500 lx) but greater larval growth were achieved at higher increasing constant light intensity (300-1000 lx, 300-2000 lx, 300-3000 lx). In experiment 3, better growth, survival and significantly higher percentage of metamorphosed larvae was achieved at 3000 lx. Larvae at natural photoperiod (12hL: 12hD) had the lowest growth and survival in all experiments. Study indicates that light intensity can improve feeding, growth, survival and metamorphosis of snubnose pompano larvae.

KEY WORDS: *Trachinotus blochii*, larval stage, light intensity







015

FMS- and internet-based quasi-realtime weather monitoring platform for localized climate change adaptation for agriculture

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ABSTRACT

In a pioneering work in the Philippines, we have developed a field monitoring system (FMS)- and internet-based weather monitoring platform to capture in quasi-realtime weather elements data in the immediate crop environment. The FMS are networked under a data collection and transmission schema and data parsing algorithm to interpret raw data into information useful for designing localized climate change adaptation for agriculture.

The platform is versatile, almost maintenance-free, automated, relatively cheap and customizable into other information systems for health and safety and disaster and risk management for localized climate change adaptation.

Keywords: field monitoring system (FMS); internet-based; quasi-realtime; climate change; localized climate change adaptation

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IMPACT OF COVER CROPS ON GREENHOUSE GAS EMISSIONS AND SOIL MICROBIAL ACTIVITIES

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ABSTRACT

Management practices that simultaneously improve soil properties and yield are crucial to sustain high crop production and minimize detrimental impact on the environment. The effect of groundcover management (ryegrass, hairy vetch, and oilseed radish) in terms of microbial biomass carbon (MBC), C and N mineralization, and enzymatic activities in a corn-wheat-soybean cropping systems under a Mollisol was evaluated. The distributions of total organic C (TOC), total Kjeldahl N (TKN), microbial biomass C (MBC), readily mineralizable C and N, and five enzyme activities (β -glucosidase, β -glucosaminidase, acid phosphatase, arylamidase, and fluorescein diacetate hydrolysis) involved in the cycling of C, N, P and S were studied in three soil depths (0-5, 5-10, 10-20 cm) while soil surface fluxes of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) were estimated.

Rye grass showed higher activity in acid phosphatase, β -glucosidase and β -glucosaminidase. Rye grass and hairy vetch significantly increased organic C and N, and MBC. Level of mineralized C and N were the same in rye grass and hairy vetch. There was no clear variation in CO₂, N₂O and CH₄ fluxes from the cover crop treatments. N₂O fluxes increased with an increase in soil moisture. The negative CH₄ fluxes manifest the soil as CH₄ sink. No significant differences among cover crop treatments in terms of CO₂-C, N₂O-N and CH₄-C emissions, a reflection that their emissions are highly variable.

Empirical data on carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) fluxes are important in management systems to evaluate mitigation strategies, while microbial biomass and enzyme activities can be used as sensitive indicators of ecological stability.

KEYWORDS: carbon sequestration, carbon dioxide, emission, agricultural soils,





ABSTRACT DEVELOPMENT OF A MULTI-PURPOSE SOLAR CHARGER

Allen Deyl S. Paulo (Presenter)

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The study is focused mainly on the development of a multi-purpose solar charger. The *experimental method focused on project development* was used in this study. The findings of the study are : A *Solar Powerbank Multipurpose Charger* could be designed and constructed using locally available supplies and materials. The steps involved are; planning, designing, assembling ,testing and revising. The defects found are as follows; the 5Ω x 2 watt resistor is getting hot during charging process, the circuit capacity is limited for 3 loads only to be charged simultaneously, the charger's capacity increased from 3-5 mobile phones but 7808 IC produced high temperature, the charger refuse to charge some models of mobile phone due to specified ampere capacity of some models, especially in low ampere and the occurrence of unusual heat from the 7808 IC in short period of operation. Finally, the devise was highly acceptable in terms of; design, construction, functionality and safety. It is recommended that the Solar Power Bank Multipurpose Charger was found to be highly acceptable and its use is highly encouraged. For further improvement of the features and capabilities of the charger, additional modules should be incorporated. Likewise, the project may be patented and distributed , may be for commercialization.

Keywords :development, project, solar-power, charger, multi-purpose

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057***(North Luzon Philippines State College)

The Small-Scale Mining Operations in Patiacan, Quirino, Ilocos Sur

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ABSTRACT

This study is conducted to address environmental issues on the operation of small-scale mining operations in Patiacan, Quirino, Ilocos Sur such as the loss of vegetation from deforestation, aesthetic defacement of land forms, slope destabilization, soil erosion, water resource degeneration, desertification and contamination of headwaters of major river systems by mine waste and tailings siltation of irrigation canals and farmlands. The respondents of this study are the local government officials, residents and those who have concern in the mining operation in Patiacan, Quirino, Ilocos Sur. The result of this study may provide the researchers an insight on the extent of environmental effect of the small-scale mining operations in Patiacan, Quirino, Ilocos Sur. It gives an idea as well to the LGU officials in Ilocos Sur through the data of this study on the real situation of the mining operations in the said area. Findings of this study may serve a basis for policy making by the local and national legislators about the effect of the small-scale mining operations in Patiacan, Ilocos Sur.





058*** (North Luzon Philippines State College)

The Tobacco Industry and Issues on Ecological Integrity

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ABSTRACT

According to former Ilocos Sur governor Chavit Singson, tobacco is the only cash crop which contributes an enormous sum in the family income of the farmers particularly those in Northern Luzon. The Philippine Tobacco Industry providing livelihood and sustenance to two (2) million people including the 500,000 tobacco farmers and their families. However, environmental experts said that tobacco farming destroyed or degraded not only the farmland for growing tobacco but also affects the nearby farms. Forests are also cleared to make way for tobacco plantations and its soil is more likely to be washed away in heavy rains. A lot of wood is also needed to cure tobacco leaves and tobacco farming usually consume more water, and has more pesticides applied to it that further affecting water supplies.

This study attempts to find out the ecological effect of tobacco industry and the reforestation program of the government to help mitigate climate change. The descriptive survey research using a questionnaire will be utilized in this study supplemented by interviews and various related studies.

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Developing Climate Change Resilient Communities through the Adoption of Sustainable Agricultural Technologies

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ABSTRACT

The project provides assistance to selected rice and corn farming communities in the province. Its implementation employs a combination of various approaches and methodologies that respond to the overall objective of developing climate change resilient communities through the adoption of sustainable agricultural technologies. Since its implementation in June 2013, the rice project has trained 25 farmers on dry season palay check technology, aerobic rice technology, production of natural farming inputs, among others. Demonstration sites were also established which served as a field practice sites for the farmers. Ten households have established backyard mushroom project following the on-the-job training on mushroom production conducted by project staff. The farmer cooperator for aerobic rice technology has increased to six from one. The pre and post KSA measurement study revealed that farmer-participants' knowledge and skills on the different technologies introduced to them have increased after the training. On the other hand, the corn project has institutionalized a partnership and trained 23 farmers on SALT/SCoPSA technology. Widest dissemination and adoption of modern technologies like Palay Check, aerobic rice technology, mushroom production technology, etc. which can result to a positive impact on the growth, yield and rice grain quality and on the sustainability of the environment may be conducted. Monitoring of the 25 farmer-trainers and their activities regarding the dissemination of the different technologies they learned from the season-long training should be done. Cost and benefit analysis for the different technologies introduced may be done with the help of farmers involved to help them appreciate the result. A phase-in and phase-out plan to ensure project sustainability may also be done prior to funding termination.

Keywords: Climate change, Livelihoods, resilience, sustainable agriculture, technologies





This project sought the significance of several less valued tropical fruits that can be processed into wine such as makopa, mabolo, duhat, banana, tomato and bignay. Wine processing in Quirino State University was established by the Quirino Young Entrepreneur's Association (QYEA) a recognized student's organization spearheaded and managed by the agriculture students which main goal is to serve as an avenue for financially challenged students to earn additional allowance while enhancing their entrepreneurial skills. The product's name is JAVEZ which was derived from the name of the first manufacturers. The wines are packaged in bottles with attractive and innovative labels. Initial produce was very limited in volume due to the very limited source of capital which is out of the student's money. During the group's various displays and product exhibits in provincial and regional events, the Department of Labor and Employment (DOLE) sought the business plan of the product thus providing the group with additional fund amounting to Php 216,000.00 for the enhancement of the entrepreneurship laboratory, provision of the processing equipment, packaging materials, labels and other materials thereby making the enterprise self-sufficient. Moreover, the laboratory is utilized as a training ground of students taking up entrepreneurship and marketing courses to further develop their skills in wine processing and related activities.

The group was able to generate a Return on Investment (ROI) of 50% from the estimated cost depending on the kind of fruit used. Continuous monitoring and evaluation is done by the project management and adviser. A financial journal and income statement is to the auditor and advisers to assure sustainability of the project through profit sharing. All sales are deposited in the bank, in the name of the association care of the president and the treasurer wherein 70% is divided among its members, 20% goes to savings and 10% for maintenance.

The QYEA continuously operates as a successful business enterprise, developing future entrepreneurs who creates employment contributory to economic development. Wine products produced has been acknowledged by the Department of Science and Technology and the primary producer of local wines in Quirino and nearby provinces. Marketing strategy employed includes the integration of wine's health benefits through word-of mouth, fliers, bulletin advertisements, displaying at "pasalubong" centers and participating in different product exhibits in the country.

Keywords: entrepreneurship, innovation, culture

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PeFT Rice: PESTICIDE FATE AND TRANSPORT MODEL IN AN IRRIGATED RICE AREA

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Abstract

For fast, effective and economical assessment and continuous monitoring of the level of concentration of pesticide in an irrigated rice area, the development and use of a model play a very important role. This study aimed to assess the extent of pesticide contamination of water in the paddy field and drainage channel and develop a model that can be used to determine the fate and transport of pesticide in an irrigated rice area. Three (3) - 144 sq. m. experimental paddy plots planted with MS 16 variety of rice and applied with pesticide was used in the study. A computer based transport model was developed and was used to simulate the concentration of pesticide residue in the ponded water and drainage channel by mathematically tracking the total mass of chemical residues from the loading point to the drainage stream in terms of mass balance. As indicated by the correlation analysis and test of significance between the observed and predicted data, the model can accurately simulate the actual pesticide concentration in the ponded and drainage water. The root mean square error (RMSE) of 5.72% further proves the accuracy of the model in predicting the pesticide concentration. The study recommends the enhancement of the model by taking into consideration the advection process in the drainage stream and linking of the model to other available models by either using the input/output of the model as an input/output to other models or vice versa.

