

"Challenge and Response"

Eighth Annual Report

MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

School Year 1977-78

BRUNO M. SANTOS
President

060
505
1977
C-3

"CHALLENGE AND RESPONSE"

EIGHTH ANNUAL REPORT

MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

BENGUET STATE UNIVERSITY
UNIVERSITY LIBRARY
LA TRINIDAD, BENGUET

School Year 1977-1978

BRUNO M. SANTOS
President

Republic of the Philippines
MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

December 29, 1978

His Excellency Ferdinand E. Marcos
President, Republic of the Philippines
Malacañang, Manila

S i r :

I have the honor to submit herewith the Eight Annual Report of the President, Mountain State Agricultural College, La Trinidad, Benguet, pursuant to the provisions of Republic Act 5923, covering the school year 1977-1978.

Very truly yours,

BRUNO M. SANTOS
President

Copy furnished:

1. The Honorable Minister of Education and Culture
2. The Members of the Board of Trustees

BENGUET STATE UNIVERSITY
UNIVERSITY LIBRARY
LA TRINIDAD, BENGUET

Republic of the Philippines
MOUNTAIN STATE AGRICULTURAL COLLEGE
La Trinidad, Benguet

BOARD OF TRUSTEES

JUAN L. MANUEL
Minister of Education and Culture
Chairman

BRUNO M. SANTOS
President
Mountain State Agricultural College

JOSEPH M. ALABANZA
Executive Director
Nat'l Econ. & Dev. Authority, Region I
Member

ATTY. ANTONIO G. DUMLAO
Coordinator
State Colleges and Universities

ROMULO Q. APOLONIO
Board and College Secretary

TABLE OF CONTENTS

| <u>CHAPTER</u> | <u>PAGE</u> |
|---------------------------------------------------------------------------------|-------------|
| OVERVIEW | 1 |
| I INSTRUCTION | 5 |
| A. Enrolment | 5 |
| 1. Enrolment by Levels of Instruction | 5 |
| 2. Enrolment by Courses in the Tertiary Level | 5 |
| 3. Student Origin | 6 |
| 4. Scholarships | 7 |
| 4.1 Scholarships in the Secondary Level | 7 |
| 4.2 Scholarships in the Tertiary Level | 10 |
| B. Graduates | 14 |
| C. Teaching and Support Personnel | 14 |
| D. Accomplishments and Problems of and Recommendations for Instruction | 14 |
| 1. Accomplishments | 14 |
| 2. On-going Projects | 16 |
| 3. Problems Encountered | 17 |
| 4. Recommendations | 17 |
| E. Graduate Studies Program | 18 |
| 1. Graduate School Faculty | 18 |
| 2. Enrolment and Graduates | 18 |
| 3. Graduate Bulletin | 19 |
| 4. Graduate Theses | 19 |
| F. Student Services and Instructional Facilities | 19 |
| 1. Guidance and Counseling Services | 19 |
| 2. Library Services | 21 |
| 3. Medical Services | 24 |
| 4. Dental Services | 25 |
| 5. Student Housing (Ladies Dormitory) | 27 |
| 6. Co-curricular Programs and Activities | 27 |
| 7. Alumni Affairs | 28 |
| II RESEARCH AND EXPERIMENTAL STATION | 30 |
| A. Personnel | 30 |
| B. Research Publications | 30 |

TABLE OF CONTENTS

| <u>CHAPTER</u> | <u>PAGE</u> |
|---------------------------------------------------------------------|-------------|
| C. Research Projects Funded by Other Agencies ... | 30 |
| 1. Extension Researches | 31 |
| 2. Agri-Business and Economics Research | 31 |
| 3. Biological Sciences Researches | 31 |
| 4. Plant Science Researches | 31 |
| 5. Soils and Chemistry Researches | 32 |
| D. Researches Funded by MSAC Administration | 35 |
| E. MSAC Funded Researches Completed by Faculty .. | 40 |
| F. Undergraduate and Graduate Student Researches Completed | 40 |
| G. MSAC Research Program for June 1978 - May 1979 | 44 |
| H. Laboratory Equipment and Supplies | 54 |
| I. Transportation Facilities | 55 |
| J. Field Equipment | 56 |
| K. Crop Processing Equipment | 56 |
| L. Research Policies | 57 |
| M. Research and Publications Office | 58 |
| III EXTENSION | 61 |
| A. Extension Program | 61 |
| 1. MSAC-SEARCA Social Laboratory | 61 |
| 2. MSAC-NMYC National Agricultural Skills Training Program | 61 |
| 3. Extension Services by Departments | 61 |
| B. Production Projects and Incomes | 64 |
| C. Community Environmental Development Activities | 65 |
| 1. Five-Year MSAC Development YCAP Plan, 1978-1982 | 65 |
| 2. YCAP Accomplishments, 1972-1978 | 66 |

TABLE OF CONTENTS

| <u>CHAPTER</u> | <u>PAGE</u> |
|----------------------------------------------------------------------------|-------------|
| III C. 3. Participation in the National Tree- Planting Program | 67 |
| D. Special Agro-Forestation Project | 68 |
| E. Rural Services of MSAC Personnel | 70 |
| F. MSAC-RSDC Services | 71 |
| IV ADMINISTRATION AND SUPERVISION | 72 |
| A. Fiscal Support | 72 |
| B. Personnel Development | 72 |
| 1. Number of Personnel | 72 |
| 2. Promotions | 72 |
| 3. Teachers as Professionals | 73 |
| 4. Recommendation | 73 |
| C. School Sites | 73 |
| 1. Relocation of Squatters and/or Claimants .. | 73 |
| 2. Land Registration Cases Submitted for Resolution | 75 |
| D. Infrastructures | 78 |
| 1. Agricultural Engineering Complex | 78 |
| 2. Plans for New Buildings | 78 |
| 3. Concrete Loop | 78 |
| E. Board Resolutions Approved | 79 |
| APPENDIX <u>A</u> Research Abstracts | 84 |

O V E R V I E W

This report covers the third year of implementation of the second Five-Year Development Program of the College.

Challenged by and responding to its expanding functions and ever widening service horizon, the College, during the year under review, readjusted its development strategies to focus on growth areas and projects with high impact potentials and lasting direct benefits to students and the community. This necessitated the re-alignment of certain programs, notably in the areas of farm development, research, extension, and infrastructure development.

These mid-course corrections made in the "trajectory" of the second five-year development program proved to be justified as will be seen in the following:

Highlights of Accomplishments

1. Farm Development. -- The Agro-Forestation Project started operation on June 10, 1977, a special project designed to establish a center for semi-temperate fruit tree culture for the highland provinces.

Situated at the school reservation, at Ampasit, Puguis, the project is a multi-purpose scheme that aims to forest bald mountains with fruit trees and at the same time offer an alternative source of livelihood to the vegetable farmers of Benguet who are facing stiffer competition from the lowland provinces

that can now grow semi-temperate vegetables.

When fully developed, the project will cover 250 hectares. As of this writing, 10 hectares is already cultivated.

2. Infrastructures. -- About 85 per cent of the P3.2 million agricultural engineering complex is completed. The greater portion of the building is being used as classrooms, and its occupancy had done much to decongest overcrowded classes.

The plans and specifications of five (5) new buildings are expected to be completed before the end of the school year under review. These are the root crops research and training center, faculty-staff apartment building, biological science building, agro-forestation field office, and machine shed.

Already scheduled for construction next school year are the biological science building, faculty-staff apartment building, and agro-forestation field office.

Work already started on the two-lane concrete vehicular road, in the shape of a loop, joining Gate 2 to Gate 4. As of May 31, 1978, the sum of P 30,000.00 was spent. The project is estimated to cost P130,000.00

3. Instruction. -- The College opened the bachelor of science in agricultural engineering program starting with the first semester of school year 1977-1978.

Several resolutions were adopted by the Board of Trustees granting scholarships and other educational benefits to deserving students in the secondary and tertiary levels.

In one or two years time, the graduate faculty expects to increase its strength with the addition of 10 instructors who are now on graduate scholarships here and abroad.

4. Research. --- Every faculty member is expected to undertake a research project per year. Henceforth, research will be considered among the criteria for promotion.

Faced with this challenge, several instructors had already completed researches through funds furnished by the College and cooperating private entities and government agencies.

The College has planned its research program for next school year by commodity, to wit: soil and water conservation, fruit crops, vegetable crops, mushroom, root crops, poultry, and livestock, plantation crops, cut flowers, and socio-economic.

5. Extension. --- Aside from carrying out its extension activities through the MSAC-PCARR Social Laboratory, and its demonstration farms, the College has envisioned the launching next year of a non-formal education program in pilot barangay centers in the province of Benguet.

The program goal is to make rural communities economically prosperous and socially progressive. It involves agricultural skills training, handicraft and home industry training, and population education.

Extension services to the community and nearby municipalities were rendered by these departments of the College, namely, agrilubusiness, forestry, animal science and technology, plant

science, food technology, and languages and social sciences.

6. Production Projects and Incomes. -- The 14 production projects of the College netted as of June 30, 1978 an amount of P166,369.30 as against P97,733.17 of the preceding year, showing an increase of P68,636.13.

The three top producers were: (a) College Canteen, under Food Service Supervisor Ofelia N. Estepa, P28,637.69; (b) RSDC Guestel, under Dormitory Manager Isidro B. Viado, P25,670.21; and (c) Balili Farm Project, under Production Manager Elmo O. Sano, P18,006.98.

CHAPTER I
INSTRUCTION

A. Enrolment

Of the total enrolment for the school year under review, more than one-half of the student population fall under the tertiary level.

1. Enrolment by Levels of Instruction: -- Below are the enrolment figures in the three levels of instruction.

| <u>Instructional Level</u> | <u>Enrolled</u> | <u>Per Cent</u> |
|-------------------------------|-----------------|-----------------|
| Elementary | 827 | 18.68 |
| Secondary | | |
| Voc. and Agric. Science Educ. | 558 | 12.60 |
| General Secondary Education | 517 | 11.68 |
| Collegiate | 2,525* | 57.04 |
| T o t a l s | <u>4,427</u> | <u>100.00</u> |

*First Semester.

In the tertiary level, the second semester enrolment was 2,290. The 1978 summer enrolment was 1,391.

2. Enrolment by Courses in the Tertiary Level: -- Listed hereunder are the semestral and summer enrolment figures for the school year 1977-1978.

| <u>Curricular Programs</u> | <u>1st Semester</u> | <u>Second Semester</u> | <u>Summer</u> |
|-------------------------------------|---------------------|------------------------|---------------|
| Non-Degree Post Secondary Programs: | | | |
| 1-Year Agric. Mech | 16 | 14 | - |
| 2-Year Forest Ranger Course | 124 | 123 | 82 |

| Curricular Programs | 1st Semester | 2nd Semester | Summer |
|-------------------------|--------------|--------------|--------------|
| Undergraduate Programs: | | | |
| BSA | 1,068 | 954 | 573 |
| BSAE | 506 | 423 | 221 |
| BSHT | 169 | 151 | 83 |
| BABM | 68 | 57 | 32 |
| BSAT | 145 | 136 | 100 |
| BSF | 311 | 295 | 183 |
| BSAEngr ^g .* | 75 | 84 | 41 |
| Graduate Program: | | | |
| MS | 43 | 53 | 76 |
| Totals | <u>2,525</u> | <u>2,290</u> | <u>1,391</u> |

*Offered first semester, 1977-1978.

3. Student Origin. --- Based on their places of birth, students in the tertiary level were grouped as follows: (a) within the town, covering Baguio City and the Municipality of La Trinidad, (b) within the Province of Benguet but excluding La Trinidad, (c) within Region I but excluding Benguet, and (d) all others (outside the region) but including foreigners. The geographical distribution is as follows:

| Origin | Male | Female | Total |
|----------------------------------------------------------|--------------|------------|--------------|
| Within the Town | 806 | 243 | 1,049 |
| Within the Province but outside the Town | 224 | 263 | 487 |
| Within Region I but outside the Province | 400 | 409 | 809 |
| All others (outside the Region) but including foreigners | 156 | 24 | 180 |
| Totals | <u>1,586</u> | <u>939</u> | <u>2,525</u> |

The foreigners are seven (7) Thai students. Last school year the Thai students numbered 15.

4. Scholarships. --- The Board of Trustees approved several resolutions granting scholarships and other benefits to deserving students enrolled in the secondary tertiary levels.

4.1 Scholarships in the Secondary Level. --- The College grants academic scholarships and other educational benefits to qualified secondary students.

Full/half tuition fee entrance scholarships granted to elementary valedictorians and salutatorians were abolished by MSAC Memorandum Circular No. 5, dated June 15, 1977, in view of the modified promotion scheme in the elementary schools as a result of the Continuous Progression Scheme.

4.11 Tuition Fee Discounts. --- In lieu of the entrance scholarships, honor students from the second to the fourth years of both the vocational and general secondary laboratory schools, whose general average is 85 or better, are given tuition fee discounts in accordance with the following scheme:

1st Honors of each curriculum year = 100%
2nd Honors of each curriculum year = 50%
3rd Honors of each curriculum year = 25%

The tuition fee discount, according to MSAC Memorandum Circular No. 5, s. 1977, may be granted each year to the same student until the fourth year, if such student maintains his

academic position in the class, that is, he will maintain a general average of not lower than 85, with no grade lower than 80 in any subject, has good moral character, and physically fit as determined by competent authorities.

4.12 Agricultural Science Program Scholars. -- Students who qualify for admission in the agricultural science classes of the secondary vocational department enjoy academic scholarships covering free tuition and miscellaneous fees. The scholarship was opened effective the first semester of school year 1977 - 1978, pursuant to Resolution No. 42-A, dated May 30, 1977. Each class of every curriculum year must not exceed 40 students.

Authority to open the secondary agricultural science curriculum, effective the school year 1976-1977, was granted under Resolution No. 5, dated March 10, 1976, of the Board of Trustees.

The curriculum for the secondary agricultural science program was approved by the Board of Trustees under Resolution No. 18, dated May 12, 1976. However, the resolution provides that the curriculum be implemented on an experimental basis for four years. The resolution further provides that the curriculum be geared to changing trends. Modifications in the curriculum shall be submitted for action to the Board of Trustees.

As observed by the Board of Trustees, the curriculum appears to be geared to technical agriculture. The Board is interested to see how a graduate of the course, the first of its

kind to be undertaken, would fare in comparison to the graduate of the ordinary secondary vocational agriculture curriculum.

4.13 Administrative Scholarships for Secondary Students. ---

The College grants the following administrative scholarships or educational benefits:

a. Under Resolution No. 31, s. 1975, full/half tuition fee privileges are extended to the CAT Corps Commander and his adjutant, respectively, provided the recipients have no failing grades in any subject.

b. Free tuition fee is enjoyed by the editor of The Mountain Breeze, official organ of the secondary student body, as authorized under Resolution No. 38, s. 1973. With the integration of the then Benguet Provincial High School on January 1, 1977, the school paper has now two (2) editors, one for the vocational agriculture program and the other for the general secondary laboratory school. The latter editor also enjoys free tuition fee scholarships.

c. Half tuition fee privilege is given to the managing editor of The Mountain Breeze, pursuant to Resolution No. 31, s. 1975.

d. Exempted under Resolution No. 32, s. 1976, from paying the school organ fee of P6.00 are the associate, news, research, Pilipino, literary, and feature editors.

e. Secondary students may enjoy full or half tuition fee privileges if they qualify as members of the Kontad Dance Troupe or the Glee Club, per Resolution No. 16, s. 1972, and Resolution No. 43, s. 1976.

4.2 Scholarships in the Tertiary Level. -- In the tertiary level, scholarships enjoyed by students are classified as academic, administrative, state or government, and veterans.

4.21 Academic Scholarships. -- Pursuant to Resolution No. 8, s. 1973, of the Board of Trustees, academic scholarships shall be granted to all (a) valedictorians and salutatorians and (b) resident honor students.

a. Valedictorians and Salutatorians. -- Full and half tuition scholarships shall be granted to valedictorians and salutatorians, respectively, from any public or duly recognized private high schools, renewable for the second semester if the student maintains a general weighted average of from 1.00 to 1.45, and from 1.46 to 1.75, respectively. However, in either case, the grantees should have no grade lower than 2.00 in any subject, and should carry a load of not less than 18 units during the term. The scholarship shall be good only during the regular school term.

b. Resident Honor Students. -- Full and half tuition scholarships shall be granted to any resident honor student who shall obtain a general weighted average of from 1.00 to 1.45,

and from 1.46 to 1.75, respectively. However, the honor student should carry a load of not less than 18 units during the term, and not have a grade lower than 2.00 in any subject.

