



1996 ANNUAL REPORT



REPUBLIC OF THE PHILIPPINES

Benguet State University

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OFFICE OF THE PRESIDENT

His Excellency
FIDEL V. RAMOS
President
Republic of the Philippines
Malacañang, Manila

Thru: Dr. Ricardo T. Gloria
Secretary
Department of Education, Culture and Sports
and Chairman, Board of Regents
Benguet State University

SIR:

I have the honor to submit the Performance Report (Annual Report) of the Benguet State University, La Trinidad, Benguet for fiscal year 1996.

This report presents the accomplishments of the University in its four-fold functions: instruction, research, extension and production as they relate to the goals of the Philippines 2000. Our achievements could not have been attained without your Excellency's and the Board of Regents' support, the cooperation and efforts of our faculty, non-teaching personnel and students.

Thank you for your Excellency's continued support to our programs and projects geared towards the improvement of the quality of life in the Cordillera in particular and of the entire nation in general.

Very respectfully yours,

CIPRIANO C. CONSOLACION
President

Table of Contents

	Page
Endorsement Letter	i
Table of Contents	ii
Mandate, Mission and Objectives	iv
Organizational Structure	v
Board of Regents	vi
HIGHLIGHTS	1
INSTRUCTION	
The Colleges	5
College of Agriculture	5
College of Arts and Sciences.	5
College of Eng'g. and Applied Technology	6
College of Forestry	6
College of Home Economics and Technology	8
College of Nursing	9
College of Teacher Education	9
College of Veterinary Medicine	10
Institute of Public Administration	12
Institute of Physical Education and Sports.	12
Graduate School	12
Academic Programs	13
Curricular Offering	18
RESEARCH & DEVELOPMENT (R & D)	19
Accomplishments	
Northern Philippines Rootcrops Research and Training Center (NPRCRTC)	19
Horticultural Research and Development Institute (HORTI).	29
Highland Agro-Forest Institute (HAFI).	34
Institute of Highland Farming Systems (IHFS)	34
Highland Socio-Economic Research Institute(HSERI)	35
Technology Awards	36
DEVELOPMENT PROGRAMS AND LINKAGES.	37
EXTENSION SERVICES	43

THE INCOME GENERATING PROJECTS (IGP's)	43a
UNIVERSITY STUDENT SERVICES	46
Library Services	46
Student Organization Services	46
Guidance and Counseling Services	46
Student Financial Aid Services	46
Testing Services	49
Placement Services	49
Student Housing Services	49
Health Services	49
RESOURCES	50
Manpower Resources	50
Financial Resources	59
Physical Resources	61
Executive and Administrative Officials	64

MANDATE

The University shall provide graduate and undergraduate courses in the arts, sciences, humanities, professional fields in agriculture, natural sciences, technology and other technical courses as the Board of Regents may determine and deem proper. It shall promote research, extension, agribusiness and advanced studies and progressive leadership in various specializations (Section 2, P.D. 2010).

MISSION AND GOAL

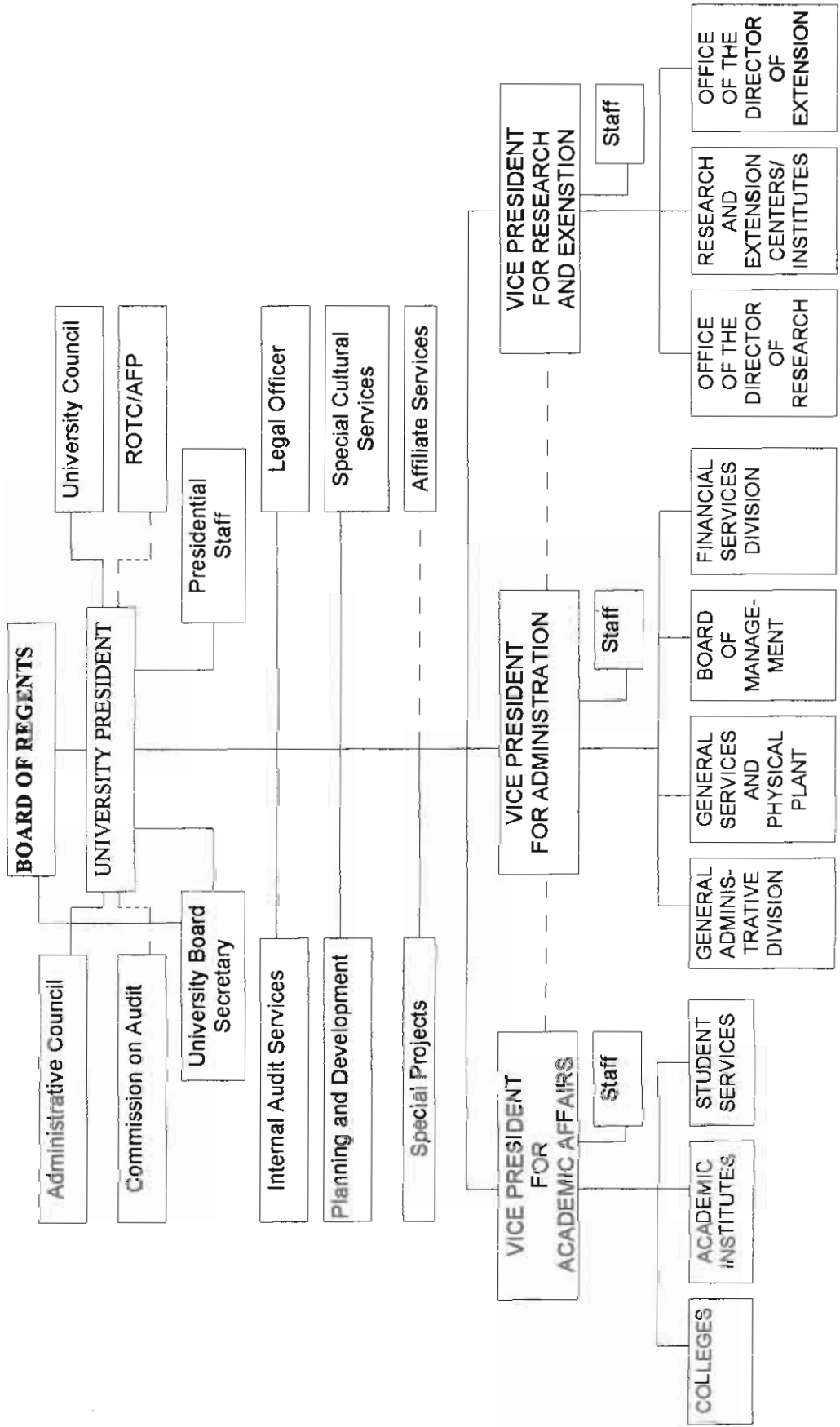
The University serves as a force that propels development in the Cordilleras and its nearby lowland provinces through its four functions: Instruction, Research, Extension and Production. To realize this mission, the University is committed to the development of man, his community and his environment that he may become self-reliant and socially responsible.

OBJECTIVES:

The University aims to:

1. Provide quality education with emphasis on the attainment of educational goals as provided by the University's mandate;
2. Embark on programs that will provide graduates with skills, knowledge and capabilities for gainful employment;
3. Formulate personnel, faculty development programs to enhance efficiency, effectiveness and economy in their performances;
4. Develop progressive leadership among students not only through instruction but also through social, civic, and cultural activities;
5. Undertake appropriate researches relevant to the needs and development of the Cordillera and other service communities;
6. Initiate and implement quality extension projects in the Cordillera and other highland area projects for self-sufficiency; and
7. Initiate and assist in the improvement and expansion of home industries and agribusiness projects for self-sufficiency.

BENQUET STATE UNIVERSITY Organizational Chart



BOARD OF REGENTS



HON. RICARDO T. GLORIA
Secretary, Department of Education,
Culture and Sports
Chairman

*→ Angel C. ...
Chairman ...*



HON. CIPRIANO C. CONSOLACION
President, Benguet State University
Vice-Chairman



HON. JUAN B. NGALOB
Regional Director, NEDA-CAR
Member



MS. GRACE T. BENGWAYAN
Board Secretary IV



HON. CHESTER B. ALIPIT
President, BSU Alumni Association, Inc.
Member

- **Fourfold Functions.** The year in review saw the University hurdle more vigorously its fourfold functions : Instruction, Research, Extension, Production. Aside from doing the fourfold functions the University also engaged on other educational thrusts and concerns.

- **Enrollment.** The average total enrollment for the first and second semester for school year 1996-1997 is 6,342. This enrollment is distributed among the different courses with the most enrollees in Bachelor of Science in Agriculture, followed by Bachelor of Science in Education and Bachelor of Science in Forestry. The number of graduates in the various degree and non-degree programs was 1,345 or 21% of the total enrollment.

- ✓ • **Academic excellence.** In pursuit of academic excellence and effectiveness, the University worked on the accreditation of the programs of the nine colleges in the University. The Accrediting Agency of Chartered Colleges and Universities in the Philippines, Inc. (AACCU) accredited all the degree programs of the various colleges. Five colleges passed level II from level I and four colleges, level I from self-survey.

- ✓ • **Board passers.** The University's graduates excelled in board examinations. The percentage of passing is 74.45 in the College of Education. A 100% passing rate was

obtained among the graduates of the College of Home Economics and Technology.

The nursing graduates obtained 82% passing rate, which was a decrease from the 100% passing rate of the first two batches of graduates. An average passing rate in all the licensure examinations taken by the graduates in various courses was 67%.

- **Recognition/Awards.** The faculty and students of the University were recognized for their excellent performance in the national level. *Dr. Franco T Bawang*, a faculty member of the College of Agriculture and appointed as University Vice President, was cited as one of the ten outstanding teachers of the Philippines by Metrobank. On the part of the students, *Ben Luis, Jr.*, a high school student, was named one of the ten outstanding young scientists of the Philippines by the Department of Science and Technology and Shell Foundation Philippines, Inc. In the college level, *Judiel Chawag* was also cited as an "outstanding nutrition student of the Philippines " by the National Nutrition Council.

- **Scholarship.** Opportunity to higher education was open to poor but deserving students through scholarship grants and financial assistance. For 1996, a total of 434 students availed of full or partial

scholarship grants. The sponsors of these scholarships were government as well as non-government agencies, civic agencies, and benevolent individuals.

✓ • **Research.** The research and development programs of the University was implemented effectively by five specialized research centers and institutes. At the same time, faculty researches were conducted in different colleges.

A total of 44 researches were conducted in the University. Of these, 22 were BSU-funded and the other 22 were provided with additional financial assistance by either local or national government agencies and international funding agencies. From these researches, 50 significant information and technologies which had practical application to target clientele, were generated.

✓ • **Extension.** For extension services, four outreach programs were implemented: Banana Pilot Program; Fish Seeding of Am-burayan River and Loo, Buguias; Integrated Pest Management; and Feasibility Study of Water Supply in Tublay, Benguet. Three training programs on teaching strategies and module formulation on low cost instructional materials were coordinated by the Extension Office to four secondary schools of Benguet and

Mountain Province. The Agri-school on the Air was started; the various college extension programs were institutionalized; extension brochures were launched; and the three-year extension agenda was launched. For training programs, the Strawberry Hall was carpeted and furnished. An amount of P 638,000 was solicited to fund the extension program of the University.

✓ • **Staff development.** To improve instructions at all levels, faculty and staff development was pursued. A total of 72 scholarship, training, and assistantship grants were awarded to the faculty and staff. Grants included overseas travels covering workshops, paper presentations, visits, research collaborations.

Among the faculty and staff who pursued their graduate studies, 13 obtained the doctoral degree and six the master's degree.

The permanent positions in the University as of December 1996 totalled 502, with 270 or 54% belonging to the faculty and 232 or 46% to the non-teaching group. As to tenure of status, 476 were permanent and 18 were temporary.

On academic ranks of the 270 teachers, 68 or 25.11% were profes-

sors; 77 or 28.52, associate professors; 79 or 29.26%, assistant professors; and 46 or 17.03%, instructors.

- **University services.** The University was frequented by visitors composed of students, faculty members, researchers, government officials, farmers and managers of development projects from all over the country and abroad. As recorded in the President's Office, a monthly average of 800 visitors visited the University in 1996. The leading development and research projects visited were the Strawberry Farm, the Food Processing Center, the Tissue Culture Project, and the Diadegma Rearing House. A total of 9,526 visitors were accommodated during the year under review.

- **Extension/Linkages.** The University continued expanding its scope of linkages/tie-ups and partnership programs with various educational and research institutions as well as business sectors and non-government organizations here and abroad. The University established partnership programs with the University of Ghent, Belgium; Sangju National Polytechnic University, Korea; Shell Philippines Foundation,

EDPITAF, PCARRD, DOST-TAPI, UP Los Baños, LGUs, ACIAR Philippines; University of Hongkong; DA, FIDA, BSWD, PTRI, CIP, UPWARD, SAPPAD, DATBED, TESTA, ADB, UNDP, DOE, NEDA-CAR-TRP, BAR NAPHIRE and with NGOs.

- **Physical development.** The physical development of the University was given priority attention. The grounds were landscaped; ornamental plants were planted in almost all the colleges. By actively implementing the War on Waste program, the University had kept grounds clean, trim and green. At the same time, seven buildings of seven colleges were completed during the year. The perimeter fencing prevented the encroachment of squatters on the land reservation of the University.

- **Budget.** The total 1996 budget appropriation of the University from the National government was P99,058,883 or an increase of P3,997,040 from the 1995 appropriation. The total capital outlay was P11,694,800, P3,542,500 and P8,152,350 of which were allocated for equipment and books, respectively.



Pres. Fidel V. Ramos awarding the Medallion to Dr. Franco T. Bawang, University Vice President and Faculty of the College of Agriculture (CA) for being one of the Ten Outstanding Teachers of the Philippines, photo was taken at Malacañang. Looking on are (R-L): Sec. Ruben Torres; a Metrobank Official; Sen. Albert Romulo, Final Search Committee Chair; President Fidel V. Ramos; Dr. Franco T. Bawang, Sr., the awardee; Dr. George Ty, President, Metrobank Foundation; Dr. Mapa, Vice President, Metrobank Foundation; Mr. Anicieto Subrepaña, Executive Director, Metrobank Foundation.



Ben S. Luis, Jr. a high school student is shown receiving his award as one of the ten outstanding young scientists of the Philippines by the Department of Science and Technology and Shell Foundation Philippines, Inc.