Keywords: pesticide modeling, fate and transport of pesticide, irrigated rice area, pesticide concentration





ICT Faculty and Students' Congress 1.0

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ABSTRACT

The congress helps respond to the unpredictable changes and challenges brought about in the field of information and communications technology as it is designed to give trainings, seminars and/or workshops to be abreast with the current trends and issues in the information technology industry. Topics discussed were based on the result of the benchmark survey conducted on the current trends in the industry and the needs in the university system. Specifically, on current IT Trends and Careers; Google apps; Cloud/Mobile Computing; and Cybercrimes. To disseminate the invitation, permission from CHED was sought in the conduct of the congress including an endorsement from the University President. To facilitate the congress and to generate the desired output, lecture/discussion; demonstration; feedback mechanism; and open forum were employed in which prizes were given in between topics discussed. A registration fee was charged for each participant to defray expenses on food, Technology shirt, congress kit and the Certificate of Appreciation. A total of 815 participants in the university system attended the congress. This kind of set-up provided awareness on the current trends and issues in the Information Technology Education (ITE); an opportunity to acquire tips on how to apply the ICT topics in an actual application environment directly from the industry; and created an opportunity to link in the industry for professional development and/or advancement. A post evaluation was also conducted among 500 respondents which were randomly selected. Data revealed that the congress was "Very Good" with a mean rating of 4.86. Thus, it implies that the conduct of the congress along with the industry linkage in an organization is a viable way of improving the quality of education we give to our students' creating a vibrant academic community in the university as a whole.





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MOLLUSCICIDAL ACTIVITY OF THE CRUDE ETHANOLIC
LEAF EXTRACT OF PHYSIC NUT (*JATROPHA CURCAS* L.)

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ABSTRACT: Molluscicidal activity of physic nut (*Jatropha curcas* L.) was evaluated against golden apple snails (*Pomacea canaliculata* Lam.). Ethanol (95%) was used to extract the bioactive constituents from the leaves of physic nut. The concentrated crude ethanolic leaf extract was fractionated according to polarity and assayed for molluscicidal activity against the young golden apple snails. Molluscicidal activity was observed on the hexane and dichloromethane (DCM) fraction applying the bioassay-directed chromatographic separation with gradients of chloroform, toluene and acetone as eluant. The hexane fraction afforded active eluates which after chemical characterization indicated the presence of phenolics, tannins and flavonoids; saponins; triterpenes and sterols. The dichloromethane fraction upon separation and bioassay evaluation yielded two active eluates characterized to contain alkaloids. The observed molluscicidal activity of the crude ethanolic leaf extract of physic nut (*Jatropha curcas* L.) could be attributed to the presence of these bioactive substances. These results could further serve as basis for considering the use of *Jatropha curcas* leaves in controlling golden apple snails in crop protection management of rice.

Keywords: molluscicidal activity, crude extract, chromatography, chemical characterization,
bioactivity





DETERMINATION OF SECONDARY METABOLITES AND ANTIBACTERIAL PROPERTY OF EXTRACT FROM THE LEAVES OF STACHYTARPHETA JAMAICENSIS (L.) VAHL

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ABSTRACT

This study evaluated the antibacterial activity, and phytochemical profile of the ethanolic extract of *Stachytarpheta jamaicensis* (L.) Vahl. leaves. The plant locally known as *kandi-kandilaan* has attracted the attention of the researchers because of the folkloric claim as an external anti-infection agent. Crude extract was obtained by macerating the powdered dried leaves with 95% ethanol followed by concentration in vacuo. The crude extract was subjected to phytochemical screening using the standard qualitative technique. Positive results were indicated by the development of colors when a particular reagent was added to the extract to determine the presence of the secondary metabolites. Paper disc diffusion method was applied in evaluating the antibacterial activity of the ethanolic extract against a common bacterium, *Staphylococcus aureus* (S. aureus). The results showed that the leaf extract has a potential activity against the test organism. The activity could be attributed to the bioactive constituents found to be present in the crude leaf extract. The phytochemical screening revealed the presence of terpenoids and saponins as the major bioactive constituent which could serve as basis for establishing the potential uses of *Stachytarpheta jamaicensis* (L.) Vahl as anti-infection agent.

Botanical Anti-Mange Soap

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ABSTRACT

Mange is a skin disease which causes threat to health and well-being of dogs. Expensive synthetic acaricide in market makes mangy dogs left untreated. This study addresses this problem by discovering cheap but effective treatment

The Study aims to determine the; 1) species of mites affected by the soap, 2) efficacy and most effective concentration of the soap, 3) efficacy awareness and general acceptability of respondents on the soap, 4) standard procedure in producing the soap, 5) to promote/disseminate the soap, and 6) to generate income.

For the species of mites affected, efficacy and most effective concentration of the soap, 45 dogs positive for mange were used, for the efficacy and general awareness 336 respondents were surveyed. Soap samples were standardized. The soap were promoted and marketed.

The botanical anti-mange soap (Natural Coco Oil or NCO and *kakawate* leaf extract or KLES soaps) eliminate mange mites. Seventy % NCO yield 100 % efficacy and KLES (20%) yield 98.99% efficacy, both were highly effective in treating mange. Efficacy awareness to NCO is 93.02% and 82.6% to KLES. For acceptability, 85.20% for NCO and 86.72% for KLES. Nine hours freezing and 2 weeks curing are best standard. Promotional and marketing were conducted.

Keywords: Coconut Oil, *Gliricidia*, Anti-mange, Dogs

*- Presenter





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This project aimed to design and develop packaging materials and labels for apiculture products and by-products for better promotion, marketing and consumption and to ensure sustained agribusiness venture. Specifically, it sought to determine the profile and best practices of apiculturists in terms of product processing and packaging and to provide a start-up packaging materials and labels for the project collaborators.

A survey questionnaire was developed, validated and utilized for gathering data on the profile and practices of beekeepers. A total of 102 active beekeepers from seven regions in Luzon were profiled. In terms of their involvement in honeybee production, 78 (94.90%) were active beekeepers. A total of 58 (74.36%) were using extractors in honey processing. The beekeepers were using containers, strainers, sealer/blower, uncapping knives, uncapping tables, honey tank, honey sump, and refractometer in their processing areas. As regards to their common activities and practices on processing area, the beekeepers identified cleanliness in the processing area as their number one priority. As regards to their packaging materials, 48 (61.54%) were using glass bottle materials.

Three samples of packaging materials and labels for each product were drafted and were subjected to acceptability test by consumer which were selected through stratified random sampling in four municipalities of La Union, prior to the identification of project collaborators. Developed start-up packaging materials and labels for honey, honey vinegar, honey wine, honey and propolis soap, honey citrus soap, dishwashing liquid with propolis, moisturizing cream with propolis and pro polish are now being utilized by selected cooperators, cooperative, and small and medium scale entrepreneurs.

Keywords: apiculture, beekeepers, honey, packaging materials

MOLECULAR DIAGNOSIS OF PORCINE EPIDEMIC DIARRHEA

IN LUZON, PHILIPPINES

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1, Helen A. Molina 2, Amadeo A. Alcantara

Abstract

Reverse transcriptase polymerase chain reaction (RT-PCR) and immunohistochemistry (IHC) were used to demonstrate the presence of PEDV antigen in the intestinal cells of suckling pigs in Luzon. The PEDV antigen was detected in 11 (13.75%) and 32 (40%) out of 80 intestinal samples using RT-PCR and IHC, respectively. RT-PCR generated a 412-bp cDNA probe which amplified the viral RNA encoding the membrane protein of PEDV from the intestinal segments of the jejunum. Immunohistochemistry revealed positive cells in the jejunum as indicated by the slight-brown staining in the cytoplasm of infected cells. Comparative evaluation of the two tests revealed a fair agreement ($\kappa = 0.327$). RTPCR may be used as a screening test for PEDV antigen detection using jejunal tissue with feces because of the shorter duration of processing and testing and immunohistochemistry on the other hand can be performed as confirmatory test using formalin-fixed jejunal samples. Histopathological changes observed were vacuolation of enterocytes, villous atrophy as exemplified by 2:1 villous:crypt height ratio and exfoliation of enterocytes which are associated with the clinical signs of PED such as watery diarrhea, dehydration and acidosis.

Keywords: Porcine Epidemic Diarrhea, Reverse Transcriptase- Polymerase Chain Reaction, Immunohistochemistry, Diagnosis, Histopathology

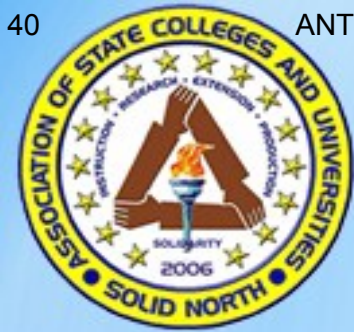


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Keywords: anthelmintic, noni fruit, gastrointestinal, EPG, efficacy



Abstract

The study was conducted from September to November 2009 at Isabela State University, School of Veterinary Medicine, Echague, Isabela. It aimed to determine the use of different concentrations of noni fruit extract as anthelmintic for gastrointestinal parasites of goats. The different treatments used were T1-control (Albendazole), T2- 10 ml noni fruit extract, T3- 20 ml noni fruit extract and t4- 30 ml noni fruit extract.

A total of 15 apparently healthy Philippines native goats ranging from 6 months to 1 year raised in a cut and carry system were used in the study. A preliminary toxicity using three goats was conducted and twelve were used for the experimental proper. Each goat were randomly selected distributed to four groups, (Albendazole, 10 ml, 20 ml and 30 ml noni fruit extract, respectively), and it was replicated thrice. Each group has a total of three goats for each treatment. Based on the geometric mean EPG count of each group, the goats were moderate to severe infested by gastrointestinal parasites.