4.22 Administrative Scholarships for College Students.

The forms of administrative scholarships and other educational benefits available for college students are the following:

a. Pursuant to Resolution No. 30, s. 1974, 100% free tuition fee privilege shall be extended to the ROTC Corps Commander, and 75% free tuition privileges to six (6) of his executive staff, including the WATC company commander.

b. Full and half tuition fee scholarships are granted to the editor and managing editor, respectively, of The Mountain Collegian, as authorized under Resolution No. 38, s. 1973, and Resolution No. 31, s. 1975.

c. Under Resolution No. 32, s. 1976, the associate, news, research, Filipino, literary, and feature editors are exempted from paying the school organ fee of P6.00.

d. Students who qualify as members of the Kontad Dance Troupe and the ROTC Band may enjoy full/half tuition privileges, per Resolution No. 16, dated April 7, 1972.

e. Members of the Glee Club may be granted full/half tuition fee privileges, pursuant to Resolution No. 43, s. 1976.

f. Recipients of student assistantships are given

employment in the different school projects for not more than 100 working hours a month. They are paid P1.00 per hour.

4.23 State or Government Scholars. -- The National Scholarship Center of the Ministry of Education and Culture pay the tuition and other authorized fees, allowances, and other privileges of the grantees under the National Integration Study Grant Program and Non-Muslim Educational Assistance Program (formerly Panamin) enrolled in the College.

Studies of students under PD No. 932, Educational Assistance Act of 1976, or better known as the Study Now Pay Later Plan, are financed by loans granted to them either by the Government Service Insurance System, Social Security System, Philippine National Bank, Development Bank of the Philippines, or the Land Bank.

4.24 Veterans Scholars. -- The United States Veterans Administration and Philippine Veterans Administration pay the tuition and other school fees of veterans or their dependents enrolled in the College.

Studies of dependents killed in action in the current secessionist movement in Mindanao and Sulu are sponsored by the Armed Forces of the Philippines.

4.25 Distribution of College Scholars. Below are the distribution of college scholars according to the kind of grants.

a. Academic Scholars (Full and Partial)

| | |
|-------------|----------|
| BSA | 12 |
| BSAE | 6 |
| BSHT | 4 |
| BAEM | 2 |
| BSAT | 4 |
| BSP | <u>4</u> |
| Total | 32 |

b. Administrative Scholars

| | |
|------------------------|-----------|
| Kontad Dance Troupe | 42 |
| Glee Club | 50 |
| ROTC/WATC | 4 |
| Mountain Collegian | 1 |
| Student Assistantships | <u>12</u> |
| Total | 109 |

c. State or Government Scholars

| | |
|----------------------------------------------------------------------|-----------|
| National Integration Study Grant Program (NISGP) | 84 |
| Non-Muslim Educational Assis- tance Program (formerly Panamin) | 5 |
| Study Now Pay Later Plan | <u>22</u> |
| Total | 111 |

d. Veterans Scholars

| | |
|-------------------------------------------|------------|
| United State Veterans Admi- nistration | 15 |
| Philippine Veterans Adminis- tration | 15 |
| Armed Forces of the Philippines | <u>1</u> |
| Total | <u>31</u> |
| Grand Total | <u>283</u> |

B. Graduates

The elementary department held its graduation program later. The secondary and tertiary levels had their commencement exercises earlier and on the same day. By curriculum programs, the number of graduates is as follows:

| <u>Curriculum</u> | <u>No. of Graduates</u> |
|-------------------------------------------|-------------------------|
| Elementary | 123 |
| Secondary Programs: | |
| General Secondary | 73 |
| Vocational-Agricultural Science Education | 80 |
| Agricultural Homemaking | 46 |
| Agricultural Mechanics | 14 |
| Forest Ranger Course | 28 |
| B. S. in Agricultural Education | 65 |
| Bachelor of Agri-Business Management | 7 |
| B. S. in Home Technology | 36 |
| B. S. in Agriculture | 82 |
| Master of Science | <u>3</u> |
| Total | <u>515</u> |

C. Teaching and Support Personnel

During the school year under review, the teaching personnel numbered 182, broken down as follows: (1) elementary education, 35; (2) secondary education, 56; and (3) collegiate, 91.

The non-teaching or support personnel were 65 in number. The count did not include the casual workers.

D. Accomplishments and Problems of and Recommendations for Instruction

1. Accomplishments. Summarized from the reports of the different undergraduate curricular programs are the following

accomplishments:

- a. Handled all courses in the curricular offerings as scheduled.
- b. Attained objectives outlined in all course syllabi.
- c. Revised syllabi in order to meet changing needs.
- d. Participated in the formulation of non-formal education.
- e. Advised undergraduate and graduate thesis students.
- f. Served as resource speakers on local, regional, and national seminars and workshops.
- g. Hosted First National Potato Production Course, and First Regional Practical Arts and Teaching Institute Training Program.
- h. Sponsored speech festivals which included debate, choral rendition, speech and dramatic presentations, and socio-cultural shows.
- i. Conducted athletic intramural activities, provincial and national.
- j. Kontad Cultural Troupe and Glec Club performed before local, regional and national audiences on and off-campus.
- k. Coordinated campus beautification and transplanting activities.
- l. Obtained free wool samples from Forfriderom for instructional purposes.
- m. Collected over 300 bottles of specimens of parasites, embryo and disease lesions.
- n. Vaccinated 253 pigs against hog cholera, 2,158 chickens against fowl pox and Newcastle disease, 25 dogs against rabies, and 307 cattle against H. septicemia.
- o. Supervised students in the construction of roads and buildings.

- p. Purchased complete FFP-FAHP paraphernalia.
- q. Made rugs, cushions, feather dusters, flower-making, etc.
- r. Discovered other nata products like carrots, cassava, gabi, squash, etc.
- s. Students donated several kitchen utensils out of home economics projects' income.
- t. Participated in drafting National Potato Program, Presidential Decree on Highland Crops Center, and Research Development Plan.
- u. Coordinated such programs as MSAC--SEARCA Social Laboratory, NMYC, MSAC--EDPITAF P. A. Programs.
- v. Solicited money for construction of concrete seats for students.
- w. Visited and extended pieces of technical advice to farmers, including identifications of pests and diseases, vaccinating and castrating animals.
- x. Required department chairmen to observe, supervise, and evaluate faculty members.
- y. Conducted technical and action researches.
- z. Carried out extension education activities.
- 2. On-going Projects. -- Listed below are the on-going projects of the curricular programs concerned:
 - a. Raising of funds to purchase supplies and equipment for use in the laboratory.
 - b. Construction of glass houses for instructional purposes.
 - c. Making of hollow blocks and road construction.
 - d. Renovation of the elementary education building.
 - e. Overhauling of three college vehicles.

- f. Undergraduate and graduate research activities.
- g. Extension activities as functions of the College.

3. Problems Encountered. --- Submitted hereunder are the problems met in instruction:

- a. Lack of textbooks, references, and scientific reading materials of recent editions.
 - b. Inadequate laboratory supplies and equipment like microscopes, chemistry set-ups, audio-visual aids, etc.
 - c. Over-sized classes, especially in the laboratory and field practice due to lack of instructors.
 - d. Poor attendance of students during convocations.
 - e. Failing and low grades of students.
 - f. Lack of rooms for specific courses, like in Physical Education, Animal Husbandry, Agronomy, etc.
4. Recommendations. --- To improve instruction, the different

curricular programs submitted the following recommendations:

- a. There should be specific funds allocated to each department to improve and upgrade existing instructional facilities.
- b. Non-teaching appointments of those performing teaching duties should be made instructors according to preparation.
- c. More teaching personnel should be selected and appointed, including supportive staff.
- d. More office and laboratory equipment and supplies should be purchased.
- e. There should be more books and technical periodicals of recent editions in the library.
- f. There should be more buildings constructed to house the Veterinary Science, Forestry, Plant Science, Animal Science, etc.

- g. Improved sanitation in the school by constructing garbage pits, installation of screen windows, etc.
- h. More strict campus rules be followed to prevent such problems as drunkenness.
- i. Reclassification of all academic personnel.
- j. There should be more emphasis on the total faculty development programs. Faculty members should be sent to attend seminars and workshops on official time.
- k. Decrease size of laboratory class to 50.
- l. Repair of the slaughterhouse for classroom use and of the suspension bridge.
- m. The College should join the Ilocos Region State Universities and A Colleges Athletic Association beginning 1978-1979.

E. Graduate Studies Program

1. Graduate School Faculty. --- There are 24 graduate school faculty with MS and doctoral degrees. In one or two years, there will be added to the graduate faculty ten (10) who are now on graduate scholarship here and abroad.

The per hour honoraria of the graduate faculty have been increased during the 1978 summer term. Those with MS and Phd/EdD were paid P10-15/hour and P20/hour, respectively.

Know-how in conducting and advising graduate researches are needed by many of the graduate faculty members.

2. Enrolment and Graduates. --- Below are the semestral and summer enrolment and number of graduates for the school year under review.

BENGUET STATE UNIVERSITY
UNIVERSITY LIBRARY
 LA TRINIDAD, - BENGUET

| <u>Term/Semester</u> | <u>Enrolment</u> | <u>Graduated</u> |
|-----------------------|------------------|------------------|
| 1st Semester | 43 | 1 |
| 2nd Semester | 50 | 1 |
| Summer | 76 | 2 |
| T o t a l s | <u>169</u> | <u>4</u> |

The graduate student individual folders/files have yet to be reorganized and improved before the end of 1978.

3. Graduate Bulletin. -- The Board of Trustees approved last year the graduate bulletin. But it is still in mimeograph form. Before the end of 1978, it is expected to be printed in booklet form.

4. Graduate Theses. -- The following are the graduate theses submitted and approved during the academic year under review:

- a. Influence of Spacing and Seed Size on the Yield of Two Varieties of Irish Potato, by Dario D. Dampilag, October, 1977.
- b. The Performance of Male and Female Fattening Swine in Different Taste of Food Supplement, by Towee Mutong, March, 1978.
- c. Response of Cobbs, Peterson Chicks on Different Feeds and feed supplements, by

F. Student Services and Instructional Facilities

1. Guidance and Counseling Services

Below are the data which reflect the guidance and counseling services rendered to the students for the school

year 1977-1978:

| <u>1.1 Drop-outs</u> | <u>Male</u> | <u>Female</u> | <u>Total</u> |
|--------------------------------------------------------|-------------|---------------|--------------|
| a. High School | 13 | 4 | 17 |
| b. College | 10 | 10 | 20 |
| <u>1.2 Marriages</u> | | | |
| a. High School | - | 1 | 1 |
| b. College | 5 | 12 | 17 |
| <u>1.3 Psychological Tests</u> | | | |
| a. High School | | | |
| (1) Mental Ability | 343 | 215 | 558 |
| (2) Otis-Lennon (Entrance Test) | 343 | 215 | 558 |
| b. College | | | |
| (1) Mental Ability | 400 | 450 | 850 |
| (2) Personality Test | 400 | 450 | 850 |
| (3) Entrance Test (SCAT) | 400 | 450 | 850 |
| <u>1.4 Excuse Slips Issued</u> | | | |
| a. High School | 83 | 27 | 110 |
| b. College | 210 | 328 | 538 |
| <u>1.5 Home Visitations</u> | | | |
| a. Follow-up cases | 10 | 15 | 25 |
| <u>1.6 Referral Cases</u> | | | |
| a. Hospital | 15 | 30 | 45 |
| <u>1.7 Other Services Rendered</u> | | | |
| a. Counseling services; | | | |
| b. Film showing on career guidance; | | | |
| c. Career guidance for fourth high school students; | | | |
| d. Orientation program to first year college students; | | | |
| e. In-service education; | | | |

- f. Conference with parents;
- g. Conference with teachers;
- h. Survey of boarding houses; and
- i. SPC college spiritual retreat.

1.8 Summary of Services Rendered. --- Below is the summary of services rendered to secondary and college students per record of absences based on excuse slips issued to them.

| <u>Course</u> | <u>Male</u> | <u>Female</u> | <u>Total</u> |
|-------------------|-------------|---------------|--------------|
| High School | 83 | 27 | 110 |
| Collegiate | | | |
| BSA | 93 | 120 | 213 |
| BSAE | 34 | 87 | 121 |
| BSHT | | 96 | 96 |
| BSF | 56 | 14 | 70 |
| BSAT | 15 | 4 | 19 |
| BABM | 7 | 3 | 10 |
| BSAEngr'g. | <u>5</u> | <u>4</u> | <u>9</u> |
| T o t a l s . . . | <u>293</u> | <u>355</u> | <u>648</u> |

1.9 On-going Research. --- The Guidance Office is currently working on a research on "Vocational Choices and Certain Personal Characteristics of Junior Vocational Agricultural and Science High School Students of Mountain State Agricultural College, 1977-1978."

2. Library Services

Presented below are the statistical data on accomplishments of the College Library.

2.1 Library Collections for 1977-1978:

- a. Books 879
- b. Theses 151
- c. Serial Titles 66
 - (1) Subscription 17
 - (2) Gifts 49

- d. Pamphlets 456
- e. SIS Publications 283
(Photocopied Periodical Titles)

2.2 Library Staff Output of Work:

- a. Titles classified 201
- b. Books accessioned 1,030
- c. Books labelled 1,030
- d. Books pasted with book pockets,
date due (old and new) 2,551
- e. Cards typed 5,452
- f. Number of periodicals indexed 777
- g. Incoming correspondence 79
- h. Outgoing correspondence 127
- i. Memoranda issued 19
- j. Book titles recommended for purchase... 473
- k. Current Awareness Services 32
(List of new acquisitions/publications)

2.3 Total Number of Clienteles Using the Libraries:

| | 1st Sem. | 2nd Sem. |
|---------------------------------------------------------|----------|----------|
| a. General Circulation | 8,780 | 9,816 |
| b. Research | 25,550 | 28,790 |
| c. Graduate | 6,636 | 7,189 |
| d. Secondary | 15,359 | 18,596 |
| e. Serials | 4,858 | 5,816 |
| f. Outsiders (students from other schools, agencies) | 22 | 38 |

2.4 Total number of books circulated 74,357

2.5 Total number of books borrowed but always out 8,645

2.6 Faculty-Student Library Committee. --- This was created

under Memorandum No. 11, s. 1977, to improve library services and to increase the effectiveness and efficiency of the MSAC library operations and management.

2.7 Current Awareness Services. --- Faculty members and stu-

dents are provided with lists of new acquisitions/publications in

the school.

2.8 Open-Shelf System. This was adopted in all the sections except the Reserve Section, whereby student and researchers have free access to the books on the shelves.

2.9 Solicited donations from foreign sources:

- a. Dr. Anwar-UL-Hag, c/o University of Agriculture, Lyallpur, Faisalabad, Pakistan, donated relevant materials on population planning programme in Pakistan.
- b. Inter Mountain Forest and Range Experiment Station, Utah, USA -- Forestry Publications.
- c. Kathleen Shardt, c/o UNESCO Regional Office for Education in Asia -- Publications on Population Education.
- d. F. Mettelbrun, c/o Instituto Nacional de Investigaciones Agrarias -- Annals and Communications of the Agricultural Institution Services.
- e. Soo-Jin Lee, c/o Asian Institute of Technology, Bangkok -- Publications on Agriculture.
- f. German Agency for Technical Cooperation Limited -- English publications on agricultural projects and problems in Germany.
- g. USDA Forest Service -- Forestry publications.
- h. Dr. Hohnledg, c/o Institute for Scientific Cooperation Germany -- Publications on Education, Applied Science, Natural Resources, and Animal Research.
- i. University of Wisconsin, Madison -- Arboretum.
- j. Asgrow International Corp. Michigan -- Asgrow Farmer and Commercial Growers Guide.
- k. East-West Center Hawaii -- Publications on Food Science and Proceedings on Rural Development.

Water Management, Fishery Development.

1. Japanese Organization for International Cooperation in Family Planning --- Books on Family Planning.

2.10 Solicited donations from local agencies:

- a. International Research Institute --- Publications on rice.
- b. San Miguel Corporation --- Kaunlaran magazine and SMC news.
- c. Canadian Embassy --- Publications on agriculture and forestry.
- d. PCARR Socio-Economic Research Division --- Data Series on Rice Statistics Philippines.
- e. Thomas Jefferson Cultural Center --- Publications about the U. S.
- f. National Research Council of the Philippines --- 8th Pacific Science Congress Research, Bulletins: Proceedings and Symposia.
- g. Asia Foundations --- Books and pamphlets.
- h. Mr. Teofilo Killip II --- Audio-Tutorial notes for Soils; Man and his Physical Environment.
- i. Bureau of Forest Development --- Philippine Forestry Statistics 1976.
- j. UPLB Institute of Agricultural Development and Administration --- Materials used in the Agro-Industrial Project Course.