THE COLLEGES

The colleges functioned according to mandated tasks. Aside from instruction, which is their main function, the colleges engaged in the other functions to include research, extension and production.

College of Agriculture

For accessibility the dean's office was transferred to the first floor of HARRDEC. The classrooms used as faculty rooms were vacated to give way to students' need to have wider rooms for lecture and other activities.

The Office of the Dean and the Geographic Information System-Land Resources Information System(GIS-LARIS) Office were grilled as a security measure against criminal elements.

Equipment and laboratory supplies were acquired during the year. These equipment included two computers, a photocopier, a ph meter, grass cutter, audio production system. Several laboratory apparatuses and a motorcycle were also purchased.

Reference materials for the college reading room were donated by the Agriculture Training and Educational Program (ATEP).

The college participated in varied social activities. In the search for Miss University Intramurals, Miss Agriculture was first runner-up, and in the University Intramurals, the College lost to the College of Teacher Education for championship.

College of Arts and Sciences

The College of Arts and Sciences is tasked to offer the basic courses for the first two curricular years required by the various degree programs of the University. It also offers major courses for BSE students of the College of Teacher Education in Physics, Mathematics, Biology, Social Studies, English and Filipino. The College offers two degree programs: Bachelor of Science in Applied Statistics (BSAS) and Bachelor of Science in Environmental Science (BSES).

The five departments of the College had 64 faculty members, three clerks, two laboratory technicians, three utility workers and three student assistants.

Instruction in the college has been continuously upgraded with faculty members being sent for graduate studies, trainings and exchange professors programs. Two faculty members were sent to Sanju National University, South Korea to

teach English.

The department of Biology and Chemistry had 11 on-going researches. The department of Humanities had completed two research projects during the year under review.

The College initiated a functional extension program - *adoption of a countryside national high school in farflung Ampusongan, Bakun* through the recommendation and coordination of the Benguet Schools Divisions Superintendent Office. The expertise of the college was shared by the faculty and staff of said school and neighboring high schools.

Some faculty members of the college were invited as lecturers on campus journalism and research.

Some college activities worth recognizing are the Intensive English Training Program to Korean students, and the BSU-Sanju National University Exchange Visit Program for professors and students.

College of Engineering and Applied Technology

The college was accredited to level I by the Accrediting Agency for the Chartered Colleges and Universities in the Philippines (AACCUP),

on December 10-12, 1996 and successfully passed the level I status.

Fifty-nine percent (59%) of the graduates who took the Board Examination passed it. The percentage of board passers may have to be increased which means upgrading instruction by improving the laboratory equipment, facilities and instructional skills of faculty.

During the year, three faculty members participated in international trainings related to agricultural engineering, wind energy and science and technology. One faculty participated in Area Based Energy Program Evaluation and Planning Conference.

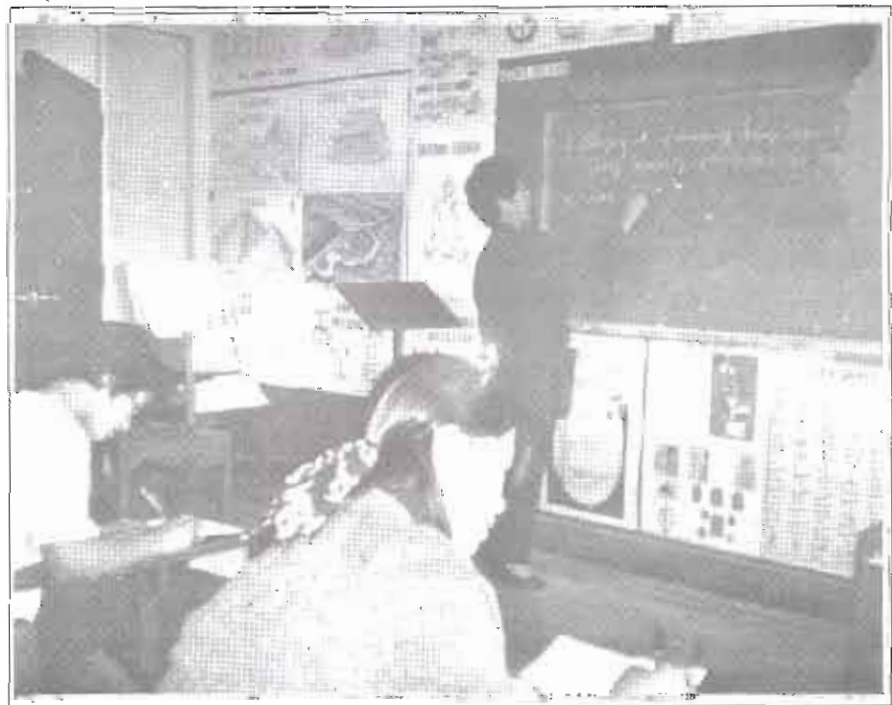
College of Forestry

The College of Forestry obtained its level 1 accreditation status from the Accrediting Agency for the Chartered Colleges and Universities in the Philippines (AACCUP) during the year.

Two new faculty members with plantilla positions were hired. Hiring them partially solved the problem of the overloading of the faculty. A visiting professor, Dr. Dong Sup Lee, a professor of Forest Resource Management from Sanju National University of Korea, helped the College in its research agenda



Instruction... through the use of visual aids and board works.



and possible fund sourcing.

The College implemented a research project on Fuelwood Management in Sagada and Besao. The Phase I of the College of Forestry Building was completed. The equipment requested for the year were delivered. The college continued to upgrade instruction and improve its research and extension agenda, more so that it has a building of its own, equipment and dedicated professors to implement its programs.

College of Home Economics and Technology

The College launched and operationalized the CHET SHOWCASE. This is a project envisioned to supplement the theories and skills learned in the classroom by students majoring in Home Management Arts and Home Economics Education.

The programs of the degree on Nutrition Dietetics and on Home Economics were formally accredited and obtained Level II status. Twenty one out of 33 graduates of the BSND curriculum passed the Board Examination obtaining a 63% passing rate. All the twelve graduates of the BSHE curriculum passed the Licensure Examination for Teachers.

The College has forged a collaborative project with the Re-

gional Training Program for Food and Nutritional Planning at the university of the Philippines, Los Baños. The project is aimed at enhancing the resource capabilities for the teaching of Public Health Nutrition at Benguet State University.

The College has come up with four issues of the CHET Quarterly, the official publication of the College of Home Economics and Technology.

For research and extension, a project entitled "Rootcrops - Based Snack Foods" was funded by TAPI under the DATBED Program. Six third year BSHE students are beneficiaries of this project. In extension, the College spearheaded the BSU-BIDANI program with Ucab and Virac, Itogon as the pilot barangays. The college also had a tie-up program with TESDA on skills development.

There are five income-generating projects managed by faculty members of the College. These are: the Cafeteria, Food Processing Center, Bakery, Home Management House and Guestel, and the Tailoring and Dress Shop.

The college produced some awardees such as the following: Judiell Chawag, "Outstanding Nutrition Student" of the Philippines by the National Nutrition Council; Jao-jao

Somyden, Gold Medalist in the Regional TESDA Youth Skills Olympics. She graduated also as Magna Cum Laude and was a finalist in the Search for the Ten Outstanding Students in CAR; Terrilyn Gibson, Second Place in the FFP-FAHP-FFPCC, Regional Convention Skills Competition on foods; and Leticia Cabotaje, Second place on clothing.

College of Nursing

The College conducted a seminar-workshop for the faculty to update the BSN curriculum and integrate new concepts. The curriculum from Level I-IV was revised to integrate concepts in values, traditional medicines, primary health care through HRDP-COPAR approach, reproductive health and HIV/AIDS.

To update the faculty of the College on the integrated concepts, most of them were sent to attend training seminars relevant to curriculum development and improvement of instruction.

The CN faculty supervised students doing clinical practice in hospitals and other health agencies in Baguio City, La Trinidad, Benguet and in Manila. These affiliate health agencies are mostly government operated centers like the Philippine Orthopedic Center and the National Center for Mental Health.

The College has done extension work through its Reproductive

Health Care Center, which is manned by trained CN faculty. The services rendered in this center included promoting health through information education and counseling clients; providing clients with supplies of condoms, pills and IUD; performing pelvic examinations; inserting and removing IUD and doing check-up; and conducting pre-natal, intranatal and post-natal examinations.

Its researches were printed in Research Monograph Series (See researches under Research and Extension Programs).

College of Teacher Education

The College of Teacher Education (CTE), through its varied programs, implemented the fourfold functions of instruction, research, extension and production.

In terms of instruction, the College successfully passed the Level II status in the accreditation conducted by AACUP. It implemented the computer education for high school students on voluntary basis. It conducted curriculum review as a basis of evaluating current performance and of planning future activities. It implemented the curricular offering in the various levels: elementary, secondary (Science and SDEP), BSE, BEE, and BSAE.

Among the graduates, Lilibeth Buslay, a BSE math major was

awarded one among the top ten outstanding students of the CAR.

In research, the College conducted a one-weeks seminar-workshop on research proposal for the faculty members. Two outputs of the said trainings were submitted for funding to the office of Senator Raul Roco. Ten student researches related to educational activities were completed.

In extension work, the College conducted seminar-workshop on teaching strategies, lesson planning, and improvisation of instructional materials at Fianza Memorial National High School, Itogon, Benguet. A Seminar-workshops on low-cost instructional materials and teaching strategies and module preparation were conducted to Bauko District I teachers and Paracelis teachers, respectively. Some faculty members implemented the Municipal Science of Technology and Agriculture Program (MSTAP) in Kapangan and Buguias, Benguet.

As regards production, the supervised farming programs for the secondary students netted a school share of P300,000.00. Some P65,801.58 was contributed by the students of the tertiary students as a share of the University reached for the implementation of the modified supervised farming programs.

The other accomplishments of

the college during the year consisted of the acquisition of television sets and mono-block chairs for the elementary department and of , additional textbooks, athletic and sports equipment. Both teachers and students produced substantial instructional materials for the various teaching strategy subjects.

The physical facilities of the College were improved through the landscaping and beautification of various grounds of the elementary, secondary and college buildings. Various facilities such as the drainage canal, covered walk and school grounds were constructed. These construction enhanced the rapport among and creativity of students.

College of Veterinary Medicine

The College of Veterinary Medicine continued upgrading instruction as shown in the acquisition of equipment for laboratory use: 1 unit anesthesia machine, 16 units microscopes and 1 unit refractometer.

In research, the College is conducting a project on defining problems and opportunities for smallholder pig production in the Philippines. This is the second phase of the project which is funded by the Australian Center for International Agricultural Research.

In extension, the faculty of the



Instruction ... through listening and writing



College engaged in rabies evaluation program that implemented the immunization of 149 dogs. The clinic of the College was availed of in diagnosing 27 rabid dogs. The College conducted also training-seminar on livestock and poultry production to farmers of the Plan International communities and ARC of the Department of Agrarian Reform. This training was sponsored by the Pilipinas Shell Foundation, Inc.

Institute of Public Administration

The Institute of Public Administration enrolled 83 students for the first semester and 69 students for the second semester in Master in Public Administration, the program it presently implements.

In undergraduate level, the Bachelor of Arts in Public Administration had its curriculum approved through resolution no. 715, s. 1996. This resolution authorizes the offering of Bachelor of Arts in Public Administration as a component of and complementary to the Master of Arts in Public Administration degree.

The said Institute has attracted many enrollees in the graduate level. The newly approved baccalaureate degree in Public Administration is all set to be offered pending the approval of its budget.

Institute of Physical Education and Sports

The Institute of Physical Education and Sports graduated 45 teachers from the public and private schools in Diploma in Physical Education and five teachers in Certificate of Physical Education.

The Institute managed and officiated the sportfests of different agencies. Ballroom dancing was also taught to the personnel of the Department of Budget and Management and Korean students. The Institute conducted seminar-workshop in physical education and sports to teachers.

The close gymnasium, which is usually used as venues of programs, seminars and sportfests was painted. Through the use of the gymnasium, the Institute produced P91,235.000, which was put into the University coffers.

Graduate School

The Graduate School continued offering 10 degree programs in various disciplines involving five Colleges and two Academic Institutes in the University.

During the year under review, the Graduate School updated its manual containing policies, guide

lines and procedures in the administration of the Graduate School. It prepared a Development Plan (1996-2000) which included the proposed transfer of the Graduate School Office to the former Office of Student Affairs Building.

To upgrade instruction, the Graduate School acquired new book titles and research journals. It conducted also curricular review and standardization of degree programs. Student consultations and dialogues were also conducted with the aim of improving student services in the Graduate School.



Local and international GS students take time out from their classroom work for a Christmas program/party.

ACADEMIC PROGRAMS

Instruction is the essential function of educational institutions. In Benguet State university, quality instruction is the foremost aim of the academic program offered in the nine colleges and two institutes of the University.

The accredited status of the programs in the colleges is one of the indicators of the quality and excellent instructions pursued in the academic programs.

Accredited Programs

The Accrediting Agency for Chartered Colleges and Universities in the Philippines (AACUP) conducted preliminary and formal assessment of the programs of the nine colleges of BSU. As of this date, the following colleges have obtained level I or II status.

A. Level 1

1. College of Agriculture
2. College of Engineering and Applied Technology
3. College of Forestry
4. College of Veterinary Medicine
5. Graduate School

B. Level II

1. College of Arts and Sciences
2. College of Home Economics and Technology
3. College of Nursing
4. College of Teacher Education

Performance in Licensure Examination

In addition to the accredited programs of the University, quality education is reflected through the performance of the graduates in the licensure examinations.

In 1996, the graduates' passing rate in the licensure examinations were higher than the national passing rate except that in the forester examination. The passing rate of the College of Teacher Education increased from that of 1995. The examinees from the College of Teacher Education and the College of Home Economics and Technology had a 100% passing rate. On the other hand, the passing rate of the graduates' of the College of nursing decreased from the 100% passing rate of the graduates of 1994 and of 1995 to 82%.

Curriculum and Instruction Development Efforts

The upgrading of the quality of curricular offering for greater effectiveness is a continuing effort in all the colleges. Through the leadership of the Vice President for Academic Affairs and the coordinated efforts of the deans and faculty, programs were accredited and efficiently implemented, and reforms and innovations were brought about in the curricula.

During the year under review, the enrollment procedures were refined through the Admissions Office. The college deans and directors came to a consensus of returning the 1 hour Monday-Wednesday-Friday classes and 1 1/2 hour Tuesday-Thursday classes.