Preliminary toxicity trial revealed that the rectal temperature, respiratory rate, pulse rate, WBC count and PCV of goats administered with the noni fruit extract were not significantly affected, although deviations appeared but values obtained falls on the normal range.

Fecal culture on the test animals showed that they were infected with *Trichostrongylus*, *Trichuris* and *Haemonchus* larvae. Based on the results of percentage reduction, it has been observed that T2 and T4 reduced *Trichostrongylus* larvae by 100% followed by T3 with 97% and T1 with 75.6%.

Trichuris larvae were significantly reduced by T1, T4 and T3 with 100%, 100% and 80% reduction respectively. It was observed that T2 was not effective in reducing *Trichuris* larvae.

Evaluation on the prevent reduction of *Haemonchus* larvae revealed that among the treatment groups, only T3 was effective in reducing *Haemonchus* larvae by 73.3% followed by T4 and T1 with 20% and 18% reduction.

EPG count revealed that the test animals were severely infected. FECR% results showed that T1, T2 and T3 reduced the egg count by 99.9%, 99.9% and 100% respectively. It was observed that T4 was not effective in reducing the fecal egg count.





ABSTRACT

Ganoderma lucidum is a white rot basidiomycete that grows on logs. Taking it as source of novel mycochemicals, the present study optimized growth conditions and fruiting body production of *G. lucidum* on different culture media, physical parameters like pH, aeration, illumination and temperature, spawn materials and rice straw–sawdust based substrate formulations. After 5 days of incubation, coconut water gelatin of pH 6.0 and in sealed and lighted conditions at room temperature (32°C) yielded the most efficient mycelial growth. Among the grains evaluated, corn grit produced a luxuriant mycelial growth in the shortest period of 5 days. Substrates having 70% rice straw and 30% sawdust recorded the shortest incubation period of 17.33 days for fructification. Basidiospores were germinated efficiently in coconut water gelatin after 72 hours of incubation. The basidiospores have a typical type of germination wherein the sporoderm produced a single germ tube, elongated, septated into a hypha, and branched to become monokaryotic primary mycelia. Mycelial coat hardening, primordial initiation, antler-like formation and basidiocarp maturation and spore liberation were observed as the sequence of fruit body development.

Keywords – basidiospore germination – cultivation phases – *Ganoderma lucidum* – mycelia growth – wild nutraceutical mushrooms

ABSTRACT

The main objective of this study was to analyze the chemical constituents, antibacterial properties and cytotoxic activities of *Pycnoporus coccineus*, a macrofungus that thrives in the wild particularly inhabiting logs and branches of trees.

Pycnoporus coccineus is in the order Polyporales that is known as wood decomposers in temperate and tropical forests. It was thought to be pandemic in distribution and its abundance macrofungus was observed in the sub-urban forest of Nagtipunan, Maddela, Quirino, Philippines where the samples for this study were collected.

Fresh thalli of *P. coccineus* were prepared as sample for the proximate chemical composition analysis which was performed by gravimetric methods. Ethanolic extract of the comminuted and pulverized thalli of *P. coccineus* was prepared by maceration technique and the crude extract was used for phytochemical screening through thin layer chromatography in order to determine the secondary metabolites. More crude extract was used for the detection of antibacterial property through the minimum inhibitory concentration (MIC) assay against three different species of bacteria, *Escherichia coli*, *Salmonella typhi* and *Staphylococcus aureus*, and for the detection of cytotoxic activity through the brine shrimp lethality (BSLA) assay against brine shrimp.

The thallus of *P. coccineus* was found to have high protein content and total ash which would indicate mineral contents. The secondary metabolites detected were of steroids, sugars, anthraquinones, coumarines, anthrones, tannins, phenol, flavonoids, and alkaloids. The toxicity level was found out to be relatively active with LC_{50} of 488.28 µg/mL but the antibacterial activity is only partially active against *S. typhi*.

KEYWORDS: cytotoxicity, antibacterial assay, phytochemicals





Exploring the Products of consecutive Polynomials whose First Factor is a Monomial

Eleanor C. Macapal

ABSTRACT



This paper is a study of the relationships of the terms of the expanded products of consecutive polynomials whose first factor is a monomial. This study aimed to devise an alternate solution in obtaining the product other than the usual process of multiplication by generating a formula out of the observed patterns and relationships of the terms of the expanded products. Further, the study aimed to formulate the properties that can be applied in finding the product of any number of consecutive integers.

The exploratory research design was used in this study. Patterns and relationships of the terms of the products of consecutive polynomials were studied thoroughly. Conjectures on the observed patterns were tested and tried before finally used in the generalization that resulted to coming up with the formula for the product of consecutive polynomials whose first factor is a monomial.

Findings of the study showed, that the product of consecutive polynomials whose first factor is a monomial can be obtained by a formula and that the formula can be used in obtaining directly the n^{th} term of the product. Further, the observed patterns of the terms of the expanded products resulted to the formulation of the properties for the product of consecutive polynomials that can be applied in obtaining the product of any number of consecutive integers.

This paper gives insights on how mathematics can be taught to students and the idea that teachers can discuss beyond what are being written in textbooks. Further, this study shows that math teachers could help their students develop their analytical thinking by giving their students individual or group guided explorative activities in the classroom. In so doing, students will find learning mathematics fun and challenging.

A Capstone Project on On-Line Document Tracking System for the Provincial Government of Quirino

Reynold A. Rustia

ABSTRACT

In the course of modernization within public authorities, governmental processes are being improved and made more cost efficient. This could be done by adapting techniques that are successfully used in the private sector.

In this study, an Online Document Tracking System (ODTS) for the Provincial Government of Quirino has been developed as a solution to enhance the document processing in the province pursuant to the Citizen's Charter in line with the implementation of Republic Act No. 9485 or the Anti-Red Tape Act (ARTA) of 2007. This will be used as facility to improve the efficiency of the paper-based workflow of document processing in the Provincial Government of Quirino.

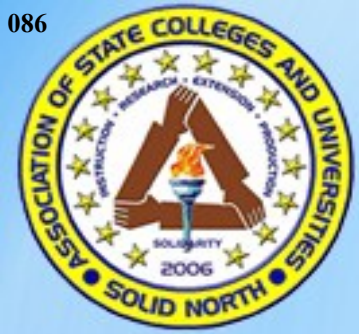
Employees usually find it difficult to determine the status of their document during processing. Using the proposed ODTS, they easily track document's status and know where to follow-up the said document. The ODTS also contributes in the transparency of government transactions since it provides details on the documents being processed and it controls the right workflow for each document. Moreover, a mobile and web applications has been proposed.

This study with the application of technology would serve as the bridge to fully enhance the services provided by the province.

The growing popularity of mobile smartphones has given rise to new methods of interaction between consumers, businesses and in general the world around us. For the end user, the smartphone provides the benefit of having a wealth of knowledge, information and services, literally at your fingertips. Conversely, as a platform for mobile applications of all kinds, it is now possible for a single application to connect, communicate and deliver content to millions of users as they go about their daily lives. For most companies and organizations that currently have mobile application offerings, the potential to reach a large market represents an opportunity for profit and smartphone users are viewed as their customers. However, in this project, we view the users as members of a community and rather than view them as customers, we attempt to leverage our users as a resource that can provide data and information that without the mobility and access of smartphones would otherwise be unavailable.

Keywords: *On-line document, tracking system, provincial government*







ABSTRACT

Title: Grammatical Structures of Camalaniugan-Ybanag

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The study was conducted to determine the grammatical structures that are commonly used by the speakers of Ybanag of Camalaniugan, Cagayan. It also determined the differences and similarities of the grammatical structures of Ybanag, Filipino and English languages.

This study used the descriptive method since it tried to determine only the structures of the Camalaniugan-Ybanag on the three sentence functions: declarative, interrogative, and imperative. It also used the comparative method since it tried to examine the similarities and differences of the grammatical structures of the three languages: Camalaniugan-Ybanag, Filipino and English. Further, qualitative research was also used since it discusses the grammatical structures of the three languages.

It is found out that most of the declarative sentences in Camalaniugan-Ybanag have subjects that come first before the verbs. Elliptical sentences are also being used. It is also fond of combining final sound of the first word and initial sound of the second word. Interrogative sentences also contain interrogative pronouns to introduce questions, sound combination of the final and initial sounds of words, and ellipsis. The imperative sentences emphasize the action by placing them at the beginning of the sentences.

Keywords: Grammatical Structures, Camalaniugan, Ybanag, Imperative, Declarative, Interrogative





Examination for Teachers

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The study aimed to identify the factors that affect the LET Performance of ISPSC Graduates, Sta. Maria Campus in the year 2008-2012. It looked into the profile of the graduates, faculty members and the status of the Teacher Education Program and the significant relationship between and among variables.

The study made use of descriptive – normative method of research. The respondents were 429 graduates, 118 students, 24 CTE teachers and 25 administrators. The data were analyzed using frequency count, percentage, weighted mean, and correlation analysis.

Most graduates were young female adolescents with average academic performance, and had passed the major subjects component of the LET. The teachers were basically married females, in their productive age, licensed, master's degree holders, and permanent.

The Teacher Education program was satisfactorily provided/undertaken in terms of program resources and services, instructional resources, and quality assurance initiatives. There is a direct positive relationship between the graduates' academic profile and their LET performance. The performance of BSEd graduates in their LET is influenced by the trends of teachers' performance and the status of the teacher education program of ISPSC does not influence the LET performance of graduates.

To improve the performance of graduates in the licensure examination, an action plan is prepared focusing on the upgrading of teachers and instructional resources and the conduct of a qualifying, aptitude and mock board examination. A follow up study using outcome based indicators is recommended to validate the result of this study.