3. Medical Services

3.1 Number of Clientele Seen/Examined:

| | |
|-------------------------------------------------|-------|
| a. Students | 1,963 |
| b. Faculty and employees | 514 |
| c. Dependents of college personnel | 29 |
| d. Outsiders (Non-MSAC Personnel/Students)..... | 6 |

T o t a l 2,512

3.2 Number of Patients Treated/Given Medicines:

| | |
|------------------------------------------|--------------|
| a. Students | 1,959 |
| b. Faculty and employees | 348 |
| c. Dependents of college personnel | 29 |
| d. Outsiders | 0 |
| Total | <u>2,336</u> |

3.3 Cases Found by Systems:

| | |
|----------------------------|--------------|
| a. EENT | 824 |
| b. Cardiovascular | 39 |
| c. Respiratory | 353 |
| d. Gastro-intestinal | 217 |
| e. Genito-urinary | 50 |
| f. Integumentary | 233 |
| g. Skeleto-muscular | 13 |
| Total | <u>1,729</u> |

3.4 Communicable Diseases Found:

| | |
|----------------------|------------|
| a. Influenza | 157 |
| b. Measles | 2 |
| c. Chicken pox | 2 |
| d. Mumps | 3 |
| Total | <u>164</u> |

3.5 Other Cases/Services:

| | |
|--------------------------------------------------------------------------------------|--------------|
| a. Accidents in the form of wounds, burns, hematomas, contusions, sprains, etc. | 348 |
| b. Immunizations (CTPA) | 1,252 |
| c. Referrals to outside agencies | 18 |
| Total | <u>1,618</u> |

4. Dental Services

4.1 Number of Patients Inspected:

| | |
|---------------------------|------------|
| a. First visit | 574 |
| b. Follow-up visits | 180 |
| Total | <u>754</u> |

| | | |
|-----|----------------------------------------------|-----|
| 4.2 | Number of patients with defects | 722 |
| 4.3 | Number of patients treated | 668 |
| 4.4 | Number of patients given oral prophylaxis... | 161 |
| 4.5 | Number of Extractions Made: | |

| | | |
|----|-----------------------|------------|
| a. | Permanent teeth | 286 |
| b. | Temporary teeth | <u>21</u> |
| | Total | <u>307</u> |

4.6 Number of Fillings Made:

| | | |
|----|--------------------------|------------|
| a. | Silver amalgam | 62 |
| b. | Cement | 26 |
| c. | Silicate | 9 |
| d. | Zinc oxide eugenol | <u>388</u> |
| | Total | <u>485</u> |

4.7 DMF Survey (Permanent Teeth):

| | | |
|----|------------------------------------------|--------------|
| a. | Number of teeth found with defects | 1,395 |
| b. | Number of teeth found missing | 1,066 |
| c. | Number of teeth found filled | <u>320</u> |
| | Total | <u>2,781</u> |

4.8 Number of temporary teeth with defects

4.9 Other Dental Health Activities:

- a. Attended 4-day Philippine Public School Dentist Association Conference, at the Philippine Normal College, Manila;
- b. Participated in three (3) continuing health education program of the ~~Raguic~~-Benguet Dental Society;
- c. Spoke in one Monday convocation on Dental Care in connection with the observance of National Dental Health Week; and
- d. Individual chairside health instructions.

5. Student Housing (Ladies Dormitory)

5.1 Number of Students Accommodated:

| <u>1st Semester</u> | <u>2nd Semester</u> | <u>Summer</u> |
|---------------------|---------------------|----------------|
| June 102 | November 88 | April 60 |
| July 99 | December 90 | May 60 |
| August 96 | January 86 | |
| September 98 | February 86 | |
| October 98 | March 87 | |

5.2 Social Activities:

- a. Induction Party July 8, 1977
- b. Acquaintance Party November 18, 1977
- c. Christmas Party December 14, 1977
- d. Valentine's Party February 17, 1977
- e. Farewell Party March 17, 1978

5.3 Other Dormitory Activities:

- a. General cleaning, once a month; cleaning, everyday.
- b. Repaired windows, door, light, and faucets.

6. Co-Curricular Programs and Activities

6.1 College and Secondary YCAP, FFP-FAHP, ROTC-CIVAC, and

Homeroom Organizations.

- a. Campus and national highway cleanliness and food production.
- b. Hauling and filling up of 300 meters of the foundation of cemented road on the campus at the new agricultural engineering complex with gravel and sand from the river and another 400 meters of the gravel and soil fill for the campus road at the floriculture project of the College.
- c. College and community socio-cultural programs during the Christmas season; local, district, provincial, and regional meets; town fiesta, and commencement exercises.

- d. Intramural physical fitness and sports program, provincial and regional meets, and other college-community athletic games held from time to time at the MSAC playgrounds.

6.2 Other Co-Curricular Service Clubs. --- Socio-cultural activities in the community were enhanced and enlivened by the participation of the KONTAD, MSAC Glee Club, MSAC Judo Club, MSAC Boy and Girl Scouts, and MSAC 4-H Club.

7. Alumni Affairs

7.1 Accomplishments. --- The Mountain State Agricultural College Alumni Association accomplished the following:

- a. Leased the old Alumni Hall to the National Grains Authority (NGA) with an increased rental from .400.00 to P1,000.00 per month, with the stipulation that the NGA shall pay the costs for light and water consumption, use of the telephone, and minor repairs of the building.
- b. Updated the master list and directory of graduates from 1924 to the present.
- c. Coordinated the fund-raising activities for the construction of a P3.5-million Alumni Home Center. As of April 1, 1978, the total amount raised was P40,517.82. The money was deposited with Agrix Marketing, Inc. and the Philippine National Bank.
- d. Supported the proposed conversion of MSAC to Mountain State University.

7.2 Present and On-going Projects. --- The Alumni Association is working towards the following:

- a. Make available an MSACAA Scholarship Fund for poor but deserving students studying in MSAC.

- b. Establish a placement office for MSAC graduates.
 - c. Organize MSACAA sub-chapters in the different provinces and cities of the country where MSAC alumni are found.
 - d. Continue with the fund-raising campaign of the association for the construction of the Alumni Home Center.
 - e. Work closely with the MSAC Administration for a more functional and progressive education institution.
- 7.3 Election of Officers. -- The Alumni Association elects its officers at a general meeting held the last Sunday of April every year.

CHAPTER II

RESEARCH AND EXPERIMENTAL STATION

A. Personnel

The Research and Experimental Station Division personnel are committed to do research. Each faculty member is expected to make a research project per year.

The RESD regular staff members are:

| | |
|--------------------------------------------------------------------------------|-----------|
| Director and concurrently Chairman, Department of Soils and Chemistry | 1 |
| Casual Clerks | 2 |
| Affiliated Staff (NSDB-MSAC Project): | |
| Research Assistants | 7 |
| Research Aides | 6 |
| Laborers (4 are supported by MSAC and 16 by NSDL) | <u>20</u> |
| T o t a l | <u>36</u> |

B. Research Publications

Some selected research findings of College undergraduate and graduate theses abstracts have been published in the MSAC Research Journal since October, 1977.

C. Research Projects Funded by Other Agencies

A total of P674,333.00 was made available for researches to be conducted in the College, contributed by the Philippine Council for Agriculture and Resources Research, National Science

Development Board, and Hoechst Philippines.

Listed below are the departments of the College that conducted the researches, project titles, names of the researchers, and sources of funds and the amount.

1. Extension Researches

- a. Project Title: Determinants of Land Use Patterns in Highland Areas
Researchers : C. Consolacion and M. Mercado
Fund Source : PCARR
Amount : P44,541.00
- b. Project Title: Tribal Rites of Igorot Farmers(on-going)
Rescarchers : S. Ocampo, Jr. and C. Consolacion
Fund Source : NSDB
Amount : P49,240.00

2. Agri-Business and Economics Research

- a. Project Title: Fluctuation of Market Supply and Farm Gate Prices of Selected Vegetable Commodities in Baguio and Benguet

Researcher : C. T. Buasen
Fund Source : PCARR
Amount : P28,423.00

3. Biological Sciences Researches

- a. Project Titles 1) Evaluation of Insecticides Against Pests of Cabbages: and
2) The Evaluation of Zolone 35 EC Against Diamond Back Moth (*Plutella xyostella* Linn) in Cabbage During the Dry Season Under Benguet Conditions.

Researcher : L. M. Colting
Fund Source : Hoechst Philippines
Amount : P4,500.00

4. Plant Science Researches

- a. Project Titles 1) Cropping Pattern of Highland

Vegetable Crops;

- 2) Germplasm Introduction, Preliminary and Advanced Tests of White Potatoes for Highland Evaluation;
- 3) Regional Trials of White Potatoes at Highland Elevation; and
- 4) Development of Heat Tolerant Varieties of White Potato Varieties for Medium and Low Elevation Areas.

Researcher : L. Victor
Fund Source : PCARR
Amount : P19,068.00

b. Project Title : Farmer's Field of White Potato
Researcher : L. Victor
Fund Source : PCARR
Amount : P9,204.00

c. Project Title : Weed Control in White Potato
Researcher : L. Victor
Fund Source : PCARR
Amount : P10,811.00

d. Project Title : All Philippine Trials (on Vegetables)
Researcher : L. Victor
Fund Source : PCARR
Amount : P45,309.00

e. Project Title : Strawberry Improvements for Highland Condition, Collection and Instruction (on-going)
Researcher : F. Hermano
Fund Source : PCARR
Amount : P15,000.00

f. Project Title : Varietal Evaluation of Chrysanthemum Under Highland Condition (On-going)
Researcher : A. Ladilad
Fund Source : PCARR
Amount : P15,000.00

5. Soils and Chemistry Researches

a. Project Title : Soil Conservation and Fertility Studies

- of Highland Vegetable Areas
(On-going)
- Researcher : C. Oliveros
Fund Source : PCARR
Amount : P15,000.00
- b. Project Title : Quickway of Identifying Nutrient Deficiencies in Vegetables and Other Crops
(On-going)
- Researchers : C. Oliveros, T. Merestela, and N. Puntawe
Fund Source : NSDB
Amount : P98,500.00
- c. Project Title : Trace Element Status of Vegetable Areas in Benguet (On-going)
- Researchers : R. Colting, C. Oliveros, and M. Toledo
Fund Source : NSDB
Amount : P96,000.00
- d. Project Title : Studies on the Effects of the Different Factors on the Behavior of Micro-elements in Intensively Cultivated Soils
- Researcher : C. Oliveros
Fund Source : NRCP
Amount : P81,083.00
- e. Project Title : Establishment of Farming System Involving Semi-Temperate Fruit Trees on Sloping Areas of Benguet
- Researcher : C. Oliveros
Fund Source : PCARR
Amount : P68,247.00
- f. Project Title : Cropping System in the Highland Vegetable Areas Involving Sweet Potato
- Researcher : R. Colting
Fund Source : PCARR
Amount : P20,414.00
- g. Project Title : Study on the Best Rate and Time of Application of NPK Fertilizer on Sweet Potato Under Highland Condition
- Researcher : C. Oliveros
Fund Source : PCARR
Amount : P18,965.00

- h. Project Title : Effects of the Different Rates of Organic and Inorganic Fertilizers on the Yield and Quality of Seeds of Radish, Pechay and Chinese Cabbage
 - Researcher : C. Oliveros
 - Fund Source : PCARR
 - Amount : ₱18,279.00

- i. Project Title : Foliar Fertilization on Vegetables
 - Researcher : C. Oliveros
 - Fund Source : PCARR
 - Amount : ₱16,749.00

D. Researches Funded by MSAC Administration

1. Department of Plant Science

This department had capable faculty members to carry out applied development researches. However, due to limited funds, no supportive staff and lack of facilities only a few were conducted by faculty members during the year.

1.1 Number of researches conducted during the year under report:

- a. Undergraduate Thesis
 - Completed 16
 - On-going 12

- b. Graduate Thesis
 - Completed 1
 - On-going 0

- c. Faculty Researches
 - Completed 5
 - On-going 3

d. Cooperative Researches -- two faculty members of the Department are conducting cooperative researches with San Miguel and Institute of Plant Breeding.

1.2 The faculty members of the Department of Plant Science,

particularly Prof. Elmo O. Sano, visited white potato and vegetable farmers along the Halsema Road (Mountain Trail) and extended to them technical advice.

1.3 Other Activities of the Department

Some faculty members of the Department participated in the drafting of the following:

- a. National Potato Program
- b. Presidential Decree for a Highland Crops Research Center
- c. Research Development Plan of the College

1.4 List of completed faculty researches

- (1) Breaking Dormancy of Potato seedpieces
- (2) Effects of some liquid fertilizers on flowering and yield of Garden Pea
- (3) White Potato Yield Trial in middle elevation
- (4) Adaptability Study of 5 white potato varieties from Australia
- (5) Effect of moisture stress on the growth and yield of white potato

1.5 List of on-going faculty researches

- a. Varietal Evaluation on Chrysanthemum under Highland conditions.
- b. Collections and Evaluation of Strawberry varieties under MSAC conditions.
- c. Effect of Weed Competition on the growth and yield of white potato.

1.6 Development Plan from 1978 Onward

For effective instruction, more and more relevant researches and wider scope of extension work, the following are recommended:

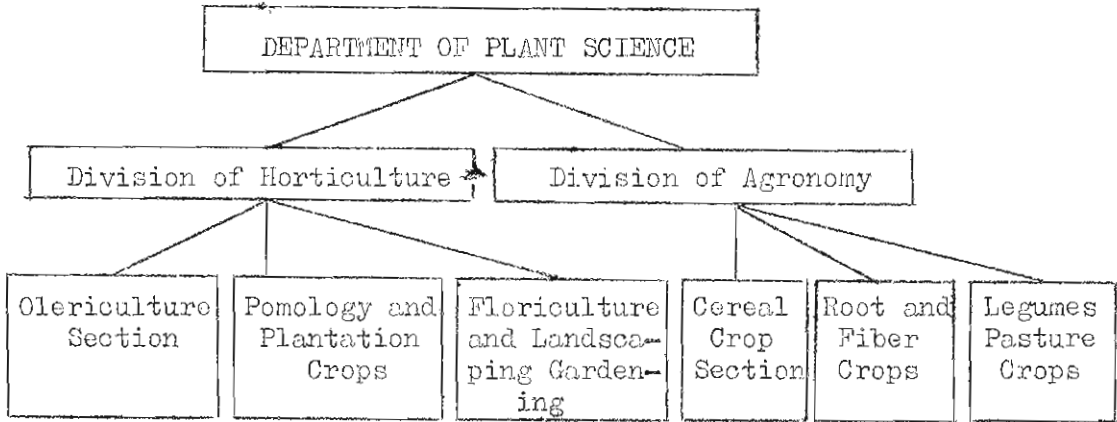
- a. Change the name of the Department of Plant Science to Department of Crop Science. This is important to separate and/or distinguish Botany from the department. Botany includes all plants, both wild and cultured while crop refers only to economic plants.
- b. The department should be organized into divisions and sections. This is necessary in order that researches will be done to other crops. Right now, almost all researches are concentrated on semi-temperate vegetables which are under Horticulture. There are no researches in agronomic crops such as rice and corn, casava, tobacco, etc.
- c. The following supportive staff are needed:
 - 1 - Clerk typist
 - 2 - Research Assistants
 - 4 - Farm Laborers

Considering that the Department is one of the biggest of departments in an agricultural college, these supportive staff are very necessary.