During the year under review, the enrollment procedures were re-

Table 1. Board examination performance in the different degree programs

COLLEGE	LICENSURE EXAMINATION	NO. OF PAS-SERS	BSU PASSING RATE(%)	NATIONAL PASSING RATE(%)
College of Engineering and Applied Technology	Agric'l. Engineering		58.82	57.7
College of Forestry	Forester		25.0	32.0
College of Home Economics & Technology	Nutritionist		63	27.5
College of Teacher Education	BEE		76	27.5
	BSHE	12	100	27.5
	BSAE	3	60	27.5
	BSE		63	27.5
College of Nursing	Nursing		82	53.9

fined through the Admissions Office. The college deans and directors came to a consensus of returning the 1 hour Monday-Wednesday-Friday classes and 1 1/2 hour Tuesday-Thursday classes.

To meet the need of the increase in enrollment in the College level, some high school teachers were re-aligned to teach in College. Additional teachers were also hired to solved partially the overloading of the faculty.

The research and extension services rendered by some faculty were approved to be credited as part of the faculty workload.

The accreditation of the College of Forestry and College of Engineering and Applied Technology were conducted in 1996. It was also during this year that seven buildings of seven colleges were completed and readied for use.

Some significant programs and linkages implemented were: the Sanju National University and BSU exchange visit, the intensive English training program of visiting Korean students, and the Korean language training program for BSU students and faculty.

Enrollment

The total enrollment taken from the average of the first and second semester during the school year 1996-1997 in all the degree programs as

well as non-degree programs was 6,342 (Table 2).

The degree program of Bachelor of Science in Agriculture (BSA) had the highest enrollment followed by the degree programs in Education and in Forestry. This has been the consistent trend in enrollment for the past five school years.

Table 3 reflects the number of graduates for year 1996. There were a total of 997 graduates for March 1996, May 1996 and October, 1996. These are distributed as follows: graduate program, 26; undergraduate programs, 650; non-degree programs, 324; secondary laboratory, 177; and elementary laboratory, 144.



A graduate receiving her Diploma from the dean of Graduate School.

Table 2. Average enrollment for school year 1996-97

PROGRAM	SUMMER, 1996	FIRST SEMESTER	SECOND SEMESTER	AVERAGE ENROLL- MENT
A. Graduate				
Ph.D./Ed.D.	41	89	86	87.5
Masteral	280	467	433	450
B. Undergraduate				
BEE	13	511	502	506.5
BSE	41	564	535	549.5
BSA	232	1195	1072	1133.5
BSAB	58	184	166	175
BSAE	56	212	212	212
BSAEng'g	26	241	211	226
BSAS	1	4	4	4
BSAT	41	163	153	158
BSES	2	116	107	11.5
BSF	204	332	318	325
BSHE	16	205	192	198.5
BSN	-	149	136	142.5
BSND	9	183	165	174
DVM	31	183	177	180
C. NON-DEGREE				
CPE/DPE	112	96	39	67.5
DAF	43	84	84	84
FRCC	15	73	58	65.5
HMA		53	31	42
AUTOMECH		32	22	27
CMT- Cross Enrollee	12	5	7	6
School-on-the Air			89	598
D. Secondary Laboratory		598	598	598
E. Elementary Laboratory		818	818	818
TOTAL	1233	6557	6215	6342

Table 3. Summary of graduates by programs

PROGRAM	MARCH 1996	MAY 1996	OCTOBER 1997	TOTAL 1996
A. Graduate				
Ph.D./Ed.D.	3	3	2	8
Masteral	6	6	6	18
Total	9	9	8	26
B. Undergraduate				
BEE	132	-	9	141
BSE	69	7	-	76
BSA	142	10	42	194
BSAB	27	1	-	28
BSAE	5	-	-	5
BSAEng'g	8	4	2	14
BSAS	-	-	-	-
BSAT	9	-	-	9
BSES	-	-	-	-
BSF	54	11	9	74
BSHE	14	-	-	14
BSN	50	-	1	51
BSND	30	-	4	34
DVM	9	1	-	10
Total	546	27	74	647
C. Non-Degree				
CPE/DPE	3	-	45	48
DAF	33	-	-	33
FRCC	6	1	-	7
HMA	26	-	-	26
AUTOMECH	36	-	24	60
CMT- Cross Enrollee	104	1	69	174
Total	208	2	138	324
D. Secondary Laboratory	177			177
E. Elementary Laboratory	144			144
TOTAL	1,084	38	220	1,342

CURRICULAR OFFERINGS

A. GRADUATE PROGRAMS

1. DOCTOR OF PHILOSOPHY (P.h.D.) in:
 - Agricultural Education
 - Horticulture
 - Language Education
 - Rural Development
 - Science Education (Biology & Mathematics)
2. DOCTOR OF EDUCATION (Ed.D.)
 - Educational Management
3. MASTER OF SCIENCE (MSc.) in:
 - Agricultural Economics
 - Agricultural Education
 - Agronomy
 - Biology
 - Entomology
 - Horticulture
 - Rural Development
 - Forestry (Silviculture, Watershed Management)
 - Animal Science
 - Botany
 - Extension Education
 - Plant Pathology
 - Soil Science
4. MASTER OF ARTS (MA) in:
 - English As a Second Language
 - Filipino as a Second Language
 - Home Economics
 - Physics
 - Physical Education
 - Social Services
 - Technology and Home Economics
5. MASTER OF ARTS IN TEACHING (MAT)
 - Chemistry
 - Mathematics
 - General Science
 - Applied Statistics
6. MASTER OF ARTS IN EDUCATION (MAEd)
 - Educational Administration
 - Elementary Education
 - Guidance and Counseling
7. MASTER OF RESOURCE SYSTEM MANAGEMENT (MSRM)
 - Agribusiness
8. MASTER OF FORESTRY (MF)
 - Silviculture
 - Watershed Management
9. MASTER OF PUBLIC ADMINISTRATION (MPA)

B. UNDERGRADUATE

1. BACHELOR OF SCIENCE IN AGRICULTURE
 - Major in:
 - Agronomy
 - Agricultural Economics
 - Agroforestry
 - Extension Education
 - Animal Science
 - Entomology
 - Horticulture
 - Plant Pathology
 - Sericulture
 - Soil Science

2. BACHELOR OF SCIENCE IN AGRIBUSINESS (BSAB)
3. BACHELOR OF SCIENCE IN AGRICULTURE EDUCATION (BSAE)
4. BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING (BSA Eng'g)
5. BACHELOR OF SCIENCE IN APPLIED STATISTICS (BSAS)
6. BACHELOR OF SCIENCE IN ANIMAL TECHNOLOGY (BSAT)
7. BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE (BSES)
8. BACHELOR OF SCIENCE IN FORESTRY (BSF)
9. BACHELOR OF SCIENCE IN HOME ECONOMICS (BSHE)
10. BACHELOR OF SCIENCE IN NURSING (BSN)
11. BACHELOR OF SCIENCE IN NUTRITION & DIETETICS (BSND)
12. BACHELOR OF ELEMENTARY EDUCATION (BEE)
13. BACHELOR OF SECONDARY EDUCATION (BSE) Major in:
 - Biology
 - Filipino
 - Library Science
 - PEHM
 - Social Studies
 - English
 - Guidance & Counseling
 - Mathematics
 - Physics
 - Values Education
14. DOCTOR OF VETERINARY MEDICINE (DVM)

C. DIPLOMA COURSE

1. Diploma in Agroforestry

D. POST SECONDARY COURSES

1. Certificate in Home Management Arts (CHMA)
2. Certificate in Physical Education (Specialization)
3. One-year Automotive Technology
4. Two-year Automotive Technology
5. Forest Ranger
6. Six-month Dressmaking
7. Six - month Food Processing
8. Six - month Tailoring Course
9. Five-month Basic Automotive
10. Five-month Advance Automotive Technology
11. Five-month Woodworking Technology

E. HIGH SCHOOL

1. Special Science
2. Agriculture Home Economics
3. Vocational Agriculture

F. ELEMENTARY SCHOOL

The Research Services of the university is under the supervision of the Office of Vice President for Research and Extension and is headed by a Research Director. It is composed of five specialized centers and institutes as follows: a) Northern Philippines Rootcrops Research and Training Center (NPRCRTC); b) Horticultural Research and Training Institute (HORTI); c) Highland Agro-forest Institute (HAFI); d) Institute of Highland Farming System (IHFS); e) Highland Socio-Economic Research Institute (HSERI). Some faculty researchers are also conducting research in their respective colleges.

ACCOMPLISHMENTS

For 1996, a total of 44 research and development programs and projects were conducted in the University. Of these, 22 programs were BSU-funded and another 22 programs and projects were provided with additional financial assistance by either local or national government agencies and international agencies (Table 4 & 5). From these programs and projects, around 50 significant information and technologies were generated or developed.

A. Northern Philippines Rootcrops Research and Training Center (NPRCRTC)

The NPRCRTC leads in root crops research, training, extension

and development. It has conducted six projects under the potato program, one project on sweetpotato and one on taro and minor rootcrops.

1. Research

A. Potato

From the local hybridization block of potato, genotypes with resistance to late blight and good adaptation were crossed to progenitors with good processing traits. Seedling tubers is being multiplied for clonal selection of 20 progenies.

Assessment of bacterial wilt infection revealed that the disease was widespread in the high and lowland potato production areas in the Philippines. In studies conducted aimed at controlling the disease, found promising was the use of organic fertilizer, lime and urea combinations, antagonists from corn rhizosphere and extracts from garlic and chive.

Furthermore, chemical usage is reduced and the resistance of varieties is sustained through the integration of resistance and minimal fungicide application. The use of late blight resistant cultivars like BSU-PO3, BSU-PO4 and Montañosa reduced the application of fungicides to at least 2 sprays per cropping.

In order to sustain potato production, alternative planting materials like TPS, GO seeds and rooted stem cuttings of disease resistant varieties

Table 4. Twenty-two BSU-funded research programs/projects for 1996

CENTER/ INTSTITUTE	PROGRAM/PROJECT [RESEARCHER(S)]
A. HORTI (10)	1. Vegetable Seed Production Technology development Program (P. E. Toledo et al.) 2. Tissue Culture Research and Development Program for Highland crops (M.A. Balcita et al.) 3. Integrated Cabbage Research and Development Program (P.B. Alipit et al.) 4. Carrot Integrated Research and Development Program (P.E. Toledo et al.) 5. Garden Pea Integrated Research and Development Program (P.E. Toledo et al.) 6. Development of Market-Oriented Cropping Schemes for Vegetables (P.B. Alipit et al.) 7. Crop Protection Studies on Selected Plantation Crops (B.S. Ligat et al.) 8. Rose Integrated Research and Development Program (J.S. Luis et al.) 9. Highland Mushroom Research and Development Program (J.S. Luis et al.) 10. Crop Protection and Cultural Management studies on Strawberry (E.T. Balaki et al.)
B. NPRCRT(5)	11. Potato Research and Development Program (Z.N. Ganga et al.) 12. Sweetpotato Research and Development Program (Z.N. Ganga et al.) 13. Taro Research and Development Program (I.C. Gonzales, et al.) 14. Yam Research and Development Program (C.G. Kiswa, et al.) 15. Minor Root Crops Research and Development Program (V.B. Salda et al.)
C. IHFS and HAFI (6)	16. Study on Intercropping and Cover-cropping in Coffee-pine Based Agro forestation (B.B. Dimas) 17. Study on Vegetative Terracing in Agro-forest Areas (R.D. Colting) 18. Integrated Highland Farming Systems Research and Development Program (R.D. Colting) 19. Azolla Research and Development Project (T.M. Merestela et al.) 20. Apple Development Project (B.B. Dimas) 21. Sheep Production and Development in the Highlands of the Cordillera (D.Q. Casiwan et al.)
D. HSERI (1)	22. Socio-Economic Studies in Highland Agriculture and Natural Resources (L.C. Debad et al.)

Table 5. 1996 Outside-funded research programs/projects at BSU

CENTERS/INSTITUTE/ COLLEGE	PROGRAM/PROJECT/FUNDING SOURCE (RESEARCHER/S)
A. HORTI	<ol style="list-style-type: none"> 1. Mass Rearing and Field Releases of <i>Diadegma semiclausum</i> in the Highlands/ADB, AVRDC and PCARRD (Prof. E.V. Cardona, Jr., Prof. A.F. Bulacso et al.) In coordination with DA-CAR. 2. Biological Control of Major Soil-born Diseases of Highland Vegetables Using Plant Growth Promoting Rhizobacteria (PGPR), Fungal and Bacteria Antagonist and Botano-Chemicals/PCASTRD-PCARRD-DOST (Dr. L.M. Villanueva, Prof. L. G. Lirio et al.) 3. Community-based Piloting of Control and Rehabilitation Strategies Against BBTO in Northern Luzon/PCARRD-DOST(Prof. B.S. Ligat) In coordination with Dr. E. Espino of UPLB and Supt. C.A. Baniqued of BNCRD, BPI-DA. 4. Evaluation of American Cyanamid Insecticides Against Major Insect Pests of Crucifers and Mites on Strawberries/Cyanamid Agricultural Research (Prof. B.S. Ligat) In coordination with Mr. Ferino. 5. Chrysanthemum R and D Program/PCARRD-DOST <ul style="list-style-type: none"> • Varietal Evaluation and Mass Propagation of Chrysanthemum (Prof. V.D. Alejandro, Dr. L.L. Tandang, Mr. J.D. Boteng and Prof. N.R. Palispis et al.) • Integrated Pest Management (Dr. L.M. Villanueva et al.) • Documentation of Existing Technologies in Chry santhemum Production (Dr. A.G. Ladilad, Dr. F.R. Gonzales et al.) 6. Vegetative Propagation of Selected Highland Crops Using Tissue Culture/PCASTRD-PCARRD-DOST (Dr. M.A. Balcita, Prof. V.D. Alejandro, Dr. J.J. Josue, Prof. A.G. Moldez et al.) 7. Rapid Clonal Multiplication of High Quality and Disease-free Cutflower Planting Stocks for Growers in the Cordillera Administrative Region/DQST-CAR (Dr. F.R. Gonzales, Dr. A.G. Ladilad et al.) 8. <ol style="list-style-type: none"> a. Bioefficacy Test of Kenyi-Bio-Active Organic FoliarFertilizer on Cabbage and Potato/MING-DA Corporation (Dr. J.S. Ligat). b. Bioefficacy Test of Mirasoil Organic Fertilizers on Cabage and Potato/Ming-DA Corporation (Dr. J.S. Ligat). c. Bioefficacy Test of 6-8-12 Foliar Fertilizer on Potato MING-DA Corporation (Dr. J.S. Ligat). 9. Field Evaluation of Decis 1.0 EC, Decis 2.5 Against Cabbage and Beans Insect Pests/Hoechst Far East Marketing Corporation (Dr. S.P. Milagrosa, Prof. L.M. Colting). 10. Field Evaluation of Omega 45 EC and Octave 50 WP Against Foliar Diseases of Roses/Hoechst Far East Marketing Corporation (Dr. S.P. Milagrosa, Dr. A.G. Ladilad).. 11. Field Evaluation of Omega 45 EC and Octave 50 WP Against Foliar Diseases of Cabbage/Hoechst Far East Marketing Corporation (Dr. S.P. Milagrosa).