Keywords: academic profile, LET performance, status of Teacher Education Program





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ABSTRACT

The second language learner persistently finds meaning to concrete and abstract objects that abound him. People who have difficult time verbally communicating can end up in confusing and frustrating situations. Ineffective verbal communication can lead to difficulties in interpersonal relationships. The learner's breadth of knowledge is basically attributed to his motivation and strategic system to address his immediate needs as a social being. Using verbal activities and schemas in definition is a fun and creative way to strengthen verbal skills. Employing descriptive design, this study aimed at determining the extent of cognitive imperialism among BSED-English students of Nueva Vizcaya State University- Bambang Campus, SY 2014-2015, and its impetus on socio-linguistic perceptual intelligence. This educational venture unveiled the extent of cognitive imperialism among respondents through their verbal activity and use of varied patterns of definition like referential, structural, pragmatic and paralinguistic meaning of English words. Significant findings transpired as the extent of cognitive imperialism was tested with its relationship on socio-linguistic perceptual intelligence along metacognitive, cognitive, motivational and behavioral intelligence, thereby indicating favorable degree of maturity, awareness or the capability of the respondents to grasp more directly what happens around them, thus think and act more appropriately.

Keywords: English Language, Cognitive Imperialism, Schematic Definition, Verbal Activity, Socio-linguistic Perceptual Intelligence



**ABSTRACT**

This study investigates the effects of socially shared metacognition on students' metacognitive experiences in stoichiometric problem solving processes. The variables such as ability grouping and chemistry tasks; and socially shared metacognition were included as the educational and social dimensions of social interaction, respectively.

This descriptive research employed both the quantitative and qualitative methods. Students' social interactions were documented using a dual coding process of students' transcripts. The participants were from a private sectarian university in Nueva Vizcaya and were purposively selected based on their mental ability.

The results revealed that students' socially shared metacognition affects quantitatively students' metacognitive experiences and the effects vary across ability groups and chemistry tasks. Across ability groups, successful collaboration occur when students' estimate of solution correctness and feeling of satisfaction are influenced by feedback requests and other monitoring responses on the assessment of strategy; and other monitoring on the assessment of understanding. Across chemistry tasks, successful collaboration occur when students' feeling of difficulty are influenced by feedback requests and other monitoring responses on the assessments of strategy and understanding.

Keywords: *Socially shared metacognition, metacognitive experiences, stoichiometry, ability grouping, collaboration*

STUDENTS' METACOGNITIVE EXPERIENCES IN STOICHIOMETRIC PROBLEM SOLVING AS INFLUENCED BY SOCIAL INTERACTION AND ABILITY GROUPING

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ABSTRACT

This study investigates the effects of social interactions on students' metacognitive experiences in stoichiometric problem solving. The educational dimension of social interaction includes ability grouping while the social dimensions include metacognitive functions and transactive structures.

Metacognitive functions include the generation of New Idea and the Assessments of strategy, results, and understanding. Transactive structures include self-disclosure, feedback request, and other monitoring responses. Students' metacognitive experiences include feelings of liking, difficulty, confidence, satisfaction, and estimates of effort, time, and solution correctness.

This descriptive study employed both the quantitative and qualitative methods. Students' social interactions were documented using a dual coding process of students' transcripts. The participants were from a private sectarian university in Nueva Vizcaya and were purposively selected based on their mental ability.

The results showed that students' social interaction vary across ability groups and showed a weak degree of correlation. Although students' social interactions affect quantitatively students' metacognitive experiences in solving stoichiometry problems, the effect does not vary across ability groups. However, it could be noted that other monitoring transactive structure influences students' feeling of difficulty and estimate of effort in solving chemistry tasks across ability groups.

Keywords: *Social interaction, ability grouping, metacognitive experiences, transactive structures, stoichiometry*





ACCEPTANCE AND PERFORMANCE OF ENGLISH WRITING STUDENTS TOWARDS BLENDED LEARNING

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Abstract:

This study is a classroom-based quasi-experiment conducted among selected students taking up English 12: Writing in the Discipline at the College of Arts and Sciences – ISU, Echague, Isabela. There were 3 sections involved in the experiment and all of them were freshmen. A blended learning environment was setup for one semester to see if the students are ready to accept and use the learning system and how this may affect their performance. It was found out that many of students are highly computer literate, though their access is limited in terms of time and infrastructure and most of them are weak in terms of online interfacing skills. The level of readiness of students is slightly related to their level acceptance but not significant. This means that readiness is not necessarily causing the student to accept and use the system successfully. Likewise, the level of acceptance and actual use of the system is not necessarily affecting their performance in the course. With the short period of exposure to the system, it was found out that the students demonstrated factors affecting their acceptance and actual use of the system. The usefulness and ease of use of the system is significantly affecting their attitude toward the system and their intention to use it for learning. This means that, students may be motivated to successfully use the online learning system once these two factors are greatly enhanced.

Keywords: Blended Learning, Technology Acceptance, Learning Management System, English Writing, Online Learning Readiness.

024 The College of Arts and Sciences Center for Mathematical Modeling as an Innovative Program of the Nueva Vizcaya State University in Interlinking Mathematics, Research and other Disciplines

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Abstract: The College of Arts and Sciences - Center for Mathematical Modeling (CAS-CMM) is a newly established center of the Nueva Vizcaya State University leading scientific researches and applications of Mathematics. The center was transformed from a research program of a college to a Center for Mathematical Modeling that aims to unify research and other disciplines through the use of mathematical models. The center's immediate concern was to organize and promote programs and activities that develop professional competence of math enthusiasts in the field of mathematical modeling research through the conduct of seminars and trainings. The center is already functional; indicative of this are: With the creation of the center, it transformed the mathematics researches conducted in the University from descriptive type to a Mathematical Modeling research type. The faculty under the center has been tap in planning the University targets for SUC's leveling and Typology. Regional seminar on Mathematical Modeling cum Research as well as National Mathematical Modeling Seminar had been conducted. In addition, the center was already anchored to the Mathematical Modeling Organization of the Philippines Inc. (MMOP) to get connected among other Institution for a wider collaborations, partnerships and linkages. At present, faculty members under this center are conducting researches on population explosion, fingerlings production, behavioral sciences, education, and health and wellness. The center plans to conduct researches in collaboration with the government agencies like the sectors for Health, Agriculture, Business and Industries, LGU's and the DOST. In addition, the center has plans for coming up with the College of Arts and Sciences Mathematical Modeling Research Journal to accommodate Multidisciplinary researches employing Mathematical Models.

Keywords: *Center for Mathematical Modeling, Applied Mathematics, Mathematical Research, Innovative Program, Mathematical Predictions, Mathematical Models*





**Perceived Body Parts Discomfort Assessment Among Users
of DMMMSU Manual Vegetable Seedling Transplanter
Raffy M. Espiritu, RPAE**

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Abstract

Conventional seedling transplanting practiced by Filipino farmers is considered a high risk job. It is a highly repetitive hand work, usually done manually, in a very awkward posture of sustained full body bending under the searing open field condition. The farmer is thus exposed to severe musculoskeletal disorder (MSD) in different body regions during transplanting season.

A manual seedling transplanter was ergonomically designed, fabricated and tested among local farmers to remedy the risky activity. This device was made of light PVC conduit and stainless pipe manually articulated to transplant bare root or tray-raised vegetable seedlings in pre-determined or randomly selected bed of well-prepared field. The device is operated in a normal standing posture in lieu of the conventional stoop position which eliminated bending and strain to users.

A body parts questionnaire (Cornell University, 1994) was used to evaluate the device in terms of user perception. It identified the regions where ache, pain or discomfort was felt after using the transplanter, the level of discomfort and the degree of interference with the farmer's ability to work. The device generally reduced the body parts discomfort and drudgery felt by workers as compared to stooping position of seedling transplanting.

Keywords: transplanter, musculoskeletal disorder, ergonomics, body parts, discomfort

**MODYUL SA PAGLINANG NG KASANAYAN SA MASINING NA PAGPAPAHAYAG
SA PASULAT NA ANYO NG MGA MAG-AARAL SA KOLEHIYO NG MGA
PILING CAMPUS NG ISU, TAONG PANURUAN 2012-2013**

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ABSTRAK

Ang pag-aaral na ito ay may layuning tuklasin ang kabisaan ng inihandang modyul na lilinang sa apat na uri ng pagpapahayag sa pagsulat ng komposisyong nagsasalaysay, naglalarawan, naglalahad at nangangatwiran. Ang metodong ginamit ay disenyong eksperimental.

May 156 mag-aaral na nasa ikalawang antas ng kolehiyo na kumukuha ng kursong BEEd at BSEd na mula sa mga piling Campus ng Isabela State University at pitong gurong nag-tuturo ng asignaturang Filipino ang sumailalim sa pag-aaral na ito. Isinama rin sa pag-aaral ang mga saloobin ng mga guro at mag-aaral tungkol sa paggamit ng modyul sa pagsulat ng komposisyon. Lumabas sa pag-aaral na mas mataas ang antas ng pagkatuto ang mga mag-aaral na ginamitan ng modyul sa di ginamitan ng modyul. Sa apat na uri ng pagpapahayag sa pagsulat ng komposisyon, mas mataas ang mean score ng dalawang pangkat sa post-test kaysa sa pre-test, ngunit mas lamang ang grupong eksperimental sa pagkatuto kaysa sa grupong kontrolado dahil mas mataas ang mean scores ng grupong eksperimental kung ihahambing ito sa grupong kontrolado. Ibig sabihin nito may malaking makabuluhang pagkakaiba ang dalawang pangkat sa pagsulat ng komposisyong nagpapatunay na epektibo ang ginawang modyul. Natuklasan din sa pag-aaral na ito na hols magkaparehas ang saloobin ng mga guro at mga mag-aaral sa paggamit ng modyul sa pagsulat ng komposisyon na ginamitan ng apat na uri ng pagpapahayag.



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ABSTRACT: The study aimed to evaluate the effectiveness of the six-year extension program, particularly the mathematics tutorial of the College of Arts and Sciences (CAS) in one of the public elementary schools in the Division of Nueva Vizcaya. The Mathematics tutorial program started in 2006 in support to the thrust of the Nueva Vizcaya State University to expand its services by conducting extension work. Primary data were collected from the two cooperating teachers, the past and present principals, randomly selected 60 pupils and 20 parents of the pupil-respondents. Secondary data were obtained from the elementary school records and CAS Extension records. Data were analyzed using descriptive statistics. The implementation, monitoring and supervision of the program were done in progressive manners. Results of the study showed that the pupils' attendance to the program has improved their academic performance in the National Assessment Test. A positive change in the pupils' attitude and confidence level towards Mathematics was also observed. Hence, the mathematics tutorial program of the CAS exhibited positive impact to grade six pupils in improving the academic performance in support to the regular classroom instruction, and in imbibing positive attitude towards Mathematics. The best practices of the program are worth to be adopted by other schools to improve pupils' academic performance and attitude towards the Mathematics.