The following additional faculty members with specific majors are needed:

- 1 - Major in Agronomy (Cereals)
- 1 - Major in Agronomy (Fiber or Root Crops)

Figure 1 -- Proposed Organization Chart for the Department of Plant Science



| PROBLEM | OBJECTIVES | SOLUTION | INVOLVEMENT (Individual & Agencies) | TIME |
|------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------|
| | | 2.5 Classroom field supervision | | |
| | | 2.6 Conduct of remedial classes | | |
| | | 2.7 In-service training of professors & instructors | | |
| | | 2.8 Requirement of 18 units of education courses to technical professors and instructors | | |
| | | 2.9 Faculty conferences | | |
| | | 2.10 Attendance of faculty members to appropriate seminars and workshops | | |
| 3. Inadequate Research Funds | 3. Help Administration in getting research funds | 3.1 Make research proposals for submission to research funding agencies locally and abroad 3.2 Increase production in the demonstration | | 1978 |

E. MSAC Funded Researches Completed by Faculty

| <u>Department</u> | <u>Project Title</u> | <u>Researchers</u> |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1. Biological Science | Screening for Varied Resistant Against Tomato Late Blight, 1978. | E. B. Akiew J. E. Sa-ong |
| 2. Plant Science | The effect of moisture stress on the growth and yield of Irish potato, March 1978. | F. T. Bawang |
| 3. Secondary Voc-Ag and Science Education | Effects of some local liquor on astringency of oriental persimmon fruit | A. C. Tipayno E. B. Dimas |
| 4. Soils and Chemistry | Twenty-three (23) researches, too long to list down, were completed by the Soils-Chemistry faculty, staff and personnel in 1977-1978 | C. J. Oliveros R. T. Tambua J. G. Balaoing D. Alinio A. L. Jara R. David M. Posadas R. Colting |

F. Undergraduate and Graduate Student Researches Completed

| <u>Department</u> | <u>Project Title</u> | <u>Researchers</u> |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------|
| 1. Agricultural Engineering | A study on the moisture requirement of lettuce grown under MSAC conditions, October 1977 | M. Posadas A. B. Aromin |
| 2. Animal Science | (1) Feeding value of cassava and ground corn meal as feed supplements for growing and fattening swine | B. A. Sanchez S. E. Moresto |
| | (2) Comprehensive study of the effects of mango washing and anti-biotic on the growth of broilers, October 1977 | S. T. Lasdacan S. E. Moresto |

| <u>Department</u> | <u>Project Title</u> | <u>Researchers</u> |
|-------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | (3) The effects of varying levels of dried mungo pulp as feed supplement on the performance of broilers, November, 1977 | R. A. Cayanos S. E. Moresto |
| | (4) Effects of the levels of mungo pulp as a feed supplement in the performance of growing fattening pigs, December 1977 | A. M. Tomas S. E. Moresto |
| | (5) A study on the possibility of early weaning under MSAC conditions, January 1977 | A. L. Angawa S. E. Moresto |
| | (6) The effect of soybean as a protein source on the performance of broilers, March 1978 | F. S. Bayag S. E. Moresto |
| | (7) Effect of different litter materials as flooring on the performance of broilers, March 1978 | B. Y. Camiwet S. E. Moresto |
| | (8) A study on the most profitable age for marketing broilers, March 1978 | R. L. Cayad-an S. E. Moresto |
| | (9-18) Some ten (10) undergraduate theses, too long to be listed, were completed in 1977-1978 | J. A. Doga-ong V. V. Doria R. B. Galban S. E. Moresto T. A. Eguid J. S. Piasitao S. A. Guarin R. U. Manantan E. A. Reyna N. B. Sison J. D. Butay J. T. Aquino, Jr. |

| <u>Department</u> | <u>Project Title</u> | <u>Researchers</u> |
|-----------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Biological Science | (1) Epidemiological study and control of late blights of potatoes (<i>Phytophthora infestans</i>), August 1977 | J. E. Sa-ong E. B. Akiew |
| | (2) A comprehensive study of five granular insecticides corn ear-worm, November 1977 | M. R. Cuenta L. P. Molitas A. G. Embuido |
| | (3) Study of six different insecticides to control diamond back moth of cabbage, October 1977 | D. G. Anillo E. V. Cardona, Jr. |
| | (4) A comparative study of five kinds of insecticides on cabbage pest complex, March 1977 | M. A. Dasarbo A. G. Embuido E. V. Cardona, Jr. |
| | (5-14) Some ten (10) undergraduate student theses too long to be listed, were completed in | A. D. Biacan E. B. Akiew M. B. Cadaweng N. A. Bingcan A. B. Bragado J. M. Cimafranca B. S. Dennen L. M. Colting T. A. Khayad B. V. Pajarillo B. B. Pera L. P. Molitas I. W. Taligan |
| 4. Extension | (1) Tribal rites followed by Natonin farmers in rice production, March 1978 | E. G. Afingwan C. C. Consolacion |

| <u>Department</u> | <u>Project Title</u> | <u>Researchers</u> |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | (2) Tribal rites followed by farmers in Sadanga, Mountain Province, March 1978. | L. N. Agapito C.C.Consolacion |
| | (3) Common pests, insect pests, and diseases of vegetable crops and their control measures employed by farmers of the Social Laboratory Pilot Area, March 1978. | R. P. Barcena C.C.Consolacion |
| | (4) The program of the Bureau of Agricultural Extension in Kalintagan-Apayao, March 1978. | A. S. Lingbanan C.C.Consolacion |
| | (5) Crop protection program of the Social Laboratory Rice Farmer Cooperation in Nangalisan, Tuba, Benguet, March 1978. | E. G. Vicente C.C. Consolacion |
| | (6-8) Some three (3) undergraduate theses, too long to be listed, were completed in 1977-1978. | C. F. Delizo S. T. Regalado C.C.Consolacion |
| 5. Plant Science | (Please refer to report on preceding pages in this chapter. Some thirteen (13) completed plant science research projects were accomplished by this department.) | L. M. Walang D. S. Somera E. S. Zabala W. D. Dar E. G. Obiaco A. C. Tipayno F. G. Hermans T. Palileng E. O. Sano D. B. Polig W. Wongsechereon R. M. Acyapat L. Andrian A. B. Loy-odan E. P. Retate A. C. dela Cruz C. J. Oliveros E. K. Mamaril L. B. Victor D. R. Carpio |

G. MSAC Research Program for June 1978-May 1979

The studies that will be done by the College in 1979 are presented in details by commodity.

Research Program

1. Commodity: Soil and Water Conservation Skills

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|----------------------------------------------------------------------------------------------------------------------|---------------------------|
| a. Inventory of soil characteristics and land use planning of Region I. | P 132,162.00 |
| b. Soil conservation and fertility studies of highland vegetable areas. | 137,497.00 |
| c. Establishment of farming systems involving orchard, crops and livestock in highland areas. | 232,261.00 |
| d. Studies on the effects of the different factors on the behavior of microelements in intensively cultivated soils. | 146,801.00 |
| e. Determination of the rate of soil erosion and factors affecting it in highland areas. | 150,000.00 |
| f. Determination of water requirements of common highland crops. | 40,000.00 |
| g. Survey of the water management practices in Region I. | 60,000.00 |

2. Commodity: Fruit Crop

2.1 Strawberry

| | |
|----------------------------------------------------------|-----------|
| a. Strawberry improvement | 23,000.00 |
| 1) Breeding for adapted and disease resistant strawberry | |
| 2) Runner seed production | |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|----------------------------------------------------------------------------------------------|---------------------------|
| b. Mineral nutrition | 14,000.00 |
| 1) Studies on fertilizer requirement, kind, quantity and quality of fertilizer of strawberry | |
| 2) Studies on the method and time of application | |
| c. Crop protection | 8,500.00 |
| 1) Effective method of controlling pests and diseases | |
| 2) Studies on weed control on strawberry | |
| d. Water management | 25,000.00 |
| 1) Studies on water requirement, frequency and methods of irrigation | |
| e. Cultural and physiological studies | 8,000.00 |
| 1) Least/Runner pruning | |
| 2) Studies on flowering and fruit setting | |
| 3) Studies on planting system and cultivation | |
| f. Off-season production | 12,000.00 |
| 1) Studies on off-season production, use of plastic funnel and other plant covering | |
| 2) Effects of daylength and temperature on berry production | 74,000.00 |
| g. Post-harvest | 15,000.00 |
| 1) Studies on the container, shipping and storage | |
| 2) Processing studies | |
| 2.2 <u>Apple</u> | |
| a. Variety/Improvement | 16,000.00 |
| 1) Variety introduction and collection | |
| 2) Propagation studies on available apple variety | |
| b. Physical studies | 9,000.00 |
| 1) Leaf/Root/Stem pruning | |
| 2) Studies on flowering and fruit setting | |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|-----------------------------------------------------------------------------------------|------------------------------------|
| o. Mineral Nutrition | P 15,000.00 |
| 1) Studies on fertilizer requirement, kind quality and quantity of fertilizer | |
| 2.3 <u>Pears</u> | 14,700.00 |
| a. Variety Improvement | |
| 1) Variety introduction and collection | |
| 2) Propagation studies on available setting | |
| b. Physiological Studies | 10,000.00 |
| 1) Studies on flowering and fruit setting | |
| 2.4 <u>Oranges</u> | |
| a. Varietal Propagation and Indexing | 15,000.00 |
| b. Physiological Studies | 8,000.00 |
| c. Crop Protection | 7,000.00 |
| d. Nutrition | <u>15,000.00</u> |
| | Total <u>P280,000.00</u> |
| 3. <u>Commodity: Vegetable Crops</u> | |
| 3.1 <u>Cabbage</u> | |
| a. Crop Improvement and Seed Production | P 18,000.00 |
| 1) Breeding for high yielding and disease resistant | |
| 2) Seed production studies | |
| 3.2 <u>Asparagus</u> | |
| a. Crop Improvement | 13,400.00 |
| 1) Variety improvement; introduction, collection, and variety trials | |
| 2) Seed production studies | |
| b. Mineral Nutrition | 6,000.00 |
| 1) Studies on fertilizer requirement; quantity, quality and method of application | |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|--------------------------------------------------------------------------------------|---------------------------|
| c. Cultural Management | P 3,000.00 |
| 1) Studies on planting system | |
| d. Crop Protection | 2,600.00 |
| 1) Effective control measures of pests and diseases | |
| e. Water Management | 10,000.00 |
| 1) Water requirement, method and frequency of irrigation | |
| f. Post Harvest | 28,000.00 |
| 1) Harvesting, handling, processing and storage studies | |
| | |
| 3.3 <u>Garden Peas</u> | |
| a. Variety Improvement | 26,000.00 |
| 1) Collection, introduction and variety trials | |
| 2) Breeding for high yielding disease resistant and good quality pod pea | |
| 3) Seed production studies | |
| b. Mineral Nutrition | 9,000.00 |
| 1) Fertilizer requirement studies; quality, quantity and method of application | |
| c. Cultural Management | 4,000.00 |
| 1) Studies on cultivation, distance and method of planting | |
| d. Crop Protection | 4,200.00 |
| 1) Studies on the control of pests and diseases, particularly leafminer and root rot | |
| e. Water Management | 9,000.00 |
| 1) Water requirement, method and frequency of irrigation | |
| f. Post Harvest | 5,500.00 |
| | |
| 3.4 <u>Lettuce (Head)</u> | |
| a. Variety Improvement | 12,300.00 |
| 1) Collection and variety trials | |
| 2) Seed production studies | |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|--------------------------------------------------------------------------------------|---------------------------|
| b. Mineral Nutrition | P 5,500.00 |
| 1) Studies on fertilizer requirement; quality and quantity and method of application | |
| c. Cultural Management | 3,000.00 |
| 1) Studies on cultivation, distance and method of planting | |
| d. Crop Protection | 6,000.00 |
| 1) Effective control of weed and diseases of lettuce | |
| e. Water Management | 8,800.00 |
| 1) Water requirement, method and frequency of watering | |
| f. Post-Harvest | 17,000.00 |
| 1) Harvesting, handling, processing and storage studies | |
| | |
| <u>3.5 Celery, Cauliflower and Chinese Cabbage</u> | |
| a. Crop Improvement | 18,000.00 |
| 1) Variety collection and trials | |
| 2) Seed production study | |
| b. Mineral Nutrition | 25,000.00 |
| 1) Fertilizer requirement; quality, quantity and method of application | |
| c. Cultural Management | 15,000.00 |
| 1) Studies on cultivation distance and method of planting | |
| d. Crop Protection | 50,000.00 |
| e. Water Management | 16,000.00 |
| 1) Water requirement, method and frequency of watering | |
| f. Post-Harvest | 29,000.00 |
| 1) Harvesting, handling, processing and storage studies | |
| | |
| Total for Vegetable Crops | <u><u>1354,400.00</u></u> |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|-----------------------------------------------------------------------------------------------|---------------------------|
| 4. <u>Commodity: Mushroom</u> | |
| 4.1 Collection and breeding of various strains of the cultivated and wild species of mushroom | P 30,000.00 |
| 4.2 Mushroom breeding for varietal improvement and adaptability | 50,000.00 |
| 4.3 Control of pests and diseases of mushroom | 40,000.00 |
| 4.4 Post-harvest physiology and processing of mushroom | 71,402.00 |
| 4.5 Using local materials as growth media | 40,500.00 |
| 4.6 Utilization of mushroom--food processing | <u>21,850.00</u> |
| Total for mushroom | <u><u>P255,812.00</u></u> |
| 5. <u>Commodity: Root Crops</u> | |
| a. <u>White Potato</u> | |
| 1) Variety trials, selection and breeding | 50,000.00 |
| 2) Physiological studies | 60,000.00 |
| 3) Crop protection | 45,000.00 |
| 4) Off-season study | 20,000.00 |
| 5) Nutrition | 50,000.00 |
| 6) Post-harvest study | 25,000.00 |
| b. <u>Sweet Potato</u> | |
| 1) Variety collection, selection and yield trials | 60,000.00 |
| 2) Crop protection | 45,000.00 |
| 3) Physiological studies | 60,000.00 |
| 4) Off-season study | 20,000.00 |
| 5) Nutrition | 50,000.00 |
| 6) Post-harvest study | 25,000.00 |
| c. <u>Sweet Potato</u> | |
| 1) Variety collection, selection and yield trials | 60,000.00 |
| 2) Physiological studies | 50,000.00 |
| 3) Crop protection | 20,000.00 |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|-----------------------------------------------------------|---------------------------|
| c. 4) Nutrition | P 20,000.00 |
| 5) Post-harvest study | 15,000.00 |
| d. <u>Carrot and Giner</u> | |
| 1) Variety trials and collection | 30,000.00 |
| 2) Cultural studies | 30,000.00 |
| 3) Off-season studies | 15,000.00 |
| 4) Crop protection | 10,000.00 |
| 5) Nutrition | 10,000.00 |
| 6) Post-harvest study | 12,000.00 |
| e. <u>Other root crops (gabi, ubi, cassava, and tugu)</u> | |
| 1) Variety collection, selection and yield trial | 80,000.00 |
| 2) Physiological studies | 40,000.00 |
| 3) Other cultural practices | 24,000.00 |
| 4) Nutrition | 35,000.00 |
| 5) Crop protection | 45,000.00 |
| 6) Post-harvest study | <u>20,000.00</u> |
| Total for root crops | <u><u>P785,000.00</u></u> |