Table 5. Continued...

CENTERS/INSTITUTE/ COLLEGE	PROGRAM/PROJECT/FUNDING SOURCE (RESEARCHER/S)
	12. Field Evaluation of D.E. 105 Against Diamondback Moth/Dow Elanco (Prof. L.M. Colting).
	13. Field Evaluation of Autam 75 SP for the Control of Insect Pests of Cabbage/Bayer Philippines, Inc. (Prof. L.M. Colting).
	15. Evaluation of Karate 2.5 EC and Karate LWP Against Major Insect Pests of Cabbage/Jardine Agchem (Prof. B. S. Ligat).
	16. Varietal Improvement of Highland Vegetable Crops/IPB, CA, UPLB (Dr. L. L. Tandang et al.) In coordination with Dr. R.A. Hautea, Dr. R.g. Maghirang, Mr. B.A. Kebasen et al. Of UPLB).
	17. Performance of Home High-Value Vegetables (Crucifers, Lettuce, Pepper, Tomatoes, Radish, Carrots, Celery) in the Highlands/Allied Botanical Corporation (Dr. M.D. Cadatal).
B. IHFS	18. Geographical Information System-Land Resource Information System (GIS-LARIS)/Provincial Government of Benguet, BSWM-DA and BSU (Dr. R.D. Colting, et al.) in coordination with Mr. B. Pascua of BSWM and Ms. L. Bentes of LGU-Benguet Province
	19. National Azolla Action Program/UPLB (Dr. T.M. Merestela, Prof. J.K. Avila et al.) in Coordination with Ms. S. Sundango of DA-CAR.
	20. Assessment, Prevention, Mitigation and Control of Pollution from Agricultural Chemicals-Pesticides/ PCARRD-DOST (Prof. A.G. Moldez et al.) In Coordination with Dr. Tejada and Dr. L. Varca of NCPC, UPLB.
	21. Development of Fertilizers/Growth Hormones from Philippine Seaweeds/DOST-PCAMRD (Prof. A.M. Corpuz et al.) In coordination with Dr. N.E. Montano of UP Diliman-MSI.
	22. Philippine Animal Genetic Resources Conservation Improvement Program (Conservation of the Native Pigs in the Cordillera Project)/JSPS-DOST (Dr. S.B. Maddul) In coordination with Dr. Salcedo
	23. Potato Research and Development Program
	23.1 Development of Processing Potato Varieties in the Philippines (Z.N. Ganga and D.K. Simongo).
	a. Preliminary Yield Trial/IPDP-PCARRD (D.K. Simongo)
	b. Advance Yield Trials and Processing Evaluation/IPDP-PCARRD (D.K. SIMONGO)
	c. On-farm Variety Trials of Processing Potato/BAR (D.K. Simongo, H.L. Quindara and E. T. Botangen)
	d. Screening of Selected Tuber Families for Resistance to Late blight and Other Pest/BAR (D.K. Simongo and Z.N. Ganga)
	e. Promotional Trials of Processing Potato Varieties/IPDP-DA (P.A. Dalang and L.M. Pacuz)
	f. International Late Blight Trial/UNDP (D.K. Simongo)

Table 5. Continued...

CENTERS/INSTITUTE/ COLLEGE	PROGRAM/PROJECT/FUNDING SOURCE (RESEARCHER/S)
	23.2 Management of Major Pests and Diseases of Potato (J.C. Perez)
	a. Survey, Mapping and Race Identification of <i>P. Solanacearum</i> and Cyst Nematode/IPDP-PCARRDP (J.C. Perez, T.C. Diccion, and G.S. Backian)
	b. Appropriate Crop Rotation Scheme Against Bacterial wilt/IPDP-PCARRD (G.S. Backian and H.B. Torres)
	c. Verification Trial on the Effect of Lime and Urea on the Suppression of <i>P. Solanacearum</i> / IPDP-PCARRD (G.S. Backian and J.C. Perez).
	d. Biological Control of <i>P. Solanacearum</i> Using Antagonistic Organism/IPDP-PCARRD (T.C.Diccion and J.C. Perez)
	e. Evaluation of Inorganic Chemicals for the Control of <i>P. Solanacearum</i> /BAR (J.C. Perez).
	f. Integrated Management of <i>P. Infestans</i> in the Highlands/BAR(J.C.Perez and J.B. Torres).
	g. Survey of A2 Matng Type of <i>P. Infestans</i> /BAR (J.C. Perez and T.C. Diccion)
	h. Identification of Races of <i>P. Infestans</i> in Potato/NPRCRTC-BSU (J.C. Perez and T.C. Diccion)
	i. Screening of Segregating Populations for resistance to <i>p. Infestans</i> in Potato/UNDP-BAR (T. C. Diccion and Z.N. Ganga)
	j. Evaluation of Some Indigenous Plant Materials for the Control of IPM in Storage/IPDP-DA (J.C. Perez and E.V. Bayogan).
	k. Effect of various Methods of Application to Indigenous Materials Against PTM/NPRCRTC- BSU(J.C. Backian)
	l. Control of Mealybug(<i>P. solani</i>) on Stored Potato/ PDP-DA (J.C. Perez)
	23.4 Improvement of Potato Cultural Management Practices (W.L. Marquez)
	a. Effect of Maturity on the Processing Traits of Potato/IPDP-PCARRD (J.G. Dati, L.M. Pacuz and H. L. Quindara)
	b. Effect of Maturity Period on the Processing Traits of Potato/IPDP-PCARRD (J.G. Dati, L.M. Pacuz and H.L. Quindara)
	c. Application of Macro and Micro Elements on the Tuber Yield and Quality of Processing Potato/IPDP-PCARRD (L.M. Marquez)
	d. Development of Potato Based Cropping System/NPRCRTC-BSU (L.M. Marquez).
	23.5 Appropriate Postharvest Technology for Potatoes (E.V. Bayogan)

Table 5. Continued...

CENTERS/INSTITUTE/ COLLEGE	PROGRAM/PROJECT/FUNDING SOURCE (RESEARCHER/S)
	<ul style="list-style-type: none"> a. Assessment of the Extent of In-ground Storage of Potatoes/PCARRD-DA (E.V. Bayogan, F.S. Balog-as and J.L. Balagtey) b. Greening Incidence and Quality of Inground Stored Tubers at Harvest/PCARRD-DA (E.V. Bayogan and F.S. Balog-as) c. Verification of GA3 and Ethrel Use in Granola Potato/PCARRD-DA (E.V. Bayogan and F.S. Balog-as) d. Survey of Sorting and Grading Practices of Potato/PCARRD-DA (E.V. Bayogan, F.S. Balog-as and J. L. Balagtey) e. Evaluation of Appropriate Packaging Materials and Waxes in Potato/PCARRD-DA (E.V. Bayogan and F.S. Balog-as) f. Evaluation of Some Indigenous Planting Materials for the Control of PTM in Storage/PCARRD-DA (J.C. Perez and E.V. Bayogan) g. Control of Mealy Bugs (<i>Phenacoccus solani</i>) on Stored Potato/PCARRD-DA (J.C. Perez and E.V. Bayogan) h. Assessment of Postharvest Storage Losses Due Mealybug Infection/PCARRD-DA (T.A. Khayad)
23.6	<p>Community-based Enterprise Development on Potato (Z.N. Ganga and H. L. Quindara)</p> <ul style="list-style-type: none"> a. Farm-level Assessment of Potato Production Marketing and Utilization/NAPHIRE (H.L. Quindara and E.T. Botangen) b. Market Research and Productivity/NAPHIRE (J.M. Sim) c. Feasibility Study on the Establishment of a Pilot Potato Processing Plant in Benguet/NAPHIRE
23.7	<p>Seed Production Project (P.A. Dalang)</p> <ul style="list-style-type: none"> a. Assessment of Potato Variety Adoption, Diffusion and Seed Supply Management Systems of Farmers in the Cordillera Highlands/NPRCRTC-BSU-CIP (B.T. Gayao et al.)
24.	<p>Sweetpotato Research and Development (Z.N. Ganga)</p> <ul style="list-style-type: none"> a. Varietal Improvement of Sweetpotato for the Philippine Highland (Z.N. Ganga) <ul style="list-style-type: none"> a.1. National Cooperative Trials on Sweetpotato/BSU-VISCA (I.C. Gonzales) a.2. Community-based Knowledge Systems in Sweet potato Genetic Resource Management/UPWARD (B.T. Gayao) b. Management of Major Insect Pests and Diseases of Sweetpotato in the Highlands (J.C. Perez) <ul style="list-style-type: none"> b.1. Screening of Sweetpotato Cultivars for Resitance to Sweetpotato Weevil/Potato Weevil/NPRCRTC-BSU (J.C. Perez). b.2. Evaluation of Botanical Crude Extracts for the Control of Sweetpotato Weevil/NPRCRTC-BSU (J.C. Perez) c. Sweetpotato-based School and Household Gardens and Extension Project (B.T. Gayao)

Table 5. Continued...

CENTERS/INSTITUTE/ COLLEGE	PROGRAM/PROJECT/FUNDING SOURCE (RESEARCHER/S)
	<ul style="list-style-type: none"> c.1 Sustaining Integration of Sweetpotato-based School and Household Gardens in Health, Nutrition and Education Programs/UPWARD (B.T. Gayao, J.G. Dati, A.T. Botangen, D.T. Meldoz and J.M.Sim)
	<ul style="list-style-type: none"> 25. Taro and Other Aroids and Research and Development (I.C. Gonzales) <ul style="list-style-type: none"> a. Varietal Improvement of Taro and Other Aroids (I.C. Gonzales) <ul style="list-style-type: none"> a.1 National Cooperative Trials on Taro/BSU-VISCA (I.C. Gonzales) a.2 Database on Taro Germplasm Collection and Characterization/NPRCRTC-BSU (J.G. Dati and I.C. Gonzales) b. Post-harvest Technology and Utilization (E.V. Bayogan) <ul style="list-style-type: none"> b.1 Verification Trial on the Storability of Market Taro in PEB/NPRCRTC-BSU (E.V. Bayogan and E.T. Botangen) b.2 The Use of Rootcrops in Meat Processing/NPRCRTC-BSU (H.L. Quindara) c. Farming Systems (W.L. Marquez) <ul style="list-style-type: none"> c.1 Rootcrop Based Farm Demo on the Use of organic Fertilizer/NPRCRTC-BSU (W.L. Marquez)
	<ul style="list-style-type: none"> 26. Yam and Minor Rootcrops Research and Development (V B Salda) <ul style="list-style-type: none"> a. Varietal Improvement of Yam and Other Rootcrops <ul style="list-style-type: none"> a.1. Yam Germplasm Collection and Maintenance/NPRCRTC BSU (C.G. Kiswa) b. Postharvest Technology and Utilization <ul style="list-style-type: none"> b.1 Storability of Yam Treated with GA3/ NPRCRTC-BSU (E.V. Bayogan and H.L. Quindara)
D. College of Veterinary Medicine (CVM)	27. Defining Problems and Opportunities for Smallholder Pig Production in the Philippines/ACIAR (Dr. B.S. Cotiw-an)
E. College of Engineering	28. BSU-Affiliated Non-Conventional Energy Center (ANEC) for the Cordillera Region/DOE (Dr. C.C. Consolacion, Prof. M.V. Capinding, Prof. J.F. Malamug, Prof. E.M. Molintas, Dr. F. G. Calora et al.) In coordination with national ANEC.
F. College of Agriculture	29. Agricultural Technology Education Program (ATEP)/EDPITAF (Prof. D.P. Padua, Prof. M. Walsiyen, Dr. D. Q. Casiwan et al.)
G. HSERI	30. Investment Potentials in the Cordillera/USAID (Dr. D.Q. Casiwan, Dr. J.P. Bagano et al.)
H. Office of the President	31. Pilot Development of Inland Waters and Fisheries Resources in Taba-ao, Kapangan, Benguet/PCAMRD-DOST (Mr. F.S. Borja and Pr. M. K. T. Dagupen) in coordination with DENR-CAR and DA-CARFU)

are being promoted. A total of 30,000 GO seeds were given to farmers' field schools in Atok and to identified seed growers for bulking. Forty thousand rooted cuttings were likewise produced and dispersed to 30 potato growers along the Mt. Trail

To enhance the good characteristics of promising varieties, cultural management practices are being improved. Maturity, distance of planting and fertilization and its effect on the processing qualities of

potatoes were evaluated. Results revealed that as maturity is lengthened, dry matter content is increased. In addition, an increased application of N fertilizer did not delay maturity but increased yield which has a very poor chipping quality.

B. Sweetpotato

Evaluation and screening of a wide range of sweetpotato germplasm is a continuous activity to identify promising cultivars for highland and lowland recommendations. The newly approved seedboard varieties PBSP 17 and PBSP 16 have a higher flour recovery and extractable starch

Against sweetpotato scab, cultivars with deep lobes and small leaf areas were resistant. Among the 20 cultivars evaluated, six (Adams 3,

V37-157, VSP-6, 88 WSG 23, 26 Binoras and 13 Tres Colores), were classified as resistant.