Keywords: *Mathematics, Tutorial Program, Intervention, National Assessment Test, Academic Performance, Attitude towards Mathematics*

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Enrichment Materials: A Tool for Mastering English Grammar



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ABSTRACT

Material serves as an automatic tutor to help students work out the task according to their own speed and ability. If instructional materials are well organized, well constructed and well presented, successful teaching–learning can be achieved. Descriptive method was used in this study in order to describe the nature of a situation as it exists. The author aims to come up with enrichment materials that would help students learn and use the English language, and could help teachers prepare and present their lessons well. Accordingly, the author facilitates the review/evaluation of the course syllabus by the student respondents and instructor respondents to know what part of the syllabus need to be developed. Results show that materials/activities is the part of the syllabus that need to be developed. Furthermore, a pre-test was conducted in order to determine the difficulties of the students. The result of the pre-test after being analyzed became the basis in the construction of the enrichment materials and was tried out. The post test was then conducted after the student respondents were exposed to the material in order to see the significant difference of the results. Finally, the author proposed enrichment materials to be able to transmit knowledge to the students in understandable, enjoyable and accessible way.

Keywords: *instructional materials, enrichment materials*





The study aimed at investigating the level of agreement of students on math myths and how this affects their study strategies. This has been realized so that concerned members of the academe will be able to strategize in correcting students' beliefs in math myths and helping them improve their study strategies. The study involved 157 college freshmen students.

Findings showed that the population of freshmen students of CITCS for the SY 2014 – 2015 is dominated by females, with ages 16 – 17 and graduates of public high schools. The students generally agree to math myths and manifest good study strategies. Males find math as less boring than females do. Students who came from private schools believe that math does not involve imagination or creativity. Males have a better strategy of finding a specific place to study math while females in taking full amount of time during tests. Students with ages 16 – 17 strategize more on finding a study place with few distractions and keeping a log of errors when tests are returned than those students with ages 18 – 19. Students with ages 18 – 19 have a more favorable approach on taking practice tests than the older ones. Private school graduates have better strategy on using flashcards for formulas and vocabularies than those who graduated from public schools. Sex, age and type of school do not influence students' agreement to math myths and their study strategies. When the level of agreement of one student in math myths goes stronger, his strategies towards studying math become better.

Keywords - Mathematics, Math Myths, Strategies, Study Strategies

DETERMINANTS OF THE LICENSURE EXAMINATION FOR TEACHERS PERFORMANCE

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ABSTRACT

Philippines is now on the verge of making the basic education curriculum at par with the demands of the fast globalizing world. A reason why higher education institutions need to ensure that they provide quality products that would help in implementing the said curriculum. However, the quality of graduates in education courses is gauged by the Licensure Examination for Teachers (LET) passing percentage. Since this is given much emphasis, the researcher determined the performance of graduates in the LET. The researcher considered the BSEd graduates batch 2006 to 2012 of Isabela State University. The descriptive-correlational method of research was used in this study. The data were treated using mean, Pearson r, and Independent Samples t-Test. Hence, it was concluded that the graduates' preparation in the teacher education institutions is the most significant factor affecting the licensure examination performance, and the curricular review and changes proposed by technical panels in the academe is working very well. Thus, campus administrators offering BSEd programs should encourage instructors and professors to undergo higher education studies to upgrade their knowledge in all areas not only in their field of specialization but to all other areas that would help increase the LET rating of the institution.

Keywords: Education, Licensure Examination for Teachers, descriptive-correlational, Bachelor of Secondary Education, curriculum



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In the Philippines, assessments done on the impact of reforms on the achieved curriculum showed little improvement (Nebres, 2006). Hence, it is assumed that the missing link might be the insufficient attention to the implemented curriculum. In view of the fact that understanding the mathematical concepts entails understanding the language of instruction, this study aims to determine the efficacy of code-switching on the College Algebra achievement of the first year students. The author employed a quasi-experimental design specifically the Pre-test-Post-test Control Group Design, using Matched Group Subject which involved first year students of Isabela State University – Cauayan Campus. Moreover, data were treated using paired-samples t-test and ANCOVA. The study revealed that the students with poor Mathematics Quotient (MQ) level in the Code-switching group significantly performed better than their counterparts in the English group. This implies that code-switching is remarkably better than that of English in teaching concepts to students with poor MQ level. Henceforth, this study is an evident that the bilingualism policy is less effective for students with poor understanding of mathematics concepts. Hence, mathematics educators should use code-switching in teaching because it is an effective way to improve the performance of the Filipino students in College Algebra.

Keywords: *Mathematics, College Algebra, Code-Switching, Pre-test-Post-test Control Group Design, using Matched Group Subject, experimental research design*

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Abstract: The effectiveness of games as a tool for teaching concepts while motivating and inspiring students is now well accepted in almost all subjects and levels of education. This study addressed the development and validation of pinoy game-based activities. The research utilized the R&D methodology which included the validation of the activities and try-out where in the quasi-experiment following a one-shot-pretest-posttest design was used. It was found out that the pinoy-game based activities were valid in terms of their instructional characteristics, objectives, content and evaluation categories and therefore, are good materials in concretizing learning of some physics concepts. Moreover, there was a significant difference between the pre and post achievement scores of the students and a positive feedback towards physics were also drawn from them. The pinoy-game based activities affirmed their worth and advantage as instructional material in teaching concepts of work, power and energy and enhancing students' achievement and interest towards the subject.

KEYWORDS: *Physics, work, power, energy, quasi-experiment, R & D methodology*





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Abstract : The approach of instruction should motivate the learner to strive to learn and to acquire knowledge to find something new to the world and explore for themselves. This study addressed the development of constructivist approach-based experiments and determining its effectiveness in teaching selected physics concepts. The study utilized the quasi-experiment following a non-equivalent control group design. It was found out that the students exposed to the constructivist approach had significantly higher post-test scores and higher mean gain scores than the students exposed to traditional approach. Moreover, there was a significant difference between the post achievement scores of the students exposed to constructivist approach-based experiments and traditional experiments. As revealed in the study, the Constructivist Approach-Based Experiments are effective in enhancing students' achievement and in developing a more positive attitude towards physics than the Traditional Experiments. Furthermore, the students' achievement and attitude towards the subject can be intensified when they work cooperatively, providing them with more opportunities to apply their own skills and make their own decisions thus overcoming their misconceptions on the subject.

KEYWORDS: *Constructivist Approach; Constructivist Approach-Based Experiment;, Traditional Experiment;, Attitude Towards Physics*

Evaluating Students' Knowledge, Attitude and Perception on Climate Change

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Abstract: Climate change is one of the most fundamental challenges ever to confront humanity. Its adverse impact is already being seen and may intensify exponentially overtime if nothing is done. As a catalyst of change, the researchers came across with this study that examines the knowledge, attitude and perception of the students in Isabela State University, Cauayan Campus in the academic year 2013-2014. A total of 210 students from the different courses participated in this study. A standardized questionnaire was used. Data was analyzed using descriptive statistics such as frequency and percentage, one-way ANOVA, t-test and Pearson r. Statistical package aided the computation of the statistical parameter. Analyses of data revealed that ISU Cauayan students have high knowledge, attitude and perception on climate change. Through the different statistical tools used, it was shown that significant difference exists between the perception of the students on climate change when grouped according to sex and on the knowledge of the students on climate change when group according to sex and religious affiliation. However, it was shown that no significant difference exists between the perception of the students on climate change when grouped according to age, religious affiliation and subject preference, likewise on the attitude of the students on climate change when grouped according to age, sex, religious affiliation and subject preference and on the knowledge of the students on climate change when group according to age and subject preference. Furthermore, a significant relationship exists between the perception and attitude of the students on climate change but no significant relationship exists between perception of the students and their knowledge on climate change as well as, on the attitude of the respondents and their knowledge on climate change.

KEYWORDS: *climate change, perception, attitude, knowledge, evaluation, student*



084



085



090



095





The study aimed to assess the capability of the Teacher Education Program of Ilocos Sur Polytechnic State College in terms of its resources, services and quality assurance initiatives. It looked into the profile of the students, faculty members and the status of the Teacher Education Program and its significant relationships between and among variables.

The study made use of descriptive – normative method of research. The respondents were 547 students, 24 faculty members and 25 administrators. The data were analyzed using frequency count, percentage, weighted mean, and correlation analysis.

Most students were young female adolescents with average academic performance. The teachers were basically married females, in their productive age, licensed, master's degree holders, and permanent.

The Teacher Education program was satisfactorily provided/undertaken in terms of program resources and services, instructional resources, and quality assurance initiatives. The status of the teacher education program of ISPSC does not influence the academic performance of students.

To improve the performance of students, an action plan is prepared focusing on the upgrading of teachers and instructional resources. A follow up study using outcome based indicators is recommended to validate the result of this study.

Keywords: students' academic profile, status of Teacher Education Program





001

Management Practices of Family-Owned Enterprises

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Abstract: This study aims to assess the management practices of the family-owned enterprises in Region 02, which are generally small and medium scale enterprises. The researcher made use of the descriptive method. A total of 90 family-owned enterprises were involved in the study which was selected using quota random sampling, 30 each from Tuguegarao City, Santiago City and Cauayan City. The business establishments involved in the study were identified through the data coming from the Department of Trade and Industry. The questionnaire used to gather principal data revolved around the management practices, specifically operational management, performance management and people management.

Results of the study show that the family-owned enterprises judiciously comply with government regulations in the operation of their businesses and operating expenses are kept as optimal as possible. Moreover, owners of these enterprises have measures to objectively assess performance of their workforce. The family-owned enterprises employ workers based on criteria which they perceive would be at the best interest of the enterprise. The results of the study are uniform across all sectors, namely, the merchandising, manufacturing, construction, service and leasing sectors.