6. Commodity: Poultry and Livestock

| | |
|---------------------------------------------------------------------------------------------------------------------|---------------------------|
| a. <u>Poultry</u> | |
| 1) Comparative study of the different commercial broiler mash on broiler performance under highland conditions | 25,000.00 |
| 2) Formulation of poultry ratio using non-commercial feedstuffs | 30,000.00 |
| 3) Studies on farming systems involving vegetables and poultry | 50,000.00 |
| b. <u>Hog</u> | |
| 1) Using root crops as supplement for growth-fattening hogs | 40,000.00 |
| 2) Studies on the profitability of using vegetable refuse as feed additives | 50,000.00 |
| d. <u>Dairy</u> | |
| 1) Studies on the profitability of cut and carry system of feeding dairy animals supplemented with vegetable refuse | <u>75,000.00</u> |
| Total for poultry and livestock | <u><u>P270,000.00</u></u> |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|--------------------------------------------------------------------------------|---------------------------------------------------|
| 7. <u>Commodity: Plantation Crops</u> | |
| a. <u>Coffee</u> | |
| 1) Crop development, collection and propagation | F 20,000.00 |
| 2) Crop protection | 7,500.00 |
| 3) Nutrition | 12,000.00 |
| 4) Physiological studies | 12,000.00 |
| b. <u>Cacao</u> | |
| 1) Crop improvement; varietal collection and propagation | 20,000.00 |
| 2) Crop protection | 10,000.00 |
| 3) Nutrition | <u>12,000.00</u> |
| | Total for plantation crops <u>P93,000.00</u> |
| 8. <u>Commodity: Cut Flowers</u> | |
| a. <u>Chrysanthemum</u> | |
| 1) Cultural studies | 25,000.00 |
| 2) Crop protection | 15,000.00 |
| 3) Nutrition | 20,000.00 |
| b. <u>Roses</u> | |
| 1) Propagation and cultural studies | 20,000.00 |
| 2) Cultural studies | 18,000.00 |
| 3) Crop protection | 12,000.00 |
| 4) Nutrition | <u>17,000.00</u> |
| | Total for cut flowers <u>P127,500.00</u> |
| 9. <u>Commodity: Socio-Economics</u> | |
| a. (Gabi, Cassava, Camote, etc.) | |
| 1) Survey of production, consumption and utilization | 25,000.00 |
| b. Vegetables (sweet peas, lettuce, celery, beans, carrots, cauliflower, etc.) | |
| 1) Supply and price fluctuation studies | 60,000.00 |
| c. Root crops (Gabi, cassava, camote, etc.) | 30,000.00 |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 9. d. Vegetables (Irish potato, cabbage, beans, peas, cauliflower, lettuce, tomato, carrots, green onions, etc.) | |
| 1) Costs and returns studies | P 60,000.00 |
| e. Root Crops (Cabi, cassava, camote) | 30,000.00 |
| f. Fruits and Flowers | 20,000.00 |
| g. Tomato, cabbage, strawberry, Irish potato | |
| 1) Post-harvest handling studies | 75,000.00 |
| h. Cabbage and potato | |
| 1) Feasibility studies | 75,000.00 |
| i. Strawberry, potato and other perishable crops | |
| 1) Production programming | 225,000.00 |
| 2) Cold storage | |
| | <hr/> |
| T O T A L | <u><u>P600,000.00</u></u> |
| 10. <u>Extension</u> | |
| a. Survey of cultural practices of vegetable farmers in the highland areas | P 30,000.00 |
| b. Survey of cultural practices of rice farmers in the highland areas | 30,000.00 |
| c. Survey of farmer's responses to scientific farming practices | |
| d. Survey of tribal rites currently followed by farmers in the highland areas | 35,000.00 |
| e. The Peace Pact Practices of ethnic tribes in the highland areas | 20,000.00 |
| f. The Tlñgao and Cañao practices of ethnic groups of the Mountain Provinces | 35,000.00 |

| <u>Problem Areas</u> | <u>Budget Requirement</u> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| g. Program Implementation of the 1) BAEX 5) BAI 2) BPI 6) BPAR 3) DLGCD 7) DAR 4) B Soil in the highland areas | P 30,000.00 |
| h. Factors affecting agro-technology transfer in the highland areas | 20,000.00 |
| i. Productiveness of Extension agents under various farming systems in highland areas | 30,000.00 |
| j. Training needs of Development agents in highland areas | 25,000.00 |
| k. Adoption process and adoption variables in the vegetable industry | 20,000.00 |
| l. Formal and non-formal education in Benguet | 20,000.00 |
| m. Evaluation of non-formal education prog- ram in Agricultural College in Northern Luzon | 20,000.00 |
| n. Manpower requirements in agriculture in the Mountain Provinces | 20,000.00 |
| o. Value systems and differences in the perception by farmers development change in the implementation of rural develop- ment program in Benguet | 20,000.00 |
| p. Income and expenditure patterns of social laboratory farmers corporators | 10,000.00 |
| q. Common problems of social laboratory farmers and solutions they follow | 10,000.00 |
| r. Socio-economic studies of ethnic tribes of the highland areas | 25,000.00 |
| s. Farmers' attitudes toward savings, credit, and repayment | 25,000.00 |
| t. Training needs of out-of-school youth in Benguet | <u>20,000.00</u> |
| GRAND TOTAL OF SOCIO-ECONOMICS | <u><u>P1,080,000.00</u></u> |

H. Laboratory Equipment and Supplies

| <u>Qty./Unit</u> | <u>Item</u> | <u>Amount</u> |
|------------------|-------------------------------------------------------------------------|---------------|
| 1 unit | Kjeldahl digesting apparatus | P 16,750.00 |
| 1 unit | Stirring hot plat | 1,200.00 |
| 1 unit | Stirrer | 900.00 |
| 1 unit | Centrifuge 10,000 rpm | 5,000.00 |
| 1 unit | Atomic absorption spectrophometer | 240,000.00 |
| 2 units | pH meter | 6,450.00 |
| 1 unit | Spectronic 20 | 18,000.00 |
| 1 unit | Oven | 3,750.00 |
| 1 unit | Muffle furnace | 15,000.00 |
| | Glass wares | 30,000.00 |
| | Chemical reagents | 50,000.00 |
| 1 unit | Carbondioxide incubator for tissue culture | 12,380.00 |
| 1 unit | Labconco fiber glass glove box for bacteriology | 1,257.50 |
| 1 unit | Phase contract trinocular microscope with body for camera adopter | 19,000.00 |
| 1 unit | Photomicrographic camera | 9,690.00 |
| 1 unit | Barnstead distilling unit 10 liters/hr. | 10,000.00 |
| 1 unit | Fiberglass tissue culture hood | 15,000.00 |
| 2 units | Knapsack sprayer | 6,000.00 |
| 1 unit | Duster | 7,000.00 |
| 1 unit | Fume hood | 14,000.00 |
| 1 unit | Freezing mocrotome | 9,405.00 |
| 1 unit | Binocular microscope | 14,497.50 |
| 1 unit | Stereomicroscope | 8,410.00 |
| 3 units | Stereomicroscope for schools and colleges | 14,462.50 |
| 1 unit | Oven | 3,397.50 |
| 1 unit | Thelco incubator (glass door) | 9,562.50 |
| 1 unit | Sterilizing oven | 2,617.50 |
| 1 unit | Autoclave | 7,312.50 |
| 2 pairs | Neopene gloves | 37.50 |
| 5 pcs. | Insect counter | 292.50 |
| 3 pcs. | Eyepiece linear mocrometer | 292.50 |
| 3 pcs. | Stage micrometer | 288.90 |
| 3 pcs. | Microslide box, wood, 75 x 25 mm | 90.00 |
| 1 unit | Slide Projector | 7,500.00 |
| 1 unit | Insect drier cabinet with racks 16 x 47 x 84 inches | 2,125.00 |
| 1 unit | Insect relaxing jar | 1,125.00 |
| 1 dozen | Insect boxes with cover glass 48 x 24 inches | 500.00 |

H. Laboratory Equipment and Supplies

| <u>Qty./Unit</u> | <u>Item</u> | <u>Amount</u> |
|------------------|-------------------------------------------------------------------------------------|---------------|
| 2 units | Steel filing cabinet with 4 drawers, 18 7/8" L x 41 1/2" W x 50 1/4" H inches | P 4,875.00 |
| 6 pcs. | Sieve plate | 4,500.00 |
| 1 unit | Distilling apparatus | 9,000.00 |
| 4 units | Refrigerator, 10 cu. ft. | 7,000.00 |
| 2 units | Cabinet Dehydrators | 16,000.00 |
| 1 unit | pH meter | 6,450.00 |
| 2 units | Vacuum canners, 7 gal. cap. | 28,000.00 |
| 1 unit | Automatic can sealer | 2,000.00 |
| 2 pcs. | Brix hydrometer | 900.00 |
| 4 pcs. | Salometer | 100.00 |
| 1 doz. | Demyohons (Glass jar jug) | 600.00 |
| 3 pcs. | Measuring cup, 3 quart pyrex | 225.00 |
| 4 sets | Measuring spoon | 40.00 |
| 4 units | Heavy duty stoves | 1,600.00 |
| 1 pc. | Jelly thermometer | 480.00 |
| 2 pcs. | Food grinder | 650.00 |
| 1 unit | Trip balance | 300.00 |
| 1 unit | Weighing scale 250 kg. cap. | 950.00 |
| 1 doz. | Aluminum basin, big | 900.00 |
| 1 doz. | Aluminum tray | 360.00 |
| 4 units | Water bath canners/accessories | 150.00 |
| 1 doz. | Hot lift tongs, big | 120.00 |
| 4 pcs. | Aluminum pots, big | 300.00 |
| 1 doz. | Chopping knives | 60.00 |
| 6 pcs. | Plastic pails | 780.00 |
| 4 pcs. | Colanders, big | 360.00 |
| 1 unit | Flame photometer | 35,000.00 |
| 1 unit | Plant tissue dryer | 25,000.00 |
| 1 unit | Germinator | 10,000.00 |
| 1 unit | Cutting mills | 35,000.00 |
| 1 unit | Ball mill grinder | 35,000.00 |
| 1 unit | Moisture tester | 12,000.00 |
| 1 unit | Shaker | 8,000.00 |
| 1 pc. | Camera with complete accessories | 5,000.00 |

I. Transportation Facilities

| | | |
|---------|-------------------------------|--------------|
| 2 units | Pick-up (Ford), 1.5T capacity | P 180,000.00 |
| 2 units | Jeep | 35,000.00 |
| 2 units | Motorcycle (army brand) | 18,000.00 |

T O T A L P 233,000.00

K. Field Equipment

| <u>Qty./Unit</u> | <u>Item</u> | <u>Amount</u> |
|---------------------|------------------------------------------------------------------------------|---------------------------|
| 1 unit | Farm tractor, 65 H P with disc plow, disc harrow, rotavator, and dozer | P200,000.00 |
| 2 units | Hand tractor, Adriatics, 10HP | 26,000.00 |
| 2 units | Water pump, 4", 10 HP electrically operated | 25,000.00 |
| | Water pump accessories, pipes and fittings | 6,000.00 |
| 5 units | Knapsack sprayer | 2,250.00 |
| 2 units | Current meters, velocity flow measurement, propeller type | 3,500.00 |
| 1 unit | Planimeters | 2,000.00 |
| 2 units | Tensiometers | 800.00 |
| 12 pcs. | Soil stove | 4,000.00 |
| 1 unit | Power sprayer | 5,000.00 |
| T O T A L | | <u><u>P274,550.00</u></u> |

L. Crop Processing Equipment

| | | |
|---------------------|----------------------------------------------|--------------------------|
| 1 unit | Moisture meter, universal moisture tester | P 5,000.00 |
| 1 unit | Platform balance, fairback, 1000 kg. cap. | 1,800.00 |
| 1 unit | Weighing scale, 1.5 kg. cap. sensitive | 1,400.00 |
| 1 unit | Weighing scale, w0 Kg. Cap. | 150.00 |
| 1 unit | Plastic grinder | 450.00 |
| T O T A L | | <u><u>P 8,800.00</u></u> |

G R A N D T O T A L P131,834.90

M. Research Policies:

The RESD recommended policies to improve the standard operations procedure in the College, among which were:

1. The RESD must be provided copies of all researches conducted by students, personnel, and cooperating agencies.
2. Researches of other agencies conducted in MSAC land area should be covered by a memorandum of agreement.
3. No research of other agencies should be conducted in MSAC land area if the faculty/staff can do the same research.
4. Data collection from MSAC students, faculty and staff through interview, mailed questionnaires, and other methods shall have the prior approval by the Human Subject Committee of the institution.
5. Research proposals requiring money from the RESD budget must satisfy certain priority areas as identified by said office.
6. All cooperative researches should be arranged with the RESD.
7. Any income derived from private and administrative researches should be credited to the MSAC Research Fund.

Thirty percent of the net income in the case of students' theses if funded by the student and 100 percent if funded by the RESD.

8. Publications of the results of private, administrative, and students' theses and researches need the approval of the RESD Director.

Thesis advisers automatically become co-authors in case the research/thesis is published.

9. All departments should identify their research priorities in coordination with the RESD.

10. Proponents of research requiring approval and/or funding from the RESD are required to submit a copy of their bio-data (name, academic rank and the designations, educational background, researches conducted, awards and scholarships received) to go with the research proposal.
11. Staff researches particularly those requiring experimental areas conducted outside MSAC should be arranged through the RESD.
12. All researches (from proposal to report) must follow the MSAC research formats. The following information should be included in the research proposal: title, author(s), cooperators (name and address), objectives of the study, procedures, time schedule, area needed, and budget.
13. Research proposals submitted for funding purposes by other agencies requires the approval of the Director of the RESD.

N. Research and Publications Office

1. The Publications Office is presently being manned by one chief, one copy editor, and three clerks, including two casuals.

2. Accomplishments

a. Initiated the publication of the MSAC Research Journal, a quarterly publication of researches undertaken directly or indirectly by personnel or students of the college.

b. Prepared (gathered, typed and edited) some manuscripts for subsequent issues of the MSAC Research Journal.

c. Coordinated the student newspapers in the campus, namely, the Mountain Collegian, Mountain Breeze, and

Everlasting Newscope, and initiated their gradual merger into one unified student newspaper to avoid needless duplication of news and to widen the circulation among college and high school students while maintaining if but relatively minimizing the cost of printing.

d. Planned the continuance of the publication of the Farmer's News Bulletin.

e. Helped faculty members and students in typing and editing and/or illustrating of their papers on manuscripts.

f. Made available school supplies needed by students and personnel of the College.

g. Took care of correspondence with other schools and agencies regarding publications, especially regarding exchange of journal publications.

h. Rendered clerical and editorial help during conferences, especially those held in MSAC or co-sponsored by MSAC.

3. Income

Although the Publications Office is foremost for service rather than monetary gain, it made a net income of P1,950.68 during the period covering July to December, 1977.

This was, inspite of the fact that all the materials

and supplies were procured through consignment, there is only one typewriter for typing jobs, and the mimeographing machine has not been repaired adequately.

The income was derived mostly from typing and sale of common school supplies.

4. Problems and Needs

4.1 The Publications Office needs a Copy Editor, who should be, if possible, one with agricultural background. He should be employed as soon as possible.

4.2 Proofreaders are also needed.

4.3 Needed equipment like one more pica typewriter, a binding machine, a better mimeographing machine, a xerox machine, a drawing equipment, and closed cabinets should be procured.

4.4 There is a dire need for a complete printing press plant in USIG.

CHAPTER III

EXTENSION

A. Extension Program

The College extended services to rural farmers in various ways to help accelerate countryside development goals of the New Society.

1. MSAC--SEARCA Social Laboratory. -- Two staff members of the Department of Biological Services delivered a lecture on major pests of the service area during the MSAC--SEARCA Farmer Cooperators Seminar at Asin, Tuba, Benguet in September, 1977.

Another two staff members of the Department served as resource speakers during the first National Potato Production Course held at MSAC on January 4-13, 1978.

2. MSAC--NMYC National Agricultural Skills Training Program. -- The Agribusiness Department had been conducting follow-up of the terminated NMYC agricultural skills training program graduates who started new farm projects. They were given technical assistance and supervision.

3. Extension Services by Departments. -- The Department of Forestry helped in the coordination of the tree planting activities of the College in consonance with PD 1153. Some 10,000 forest tree seedlings of various

species were cultured during the year for planting in watersheds of the College and the community.

The junior students of the Department of Animal Science and Technology helped in the campaign for animal disease prevention in the rural areas by vaccinating 253 pigs against hog cholera, 2,158 chicks against fowl fox and new castle disease, 26 dogs against rabies, and 307 cattle. The vaccines were provided by the Bureau of Animal Industry. The vaccination done by the MSAC students were supervised by the faculty veterinarians of the College.

The faculty of the Department of Animal Science and students majoring in animal science extended services to the rural farmers by (a) assisting farrowing sows, (b) immunizing pigs and chickens, (c) injecting iron preparation, (d) treating sick animals, and (e) deworming livestock. The farmers visited the animal projects of the College and sought technical advice on animal raising. They bought stocks at prices within reach to start their projects.

Several faculty members of the Department of Plant Science, particularly Prof. Elmo O. Sano, had been visiting and extending technical advice to vegetable and white potato farmers at the Halsema Road (Mountain Trail).

A faculty member of the Department of Food Technology lectured and demonstrated on food preservation at a Seminar in Nursing in Baguio General Hospital on October 3, 1977.

The Department of Languages and Social Sciences served as a cooperator with the UP College of Education, Diliman, in conducting for the rural areas of the community a two-week seminar (intensive lessons using self-learning kits) in Filipino to elementary, secondary, and tertiary instructors. The KONTAD Cultural Troupe of the College gave several socio-cultural presentations to local, regional, and national audiences, and even foreign visitors on request of other institutions or agencies, public and private.