Of the 1,500 open pollinated True Sweetpotato Seed (TSPS) of local cultivars, only 45 clones were selected because of their low drought score and storage root yields

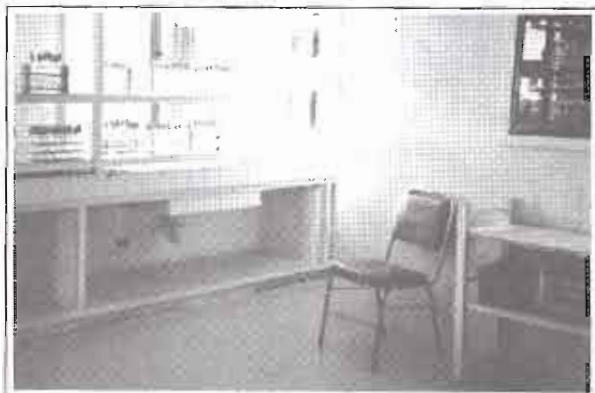
C Taro and Minor Root Crops

There were 137 accession of *D. alata*, 29 of *D. esculenta* and 16 of *D. hispida* collected and main-tained in the field. Each collected accession was characterized using the modified IBPGR descriptors list. From the 163 taro collections in 1990, only 18 groups from the total accessions were made. Through characterization of numerous morphological features and eating quality, duplicates were identified

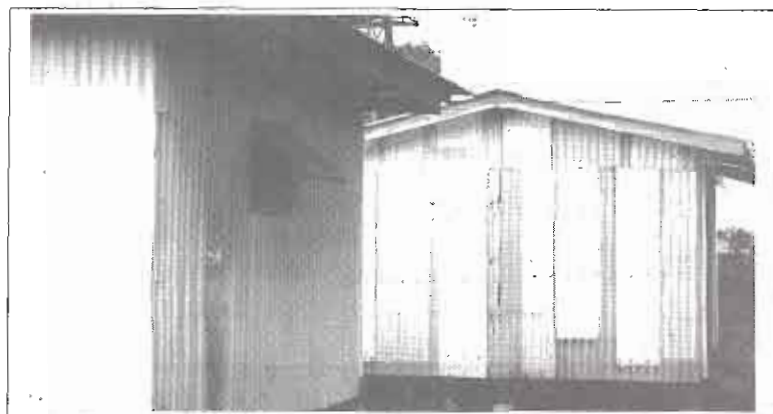
2. Training And Extension

The Center conducted 18 trainings/workshop/seminars and provided consultancy services in the Cordillera region and Mindanao.

Several publications/extension materials were released in 1996. Other extension materials are being prepared for 1997 release.

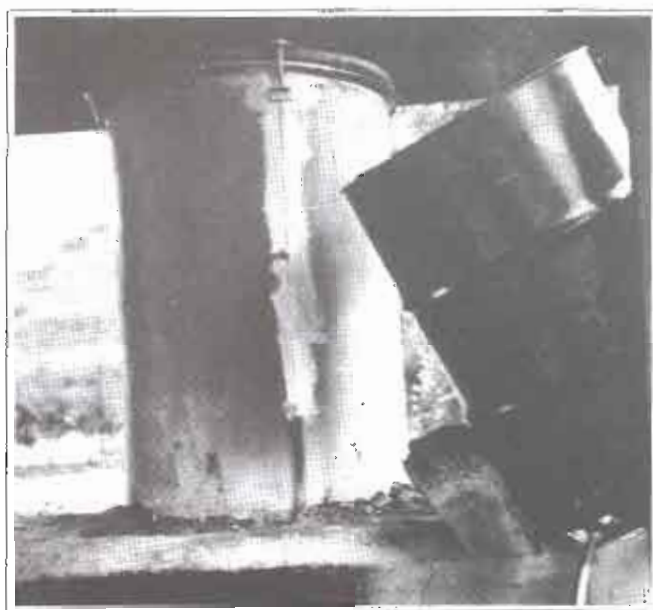


Tissue culture laboratory at the Northern Philippines Root-crops Research and Training Center



Diffused Light Storage(DLS) for root crops

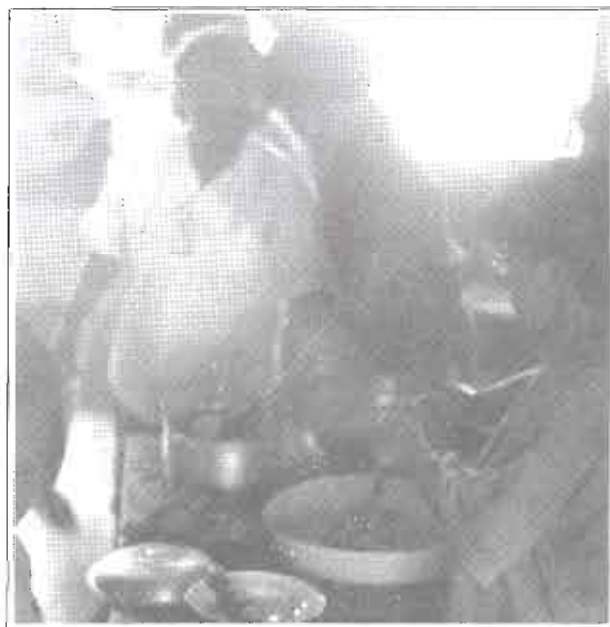
Soil sterilizer used to sterilize soil for rooted stem cutting and tuber-let production of potatoes.





The sweetpotato germplasm collection at the NPRCRTC'S experimental field.

One of the NPRCRTC's project is to promote the nutritional value of rootcrops. Hence, school teachers and housewives are taught the many ways of preparing sweetpotato which has a good market most especially to school children.



B. Horticultural Research and Development Institutes (HORTI)

The HORTI conducts research, training and extension activities in sub-tropical vegetables, fruits and plantation crops, and ornamentals/cutflowers in the Cordillera region and other highland areas. It is committed to generate, develop, and disseminate low cost but effective technologies to improve agricultural and industrial productivity in the highlands. It has accomplished the following:

1. Research

The HORTI generated 11 technologies/information on vegetable crops (cutflowers, asparagus, cabbage, potato, crucifers, garden pea & mushroom), eight on fruits and plantation crops (banana, strawberry and apples), 10 on ornamentals (roses, chrysanthemum, lili-ums, anthurium, carnation and poinsettia).

A. Vegetable Crops

Treatment of Gibberilic Acid at 100 ppm to cauliflower and 5 ppm to lettuce promoted early bolting and flowering. Plant spacing at 24 cm between hills and rows and GA3 application at 500 ppm effected higher percentage of flowering on carrot.

Asparagus apical explants in Murashige O. Skoog et al. (1972)

medium (MS-based) produced more shoots than other explant types in other media.

Application of Mirasoil, an enzyme treated chicken manure, at 4 t/ha effected greater marketable yield of cabbage as a consequence of higher percentage of heading, heavier and bigger size heads formed.

Use of either CaSO₄ at 3 t/ha or rice hull ash at 8 cu m/ha suppressed clubroot infection and increased the marketable yield of cabbage.

The key insect pests of head cabbage where priority control should be focused on are diamondback moth, flea beetles, aphids and cutworms. *Diadegma semiclausum* and *Cotesia plutellae* are the parasitoids of diamondback moth observed. *B. thurengensis* Aizawa is effective against diamondback moth.

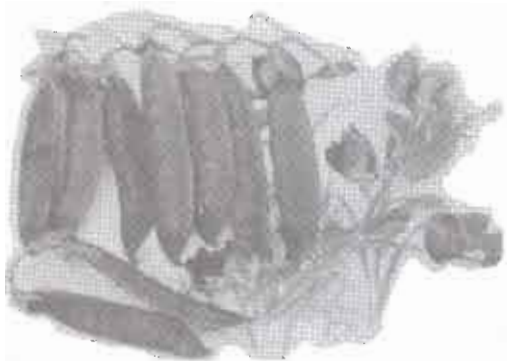
Fungal and bacterial antagonists to root-knot nematode of crucifers and cyst nematode of potato were found in growing areas of Benguet and Mountain Province. Also, bacteria and fungal isolates were found to inhibit growth of black rot and soft rot of crucifers and bacterial wilt of potato.

Piper beetle solvent extract showed highly bactericidal effect against soft rot, black rot and bacterial wilt.

Out of 148 entries evaluated in two sets of replicated trials, 17 were

selected as promising garden pea varieties based on their field performance related to pod doubling, pod quality and resistance of major pests. Nine F6 and two F8 lines were also selected as promising lines from the tested 46 segregating populations.

A total of 2.1 kg CGP 11A and 15.5 kg of CGP 14, the two newly recommended varieties, were produced for further distribution and evaluation in more farmers' fields. There 21 promising lines were seed increased, yielding a total of 105.30 kg. In Benguet alone, 33 farmer-partners have tried at least five of the promising lines each. CGP 11A, 12, 14, 18, 21 and 22 were the lines more greatly preferred due to their higher yielding ability and better quality and resistance to major pests than the traditional commercial varieties.



CGP-14

- Sister line of CGP-13
- Dark green pods, 8-10 seeds per pod
- Average fresh pod yield of 6.32 t/ha
- Selected for both Benguet and Cagayan Provinces

CGP 12 and 18 are the two improved lines selected and identified to be recommended for release as varieties for commercial in 1977.

Alnus sawdust is superior to lowland softwood sawdust as substrate for Pleurotus mushroom spawn.

Fruits and Plantation Crops

In all the 13 municipalities of Benguet surveyed, the different insect pests observed inflicting different severity of infection in bananas were banana bunchy top, panama/fusarium wilt, moko/bacterial wilt, weevil borer and aphids. The different varieties grown were Decosta, Cantong, Lacatan, Morado and Dippig.

Six municipalities of Benguet were chosen as initial pilot sites for the tissue cultured banana, as follows: Palew and Basil in Tublay, Balili in La Trinidad, Camog in Sablan, Camp 1 and Nangalisan in Tuba, Central and Abatan, Buguias and Poblacion, Kibungan.

Tissue cultured banana plantlets which were obtained from BPI Baguio and which were given to the farmer co-operators in the different pilot sites, were monitored monthly and evaluated in terms of status of the crop, number of suckers produced and presence of pests.

Pine needles can be a good sub-



The University President monitors some of the research and development undertakings of the University. Banana rehabilitation program in Sablan, Benguet.



Seed production program of the University.

stitute to black plastic as mulching materials in strawberry production.

Triple row method of planting strawberry is more profitable than the double row method.

Strawberry runner tips grew rapid adventitious shoots in Kyte (1983) (MS-based) or Moore, et al. (1991)(MS-based) medium for tissue culture.

The presence of 10-20 aphids per banana plant effected high visible symptoms of bunchy top virus on the leaves and pseudostem.

Grafted seedlings of nine commercial apple varieties were planted for testing in the Benguet State University Agroforest project. The elevations of the experimental sites were 1,375 and 1,475 feet above sea level. The planting distance was 2.5 m between trees.

Of the nine varieties tested, "Rome Beauty" gave the highest average number of fruits harvested with the biggest size followed by "Dorsett Golden", "Prince Noble", "Cahort No. 1", "Ana", and "Winter Banana". All the matured and riped fruits of the said varieties had a sweet taste as reflected by the 13.0 refractometer reading. All the fruiting varieties took an average of seven days after flowering to fruit set and 122 days from fruit set to harvest. Varieties "Manalagui", "Liberty"

and "Spartan" failed to produce flowers and fruits.

The farms of 51 farmer-partners from different municipalities of Benguet and Mt. Province were slated for on-farm trials of the promising apple varieties.

Ornamentals

Ten cultivars of roses being grown by rose growers in different growing sites in Benguet were collected and evaluated for their performance based on their vegetative growth, reproductive growth and cutflower quality and yield.

Calixin 75 EC controlled powdery mildew and lack rot spot of roses more effectively than Benlate 50 WP. Calixin 75EC at the rate of 0.4 li/ha performed better in controlling the spread of the two fungal diseases than the other rates of Calixin at 0.2 and 0.3 li/ha, and Benlate at 30 g and 50 g/100 li water.

A total production of 330,311 dozens of roses was harvested for 11 month period (November 1995 to September 1996) by 136 rose growers of Bahong Multi-purpose Cooperative.

Cutflower price on wholesale basis is highest in the month of February which averages P105/dozen for super long (greater than 24"); P75/dozen for extra long (16-24"); P60/dozen for long (13-16"); P55/dozen for medium 10/12"); and P35/dozen for short (9") and super

short (less than 9").

The other months of the year when rose prices are quite high were January, August, September, October, November and December, 1995. Lower prices were recorded in the months of March, June and July, 1996.

Forty-two varieties were collected and conserved in-vitro at the HORTI Tissue Culture Laboratory. Micropropagation of 30 entries is ongoing. Eight entries were transferred to the greenhouse and established as mother plants. They served as sources of planting materials in the succeeding evaluation trials.

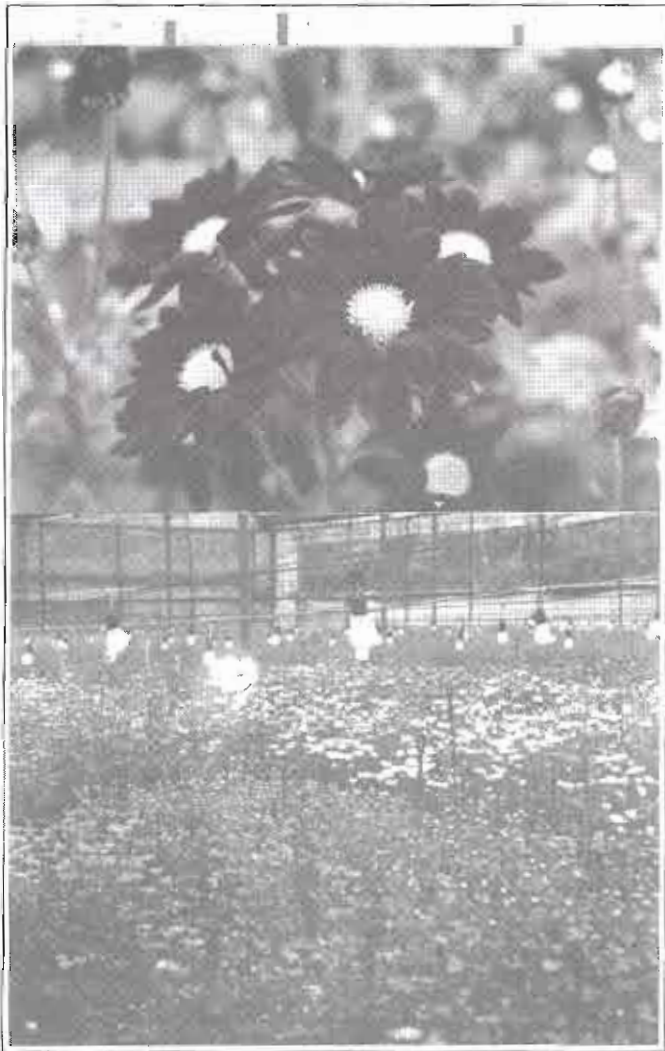
A survey conducted in chrysanthemum growing areas in Benguet, Cebu and Davao showed the presence of the following diseases: rust, white rust, Pythium and Rhizoctonia damping-off, fusarium wilt, flower and bud rot and gray mold. The common insect pests collected were mites, aphids, thrips, leafminer, looper larvae, army worm larvae, white fly, snout beetle and snails.