Key Words: *Operational Management, People Management, Family-Owned Enterprises*

003

The Endangered Bugkalot Dialect

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Abstract

The purpose of this study was to explore the use of Bugkalot native dialect and the factors that cause its usage and non-usage as perceived by the Bugkalots in a village of Quirino Province, Philippines. The research made use of the qualitative research approach. Ethnography was the strategy used to gather the needed information. Research participants were composed of High School students whose parents are both Bugkalots, or one of the parents is a Bugkalot. Focused Group Discussions were also conducted among the elders to explore the causes of non-usage of the dialect. The findings of the study revealed that the research participants like their native dialect but they prefer to speak in Ilocano since Ilocano and Tagalog are the languages used in school. From the elders' point of view, the causes of its non-usage are: declining number of speakers, education, and migration. With these findings, the researcher compiled Bugkalot words and their meanings before it will be forgotten by the present generation.

Keywords: Bugkalot, usage, non-usage, native dialect



Enhancing the Tourism Industry

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ABSTRACT

This paper aims to present the prospects of enhancing the tourism industry through a joint effort of an academic institution and a local government unit in the municipality of Bayombong, Nueva Vizcaya, Philippines. The linkage unfolds the visible role of academic institutions in a locale through the creation of tourism identity, utilization of agricultural commodity, integration of science and technology and the arts and the institutionalized of policy development.

Nueva Vizcaya has been dubbed as the “Citrus capital of the Philippines.” This prompted the Nueva Vizcaya State University to file House Bill No. 4509 authored by the Honorable Congressman Carlos Padilla. This paved the way for the declaration of the “DEKAT CITRUS FESTIVAL”.

The local government unit as an arm of policy development declared the “Dekat Citrus” recipe as a signature delicacy of the town to be served in all hotels, restaurants, and schools in Bayombong, Nueva Vizcaya.

The partnership of the university and the local government unit would strengthen the academe’s role in instruction, research, extension and production which hopefully would respond to reducing poverty in the province as a whole.

The linkage is in compliances with the university’s organizational performance indicators such as: Performance-Based-Bonus; Normative Financing Scheme; SUC Leveling; Typology; Outcome- Based; Sustainability Assessment and Organizational Outcomes.

ASSESSMENT OF FARMERS’ KNOWLEDGE, ATTITUDE AND PERCEPTIONS TOWARDS THE USE OF ORGANIC FERTILIZER

*A Case of Cagayan Valley, Philippines***ARTEMIO A. MARTIN, JR.**

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ABSTRACT

The study investigated farmer’s awareness, perceptions and attitudes towards organic farming as soil quality enhancement strategy. Simple random sampling was used to selected 1,260 food crops farmers from the valley. The result showed there is a high level of awareness on organic farming but low level of adoption. The organic inputs that got high level of awareness by the farmers are bio-organic fertilizer, poultry manure, compost humus, vermicompost and vermicast. The farming practices popularly done are: organic fertilizer application, animal manure, compost fertilizer and the practice of crop rotation. The awareness of the farmers on the benefits is limited on the following: improvement of soil fertility; benefit to the environment; reduction of production cost and its benefits to beneficial insects. The farmers have low awareness on the higher price of organically grown products and its health benefits.

Among the foremost problems and constraints experienced by farmers in organic farming are the difficulty of sourcing animal manure; the slow effect of organic fertilizer and the cost of organic fertilizer. The result of this research is envisioned to add knowledge in the field of organic farming. It serves as baseline data for policy formulation by government to promote the massive use of organic fertilizers.

Keywords: Organic Fertilizers, Organic Farming, RA 10068, Organic inputs, Organic Farming Practices



(Sapat at Masustansyang Pagkain sa Bawat Tahanan” Project)

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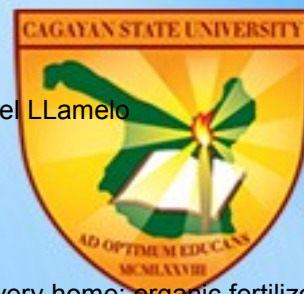
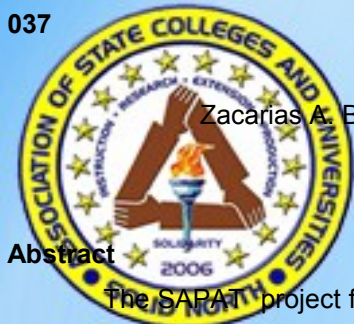


Abstract

The SAPAT project was spearheaded by FCDFI in collaboration with Apayao State College. The four major components of the project were 1) A vegetable garden in every home; 2) A fruit tree in every home; 3) Organic fertilizer production in every home; and 4) Native chicken in every home. After four (4) years of operation on four (4) identified project sites at Barangay Buluan, Karikitan, Ili and Talifugo, Conner, Apayao, an impact assessment was conducted. Result revealed that majority of the respondents indicate sufficiency after 4 years of the project compared to an average of twenty percent before SAPAT. Most of the recipients claimed balance diet. All of the recipients produced their own vegetables right on their backyards. Before the start of the project, the respondents planted only 8 kinds of vegetables however, after 1 year it was tripled and an average of 27 kinds of vegetables. Most of the backyard vegetables were harvested once to twice a week by most of the recipients as compared to once a week before the project implementation. As an overall assessment, most of the recipients increased the consumption of vegetables during or up to the fourth year of implementation of the project. Reasons of increment includes more kinds of vegetables planted, availability of vegetables at the backyard, and various loaned out seeds recipients. There was a slight increase in the consumption of meat due to the loaned out chicken and extra income on vegetables, they can afford to buy more meat for the family. The respondents rated the project very good in terms of uplifting the living condition of the family by providing extra income, free vegetables and meat and through capacitation to engage food processing activities.

Keywords: vegetables, food, garden, income, consumption



**Abstract**

The SAPAT project funded by UNDP through NAPC, FCDFI and ASC. The four major components were vegetable garden in every home; fruit tree in every home; organic fertilizer production in every home; and native chicken production in every home. The project was implemented through the four developmental activity components focusing on women empowerment and training of local partners, women, from the farmer sector, social workers, school teachers, barangay nutritionists and local government agencies. The food garden established were directly managed by women in close collaboration with ASC to conserve selected crops and vegetables that constituted the expansion of food base and address problems in nutrition. This provided women access to economic opportunities and strengthen their capabilities to become important assets of their communities. Moreover, there was promotion on sustainable food production by expanding the sources of food to include locally available carbohydrates, vitamin and protein-rich crops and livestock. There was evidence of the development of a production and consumption system. It generated institutional and policy support through joint action planning and incorporation in the ELA. The features of the project that helped ensure that sustainability included the cost of production which is very low and affordable as open-pollinated native vegetables were used and resulting mature seeds, roots and stems can be used in the next planting season. This avoided the bottleneck of other vegetable project which use expensive hybrid seeds which have to be purchased every planting season. Household members were taught on how to produce their own organic fertilizer for their vegetable gardens rather than purchase expensive and environment-polluting inorganic fertilizer and pesticides. Further, there was a conscious effort to link production and utilization at the household level. Capacity building was provided through training and technology provision. In this project, nothing was given free except training and capacity building. All seeds, native chicken and worms were loaned out in kind and paid in kind so that two other farmers can be helped through seed loans in the next season. The project demonstrated increased capacities of the poor and vulnerable beneficiaries in the communities in Apayao to develop and manage resources and ultimately attain self-sufficiency in food.

Keywords: food, production, nutrition, vegetable, household

E – WASTE MANAGEMENT PRACTICES AT THE ISABELA STATE UNIVERSITY CAUAYAN CAMPUS

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Abstract: E – waste phenomenon continues to flourish due to rapid adaptation and use of ICT's which has contributed to increase in e – waste stream. E – waste is said to be one of the fastest growing waste streams and has been acknowledged as a serious problem. This study determines the awareness and practices in handling e – waste in the College of Computing and Information Technology students in Isabela State University, Cauayan Campus, Cauayan City, Isabela in the academic year 2013-2014. A total of 132 IT students participated in this study. A semi-structured interview was used to determine the e-waste management practices in the University. Data was analyzed using descriptive statistics such as frequency, percentage and weighted mean with the aid of Statistical Package for Social Sciences (SPSS). The study revealed that cellphone is the most widely used e-gadgets, majority of the respondents were aware on e-waste, however, most of the respondents do not know any local and international laws pertaining to e-waste. Many of them are properly managing their e-waste. Furthermore, in the campus, there is no definite and sustainable solid waste management specifically on e-waste.

Keywords: E-waste management, awareness, practices, e-waste, Philippines





BARANGAY MICRO-BUSINESS ENTERPRISE ACT OF 2002: AN ASSESSMENT

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ABSTRACT



The Barangay Micro Business Enterprise (BMBE) act of 2002 also known as R.A. 9178 was enacted to help the entrepreneurs in the country by providing support in terms of tax incentives, trainings and microfinance programs to micro entrepreneurs. The study assessed the economic impact of BMBE program to the growth of barangay micro-enterprises in Cauayan City, Isabela from 2008-2012. Specifically, the study described the profile of micro-entrepreneurs in terms of legal forms, business activity, size of capital, and number of years as a BMBE recipient. It also determined the degree of contributions of BMBE law to the economic growth of its recipients, the degree of information dissemination of the BMBE implementers and the problems encountered by the BMBE recipients & implementers in the implementation of the program. The pre-post design, was used in evaluating the impact of the law implementation to the economic growth of the firms registered under the law. The instruments used in collecting data were questionnaire and interviews. All respondents acknowledged that BMBE Program had high contributions towards their enterprises in terms of economic growth, size of capital, return of investment, net profit and net worth. However, it was found that the local government did not fully implemented the BMBE law because of lack of ordinances and its decreasing effect on the total tax collection. Considering the good contributions of BMBE Law to the recipients micro enterprises, a massive information dissemination must be done to achieve the objectives of the government legislators in passing the law, and a strong collaboration between the implementing agencies of the government to strengthen BMBE implementation, the local council should pass an ordinance stating tax exemption/specific tax discount to further increase benefits availed by BMBE recipients. The local government in its corporate capacity should study feasible businesses to start generating additional income aside from tax collection from private businesses.