B. Production Projects and Incomes

The total income from the various production projects of the College for the Fiscal Year ending June 30, 1978 amounted to P166,369.30 compared to last year's P97,733.17.

| <u>Production Project</u> | <u>Personnel In-Charge</u> | <u>Net Income</u> |
|-----------------------------|----------------------------|---------------------------|
| 1. College Canteen | Mrs. O. N. Estepa | P 28,637.69 |
| 2. RSDC Guestel | Mr. I. B. Viado | 25,670.21 |
| 3. Balili Farm Project | Mr. E. O. Sano | 18,006.98 |
| 4. Swamp Vegetable Project | Mr. D. P. Dampilag | 14,760.60 |
| 5. Swamp Vegetable Project | Mr. J. P. Martes | 12,832.09 |
| 6. FAHP Canteen | Miss V. D. Tumbaga | 12,299.40 |
| 7. Ladies' Dormitory | Miss E. R. Mufana | 10,617.23 |
| 8. Swamp Vegetable Project | Mr. G. G. Bilango | 9,949.22 |
| 9. Floriculture Project | Mrs. A. G. Ladilad | 9,809.00 |
| 10. Poultry Project | Dr. R. B. Galban | 6,113.60 |
| 11. Swamp Vegetable Project | Mr. R. M. Bocalan | 6,097.21 |
| 12. Pomology&Veg. Project | Mr. A. C. Tipayno | 5,012.21 |
| 13. Swamp Vegetable Project | Mr. C. A. Tuguinay | 4,613.18 |
| 14. Publications | Mr. B. M. Balweg | <u>1,950.68</u> |
| | TOTAL | <u><u>P166,369.30</u></u> |

C. Community Environmental Development Activities

The College actively participated in enhancing the local environmental and beautification program of the new society to influence the development of human beings.

1. Five-Year MSAC Development YCAP Plan, 1978-1982. -- A plan entitled "MSAC Community Environmental Development Project", embraced areas to be developed and improved in a 722-hectare school reservation. All students and faculty directly involved in the scheme during in-and-off school hours started last year to work on the areas of the project, namely, infrastructure, agro-forestation, agro-industrial, production and extension, national highway cleanliness and beautification programs.

The behavioral objectives of the YCAP activities are to deepen the insight of students into the actual infrastructure development of the College as a miniature community and to develop positive self-reliant attitudes toward the attainment of the reform and development goals of the New Society.

The physical development objectives of the YCAP program are to intensify the exposure of students with close supervision in the infrastructure development and improvement projects and to provide work-oriented or activity-oriented activities which translate classroom learnings into actual realities which contribute to the economics and social

benefit of the community.

The plan projected a timetable of various activities to be done for five years from April 1, 1978 to March 31, 1982. For evaluation purposes, the baseline to be used would be the YCAP accomplishments noted as of April 1, 1978.

2. YCAP Accomplishments, 1972-1978. -- The YCAP activities of the College yielded positive improvement accomplishments:

| <u>Project Activities</u> | <u>Extent of Accomplishments</u> | <u>No. of Students Involved</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------|
| a. Filling up of road for concreting from Gate 4 to Secondary Vo-Ag Related Subjects Building | 400 meters | 2,525 College Students 40 MSAC/YCSC Officers & Members |
| b. Filling up of MSAC/Balili Farm Road | 350 meters | 517 Gen. Sec. Lab. students 500 Elem. Lab. pupils |
| c. Graveling of floriculture Road | 300 meters | 517 Gen. Sec. Lab. students 40 MSAC/YCSC Officers & Members |
| d. Maintenance of landscaping and cleaning of campus roads(5Kms) including drainage system and whitewashing of college concrete fence along National Highway(1.5Kms.) | 50,000 meters | 517 Gen. Sec. Lab. students 500 Elem. Lab. School pupils 100 College students 558 Vo-Ag Sec. students |
| e. Barbed wire fencing of MSAC/Balili Farm Road | 400 meters | 200 Gen. Sec. Students |

| <u>Project Activities</u> | <u>Extent of Accomplishments</u> | <u>No. of Students Involved</u> |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------|
| f. Maintenance of the 8-hectare main MSAC campus landscape and cleanliness program, including the 1.5 Km. National Highway | 8 hectares | 2,525 College students 517 Gen. Sec. Lab. Students 558 Vo-Ag and Ag-Hkng. students |
| g. Summer alnus tree planting along the Balili Riverside Flood Control Projects | 1,500 meters | 76 Gen. Sec. students (YCAP) (Off-school hours) |
| h. Cleaning and fruit tree planting in the MSAC Special Agro-Forestation Project (Ampasit, La Trinidad) | 1 hectare | 40 MSAC/YCSC officers & members |
| i. Sandpapering and wood-staining all classroom and laboratory tables, desks, & tables in all the buildings in the campus | 4,250 pieces | 40 MSAC/YCSC officers & members 500 Volunteer pupils & students |

3. Participation in the National Tree-Planting Program. Pursuant to PD 1153 and in accordance with PROFEM Administrative Order No. 1, 1977, the entire College population planted the required number of trees for 1977 during the months of September and October.

All students and personnel of the College planted each at least 12 assorted trees (pine, ~~agoho~~, alnus, ipil-ipil, coffee, etc.) in various areas of the 722-hectare school reservation.

A total of 49,704 forest tree seedlings were planted in 1977:

| <u>Departments</u> | <u>No. of Planters Registered</u> | <u>No. of Trees Planted</u> | <u>No. of Ha. Planted</u> | <u>Percentage of Survival as of 6/12/78</u> |
|----------------------------------|-----------------------------------|-----------------------------|----------------------------------------------------------------|---------------------------------------------|
| a. Sec. Vo-Ag. Ag-Hmkg. Educ. | 560 | 6,620 | Upper Bali- li Water- shed - 12.5 | 40% or 2,648 |
| b. Gen. Sec. Lab. School | 517 | 6,204 | Lower Bali- li Water- shed - 12.5 | 40% or 2,481 |
| c. Elem. Lab. School | 470 | 5,600 | Balili Ri- verside - 2.5 | 40% or 2,256 |
| d. College Department | 2,300 | 27,600 | Ampasit Wa- tershed) Agro- Forestation Project)-155.0 | 80% or 22,080 |
| T o t a l s | <u>4,147</u> | <u>49,704</u> | <u>182.5</u> | <u>50%</u> <u>24,852</u> |

The low percentage of survival of the trees planted last year is due to damages done by squatters and their animals in and outside the school reservation.

In the 1978 tree planting activity, the surviving trees will be ring-weeded and the dead ones will be replanted. Each of the college constituents shall be required to plant again at least 12 trees in the various areas of the 722-hectare school reservation.

D. Special Agro-Forestation Project

The MSAC/JOCV Experimental Expansion Project was conceived in July, 1976. An instructor and a JOCV assigned in the College scouted for a 10-hectare lot in the school reservation ideal for temperate and semi-temperate fruit trees, especially

for the Unshu and Fukuhara oranges found adaptable in the MSAC Pomology Experimental Orchard. The project is located at the Ampasit Watershed.

In October, 1976, a survey with contour mapping was undertaken on a record time. The area was increased to 50 hectares.

The project actually started operation on June 10, 1977 with only five (5) casual laborers who worked in clearing, spot terracing, bench terracing, road-and-trail construction, and planting trees. The number of laborers was increased on July 16, 1977 to nine (9) paid at P10.00 per working day of eight hours labor. At the time of writing, the project has twelve (12) casual laborers working in the initial area of the Agro-Forestation Special Project in addition to four (4) casual forest guards of the College.

The project has been manned by an Acting Director, a technical assistant, two JOCV'S, four casual forest guards, twelve casual laborers, and three other laborers working at the main Pomology Project of the College.

The main Pomology Project were planted with Unshu and Fukuhara oranges, apples, pears, peaches, persimon, figs, loquat, grapes and coffee trees. They are growing well with fruits.

The Agro-Forestation Special Project at the Ampasit Watershed were planted with 6,000 arabian coffee and 1,000 calam-

darin trees on a 7-hectare area operated in a short time, considering the number of laborers. The target of operation is 5 hectares per year. Despite the fact that these trees were planted only in August-November, 1977, most of these trees are now bearing fruits.

For windbreaks, some 5,000 alnus trees were planted on strategic portions of the Agro-Forestation Special Project. In other areas of the project, about 1,000 pine trees and narra trees were planted by some MSAC employees, teachers, and students.

On January 23, 1978 the irrigation system of the Agro-Forestation Special Project was started. The irrigation system consists of an irrigation dam, hydro-pump, pipes, fittings and water tank costing the MSAC and JOCV P150,000.00. Aside from the P150,000.00 MSAC/JOCV fund, P50,000.00 was allocated to the project for June 10, 1977 to December 31, 1977 and P270,000.00 for January to December 31, 1978 for operation and maintenance.

E. Rural Services of MSAC Personnel

Sixty-three teachers and employees were deployed for rural service in the depressed areas of their own respective municipalities from September 16, 1977 to November 15, 1977.

Number of personnel not yet deployed for rural service:

| | |
|----------------------------------|------------|
| Faculty members (Teaching) | 171 |
| Staff (Non-Teaching) | 39 |
| Supportive Staff(Casuals) | <u>31</u> |
| Total | <u>241</u> |

As of this writing, schedules are being prepared to deploy some teachers and staff members for the non-formal program of the College and the casuals for local development and improvement activities in the 722-hectare school reservation and in the immediate depressed areas of the community.

All those not deployed in 1977 shall be scheduled during the school year 1978-1979 to render a 30-day rural service each.

F. MSAC-RSDC Services

The Regional Staff Development Center of the College served as a training and re-training center for a continuing professional, technical, and socio-cultural development of staff and rural farmers by way of conferences, seminar-workshops, and symposia on a local, regional, or national level.

| <u>Theme/Title of Conference/ Seminar-Workshop</u> | <u>No. of Participants</u> | <u>Local/Regional or National</u> | <u>Inclusive Dates</u> |
|--------------------------------------------------------------|--------------------------------|---------------------------------------|----------------------------|
| 1) Family Planning & Sex Education | 200 | Local | 8/23-26/77 |
| 2) DAP - ACAP | 36 | Regional | 10/23-31/77 |
| 3) Farm System Development Corporation | 70 | Local | 11/6-12/77 |
| 4) Regional Consultation and Rural Development Workshop | 55 | Regional | 11/10-12/77 |
| 5) First National Potato Production | 50 | National | 1/4-12/78 |
| 6) DAR Executive Live-In Sem. | 80 | Regional | 2/22-3/10/78 |
| 7) Practical Arts Seminar - Workshop & Teaching Institute | 55 | Regional | 4/23-5/20/78 |
| 8) PTC-RD Training on Extension Workers | 35 | Local | 5/21-27/78 |

CHAPTER IV

ADMINISTRATION AND SUPERVISION

A. Fiscal Support

The National Government supported the Mountain State Agricultural College for the period July 1, 1977 to June 30, 1978 with a total appropriation of P8,252,520.00. This amount was spent for personal services, maintenance and operations, equipment outlay, and capital outlay.

B. Personnel Development

1. Number of Personnel. --- The number of teaching, non-teaching, and support personnel rose from 299 to 303. This was a minimal accretion to the work force of the College.

2. Promotions. --- Deserving teachers were promoted, to wit:

- a. One Executive Development Officer to Vice President for Development;
- b. Two Assistant Professor I to Assistant Professor II;
- c. Seven Assistant Professor I to Assistant Professor II;
- d. Four Instructor V to Assistant Professor I;
- e. One Instructor I to Assistant Professor I;
- f. Two Instructor II to Assistant Professor I;
- g. Two Instructor I to Instructor V;
- h. Two Instructor II to Instructor V;
- i. Seven Instructor I to Instructor II;
- j. One Copy Editor to Instructor II; and
- k. Four Assistant Instructor to Instructor I.

3. Teachers as Professionals. -- Majority of the instructors with teacher eligibilities had applied for registration as professional teachers under PD No. 1006, or had applied to take the board examination for teachers scheduled in April, 1978.

4. Recommendation. -- To promote further the abilities and capabilities of the staff and attract them to the development thrust of the government, it is recommended that the Civil Service Commission Regional Office be requested to conduct a Junior Executive Training Program at the College for its department chairmen and division chiefs. Such training will provide these supervisory officials a chance to upgrade their administrative competence.

C. School Sites

1. Relocation of Squatters and/or Claimants. -- To hasten the development of the Agro-Forestation Project and Northern Root Crops Research and Training Center, the College proposed to the squatters and/or claimants at site Ampasit, barangay Puguis that they be resettled elsewhere in any of the school sites, and they be compensated for their improvements.

The College obtained under Board Resolution No. 52, dated October 10, 1977, the authority to negotiate with the squatters and/or claimants concerning their relocation and modes of compensation for their improvements.

As offered by the College, every squatter/claimant shall be allotted a residential lot, with an area of 300 square meters, at a resettlement site. In addition, they shall be entitled to one of the following options:

a. The College shall pay for the permanent improvements such as buildings, stone terraces, and bearing fruit trees at prices to be determined by an appraisal committee that shall be created by the Board of Trustees.

b. The head of the squatter/claimant family will be employed as a laborer in accordance with existing policies and rules of the College.

c. The children of the squatter/claimant family will be allowed to pursue their secondary and tertiary education at the College for free (tuition and matriculation fees); provided, however, that the said children will pass all the academic requirements of the curricular year they will be enrolled in.

Eight squatter/claimant family heads agreed to be relocated. They chose to be compensated for their improvements that occupy an aggregate area of 6.1754 hectares of the agro-forestation project.

Accordingly, in a meeting held in Manila, on May 25, 1978, the Board of Trustees passed Resolution No. 40 creating a committee to appraise the improvements of the squatters/claimants at the MSAC agro-forestation and root crops project sites, with the stipulation that the Office of the Provincial

Assessor of Benguet be involved in the appraisal work and that the College pay the improvements in accordance with PD No. 1107.

Two sub-committees were formed to assist the Provincial Appraisal Committee, namely, the Provincial Sub-Committee and the MSAC Appraisal Committee.

The Provincial Sub-committee was composed of Atty. Manuel M. Reyes, Legal Officer, COA, Benguet Province; Eduardo V. Abastilla, Representative, Provincial Assessor's Office; and Catalino Gomez and Tomas P. Tagudar, Representatives, Provincial Engineer's Office.

The MSAC Appraisal Committee was headed by Theodore E. Arciso as Chairman. Members were Profs. Benjamin B. Dimas and Carlos T. Buasen and Mrs. Juliet D. Demot.

Pursuant to Executive Order No. 254, series of 1970, the Provincial Appraisal Committee was composed of Engr. Romeo J. Gomez, Provincial Assessor, Chairman; Provincial Auditor Honesto C. Belen and Provincial Engineer Anastacio O. Badua, Members.

The Provincial Appraisal Committee is expected to inspect and appraise the improvements of the squatters and/or claimants at the early part of school year 1978-1979.

2. Land Registration Cases Submitted for Resolution. --

These cases are LRC No. N-389(19), Record No. N-46937, Mountain State Agricultural College, Applicant, and CA-G. R. 55722-R, Filmore Laoyan, et al. versus Mountain State Agricultural College, et al., Oppositors-Appellants.

2.1 LRC No. N-389, Mountain State Agricultural College, Applicant. -- The application of the College for registration and confirmation of title to two (2) parcels of land under LRC No. N-389 was submitted for resolution on April 5, 1978 in an order as of that date by Judge George C. Macli-ing, Branch III, Court of First Instance of Baguio and Benguet. It was filed on January 8, 1975.

The two (2) parcels of land form part of the main campus, more particularly described in survey plan Swo-01-02-00001, sheet e, to wit:

| | |
|-----------------|-----------------------|
| Lot 7 | 79,331 Sq. M. |
| Lot 8 | <u>130,594 Sq. M.</u> |
| Total | <u>209,925 Sq. M.</u> |

2.2 CA-G.R. No. 55722-R, Filmore Laoyan, et al. versus MSAC, et al., Oppositors-Appellants. -- In a resolution dated May 29, 1978, the Court of Appeals denied the urgent ex-parte motion of counsel for the heirs of Agustin Ulep and the heirs of Marcelino Garcia for permission to file their appellants' brief and praying for 20 days notice to do so.

As pointed out by the resolution, CA-G.R. No. 55722-R was already submitted for decision since September 15, 1976.

The resolution was penned by the Sixth Division, Court of Appeals, of which the Honorable Criselito Pascual is the Chairman. Members are the Honorable Corazon Juliana Agreva and Rafael Climaco.

CA-G.R. 55722-R covers four (4) parcels of land described in plan Psu-122348 surveyed for Filmore Laoyan on December 21-22, 1948 and approved on August 29, 1949, to wit:

| | |
|-----------------|-----------------------|
| Lot 1 | 137,231 Sq. M. |
| Lot 2 | 8,499 Sq. M. |
| Lot 3 | 83,382 Sq. M. |
| Lot 4 | <u>12,094 Sq. M.</u> |
| Total | <u>241,206 Sq. M.</u> |

Application for registration and confirmation of title to the aforesaid four (4) lots were filed on July 23, 1964 under Land Registration Case No. N-129, Record No. N-26490, by Filmore Laoyan, and/or attorney-in-fact of other applicants, Elizabeth Laoyan Alinos, Sabel L. Bodilis, Mathew A. Laoyan, Cecily L. Sagubo, Robert B. Laoyan, Francisca L. Galgala, Stella L. Galo, Jaime Laoyan, and Victor Laoyan.