Chrysanthemum growers in Baguio-Benguet, Zamboanga, Iloilo, Cebu and Davao City were surveyed and interviewed. Data on appropriate production technologies involving greenhouses, field and potted plant culture of chrysanthemum in different growing sites were gathered.

Rooting in chrysanthemum is easily obtained using May and Trijano, 1991 Tiano, 1991 (MT) medium. Shoot formation is greater when using the apical tip.

Lilium

Bulbscale explants for tissue culture of liliium varieties exhibited direct bulblet formation in Takayama (MS-based) and Sheridan (LS-based) media.



Anthurium

Funguran-Oh applied at 3 tbs/16 li water at seven day interval is effective in controlling the spread of bacterial blight disease of anthurium.

Carnation and Poinsettia

The best fertilizer application rate of carnation and poinsettia is 70-70-70 and 60-60-60 kg N-P205-K20/Ha , respectively.

2. Training and Extension

A consultation and training on postharvest handling of vegetable crops was conducted on Oct. 10-11, 1996 sponsored by BNCRDC, HTRC-UPLB, BSU-HORTI & ODE.

A training on Integrated and biological control of plant pathogenic bacteria was conducted on Nov. 4-6, 1996.

The institute has also provided two consultation services and conducted two trainings to 66 participants.

C. Highland Agro-Forest Institute (HAFI)

The HAFI continuously conducts activities on agro-forest research and development programs.

It generated two technology/information on citrus farming systems and coffee with sayote intercrop.

The alnus hedgerow in citrus-based farming system in an area having 55% slope was found to be effective in controlling run-off, as indicated by a computed soil loss of 2.99 t/ha which is below the generally accepted permissible soil loss of 11.2 t/ha. As a soil conservation practice (P) for use in the USLE, the P value is 0.14.

Coffee grown with sayote covercrop/intercrop gave the highest yield followed by coffee with passion fruit. It was revealed also that the month of September had the highest soil loss of 2.66 kg in the 50 sq m plot, having the highest run-off of 3,280 liters.

D. Institute of Highland Farming Systems (IHFS)

The IHFS generated five technology/information on integrated highland farming systems, azolla, rice, fertilizer/growth hormone development from seaweeds and sheep production.

In an effort to revitalize intensively-cropped soils for organic farming of vegetables, soil chemical and physical properties were monitored annually using different vegetables as

test crops. Preliminary results showed that higher rates of organic fertilizer would be needed to have substantial increase in soil organic matter. Furthermore, crops fertilized purely with organic fertilizers had comparable yields with those fertilized with inorganic fertilizers. This being so, the gradual shift from the use of inorganic to pure organic fertilizer has a high potential technique for revitalizing degraded soils and thus for obtaining good crop yield.

The research activities involved the use of either fresh or dried azolla as a component of composting materials and the refinement of the azolla food products. Composting grasses and other farm waste materials increased N and P contents of the mature compost as the level of fresh azolla was increased from 0 to 8% to enhance ammonia release.

The Subcenter is maintaining 82 strains/varieties of azolla. Some azolla strains are mass produced in propagation ponds as source of inoculum for distribution to the farmers and compost material.

Hybrid rice from China such as Yuza 33 and Yuza 29 produced 11.04 t/ha and 11.3 t/ha, respectively, and a respective yield advantage of 256% and 264% over the local check, Kintuman, an aromatic native rice variety, had a yield of 3.1/ha. Among the NCT materials tested, IR 62443, a pre-released variety for the CAR, pro-

duced 7.2 t/ha or 132% yield advantage over the check, and PJ2 had a yield of 6.3 t/ha or yield advantage of 103% over the local check. These NCT materials, except the hybrid rice, are being piloted in at least three locations, in CAR, two in Benguet, (Palina and Poblacion, Buguias) and one in Banawe, Ifugao.

In the study on the development of fertilizers/growth hormone from Philippines seaweeds, potato plants treated with seaweed extract + commercial solid fertilizers significantly obtained the highest mean on the final height of potato 45 days after planting. It also gave the highest mean weight on the total tuber yield, marketable tubers and weight of extra tubers.

Cutflowers of chrysanthemum held on 0.1% seaweed extract had longer vase-life from harvest to senescence and better foliage color quality than the other holding solutions with higher percentage of seaweed extract. Comparable results on the color quality of flowers were obtained from the use of 0.1% seaweed extract with the other holding solutions of 50% 7-up, and 0.02% chlorox + 0.01% citric acid.

E. Highland Socio-Economic Research Institute (HSERI)

The HSERI has launched one program on waste management and

conducted one trainors' training on ecological waste management and on the development in Philex Mining Community.

Publications:

The Research Services had two regular semi-annual publications; 1) the BSU Research Journal No 23 (June and December 1996 issue), and, (2) the BSU Newsletter Vol XIV, No 1(June, 1996) and Vol XV, No. (December, 1996)

These are circulated locally and internationally

TECHNOLOGY AWARDS

1 BSU garnered awards on best technologies developed. The awards were presented during the 1996 Research and Development Highlights Symposium conducted under the aegis of the Highland Agricultural Resources Research and Development Consortium (HAR-RDEC). The winners and the titles of their researches are as follows:

- 1st - True Potato seeds (TPS) as an alternative planting material (Z.N. Ganga, et al.)
- 2nd - Hedgerows buffering with alnus as soil conservation technique

in citrus-based farming systems. (R.D. Colting).

- 3rd - Pine needles as mulch control weeds in strawberry fields (E.T. Balaki)
- 3rd - Triple-row method of planting strawberry increases yield (Poster) (E.T. Balaki)

2. During the BSU Foundation Day on January, 1996, a poster entitled "Partnership in Sustainable Development Through Azolla Technology," garnered the 3rd place.

3 The Sweetpotato-based Home and School Gardening Technology Development Project was awarded the Most Outstanding Project on Inter-agency Partnership (International level). This was awarded by the Users' Perspective with Agricultural Research and Development (UPWARD) on December 15, 1996 during the 5th Annual Convention of the Users' Perspective for Agency Program on Research and Development. (B.T. Gayao, et al.)

4. As centerpiece, the Vegetative Propagation of Selected Highland Crops Using Tissue Culture was selected as one of the Technologies in Focus during the 7th Annual DOST Technology Fair (Techno-Fair) last July 8-13, 1996 at the Philippine Trade Training Center, Manila.

1. **BSU-Institute of Plant Breeding (IPB) and Highland Crops Research Station.** This conducted varietal improvement projects on semi-temperate vegetable crops such as snap beans, garden peas, potato, tomato, succini, sugar beets, and pechay. The findings on these commodities are summarized as follows:

Snap Beans (*Phaseolus vulgaris*)

Seven varieties were selected for pilot production based on the results of the on-farm trial conducted in 1993-1995 in Benguet, Cagayan, Quezon and Laguna. Of these varieties, three are bush type namely Hab 63, Torrent and Land Mark and the other four varieties are pole type such as Blue Lake 228, hera, blue Lake and Blue Lake FM-1. They are high-yielding, resistant to bean rust and stringless and have better eating quality. They have been accepted by the snap bean farmers in the low-mid- and high-elevation areas. In Benguet alone, around 60 farmers have adopted these new varieties.

Garden Pea (*Pisum sativum*)

Out of 48 entries evaluated in two sets of replicated trials (RYT), 17 were selected as promising varieties of garden pea based on their field

performance related to pod doubling, pod quality and resistance to major pests. Nine F6 and two F8 lines were also selected as promising lines from the tested 46 segregating populations.

A total of 2.1 kg CGP 11A and 15.5 kg of CGP 14, the two newly recommended varieties were produced for further distribution and evaluation in more farmers' fields. Also, 21 promising lines are seed increased, yielding a total of 105.30 kg. In Benguet alone, 33 farmer-partners tried at least five of the promising lines each. CGP 11A, 12, 14, 18, 21 and 22 were the most preferred lines due to their higher-yielding ability and better quality and resistance to major pests than the traditional commercial varieties. This year CGP 12 and CGP 18 are the two improved lines selected and identified to be recommended for release as commercial production in 1997.

Potato (*Solanum tuberosum*)

Two clones of potato, IPB-BSU Selection# 3 (ASN 69) and IPB-BSU Selection #4 (8302-D185-7), are new varieties recently approved and registered by the Germplasm Registration and Release Office (GRRO). They are the selections of the national potato breeding project spearheaded by IPB in collaboration with BSU.

Tomato (*Lycopersicon esculenta*)

A total of 239 individual plant selections were made from 159 families. The selection was based on their performance related to prolificacy, fruit size, growth habit, maturity and other. Forty-five entries were selected for salad type, 114 for fresh market and 80 for salad-fresh market type.

Ten tomato varieties with known resistance genes from AVRDC, Taiwan and two local varieties were planted at the HCRS, BSU to identify the possible source of resistance genes against *Phytophthora infestans* present in the area. Out of the ten varieties studied, four were susceptible. The race of *P. infestans* present in La Trinidad, Benguet is similar to the one present in Taiwan.

Special Crops

Five varieties of Succini and four varieties of sugar beets were included in a separate variety trials. Black Jack out-performed the other four varieties of Succini by producing 47 g yield for 117 fruits. Sangria, the-top yielding variety of sugar beet, produced 38 kg/10m² plot.

Rejuvenation of Pechay and Mustard

Seventy eight kg of Pechay cv. Black Behi and 17 kg of mustard were produced at the station. These seeds will serve as source of planting materials for 1997 planting and for instructional purposes. However, due to late planting of the crops, the seeds produced were found out to be of inferior quality. Since they had only around 50% germination, they are not saleable (85% germination is required).

2. **Agricultural Technology Education Project (ATEP).** The main objective of this project is to produce technically equipped agricultural entrepreneurs. BSU belongs to Regional Agricultural College (RAC) which is tasked to provide academic leadership in advancing the frontier of knowledge in the various fields of agriculture.

ATEP conducted training for selected technical staff and faculty members of ISAC, WLAC, and RSC, from other ATEP and AGREED PTLAs on the development of instructional materials. This project was able to setup cooperative research undertaking with RSC on the production of white potato, strawberry and on-farm trials of snap beans and garden pea.

3. **Geographical Information System - Land Resource Information System (GIS-LARIS).** This is a joint undertaking of BSU, Benguet province and Bureau of soils and water management of the Department of Agriculture (DA).

The GIS-LARIS completed survey on bio-physical resources and agro-socio-economics in the 13 municipalities of Benguet, conducted preliminary analysis on agricultural development potentials of Benguet, analyzed the soil of farmers and started digitizing municipal maps and computerization data.

4. **BSU-Affiliated Non-Conventional Energy Center (ANEC).** Under the College of Engineering and Applied Technology (CEAT), it is tasked to spearhead the development, use and commercialization of non-conventional energy system in the Cordillera. It designed a proto-type micro-hydro battery charger which was started in 1994 with funding support from the Department of Energy (DOE). This machine was tested in different sites under different operating conditions. In the CAR region, 15 demonstration units have already been installed (with local counterparts in a form of labor or parts). These are benefiting a good number of people.

Additional installations in other parts of the country have been programmed.

5. **BSU-Australian Center for International Research (ACIAR) Project.** This project shall define problems and provide opportunities in small-holder pig production in the Philippines. It is being implemented by the College of Veterinary Medicine. In a survey, it was found that 150 were small-holder pig raisers. A project office was established at Loo, Buguias, Benguet.
6. **BSU-NEDA- Technical Resources Project (TRP).** This is a joint project of NEDA-CAR and Benguet State University which aims to enhance the promotion of regional investment by providing investors a focused guide on the opportunities available in the provinces and city of CAR. The study intends to identify, categorize and prioritize investment potentials in terms of products and services in the areas of agriculture, environment, social services, infrastructure, tourism and industry. As of this date, a long list of investment potentials has been completed. A prioritizing scheme was formulated by a group of consultants and validated by some businessmen, LGUs, and NGOs who would be end-users of the result of this research project. From this validated prioritizing scheme, investors can screen and select from the long list of products and services.

7. **BSU- Philippine Council for Agricultural Resources Research and Development (PCARRD)-DA-Centro Internacional de la Papa (CIP) PROJECT.** This project being implemented by the Northern Philippines Rootcrops Research and Training Center (NPRCRTC), aims to develop potato processing varieties in the Philippines. The project is located at the Center's experimental station at Buguias (Sinipsip and Natubleng), and Atok (Calasipan and Tullodan).

Through breeding, evaluation and selection, processing varieties/cultivars were chosen. Selection was also based on their resistance to pests and diseases. Those selected were mass multiplied through tissue culture and rapid multiplication techniques to facilitate diffusion to potato growers and were further subjected to various sustainable management practices to enhance their desirable characteristics.

8. **BSU-UNITED NATION DEVELOPMENT PROGRAM PROJECT (UNDP).** A joint project aimed at reducing pesticide use in potatoes through the use of biotechnology is being implemented by the NPRCRTC at Sayangan, Atok.

Using a resistant variety and observing cultural management

practices such as vine killing, hilling-up, proper harvesting, and seed treatment are among the control measures employed against late blight of potato. The use of resistant varieties is becoming an important control measure because of the negative effects of chemical spraying. Some available varieties with resistance to late blight are Montañosa, BSU-PO3, BSU-PO4 and Conchita.

9. **BSU-CIP- Bureau of Agricultural Research (BAR) SEED PRODUCTION AND DEVELOPMENT PROJECT.** The project aims to produce clean planting materials through tissue culture, stem cuttings and GO seeds; multiply and maintain new potato varieties; provide and disperse clean planting materials; and train and assist farmers on their seed farm.

This project is being implemented by the NPRCRTC at Natubleng (outreach station). The CIP provided the greenhouse and repair and BAR, the funding.

Three field schools at Atok graduated from their IPM-FFS for potato. Another seven schools started the second FFS in potato in Atok. Ten thousand GO seeds were given free to these schools. Many potato farmers are becoming aware of the existence of late

blight resistant varieties and are being convinced of the feasibility of Rapid Multiplication Technique (RMT) as a tool in seed production.

10. **BSU-Asian Development Bank (ADB) Project.** The project aims to promote the True Potato Seed (TPS) Technology in the Philippines through farmer-led technology transfer; provide research support to upgrade TPS technology through collaborative country testing of promising hybrids and seed multiplication technologies; and assist participating countries to develop indigenous TPS production system.