KEYWORDS: Entrepreneurship, Microenterprise, Business, BMBE law, RA 9178, Cauayan City, Philippines

LES MISERABLES: THE DYADIC ROLE OF THEATER AMONG CHILDREN IN THE RURAL AREAS OF NORTHERN LUZON

ERMEL M. DELIMA

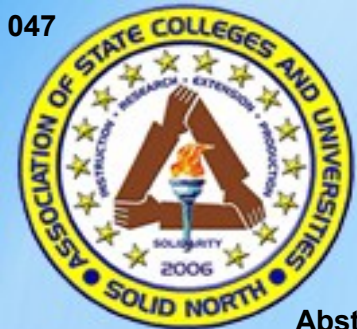
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Abstract: Numerous studies have demonstrated a correlation between drama involvement and academic achievement; and its role in self-efficacy and self-esteem of juvenile delinquents and disadvantaged children, but an empirical study on the impact of theater arts on the reticent behavior of the Filipino children has not been conducted which this paper was premised. The Basic Integrated Theater Arts Workshop (BITAW) module developed by the Philippine Educational Theater Arts (PETA) and the Takarang Dulaan ng Kamalayan (TADULKA) module were used by the researcher in conducting the workshop. The level of reticence was determined using the self-assessment questionnaire developed by Keaten et al (1997). Observations revealed that participants actively participated during the workshop particularly on improvisation, pantomime, monologue, blood effects and sound effects; and script writing regardless of their socio-cultural background and orientations. The known reticent or shy students were observed to volunteer on some tasks which they do not usually do in a classroom. Some participants, especially those who belong to poor families could easily pour out emotions and did well in expressing melancholic emotions. The use of theater arts was proven effective in addressing reticence among children in the rural areas.

Keywords: theater arts workshop, drama, theater, reticence, Isabela





ADOPTING THE IMRAD FORMAT IN RAISING THE BAR OF UNDERGRADUATE RESEARCH

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Abstract : *One of the most challenging tasks among undergraduate students is writing and publishing a research output. Most often, an undergraduate student adopts a format that does not conform to the standards of writing a scientific paper. The paper explored the common flaws of a student in preparing a research manuscript and introduced the Introduction, Methodology, Results and Discussion (IMRAD) format (Wallwork, 2007) as an intervention. The findings revealed that students usually present research titles in string of nouns, abstracts begin with phrases and other overused expressions which are usually discouraged by majority of research journals; and, the results and discussion part of some researches lack the necessary review of literature that weakens the analysis of the results. The intervention revealed positive outcome on the adoption of the IMRAD format. However, a deeper understanding of literature review, conceptual paradigm and adopting the best practices in poster presentation should be emphasized in future mentoring activities.*

Keywords: *IMRAD format, thesis mentoring, mentee, Isabela State University*





Kalansing- Barya, Kalatog-Lata: Liberasyon sa Opresyong Ekonomik ng mga Taong- Kalsada

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Saanmang bansa, kahirapan ang itinuturong salarin, mamamatay-tao sa mga taong ipinanganak na ‘hubad” mula sa marangyang buhay. Mga nilalang na itinuring na nilang nagsimula ang kanilang kamatayan sa panahon na sila ay isinilang sa pamilyang batbat ng kahirapan; sa lugar na pinagkaitan ng anumang kayamanang likas at mana, kasama ng kaapihang kultural at historikal. Sa kwalitatibong pag-aaral na ito, ipakikitang ang kalsada ay malayang takbuhan ng mga maralitang Pilipino: ang mga pulubing teritoryal at pulubing nomadik. Ang kalsada’y tiyak na tutukoy sa sosyo-ekonomikong klase ng ating lipunan—ang ilustrado, burgis at proletaryan; lugar ng isang grandeng liberasyong ekonomik sa kabila ng paniniwalang magbibigay ng isang kalunus-lunos na larawang magpapabago at sisira sa heograpikal at panlipunang istruktura ng isang lugar-urban. Laman ngayon ng ilang malalaking bayan/ lungsod sa Isabela ang mga pulubing teritoryal (regular na namamalimos sa lugar) at mga pulubing mula sa teritoryong karagatan. Ang kagyat na pagdami nila sa lugar upang pumuno sa kalsada ay paraan upang makita ang api nilang kalagayan upang sila’y mabigyan ng isang regular na kabuhatan; kikilalanin sa kanilang kahalagang panlipunan at kontribusyong pang-ekonomiya. Isang programang pangmatagalan at pangkalahatan ang magpapalaya ng lubusan sa kanilang pagkakakilanlang inferyor gamit pa rin ang mga “gatas de lata”, ang musika ng kayamanan at “lahad-kamay”, ang pagpapansing sosyal.

Pangunahing Termino: Kahirapan, pulubing teritoryal, pulubing nomadic, liberasyon, kwalitatibong pag-aaral, Isabela

Mga Bata sa Mundong Tatsulok: Karahasan, Kahalayan at Kalayaan

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Ang mga bata ay madalas ipinalalagay na anghel sa bawat pamilya sa buong panig ng mundo, simbolo ng kaganapan ng pagiging tunay na magulang at higit sa lahat, pinakaimportanteng regalo mula sa Maykapal. Ang pag-aaral na ito ay isinagawa upang malaman ang tunay na kalagayan ng mga bata sa mundo kabilang ang kanilang katayuan sa mundo, partikular sa larangan ng literatura, ekonomiya, tradisyon lalong-lalo na sa kultura at lahing kanilang kinabibilangan. Ang ilang mga akda mula sa Pili-pinan at iba pang bahagi ng mundo sa pamamagitan ng kontesktwal analisis ay ginawang lunsaran upang maipakita ang tunay nilang kalagayan. Ipinakikitang kadalasang ang ama ay pinakapangunahing nakapananakit ng pisikal maging sekswal na pang-aabusong nagbibigay ng malalim na pilat sa katauhan ng bata, isang nakasususulok na kasalanan sa lipunan; ang pag-usbong na malasakit ng mamamayan at pagkilos ng mga samahang pampubliko at pampribado na nangangalinga sa mga batang biktima at tumutulong na hilumin ang kanilang malalalim na sugat at pagtuturo sa kanila upang bumangon sa mala-trahedyang karanasan; ang kanilang paglaya mula sa karimarimarim na mundo at ang realisasyon ng kanilang mahahalagang gampanin sa mundo bilang mga bata. Ang pagpapalutang sa kanilang mga karapatang legal sa pamamagitan ng istriktong implementasyon ng batas, tulad ng “ Special Protection of Children against Abuse, Exploitation and Discrimination Act”. Upang lalong maunawaan ang karapatan ng mga bata sa lipunan kinakailangang sumailalim ang bawat magulang sa iba’t ibang pagsasanay at pagsangguni sa mga eksperto patungkol sa mabuting pagpapalaki ng kanilang mga anak; ang mga bata’y kailangan ding maging mulat sa kanilang karapatan sa pamamagitan ng iba’t ibang mga programa upang malampasan ang trauma at makaiwas sa kamay ng mga mang-aabuso.

Pangunahing Termino: Bata, Pag-aaral ng Pelikula, Pang-aabuso, Karahasan, Kahalayan, Kalayaan, Palarawang Metodo, Pilipinas





Ang mga babae ay madalas ilarawan bilang ilaw ng tahanan, tagapag-aruga ng mga anak, tagapangasiwa ng budget at masunuring asawa n Adan. Subalit ang mga katawagang ito ay naglalarawan sa inferyor na kalagayan ng kababaihang taliwas sa kalalakihan bilang matatag na haligi ng tahanan, tagadisiplina sa mga anak, tagapagtaguyod ng kabuhayan at tagapagpatupad ng desisyong marital. Ang kwalitatibong pag-aaral na ito ay isinagawa upang matimbang ang kalagayang pang-ekonomik ng mga kababaihang pilit na humahanap ng maliit na espasyo sa lansangan o kalsada upang unti-unting makasabay sa daloy ng pagpapalago ng kabuhayang pampamilya na kasamang ipinupuhunan ang kalusugan, dignidad at pangarap. Isa-isang lumitaw sa mga panayam ang iba't ibang isyung kinahaharap ng kababaihan bilang isang aping nilalang na pumapasan sa mga pang-araw-araw na pangangailangan sa bahay, panustos sa edukasyon ng anak at patung-patong na suliraning pinansiyal subalit sa kalauna'y unti-unting lumitaw ang pagtamasa ng kalayaan mula sa labis na kahirapang pinansyal, pagkakatali sa gawaing domestik at pagkakulong sa bahay-patriarkal sa pamamagitan ng pakikipagbuno sa lansangan na nagdulot ng akumulasyon ng iba't ibang kayamanang kanilang tinatamasa ngayon. Ang mga babae sa lansangan katulad ng maglalako ng anumang produkto o serbisyo sa kalsada na karaniwang buhay na larawan ng mga kumikilos na nilalang sa marginal na ekonomiya ang naging tuon ng pag-aaral na ito. Ang pagkakaroon ng mga batas at kilusang pangkababaihan katulad ng "Magna Carta for Women" ang nagpailanlang sa kababaihan patungkol sa kanilang kontribusyon sa lipunan lalo sa aspetong ekonomik. Ang paglulunsad ng mga gawaing pangkabuhayan at oryentasyon sa mga kababaihan ang susi ng katatagan ng mga kababaihan sa lansangan.