The College opposed the registration of Lots 1 and 4, Psu-122348. As pointed out by the College, Lot 1 of Psu-122348 forms part of Lot 1, Mn-68, Executive Order No. 99, series of 1914, as amended by Swo-4240, Executive Order No. 26, series of 1934, and that the same is within Lot 15, Nr-127 surveyed for the College on July 11-12, 1956 and approved March 5-August 20, 1957 and approved on January 29, 1959. Lot 4 of Psu-122348, according to the College, is a portion of Lot 2 of Nr-127.

In a decision rendered on July 10, 1973, Judge Pio R. Marcos of Branch I, Court of First Instance of Baguio City and Benguet, granted the application for registration of Lots 1, 2, 3 and 4 of Psu-122348 to the applicants.

The College presented on August 24, 1973 a motion for reconsideration and/or notice of appeal. Its record on appeal was approved on January 15, 1974.

D. Infrastructures

1. Agricultural Engineering Complex. -- This three-storey building is about 85 per cent complete. About P2.6 million was already spent for the edifice. Total cost upon completion is estimated to be P3,112,937.00.

2. Plans for New Buildings. -- Expected to be completed before the end of the school year under review are the plans and specifications of the following buildings:

| <u>Description</u> | <u>Estimated Cost</u> |
|----------------------------------------------|-----------------------|
| a. Root Crops Research and Training Center | P1,000,000.00 |
| b. Six-door Faculty-Staff Apartment Building | 500,000.00 |
| c. Biological Science Building | 980,000.00 |
| d. Agro-Forestation Field Center | 500,000.00 |
| e. Machine Shed | 150,000.00 |
| Total | <u>P3,130,000.00</u> |

Construction of the faculty-staff apartment building, biological science building, and agro-forestation field office is scheduled in the early part of next school year.

3. Concrete Loop. -- A two-lane concrete vehicular road in the shape of a loop linking Gate 2 to Gate 4 was started in April, 1978. As of the following month, one lane of the road was cemented from Gate 4 up to the frontage of the agricultural engineering building, at a cost of about P30,000.00. Estimated to be spent for the project is P130,000.00.

E. Board Resolutions Approved

The MSAC Board of Trustees, on recommendation of, and presentation by, the College President, passed and approved eighty (80) resolutions in six (6) meetings from May, 1977 to May, 1978.

The most important resolutions that relate to policies and salient programs are:

Series of 1977

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 38 - 39 | - Approved the revision/shortening of all degree programs of the College from five to four-year courses only, except the BS Agricultural Engineering which shall remain as a five-year course. |
| 40 | - Approved the curriculum for the new course in Bachelor of Science in Agricultural Engineering (BSAEng'g.), the opening of which was authorized by the same Board under Res. No. 19, s. 1977. |
| 41 | - Approved the change in the title certificate description of the one-year collegiate course from Farm Mechanics to Agricultural Mechanics. |
| 42-A | - Approved the grant of full scholarships to the enrollees in the Special Agricultural Science sections in the Secondary Vocational curriculum, effective June, 1977. |
| 51 | - Approved the Guidelines for the operation of the MSAC Cooperative Researches which shall govern all cooperative researches of the College with other agencies effective the 2nd semester, SY 1977-1978. |
| 52 | - Approved authority for the College President to negotiate with the squatters on the reservation, particularly with those within the Agro-Forestation Special Project, and the area designated for the Root Crops Center. |

Series of 1977

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 55 | -- Endorsed the elevation/conversion of the Mountain State Agricultural College to a university status, to be known as the Mountain State University (As amended by Res. No. 24, s. 1977), and authorized her to prepare and work for the said status. |
| 61 | -- Authorized the College President to apply the full force of the provisions of Department Order No. 63, s. 1976, relative the organization and activities of student organizations, fraternities/sororities, or any other student group or groups. |

Series of 1978

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | -- Confirmed referendum authorizing the College to enter into agreement with the JOCV for the development of the Agro-Forestation Project, and the allocation of P75,000.00 as counterpart of the College for the prosecution of the project. |
| 5 | -- Approved authority for the College to offer to its students a special student accident insurance plan at P5,000.00 each for an annual premium of P10.00 per student, collectible upon enrolment, as offered by the Philippine-American General Insurance Group, which covers each student 24 hours a day, 365 days a year, anywhere in the world, including drowning, snake and dog bites. |
| 6 | -- Approved the creation of a Student Financial Aide Office (SFAO) to service the financial needs of deserving students along scholarships, student assistantships, and emergency loan plan. |
| 8 | -- Approved the Agreement for security services, made, executed, and entered into by and between the College and the TOP Security and General Services, Inc., effective January 1, 1978. |
| 9 | -- Approved the grant of a dissertation and/or thesis assistance to academic personnel who are pursuing graduate studies on their own, in the |

Series of 1978

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | - amount of P3,000.00 to P4,000.00 for the doctoral, and P1,500 to P2,000.00 for the masteral programs respectively, subject to certain conditions to be spelled out in each agreement, and provided their dissertation or thesis proposals are approved by the College. |
| 10 | - Approved the Memorandum of Agreement made and entered into by and between the Mountain State Agricultural College and the Japanese Overseas Cooperation Volunteers (JOCV) on the 9th of January 1978, for the development of the Agro-Forestation Project of MSAC at the Ampasit site, Pagnis, La Trinidad, Benguet. |
| 15 | - Approved the graduation of four hundred sixty-nine (469) candidates from the various curricular offerings of the College, as of March 22, 1978, academic year 1977-1978, upon recommendation of the College Council. |
| 16 | - Approved the request of Ret. Pedro Baban to pay the sum of P7,500 in exchange for a Quitclaim Deed to be executed by the College over a parcel of land consisting of 271 square meters, at the Poblacion, La Trinidad, Benguet, under certain conditions to be spelled out in the deed. (The Quitclaim Deed was confirmed by the Board under Res. No. 26, s. 1978). |
| 17 | - Approved the request of Mr. Antonio Lucas to pay the sum of P7,500 in exchange for a Quitclaim Deed to be executed by the College over a parcel of land consisting of 371 square meters, at the Poblacion, La Trinidad, Benguet, under certain conditions to be spelled out in the Deed. (Confirmed by the Board of Trustees under Res. No. 26, s. 1978). |
| 18 | - Authorized the College President to negotiate with the Pacific Farms, Inc. for the conducting of cooperative researches on local pony and forage provided that the agreement is submitted to the Board for final action. |

Series of 1978

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22 | - Approved the request of Professor Jose B. Lubrica, Sr. to extend his DEC-LEAP scholarship toward the doctorate degree (Ed.D) at PCAT; Provided, he pursues the same on Saturdays and during summer terms, and that he renders services during the regular school days. This shall be effective the summer term, 1978. |
| 23 | - Approved and re-stated its position (Board of Trustees) that the powers and duty to receive and appropriate such sums of money as may be provided by law for the support of the College is vested in the governing Board, that it has the duty to review, approve and recommend the College budgetary proposals to the Budget Commission, which disposes it by providing such sums of or amounts of money as may be needed and justified for the support of the College; that it must prorate the amounts appropriated by law to the various programs and projects of the College. |
| 27 | - Approved the extension of the scholarship of Mr. Angel C. Cawat, IDEA scholar of MSAC at the Xavier University, Cagayan de Oro City for one summer more (April-May '78) with a cost of P1,753.00, which includes a one-way plan fare for him. |
| 29 | - Approved the general plans for the infrastructure projects of the College funded under the General Appropriations Decree, PD No. 1250, with P4,250,000, and authorized the College to undertake the same by administration subject to proper zoning, structural designs, building codes, and other government regulations on public buildings. |
| 31 | - Approved the increase in the honorarium rates of professors/instructors for overtime teaching during the regular and/or summer terms, effective the summer sessions (1978), in accordance with the schedules herewith proposed. |
| 39 | - Approved the policy to make the testing services at the Guidance and Counseling Office available to the general public, as a public service feature of the College, and authorized the charging of a moderate testing/service fee of P10.00 each client |

Series of 1978

| <u>Res. Numbers</u> | <u>Subject</u> |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 39 | - from government agencies, and P20.00 each from private entities; provided, that this shall be effective June, 1978. |
| 36 | - Approved the confirmation of academic rank of Assistant Professor I to the Chief Librarian, Mrs. Nora J. Claravall, and change of her tenure status from temporary to permanent, effective June 1, 1978. |
| 40 | - Approved authority to create a committee to appraise the improvement that may have been introduced by squatters on the Agro-Forestation and Root Crops Project sites; Provided, the office of the Benguet Provincial Assessor is involved, and provided further, that the College is authorized to pay the improvements as appraised by the committee in accordance with the provisions of Presidential Decree No. 1107. |
| 41 | - Approved authority for the College to designate a resettlement area for all squatters within the school reservation, and recommended the segregation of such area to the President of the Philippines; Provided, the area is properly surveyed and approved by authorities concerned; Provided further, that the College is authorized to create a committee to help implement the intents of this resolution. |
| 45 | - Approved authority for the College President to appoint some 23 or more substitute instructors vice several faculty members who are recipients of various scholarships, fellowships, and/or student assistantships under sponsorship by different agencies; Provided, the appointments shall be subject to confirmation by the Board either by referendum or during the next Board meeting. |

One of the six (6) Board meetings held during the period covered by the report, which coincided with the 53rd Commencement Exercises on March 22, 1978, was held on the Callege Campus, La Trinidad, Benguet.

RESEARCH ABSTRACTS
July 1977 - June 1978

A. Undergraduate Thesis

POLIG, DIZON B. November, 1977. Influence of leaf pruning and plant density on the growth and yield of Baguio bean.

Adviser - Mr. William D. Dar

The influence of leaf pruning and plant density on the growth and yield of Baguio bean (*Phaseolus vulgaris*) was studied. There were two treatments of leaf pruning, namely: (P₁) pruned plants, (P₂) unpruned plants. Five treatments of plant density were: D₁ (one plant per hill), D₂ (two plants per hill), D₃ (three plants per hill), D₄ (four plants per hill), D₅ (five plants per hill).

Pruned plants with one plant per hill gave the tallest plants. However, there was no significant difference between the height of the pruned and unpruned plants.

More total yields were harvested from the unpruned plants set at three plants per hill than in pruned plants. Unpruned plants produced the highest marketable yield when set at three plants per hill. Pruned and unpruned plants combined with one plant per hill produced the largest size of marketable pods at the same time produced lesser non-marketable pods.

Pruning the leaves did not produce longer pods. However, plants set at five plants per hill gave the highest number of pods which differed significantly from setting one, two and three plants per hill.

The dark green color of pods were observed in pruned plants. This was suspected to be due to less overcrowding of leaves of the pruned plants.

Antracnose and bean rust diseases were abundant in pruned plants having five and four plants per hill which were occasionally observed in plants that were pruned. This shows that pruning the leaves may lessen plant disease dissemination.

ABAN, MELANIO W. March, 1978. Yield performance of nineteen varieties of tomato under MSAC conditions.

Adviser - Prof. Demetrio S. Somera

The yield performance of nineteen cultivated varieties of tomatoes under MSAC conditions was studied at the Mountain State Agricultural College, La Trinidad, Benguet. The Randomized Complete Block (RCB) design was used. The nineteen cultivars used are the following: Marglobe, Manalucio, Marnande, Manapol, Rutgers, CVSF-2, Red Cherry; Cagayan, Clavito, Pope; Pink 29, Imelda, New Cherry, CVSF-5, H-2943, H-2272, H-4172, H-1813, and H-4275.

The experiment was conducted to determine the cultivated variety best suited with respect to growth and yield under MSAC conditions.

The highest percentage of fruit set was obtained from Cv. Pope with a mean of 27. Cv. Clavito, however, registered the highest number for fruits produced. Cv. Marglobe produced the highest number of fruits with a mean of 180 and the highest number of marketable fruits with a mean of 160. Likewise, it yielded the highest average weight per plant. The average weight per fruit was obtained from Cv. Manalucio, Cv. Pink 29 was observed to have the tallest stalks among the varieties tested under MSAC conditions.

ACYAPAT, RICO M. March, 1978. Effect of different organic fertilizers on the growth and yield of white potato. Adviser - Prof. Demetrio S. Somera

The effect of different organic fertilizers on the growth and yield of white potato was studied at the Mountain State Agricultural College, La Trinidad, Benguet, from January 1977 to March 1977.

There were five organic fertilizers used, namely: Control (C_0), chicken dung (C_1), rabbit manure (C_2), guano (C_3), compost (C_4), and Sagana 100 (C_5).

The tallest height on the weekly and the final growth measurement was obtained from plants fertilized with chicken dung. The shortest plants were attained from the control. The heaviest weight of vegetative parts was obtained from plants fertilized with chicken dung. The same plants produced the most profuse roots in terms of weight, while the control had the least roots.

Plants applied with chicken dung significantly produced more big and medium tubers in terms of weight. The rest

of the organic matter used attained heavier weight than the control. However, there was no significant difference in the weight of small tubers among the plants applied with organic fertilizers.

The plants fertilized with chicken dung produced the most number of tubers while the control plants produced the least. As expected, since more tubers were produced by plants applied with chicken dung, the weight of marketable tubers was also more. The compost plants produced the least weight of marketable tubers among the treated plants.

The total yield of the plants fertilized with different organic fertilizers differed. The control plants produced significantly less. This result seemed to imply that chicken dung is the best organic fertilizer for white potato.

AMBANLOG, RAYMUNDO B. April, 1978. Growth and yield performance of two varieties of cabbage, transplanted at different ages.
Adviser - Prof. Lucio B. Victor

The growth and yield performance of two varieties of cabbage transplanted at different ages was studied at the Mountain State Agricultural College from November 1977 to February 1978. The varieties used were Marion Market and Copenhagen Market while the ages of seedlings at transplanting were three-week-old (A_3), five-week-old (A_5), six-week-old (A_6), and seven-week-old (A_7). These were sown at staggered dates and transplanted in the field at the same time.

Marion Market headed and was harvested earlier, had more leaves at transplanting, taller seedlings at transplanting, higher percentage of survival, higher percentage of heading and more number of unwrapped leaves at harvest than Copenhagen Market.

The six-week-old transplanted seedlings and matured earlier, had highest percentage of survival; percentage of heading, most number of unwrapped leaves, at harvest and the biggest head then the other ages used. The seven-week-old seedlings were the tallest and had the most number of leaves at transplanting.

Copenhagen Market produced a higher mean crown diameter, total marketable yield, weight per head, and weight of

the vegetative parts than Marion Market.

The varieties as well as the ages of seedlings at transplanting did not affect the solidity of seeds.

The interaction of variety and age of seedlings at transplanting did not differ significantly in all data gathered.

ANDRION, LOURDES F. March, 1978. Response of celery to different levels of nitrogen and frequency of watering.

The response of celery to different levels of nitrogen and frequency of watering was studied from September to December, 1977, at the Mountain State Agricultural College. The treatments used for frequency of watering were as follows: F_1 (watered everyday), F_2 (watered every two days), F_3 (watered every three days), and for the rates of nitrogen level with fixed amount of phosphorous and potassium, were as follows: R_0 (0-100-150), R_2 (200-100-150), R_3 (250-100-150) kilograms or NPK per hectare.

There was no significant difference among frequency treatments. However, plants watered everyday gave the highest mean of height, length of stalks, weight of roots and total per treatment.

Highly significant differences obtained from the different rates of nitrogen level. Plants applied with 150-100-150 kilograms of NPK per hectare gave the highest mean of height, length of stalks and number of stalks and number per treatment. Plants applied with 250-100-150 kilograms of NPK per hectare gave the heaviest weight of vegetative parts and weight of roots and highest total yield per treatment.

No interaction between the frequency of watering and rates of nitrogen level was noted.

LOY-ODAN, ANA B. March, 1978. The effect of the different dosages of carbon disulfide (CS_2) in breaking the dormancy of potato seed tubers.
Adviser - Prof. Elmo O. Sano

The effect of the different dosages of carbon disulfide in breaking dormancy of the potato seed tubers was studied. There were six treatments with the following dosages: Control (T_0), 15 ml/m³, (T_1) 25 ml/m³,

(T₂) 35 ml/m³, (T₃) 45 ml/m³, (T₄) 55 ml/m³ (T₅).

Of the dosages applied, 25 ml/m³ effected the most multiple and uniform normal tuber sprouts and gave the highest percentage of germination (49.95%), with a highly significant difference from that of the control (7.70%). With a dosage of 25 ml/m³ tubers had the shortest length of time ready to be planted (43) days compared to those in the control which had the most number of days (85 days). The dosage 25 ml/m³ is the optimum dosage for breaking potato seed tuber dormancy.