This project is being implemented by the NPRCRTC at the provinces of Benguet, Cagayan, Negros, Bukidnon, Davao del Sur.

Parental lines tested for their ability to produce seeds under local conditions were good, however, the amount of seeds produced was not enough to compensate for the total production cost. Based on the cost and return analysis, it is not profitable and practical to commercially produce TPS in the Philippine highlands, particularly at La Trinidad, Benguet, under short

day season.

From the 16 TPS progenies evaluated in Set A, five were selected for at La Trinidad and six for Sinipsip. From 17 TPS progenies in set B, four were selected for La Trinidad, and Natubleng. Progenies were selected based on their yield and uniformity of tuber shape, size and skin color.

11. **BSU-CIP PROJECT.** The objectives of the project are to promote and multiply late blight resistance varieties specifically the BSU-Po3-BSU-Po4, and to develop a sustainable informal seed production scheme.

The project is being supervised by the NPRCRTC at Buguias and Atok, Benguet.

The two late blight resistant varieties were readily accepted by the farmer-partners, as shown by their interest and enthusiasm in growing them. Likewise, the increasing demand and number of interested farmers show the great potentials of the two varieties for further adoption by other farms. However, in spite of the seed potato production training given to partners, GO seeds were not isolated but planted near table potato production areas due to the limited farm area of farmer partners.

12. **BSU-National Post Harvest Institute for Research and Extension (NAPHIRE) Community-based Enterprise Development on Potato Project.**

The objectives of the projects are to assess and evaluate existing production, marketing and utilization practices of potato farms; identify constraints/problems encountered by potato farmers; evaluate marketing systems, practices and problem on potato processing; determine appropriate marketing strategy for potato processed products; provide necessary information on market technology, management and financial requirements on potato processing; ascertain feasibility of establishing a pilot potato processing plant in Benguet.

The project is being implemented by the NPRCRTC at the provinces of Benguet and Mt. Province and Metro Manila.

Inter-agency consultations, pre-testing and revision of questionnaires are being done.

12. **BSU-Philippine Rootcrops Research and Training Center (PRCRTC)- National Research Institute (NRI) through Southeast Asian Potato Program for Research and Development (SAPPRAD) ,CIP - Users' Perspective With Agricultural Research and Development (UPWARD) Project.**

The project which aims to improve varieties of sweetpotatoes for the Philippine highlands, is being undertaken by the NPRCRTC at La Trinidad, Sablan, Kapangan and Kabayan, Benguet, Sagada, Mt. Province and Aringay, La Union.

The selected new varieties/ cultivars of sweetpotatoes were tested for their adoption to specific location or conditions. These cultivars were also evaluated for their dry matter content and processing qualities and environmental related conditions.



DECS personnel and BSU researchers monitoring the sweetpotato-based school garden project. This is one of the inter-agency collaboration projects of BSU.

13. **BSU- Sangju National Polytechnic University(SNPU), Korea.**

This is a scholarship and exchange program to promote and expand the exchange of academic data and publications; professors, researchers, and students; and implementation of joint research. For the year 1996, there were 2 faculty members sent to Korea to teach English; 5 students from SNPU took 10 months intensive functional English training program; 29 students underwent 5 weeks functional English training and in exchange, there were 20 BSU delegates who had gone to Korea.

14. **SHELL TRAINING FARM-BENGUET STATE UNIVERSITY (STF-BSU).**

Inaugurated in 1996, the joint collaboration aims to train farmers and out-of-school youth thru the Integrated Farming System (IFS) approach. The approach conceptualized by the Shell, includes the following modules: vegetable farming, organic farming, biotechnology, livestock raising, agroforestry and farm planning.

A specific program for the farm youth, the Sanayan sa Kabuhayang Agrikultura (SAKA) had likewise been established. This aims to train the youth in agricultural and entrepreneurial skills development.

For the year under review, a total of 400 farmers were trained

under the IFS scheme. This was achieved thru partnership with the following: Plan International (PI), Dept. of Agrarian Reform-CAR, and the Ugnayan ng Magsasaka ng San Simon, Pangasinan. On the other hand, the SAKA program graduated twenty farm youth from PI areas namely: Tuba, Kapangan, La Trinidad, and Sablan.

To suffice learning the SFT-BSU Project has employed farm operations like: Bio-organic farm operations, Livestock and Poultry and Nursery Establishment.

15. **BSU-DOST-CAR-Technology Application and Promotion Institute(TAPI).**

The DOST- Academe Technology Based Enterprise Development (DATBED) Program funded by TAPI-DOST which started in November 1994 has already graduated some 40 students: Bachelor of Science in Agriculture and Bachelor of Science in Agribusiness Management. The project advisers oversee students dabbling in the actual production and marketing of oyster mushrooms, chrysanthemum, strawberry and carrots. In May 1993, the amount of P75,584.20 was released by Dr. Maripaz L. Perez, Director of TAPI to fund a proposal on " Root Crop-based Snack Foods" which is being implemented by the College of Home Economics and Technology. Beneficiaries are third year students of the BSHE curriculum. The following products

were made: ube pastillas, sweet-potato pastillas, carrot-potato balls, and potato bars. The group also tried the other root-crop based products such as ube tart, ube hopia, and sweepotato hopia which were found to be more attractive to consumers and has longer shelf life.

16. BSU-DOST-PCARRD PROJECT.

Chrysanthemum is one of the five exportable crops included in the Integrated Ornamental Horticulture Research and Development Program (IOHRDP) funded by the Department of Science and Technology. To be competitive, the IOHRDP aims to enhance the production of quality ornamental products acceptable to the world market.

Chrysanthemum Research and Development is jointly implemented by the Benguet State University and the University of the

Philippines at Los Baños. Several experimental stations of the Department of Agriculture-Bureau of Plant Industry (DA-BPI) are also taking part in this activity. This is in cooperation with the Department of Trade and Industry-Bureau of Export Trade Promotion (DTI-BETP), Center for International Trade and Exposition Mission (DTI-CITEM), the Federation of Cutflowers and Ornamental Plant Growers of the Philippines (FCOPGP), and the Philippine Information Agency (PIA).

For efficient program implementation, the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD) acts as the overall coordinator through the program management committee (PMC). PMC sets priorities, identifies critical indicators, and evaluates the performance to attain the project's objectives.



Student beneficiaries gathering chrysanthemum from the DATBED funded research and development project.

The program of the extension office is geared towards increased agricultural productivity through the commercialization of technologies which promote conservation of resources and the environment.

A. Regular Programs that have been implemented

1. Implemented the Banana Pilot Program in Sablan. Other municipalities are also requesting for suckers.
2. Fingerlings were dispersed in Kapangan and Buguias in collaboration with DA-CARFU.
3. Conducted trainings on Integrated Pest Management (IPM) in Atok and Tuba.
4. Completed the field work phase of the feasibility study with a grant from LGU of Tublay.

B. Trainings:

There were three trainings conducted by the extension office.

1. **Teaching strategies:** Use of low-cost instructional materials and module preparation in four secondary schools of Mt. Province and Benguet.

2. Trainors' Training on Cutflowers Production.
3. Training on Local Government in the Municipalities of Manakayan, Bokod and Kabayan in collaboration with DILG Benguet Province.

C. Projects Coordinated:

1. Demonstration of raising cutflowers in Greenhouse.
2. Community mobilization for population. Resources Environment Program - Completed Phase I barangay profiling of Alno, La Trinidad.
3. Facilitated the installation of 2 units of transformers for the agro-forestry complex at Ampasit, La Trinidad.
4. Facilitated the installation of cold storage facility at swamp area. Funds amount to P500,000 was given by DOST-TAPI.

D. New Programs

1. Technology Piloting and commercialization
2. Technology Packaging and Publication
3. Training Outreach
4. Agri-school in the air

The income-generating projects under the revolving fund is actually grouped into two categories, are the principal sources of income of the production program of the University. The first, Fund 161, and the other, Fund 163, had an aggregate income of P840,708.23 for 1996.

Fund 161 is composed of 22 various projects of which 17 were considered as agri-based, and five as non-agri-based with a total income of P679,219.59. On the other hand, Fund 163 comprises seven non-agri-based and one agri-based projects; it generated a total income of P161,488.64 for the year.

All these projects were closely monitored during their operation. Their year-end status of operation and/or result of undertaking is shown in Table 6.

The top grossers under Fund 161 were (1) miscellaneous income, (2) bakery, (3) vegetable production, (4) strawberry production and (5) poultry production.

The use of the Home Management Building, guestel and dormitories (men and women) was also the top grosser under fund 163.

The negative results under Fund 163 were due to purchases of transportation facilities and electric transformers, and repair of equipment and materials necessary for the various projects. Some income of these projects was spent in paving the covered walk alleys within the University campus. Others can be attributed to calamities that struck these areas. Turn-over of management, uncorrected inheritance of liabilities, damage and losses also posed as factors for this result.



Strawberry production is one of the income generating projects of BSU.

Income Generating Projects

Table 6. Cash status of revolving fund, fund 163 as of December 31, 1997

NAME OF PROJECT	1995	1996	1996	BALANCE, 1996	CASH BALANCE
	BALANCE 1	INCOME 2	EXPENSES 3	2-3 4	1+4 5
1. Cafeteria	1,778,142.44	5,000,073.00	5,105,557.90	(105,484.90)	1,672,657.54
2. FAHP Canteen	7,082.96	1,870.77	-	1,870.77	8,953.73
3. Applied Tech	9,644.50	-	-	-	9,644.50
4. Gueste	195,753.67	262,545.00	137,327.62	125,217.38	320,971.05
5. Home Mgmt. Bldg.	219,229.05	285,560.00	127,068.16	158,491.84	377,720.89
6. Animal Clinic	18,339.00	4,270.00	-	4,270.00	22,609.00
7. Dorm (Ladies/boys)	120,435.23	210,988.35	194,661.78	16,326.57	136,761.80
8. Transportation Services	92,833.96	103,191.50	142,394.52	(39,203.02)	53,630.94
TOTAL	2,441,460.81	5,868,498.62	5,707,009.98	161,488.64	2,602,949.45

Table 7. Cash status of revolving fund, Fund 161 as of December 31, 1986

	BALANCE	INCOME	EXPENSES	1986	BALANCE
	1	2	3	2 - 3	1 + 4
1. Bakery	1,157,458.27	1,568,803.70	1,282,339.73	286,463.97	1,443,922.24
2. Poultry Flock 7	(30,434.38)	29,740.00	7,354.57	22,385.43	(8,048.95)
3. Floriculture	10,339.67	-	-	-	10,339.67
4. Flori-Orchid	(147,073.01)	5,805.00	-	5,805.00	(141,268.01)
5. Piggyery	217,412.42	283,662.00	295,622.92	(11,960.92)	205,451.50
6. Cattle	52,549.96	-	52,000.00	(52,000.00)	549.96
7. Mushroom	(15,242.90)	12,290.00	-	12,290.00	(2,952.90)
8. Agro-Forestation	131,087.49	48,428.28	163,229.69	(114,801.41)	16,286.08
9. Pomology	(17,913.50)	17,726.00	10,294.00	7,432.00	(10,481.50)
10. Strawberry	41,326.84	202,322.75	97,426.00	104,896.75	146,223.59
11. Vegetable Production	(45,721.67)	678,788.00	430,612.99	248,175.01	202,453.34
12. Food Processing Center	835,578.48	2,383,264.00	2,483,573.65	(100,309.65)	735,268.83
13. Miscellaenous Income	74,396.93	321,312.65	200.00	321,112.65	395,509.58
14. Seed Production	32,767.19	-	-	-	32,767.19
15. P.E. Facilities	66,360.45	102,840.00	126,126.85	(23,286.85)	43,073.60
16. ATEP, Special Project	31,022.04	177,547.14	181,830.53	(4,283.39)	26,738.65
17. Cutflower	-	-	22,699.00	(22,699.00)	(22,699.00)
18. Poultry c/o S. Arcellana	(17,336.75)	-	-	-	(17,336.75)
19. Poultry C/o J. Feliciano	176,154.34	-	-	-	176,154.34
	272,333.83	-	-	-	272,333.83
	556,396.79	-	-	-	556,396.79
	51,145.95	-	-	-	51,145.95
	(806,446.21)	-	-	-	(806,446.21)
	(322,038.92)	-	-	-	(322,038.92)
19. Chayote	(39,246.11)	-	-	-	(39,246.11)
20. Marketing Center	16,969.83	-	-	-	16,969.83
21. Student Trust Fund	46,081.66	-	-	-	46,081.66
TOTAL	2,327,928.69	5,832,529.52	5,153,309.93	679,219.59	3,007,148.28

Library Services

The University Library, being the heart of the institution, continued pursuing the different programs and services for the educational development of the academe.

The most notable accomplishment of the library is the operationalization of the INTERNET connection through PHNET at Saint Louis University as the primary node and BSU's dedicated line connectivity providing access to information globally.

During the year, the University Library acquire 1,086 volumes of books through purchase, gifts, exchange and networking. It added 160 journals through subscription and other means.

The usual services rendered to readers were attended to religiously. Added to routinary services provided to library clientele were internet and e-mail services which served the studentry, the faculty and the University as a whole. Information and communication network greatly improved through the said services.

Student Services

The Office of the Student Affairs (OSA) is tasked to enhance the students' personal growth and

development through effective delivery of quality student personnel development services, as follows:

Student Organization Activities. The registration of both old and new student organizations was processed. These organizations were also evaluated to determine the most outstanding organization. The students conducted election of officers of the Supreme Student Council which was coordinated by the OSA. The OSA also coordinated major students' activities such as the 1996 Search for the 10 Outstanding Students of CAR, the BSU-Korean Exchange program and the participation of the boy scouts and scouters to the Provincial Jamboree.

Guidance and Counseling Services. Provided were counseling services to students with personal, emotional, family and marital problems, and other problems related to absenteeism, returnees, graduation, discipline, and many others. The student inventory services, information services, follow-up and referral services were also provided throughout the year.

Student Financial Aid Services. The scholars were assisted in the processing of their enrollment. They were certified to be scholars whose fees are to be taken care of by the sponsoring agencies. Either initiated by the OSA or requested by the grantee for following up scholar-



The MOUNTAIN COLLEGIAN STAGERS posed after a one-day journalism seminar workshop last March 17, 1996. This seminar was attended by 80 participants from different schools in La Trinidad, mostly P.R.O.'s of student organizations of BSU.