Pangunahing Termino: Babae, Kalsada, Opresyon, Liberasyon, Kwalitatibong Pag-aaral, Pilipinas, Mundo

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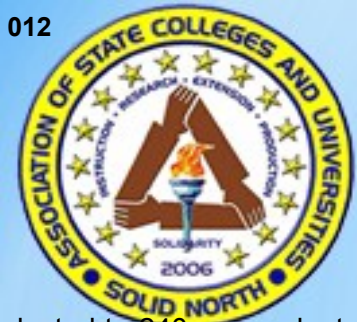
Significance and Impact of the Celebration of Begnas Ylocos to the Tribal Communities in Ilocos Sur

by Dr. Elizabeth M. Gacusana & Dr. Severino G. Alviento

ABSTRACT

Begnas Ylocos is a yearly celebration of festivities of the tribal communities in Ilocos Sur coincided with the anniversary on the approval of Republic Act 8371 otherwise known as Indigenous People Rights Act (IPRA) of 1997. Begnas, an ethnic word which means thanksgiving or offering rituals, is a show of appreciation by the indigenous peoples to their good harvest. The participants during the festival showcase their talents of cultural ensemble, indigenous dances, songs, games, rituals, food festival and trade fair. The objectives of Begnas Ylocos are: to provide members of the cultural communities with a liberating and an empowering force for unified and massive economic development, to encourage the members of the tribal communities in the province to continue develop their indigenous products and provides venue to sell them in a trade fair during the celebration, and to develop an eco-cultural tourism program that encourages the people to be aware of their eco-habitat and protect and preserve the natural resources of the province and cultural heritage. This study sought to find out whether the celebration of Begnas Ylocos of the tribal communities in the province of Ilocos Sur really served well its purpose.





This study focused on the economic contribution of women engaged in watershed development in Nueva Vizcaya. A survey method was conducted to 240 respondents and to enrich the quantitative data a focused group discussion was conducted. Women farmers own less than a hectare of land and they plant *palay*, corn, vegetables as their common crops as their agricultural profile shows. Women play vital economic contribution in crop/vegetable production like planting, fertilizing and harvesting as well as feeding, herding and marketing in livestock/ animal production. The economic contribution of women in performing productive, managing and reproductive work are not compensated with money. But should these be given monetary value, this could imply additional economic contribution of women in the family and community. They are willing to participate and cooperate with officials and concerned agencies if there are projects to lessen the effect of high temperature like planting trees and segregation of waste. Off-farm activities like food processing their own products (ginger-making, tomato sauce making), environmental-friendly business like recycling, women farmers have additional economic contribution to their family. By these technologies, they come to truly realize their potentials as economic contributors and thereby realized also that by doing so, they have empowered themselves.

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029

Title: **Climate Change Responses and Rice Production Practices of Rice Farmers in Nueva Vizcaya, Philippines**

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Key words: **Climate change, Rice Production Practices, Rainfed Rice, Irrigated Rice, Nueva Vizcaya**

Abstract: Climate change has its negative effect on the agriculture sector but farmers have their way of responding to such change. This study examined the responses and practices of rice farmers to climate change in Nueva Vizcaya, Philippines. The 15 municipalities were ranked by elevation and 3 were selected as sample areas: high-est, middle and lowest in elevation. Rice production was classified into two ecosystems: rainfed and irrigated. Secondary data were used in establishing the climate of Nueva Vizcaya, while primary data were used in determining the *climate change responses* and production practices of the farmers. The case study approach was used in the study. It was found out that the whole province is vulnerable to climate change, however, most farmers are not aware nor do they fully recognize that agricultural productivity is affected by climate change. Adaptation practices are being done especially in the rainfed areas in the municipality with the highest elevation as it is prone to severe landslides. However, the practices of the rice farmers should be subject to deeper research to test the viability and sustainability of such practices as climate changes. Information and awareness to climate change should be an integral part of extension services to the farmers.




ABSTRACT


DMMMSU's resource-based approach to fisheries research led to the development of new technologies for adoption by its service communities. Mariculture of seaweed and sea urchin provided the base for production of primary source materials for the product development initiatives such as seaweed candies, seaweed pickles, seaweed flakes, seaweed bathsoap and roe processing. Through effective technology transfer, research outputs were transformed into productive livelihood projects that brought economic productivity in the community.

Collaboration, capability building and community awareness on coastal resource issues and information and education campaign coupled with strong participation and involvement of stakeholders, undoubtedly triggered community responsibility towards economic and resource protection.

Partners in the implementation of the developed technologies on seaweed and sea urchin to productive livelihood projects included the Department of Science and Technology-Technology Application and Promotion Institute (DOST-TAPI), Taguig, Metro Manila; Bureau of Fisheries and Aquatic Resources (BFAR), Region I; HOLCIM-Philippines, Inc.; Department of Labor and Employment (DOLE), Region I; Local Government Units of Balaoan, Bacnotan and Luna; Paraor Fisherfolks Association (PFA) and Women's Aquatic Processing Association (WAPA).

These paved the way of improving the socio-economic condition of the beneficiaries as well as biological impacts in the pilot coastal community. The sustained mariculture of sea urchin by coastal fishers also increased and maintained the wildstock population. Enhanced biodiversity was observed to include the re-occurrence of sea cucumber population in the production areas and increased juvenile sea urchin population.

Hence, sustainability of the projects is dependent and attributed to the realization of the key players' role in research and development.

Keywords : mariculture, collaboration, involvement, community, product development, productivity, DMMMSU, seaweed, sea urchin

Love, Courtship and Marriage of the Bugkalots: A Study on the Traditional and Present-Day Practices

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ABSTRACT

The study documented the traditional and current day practices of the Bugkalot tribes on courtship and marriage. Key informants interview, site visit/participant-observation and focused group discussion were used as methods of data gathering. Bugkalots marriage during the earlier period took several forms: individuals with freedom to choose their partners, arranged marriage (tani, seve), and eloping. Bugkalot marriage is a venue for the resolution of conflicts and misunderstanding between and among the Bugkalot tribe members, wedding can only proceed if both parties have already resolved previous conflicts and disagreements. Headhunting and dowry were also practiced; gifts offered by the groom's family once accepted meant acceptance and forgiveness. Marriage is a function of the whole family where members and close relatives share the burden of preparing for the wedding. Wedding festivity is characterized by performing traditional Bugkalot dance (tagem) and song (pi-ya) by the bride and groom's family members. Present-day marriage starts with courtship, however, giving of gifts or dowry, provision of labor services in farm chores, living together prior to wedding and head hunting are no longer allowed. Most of the Bugkalots who got married with other tribes followed the traditions of their respective partners or the legal procedures like applying for marriage license, attending marriage counseling and family planning seminars. Wedding ceremonies are performed by a pastor, priest or the Local Chief Executive of the municipality. Signing of marriage contract by the newly wed together with their sponsors and the wedding officiant is also done. Younger Bugkalot generations are aware of arranged marriage and the headhunting activity attached to it. None of them agreed to have arranged marriage, they believe that you should be with the someone you love rather than a person chosen by somebody. Young Bugkalots preferred to have their wedding the traditional way (minus the headhunting activity), get married in the church, or civil wedding officiated by the Local Chief Executive or a Pastor. Gentlemen preferred to court while the ladies chose to be courted. All of the respondents chose to marry non-Bugkalots because they treat other members of the tribe as their brother or sister. There are seven factors that contributed to the gradual drifting of culture and traditions. These include Christianity, intermarriage, acculturation, continuous entry of migrants to the Bugkalot ancestral domain, government policy, globalization and education and employment.

Keywords: Courtship, marriage, traditional practices, Bugkalots





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SOA on Corn Production: AN EXTENSION MODALITY

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ABSTRACT

For the wet season of 2013, a School-on-the-Air Program on Corn Production (*Paaralang Panghimpapawid Ukol sa Pagpaparami ng Ani ng Mais*) was proposed to be aired. The conduct of this program was a collaborative activity with the Isabela State University Cabagan spearheaded by the Department of Extension and Training Services. This collaborative effort had attempted to maximize the resources of the various government agencies to ultimately deliver the needed information at low cost compared to paid commercial radio stations. The DWRA 99.5 FM of the Isabela State University Cabagan Campus was used for this purpose. The program was anchored through the municipal agricultural offices in the respective municipalities involved in the program. With this modality, the conduct of research is indispensable to evaluate the program per se and the knowledge gained by the participants. This paper seeks to present the result of the School-on-the-air on Corn Production.





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Benchmarking for Performance and Impact Assessment of Small Water Impounding Projects: Basis for Policy Formulation

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ABSTRACT

Benchmarking is already widely accepted and advocated by several organizations worldwide such as IPTRID, IWMI, ICID, FAO and World Bank because it is a very powerful management tool for analyzing and improving the performance of water resources projects.

The study was conducted to characterize, assess the irrigation and cropping practices, determine the socioeconomic impact and evaluate the water productivity of two (2) Small Water Impounding Projects (SWIPs) namely Burgos SWIP in Cabarroguis and Divisoria Norte in Maddela, both in the Province of Quirino.

The sites were characterized using Global Positioning System (GPS) which was processed using Geographic Information System (GIS) to generate maps. The study made use of structured questionnaire to gather the socio-demographic profile, irrigation and cropping practices and assess the socioeconomic impact of the SWIPs to the farmer-beneficiaries.

Most of the farmer-beneficiaries of Burgos and Divisoria Norte SWIPs are males, aged 40-59 years old, married with below four household members, Roman Catholic, high school graduates and some are members of cooperatives. They are rice farmers, have attended 1-2 trainings related to farming and own a 1.00 to 1.99 hectares farm. They are growing inbred rice varieties through transplanting, spray their rice farms at the early stage of disease/pest occurrence, use paddy to paddy method of water distribution, use commercial inorganic fertilizers practicing basal application, side and top dressing, weed once per cropping manually, land prepares twice through harrowing.

The SWIPs have positive impact as confirmed by the increase in the annual mean yield and in the annual gross income of the farmer-beneficiaries. It contributed a significant increase of 2.14 tons/year in the mean yield generating an additional income of PhP32,113.64 for Burgos SWIP. On the other, it contributed a significant increase of 2.08 tons/year giving an additional income of PhP31,313.60 for Divisor Norte farmer-beneficiaries.

The computed output per unit irrigated area (OIA) of Burgos and Divisoria Norte SWIPs is PhP41,004.06/ha and PhP37,280.00, respectively. On the other hand, the output per unit command area (OUC) is PhP22,622.48 and PhP14,889.24, respectively. Both values are lower than the OIAs and OUCs of SWIPs previously evaluated within the region.

The benchmarking study will provide strategic information to policy makers of agricultural and irrigation agencies on the existing weaknesses of irrigation systems in the country and determine in a more quantifiable terms level of potential improvement and investment targets.

Keywords: Small water impounding project, benchmarking, performance and impact assessment