WONGSECHAREON, WANNAPORN. February, 1978. The effects of different levels of nitrogen on the growth and yield of lettuce.

Adviser - Prof. Demetrio S. Somera

A study was conducted to determine the effects of different levels of nitrogen on the growth and yield of lettuce. The treatment used in kilogram N per hectare were: 0 (zero), 50, 100, 150, and 200.

The growth and yield of lettuce increased as the rate of nitrogen was raised from zero to 200 kilograms per hectare. Plants fertilized with 200 kilograms of nitrogen per hectare produced the widest leaf area, most solid head, heaviest head weight, and highest yield per plot. Plants fertilized with 100 kilograms, 150, 200 had statistically the same quality head yield in terms of compactness.

There was no difference between the weight of yield per head of plants applied with 150 kilograms and 200 kilograms of nitrogen per hectare. A side-dressing of 100 to 150 kilograms of nitrogen per hectare was observed to be enough for lettuce under the conditions of this experiment.

ANGAWA, ALFONSO A. January, 1978. A study on the possibility of early weaning under MSAC conditions.

The study was conducted to find out the possibility of early weaning under MSAC conditions from October to November, 1977.

Nine four-week-old piglets were used in this study. The complete randomized design was used with three treatments and three replication. Treatment A was weaned at six weeks of age, treatment B and C at seven and eight weeks,

respectively.

There were no significant difference among the different treatments in the initial weights, weekly gain in weight, and final weight. There was, however, a significant difference among the different treatments in the final gain in weight.

The piglets weaned at six weeks of age registered the highest final gain in weight of 3.83 kilograms while those weaned at seven weeks of age registered the highest weekly gain in weight of 0.64 kilograms.

BA-YAG, PERLAMENDA E. March, 1978. The effect of soybeans meal as a protein source on the performance of broilers.

The study was conducted to find out the effect of feeding broilers with soybean and to determine the best method of treating whole soybean seeds to remove the anti-trypsin substance.

A total of 160 straight run day-old broiler chicks (Peterson) was randomly allocated into four treatments. Each treatment contained 40 chicks with 10 chicks for each replication. There were four different dietary treatments studied.

There were significant differences between the experimental treatments and the control lot on the feed conversion efficiency gain in weight in feed consumption. The average final weight showed highly significant differences between the experimental lots and control group. The percentage of mortality was not significant.

Based on the average feed conversion efficiency and average feed consumption, treatment 0 (control) incurred the highest cost of feeds and feed supplement to produce a kilogram body weight followed by treatment 1 (raw bean), treatment 3 (boiled soybean) and treatment 2 (roasted bean).

Birds fed with roasted soybean showed the highest average final weight as compared with those given boiled soybean and raw soybean and those in the control. The birds in treatment 2 (roasted soybean) and treatment 3 (boiled soybean) had the same average gain in weight followed by treatment 1 (raw soybean). Birds in the

control had the poorest gain in weight.

CAYAD-AN, RUBEN L. March, 1978. A study on the most profitable age for marketing broilers.

This study was conducted to determine the most profitable age for marketing broilers. A total of 120 day-old broiler chicks was used. The birds were distributed at random into three treatments and replicated four times. The different treatments were as follows: Treatment A (sold at six weeks old), B (broiler sold at eight weeks old) and treatment C (sold at ten weeks old).

Result of this study showed that the broilers sold at ten weeks old (TC) earned the highest return over feeds, antibiotics and chick cost followed by the broiler sold at eight weeks old (Tb) and those sold at six weeks old. Based on the treatment means the difference between treatments C and B was insignificant.

The different treatments showed a highly significant effect on the total feed consumption, final weight and gross income.

Broilers sold at six (Ta) ranked first in feed conversion efficiency, followed by the birds sold at eight weeks (Tb) and birds sold at ten weeks (Tc). The difference in feed conversion efficiency between treatments A and B was not significant.

CAYANOS, ROBERT A. November, 1977. The effects of varying levels of dried mango pulp as feed supplement in the performance of broilers.

The study was conducted to find out the effects of varying levels of dried mango pulp as feed supplement in the performance of broilers at the Mountain State Agricultural College from February to April, 1977.

A total of 160 straight run day old broiler chicks (Hybro) was randomly distributed into four treatments. Each treatment of 40 birds were allocated to four replications with 10 birds for each replicate. Four levels of feed mixtures using mango pulp as feed supplement was studied.

There was a significant difference between the treated lots and control on the average final consumption. There

were no significant differences in the average final weight, average gain in weight, average feed conversion efficiency and mortality between the different experimental treatments and the control lot.

Birds in the control had the slight average final weight and average gain in weight compared with treatment C (15% mungo Pulp) and D (20% mungo Pulp).

Birds in the control and Treatment B (10% mungo pulp) had the same feed consumption followed by Treatment C (15% mungo pulp). Birds in Treatment D (20% mungo pulp) had the least average feed consumption.

Treatment D (20% mungo pulp) had the poorest feed conversion followed by Treatment C (15% mungo pulp) and B (10% mungo pulp). Control incurred the highest cost of feeds and the feed supplement to produce a kilogram body weight. Treatment C (15% mungo pulp) was the most profitable.

DORIA, VIRGINIA V. March, 1978. A preliminary study on the liveweight, dressweights and measurements and weight of the vital organs of cavies.

The experiment was conducted to determine the liveweight, dressweights, measurements and weights of the vital organs of the three breeds of cavies: *Cavia cutheri* (A) English or Bolivian cavies (B) *Cavia* or true cavies (C). A completely randomized design was used. The study was conducted in Malabago, Calasiao, Pangasinan from March to September, 1977.

Among the three breeds used, breed B registered the highest growth performance on their liveweights, dressweights as well as the dressing percentage of all the animals. It was also noted that breed B obtained the highest on the weights and measurement of the different vital organs of the animals. Breed B obtained the lowest in their liveweights, dressweights and measurement and weights of the different vital organs except on the measurements of the large and small intestines where it got the longest. However, during the duration of the study there was no mortality incurred. It was also noted that there was no significant difference among the three breeds.

DOGA-ONG, JANE A. March, 1978. A study of the levels of chopped forage as feed supplements for growing-fattening pigs.

The study was conducted to determine the effect of the different levels of chopped forage as feed supplements for growing-fattening pigs. It was conducted at the Piggery Project of the Mountain State Agricultural College, La Trinidad, Benguet from November 28, 1977 to February 28, 1978.

Twelve weanling filts of about two months old were divided into three treatments with differing concentrate feeds, namely: 70 percent concentrate feeds mixed with 30 percent forage; 85 percent concentrate feeds mixed with 15 percent forage; and pure commercial feeds as control.

The pigs fed with pure commercial feeds (T_1) had the highest final gain in weight than those feed supplemented with chopped forage. As to the cost of feeds to produce a kilogram gain in weight, supplementing with forage seemed to be cheaper than using pure commercial feeds although the difference was not significant.

Results of this experiment show that forage supplemented feeds are as good as pure commercial feeds. Since pure commercial feeds are very expensive than forage supplemented feeds, swine raisers may use free or cheaper grasses as supplement feeds for more profit.

EGUID, THOMAS A. March, 1978. The efficiency of frequency of feeding on the performance of broilers.

The study was conducted to determine the most efficient frequency of feeding.

A total of 160 day-old broiler chicks was studied, following the completely randomized design (crd). The birds were distributed at random into four treatments: T_1 (one feeding time), T_2 (two feeding time), T_3 (three feeding time), T_4 (four feeding time).

Results revealed that T_3 (three feeding time) was the best among the four treatments. Treatment three registered the heaviest weight with a mean of 12.90 kg. This was followed by T_2 (two feeding time) and T_1 (one feeding time) with mean of final weights of 12.77 and 12.68 kilograms respectively. Treatment four (four feeding time)

had the least mean of final weight of 12.18 kg. It was further observed that T₃ proved to be superior over the other treatments not only in terms of final weight but also in feeding conversion efficiency and weekly gain in weight. It was also noted that T₃ consumed an average of only 2.81 kilograms of feed₃ to produce a kilogram gain weight and an average weekly gain in weight of 1.74 kilogram.

Statistical analysis of the results, however showed no significant difference in final weight and feed conversion efficiency. However, T₃ (three feeding time) was found highly significant with a computed -F of 68.33 in the average weekly gain in weight.

FIASITAO, JULIAN S. March, 1978. Comfrey as feed supplement for rabbits.

This study was conducted to obtain some information on the stability of ground comfrey leaves as feed supplement for growing rabbits, in terms of feed consumption final weight gain, and feed conversion efficiency. Afsilin feed supplement was included as treatment 3. The different treatments were: T₀ (control), T₁ (3% ground comfrey), T₂ (5% ground comfrey), T₃ (Afsilin¹ feed supplement).

The completely randomized design (CRD) was used in the study.

The results revealed that supplementation of afsilin and 5% ground comfrey caused a slight increment on the final weight, gain in weight and feed conversion efficiency of the rabbits compared to that of the 3% ground comfrey and control which registered almost equal results. However, no significant difference was noted.

Based on the ratio of the cost of feeds and supplements to the gain in weight, Afsilin and 5% ground comfrey were cheaper by 0.13 as compared to the control.

LASDACAN, SAMUEL T. October, 1977. Comparative study of the effects of mungo washing and antibiotic on the growth of broilers.

The study was conducted to determine the effect of mungo washing on the growth of broilers and to compare

the results on the growth of broilers given antibiotics. The study was conducted at the Mountain State Agricultural College Poultry Project from February to April, 1977. A total of 120 day old chicks was used and equally distributed into four treatments, namely: T I (Antibiotic-- Terramycin) mixed with drinking water), T II -- 50:50 mungo washing and water, T III -- 35:65 mungo washing and water, T IV -- 20:80 mungo washing and water.

Results showed that Treatment II (50:50 mungo washing and water), T III (35:65 mungo washing and water), and T IV (20:80 mungo washing and water) had better feed conversion efficiency than Treatment I which was given antibiotics. It also showed that the treatment which was given mungo washing had higher gain in weight than Treatment I (antibiotic) except in Treatment IV which had slightly lower gain in weight than Treatment I.

Based on the findings, mungo washing can be given to the broilers (as a drink like antibiotic) for growth.

It was, however, found that there was no significant difference among the treatments as revealed by statistical analysis.

MANANTAM, ROBERTO U. March, 1978. The effect of corn, dried milk, and cassava as feed supplements on the performance of broilers.

The study was conducted to find out the effect of corn, cassava, and dried milk as feed supplements in the performance of broilers at the Mountain State Agricultural College, La Trinidad, Benguet from September to October, 1977.

A total of 160 straight-run day-old broiler chicks (peter-son) was randomly distributed into four treatments. Each treatment of 40 birds was replicated four times with 10 birds per replicate. The completely randomized design (CRD) was used.

The treatment used were as follows: T₀ -- (pure commercial feeds), T₁ (commercial feeds + 20 percent corn grit), T₂ (commercial feeds + 20 percent ground cassava), T₃ (com-mercial feeds + 10 percent corn - soya - milk).

There were significant differences between the control and the treated lots on the final weight, gain in weight and feed conversion efficiency. There were no signifi-

cant differences on the initial weight and cost per kilogram in weight as affected by different feed supplements and the control.

Birds in the four treatments had the same feed consumption because feeding was done on restricted basis.

Birds in T_3 (10% dried milk) and (20% corn) had heavier final weight, gain in weight compared to the T_0 (control) and T_2 (20% cassava).

Treatment 2 (20% cassava) had the poorest feed conversion efficiency and incurred the highest cost per kilogram in weight followed by the T_0 (control). Treatment 3 (10% dried milk) and T_1 (20% corn) gave the most profitable and economical as feed supplements.

It was observed that the percentage of mortality was very low.

REYNA, MARILOU A. March, 1978. The effect of early weaning on pig performance under MSAC conditions.

A total of 6 weanlings with different ages (weeks) was used in the study to determine the effect of early weaning on the growth of weanlings. Following the completely randomized design, the weanlings were randomly distributed into two treatments replicated three times with one piglet per replication. Piglets in T_2 were weaned on the conventional method of weaning at 8 weeks, while T_1 were weaned earlier at the age of 6 weeks. The piglets were given the same treatment until the end of the experimental period.

The results showed that early weaned pigs (T_1) gave the highest final weight of 18.23 kg. after the end of the study. Treatment 2 registered a final weight of 15.83 kg.

Statistical analysis showed that the differences in the initial weight, final weight, and feed efficiency were not significant both at 0.01% and 0.05% levels. However, in terms of gain in weight, the early weaned pigs registered the highest mean of 12.68 kg. as compared to piglets weaned at 8 weeks with 9.7 kg. mean gain in weight. The difference observed was statistically significant at 5% level but insignificant at 1% level.

Considering all factors, T_1 or early weaning at 6 weeks proved to be better because the weanlings could convert the feeds efficiently and had higher gain in weight than pigs weaned on the conventional method of weaning.

SEGMUNDO, GUARIN A. March, 1978. The effect of time of breeding on time of farrowing.

The study of 15 in-heat sows of the Large Black, Large White and Landrace breeds were bred at the corresponding time schedule following the Completely Randomized Design with 3 treatments. Each treatment was replicated 5 times. The treatments were as follows: Treatment A (bred at 8:00 o'clock A.M.), Treatment B (bred at 3:00 o'clock P.M.), Treatment C (bred at 10:00 o'clock P.M.),

All the 15 in-heat sows were bred during their second day of heat at random by boars of the Large White and Poland China breeds. The natural method was employed.

The farrowing time was based on average timing which is assigned to light and dark periods-- with the former timed from 6:00 A.M. to 6:00 P.M. and the latter from 6:00 P.M. to 6:30 A.M.

Sows that farrowed during the dark period were bred at 8:00 A.M. and 10:00 P.M. with the farrowing time 1:56 A.M. and 4:44 A.M., respectively. Likewise, three out of five sows bred at 3:00 P.M. and farrowed at 2:48 A.M., bringing in a total number of thirteen sows giving birth during this period. That only two sows farrowed at 8:45 A.M. indicated thirteen per cent equivalent response of the economical day time farrowing consensus.

Sows bred at 3:00 P.M. had a mean gestation period of 112.8 days which is shortened than that of sows bred at 8:00 A.M. and 10:00 P.M. with gestation period of 114 and 115.4 days respectively. These data were significant when statistically analyzed.

Statistical analysis of the data in terms of size of litters, weight of litters at farrowing time interval between the first and last borne litters, and time the sows farrowed their first litter showed no significant difference among the different treatment means.

B. Graduate Thesis

DAMPILAG, DARIO D. October, 1977. Influence of spacing and seed size on the yield of two varieties of Irish potato. Major Professor - Prof. Conrado J. Oliveros

The influence of planting distance and seed sizes on the yield of two Irish potato varieties (Isola and Hydra) were studied from November 1975 to February 1976.

The distances used were: 20 x 30, 30 x 30 and 40 x 30 cm. between hills and rows, respectively. The size of seed pieces ranged from 30-54, 55-75, and 76-100 grams for small, medium, and large seeds, respectively.

The results showed that more stems were produced from both Isola and Hydra when large-sized seeds were used at a distance of 20 x 30 cm. The lowest number of stems and weight of haul were obtained from small seeds planted at a distance of 40 x 30 cm.

The wide leaf areas were obtained from Isola using small-sized seeds planted at 20 x 30 cm. followed by the medium-sized seeds of hydra using the same spacing. On the other hand, the smallest leaf area on both varieties was obtained from large sized seedpieces planted at a distance of 40 x 30 cm.

The yield of both varieties was highest at 20 x 30 cm. using large-sized seeds. The lowest yield was obtained from small seed size of Isola at 40 x 30 cm. spacing. The results showed that large-sized seeds gave higher yield than the other sizes of seeds at planting distances used.

Heavier extra large-sized tubers were obtained from 40 x 30 cm. spacing over the similar yield at 30 x 30 and 20 x 30 cm. Similar weight of large-sized tubers were obtained from 40 x 30 cm. and 20 x 30 cm. spacing over those from 30 x 30 cm. Both medium and small sized yields were heavier at 20 x 30 cm. distancing and decreases as the space between seeds was reduced.

Small and large-sized seeds yielded similar weight of extra large tubers over the extra large-sized tubers obtained from medium seeds. Small, medium and large-sized seedpieces gave comparable weight large-sized yield. Medium sized seeds yielded the highest weight of medium-sized tubers with small seeds giving the lowest. Small-sized yields were more of large-sized which decreases as size of seedpieces was reduced.