The members of the BSU-College Red Cross Youth Council Outreach Program, together with their adviser, Prof. Olga C. Dangwa, distributing used clothings in Bakun, Benguet

Table 8. LIST OF SCHOLARSHIP/GRANT SPONSORS AND NUMBER OF BENEFICIARIES BY DEGREE PROGRAMS

SPONSOR	DEGREE PROGRAMS														TOTAL	
	BSE	DVM	BSF	BSA	BSN	BEE	BSAT	Engg	BSAB	BSND	BSHE	BSEB	BSAE	DAF		FR
I. GOVERNMENT GRANTS/SCHOLARSHIP																
1. State Scholarship Program (SSP)	3	1														4
2. National Integrated Scholarship	9	2	2	6	6	6	6	2	4	1	1	1				41
Government Program (NISGP)																
3. Selected Ethnic Group Educational																
Assistance Program (SEGEAP)	2	1		4	8	4			1	1		1	5			27
4. Cong. Ronald Cosalan (Benguet)	2			2	1				1	1			2			9
5. Cong. Victor Dominguez (Mt. Province)	2			6	2											10
6. Study-Now-Pay-Later Plan (SNPLP)	1		1	1	1	2	1	1	1	1			1			9
7. Department of Science and Technology (DOST)			1	8				5					16			30
8. Office of Northern Cultural Communities (ONCC)	3				2				1	1						7
9. National Angara Scholarship (NAS)											1					1
10. Poverty Alleviation Fund (PAF)	6	2	3	4	1	10		3	1	4	5	1				40
II. PRIVATE SCHOLARSHIPS/GRANTS																
1. Erap Foundation Incorporated (EFI)			1													1
2. La Tondera Incorporated								5								5
3. ZONTA				1						2						3
4. Philippine National Bank (PNB)		1		1				1								3
5. Commission on Filipino Overseas (CFO-DOFA)		1														1
6. Dr. Dong SupLee Grant			2													2
III. BSU SCHOLARSHIPS/GRANTS																
1. Mountain Collegian (MC)	4	1		2					1			1				9
2. ROTC				3					1							4
3. Athletics	8		1	11		2			2			2	3			29
4. BSU-CAR	1		1	2	1											5
5. CHED-DILG (PNP)	6			1				1				1				9
6. Employee Dependents	6			5		3			2	1		2	3			24
7. Barangay/SK Officials	22	2	1	18	3	20	1	2	6	5	6	2	8		2	99
8. KONTAD	4	2	1	8	1	1	3	3	1	1	2	1				28
9. Supreme Student Council (SSC)				1												1
10. Glee Club	14		3	2	1	7	1					3	2			33
T O T A L	93	13	17	85	27	55	9	29	17	13	14	17	27	16	2	434

ship grants, communications with sponsors was prepared. For 1996, 434 students enjoyed full or partial scholarships in the University. The number of scholars in the various programs with the sponsoring agencies is shown in table 8.

Testing Services. Entrance tests to the Secondary Laboratory School and College were administered. The test results were also interpreted and used during consultations with parents.

Placement Services. Students seeking jobs were assisted. Job opportunities for graduating students were sought. A seminar on career orientation was conducted for graduating students. Students

were also guided in choosing the right course.

Student Housing Services.

An average of 135 lady students and 92 male students were served in the Girls' Dormitory and Boys' Dormitory, respectively. During the summer months of April and May, 514 transient boarders were accommodated in the Girls' Dormitory.

Health Services.

The health needs of the university population which is composed mainly of the students, the faculty and staff as well as their dependents were provided. These health services consist of consultations, treatments of cases found by systems, communicable diseases and accidents.



The KONTAD is one of the indispensable student organizations that draws crowd during programs and other University affairs.

MANPOWER RESOURCES**Manpower Profile**

As of December 1996, there were 502 personnel, of whom two were holding key positions, 270 faculty and 230 non-teaching positions (Table 9)

Table 9. Total Number of Positions as of December 1996

A. Key Positions	Number
University President	1
Executive Vice President	1
B. Faculty	
Professors	68
Associate Professors	77
Assistant Professors	79
Instructors	46
C. Non-teaching	
First level positions	168
Second level positions	62
Total	502

The number of staff or non-teaching personnel, level positions, status, gender and degree are shown in table 10. There are 168 or 74% of the staff belonging to the first level. These are the security guards, laborers, utility workers, science aids, clerks and others who occupy sub-professional work in a non supervisory or supervisory capacity requiring less than four years of collegiate status. On the other hand, 58 or 26% of the staff belonged to the second level. They are the science research specialists, college librarians, the public health nurses and the staff under the Administrative Division and Financial

Divisions. The second level positions include professional, technical or scientific work in a non-supervisory or supervisory capacity requiring at least four years of college work up to Division Chief Level.

The distribution of faculty is shown in table 11. The college with the highest number of faculty is the College of Education. The 14 faculty members include the teachers in the secondary and laboratory schools. The College of Agriculture had the highest enrollment and offers nine major courses. The 65 faculty members which is 23.55% of the faculty force are not only teaching but are

Table 10. Distribution of the Staff in Level Positions, Status, Gender and Degree.

Level	STATUS		GENDER		DEGREE				
	P	T	M	F	PhD/ EdD	MS/ MA	DDM	BS/ AB	NON- DEGREE
Ist Level	163	4	94	73		6		48	113
2 nd Level	58		14	44	2	13	2	37	4
TOTAL	221	4	108	117	2	19	2	85	117

Table 11. Faculty Distribution Per College/Institute

College/Institute	No. of Faculty	Percentage(%)
College of Agriculture	65	23.55
College of Arts and Sciences	64	23.19
College of Engineering and Applied Technology	12	4.35
College of Forestry	12	4.35
College of Home Economics and Technology	13	4.71
College of Nursing	09	3.26
College of Teacher Education	74	26.81
College of Veterinary Medicine	12	4.35
Graduate School Consortium Professor	06	2.17
Institute of Physical Education and Sports	07	2.54
Institute of Public Administration	02	.72
TOTAL	276	100%

also engaged in administrative, research and development work. The College of Arts and Sciences followed the College of Agriculture. This college offers the basic foundation courses in all the colleges. There were six consortium professors in the Graduate School which accounted for the additional number

of faculty to the 270 plantilla positions.

Manpower Resource of Research Services

Table 12 shows that 107 research personnel were distributed to five research programs as follows:

The Northern Philippines Rootcrops Research and Training Center (NPRCRTC), 48 (45%); Horticultural Research and Development Institute (HORTI), 32 (30%); Highland Agro-Forest Institute (HAFI), 20 (19%); Institute of Highland Farming Systems (IHFS) five (4%) and Highland Socio-Economic Research Institute (HSERI) two (2%).

It also shows that 17 (16%) research personnel held positions

ranging from Instructor III to Professor VI; 31 (29%) held positions ranging from Science Aides to Supervising Science Research Specialists, including one Information Officer IV; 47 (44%) were permanent support staffs. There were also six Science Research Assistants and Science Aides and five laborers who were under contractual basis. Eleven or 10% of the research staff were under contractual basis (laborer 1, Science Aide and Research Assistants).

Table 12. Distribution Research Personnel by Program

ITEM/POSITION	NPRCRTC	HORTI	IFHS	HAFI	HSEI	TOTAL
Prof. VI		3	3			6
Prof. V					1	1
Prof. II		1				1
Prof. I		2				2
Assoc. Prof. V	1	2				3
Assoc. Prof. IV	2	1				3
Instructor III	1					1
Sub-total	4	9	3		1	17
Information Officer IV	1					1
Sup. Sc. Res. Sp.		1				1
Sr. Sc. Sp.	2	1				3
Sc. Res. Sp. II	2	1				3
Sc. Res. Sp. I	1	1		1	1	4
Sc. Res. Analyst	3					3
Sc. Res. Asst.	2					2
Educ'l. Res. Asst II	1					1
Educ'l. Res. Asst. I	1					1
Asst. Statistician	1					1
Sc. Aide	9	2				11
Sub-total	23	6		1	1	31

Table 12 Cont'd...

Artist Illustrator I	1					
Clerk III	2					2
Clerk II	1					1
Heavy Eqpt. Optr. I	1					1
Security Guard				2		2
Farm Supervisor	2					2
Laborer Gen. Foreman	1					1
Laborer Foreman	1			1		2
Laborer II	8		1	5		14
Farm Worker II	1	1				2
Carpenter II	1					1
Laborer I		5		11		16
Farm Worker I	1	2				3
Sub-total	20	8	1	19		48
Sc. Res. Asst. (Cont'l.)		4				4
Sc. Aide (Contractual)		2				2
Laborer I (Contractual)	1	4				5
Sub-total	1	10				11
GRAND TOTAL	48	32	5	20	2	107

Table 13. Loyalty Awards in 1996.

LENGTH OF SERVICE	FACULTY	NON-TEACHING	TOTAL
10 years	2	8	10
15 years	24	21	45
20 years	6	4	10
25 years	5	4	9
30 years	7	1	8
35 years	6		6
40 years	2		2
TOTAL	52	38	90

During the University Foundation Day on January 12, loyalty awards were given to the faculty and staff who have faithfully served the government from 10 years or more. As shown on table 13, two with 40 years of dedicated government services were awarded. The highest number of awardees went to 24 faculty and 21 non-teaching personnel who had 15 years of government services. A total of 90 or 18% of the personnel of the University were awarded.

Benguet State University has among its faculty and students national awardees during the year. They are as follows:

Dr. Franco T. Bawang - One of the Ten Outstanding Teachers for 1996 in the College level; awarded by Metrobank Foundation.

Prof. Wilfredo Mina - USA Bronze; awarded by the Boy Scout of the Philippines.

Judiel Chawag - 1996 Outstanding Nutrition Student of the Philippines; awarded by the National Nutrition Council - College Level.

Benjamin S. Luis - 1996 Outstanding Junior Scientist of the Philippines, awarded by Shell Foundation and the Science and Technology Information Institute of the

Department of Science and Technology.

Faculty Distribution by Rank, Gender and Degrees

As of 1996, there are 267 faculty in the nine colleges and two institutes of the University. There are 270 itemized faculty positions but three are unfilled yet. Sixty percent of the faculty are female and 40% were male. As to degrees, 25% have doctoral degrees, 40% have master's degree, 3% are veterinary doctors, and 32% have baccalaureate degrees (Table 14).

Faculty and Staff Development

The faculty and staff development has been pursued annually. For 1996, there were 35 scholars/trainees pursuing their doctorate and master's degree here and abroad. Table 15 shows the list of scholars/trainees, college where they belong, degree or field of specialization, duration and sponsors of the study/training grant.

The list of scholars and trainees are distributed as follows: College of Agriculture, thirteen; College of Arts and Sciences, eight; College Teacher Education, six; College of Home Economics and Technology, and five from research centers and institutes.

Table 14. Distribution of Faculty by Academic Rank, Status, Gender and Degrees

	STATUS		GENDER		DEGREE			
	P	T	M	F	PhD EdD	MS/ MA	DV M	BS/ AB
Instructor I	12	14	12	14		3	1	22
Instructor II	8		4	4		1	1	6
Instructor III	9		6	3		1	1	7
Sub-total	29	14	22	21		5	3	35
Assistant Professor I	21		10	11	1	7	2	11
Assistant Professor II	10		2	8	3	4		3
Assistant Professor III	10		5	5		5	1	4
Assistant Professor IV	38		12	26	3	22	2	11
Sub-total	79		29	50	7	38	5	18
Associate Professor I	6		1	5		1		5
Associate Professor II	8		3	5		3		5
Associate Professor III	10		5	5	1	6		3
Associate Professor IV	13		4	9		8		5
Associate Professor V	40		17	23	19	19		2
Sub-total	77		30	47	20	37		20
Professor I	11		1	10		9	1	1
Professor II	13		6	7	1	12		
Professor III	11		6	5	5	5		1
Professor IV	4		2	2	4			
Professor V	5		1	4	5			
Professor VI	22		10	12	22			
College Professor	2		1	1	2			
Sub-total	68		27	41	39	26	1	
Total	253	14	108	159	66	106	9	86

Table 15. List of scholars and trainees from the different colleges, institutes and centers for 1996.

NAMES	COL- LEGES /UNIT	DEGREE/ FIELD OF SPECIALIZATION	COLLEGE/ UNIVERSITY VENUE	PERIOD COVERED	DURA- TION	SPONSOR
Aben, Silvestre	CTE/HS	Ph D Horticulture	Univ Western Sydney, Australia	Feb 1995 Feb 1998	3 yrs	BSU Faculty Staff Development
Adanglao, Prescilia	CTE/HS	MS in Home Economics	BSU	Jun 1996 May 1997	1 yr.	Study leave
Alejandro, Vilma	CA	Ph Agric'l Studies	University of Ghent	June 1994- May 1997	3yrs	Belgian Administra- tion for Dev't. Co- operation
Anselmo, Belinda	CA	PhD Research	Ben Gurion Univ, Israel	June 1996 May 1999	3yrs	Jacob Blaustin In- stitute for Desert Research
Atinyao, Marlene	CA	PhD Animal Science	UPLB	June 1995 Oct 1998	3 yrs.	BSU Faculty Staff Development
Lalaoing, Lory	CHET	Ph.D. Home Economics	Phil. Women's Uni- versity	June 1994 May 1997	3 yr.	Phil. Assoc. of State Universities & Col- leges (PASUC)
Batani, Ruth	CAS	Graduate Program for Health Soc. Sciences	De La Salle Univer- sity,	Jan 1996 May 1997	1 yr.	Ford Foundation
Cardona, Eulogio, Jr.	CA	PhD Agric'l Studies	Univ of Ghent	Aug 1996 May 1997	9 mos	Belgian Adm. For Dev't. Cooperation

Colting, Lita M.	CA	PhD Entomology	UPLB	June 1994 Oct. 1996	2.5 yrs	BSU Faculty Staff Development
Debad, Luz	CA	Field Study Internship program	Israeli Government	Jan 12 to May 9, 1997	4 mos	Israel
Diego, Ruth	CVM	Advanced Studies in Aguaculture	University of Ghent, Belgium	Oct. 1996 Sept. 1999	1 yr.	Belgian Adm. For Dev't. Cooperation
Domondon, Dionesia	CAS	Growing Mushroom in Pure Culture	Univ. of Ghent	April 29 May 30, 1997	1 yr.	Ghent Univ Facul-ty Agro-Biology
Garcia, Judith	CON	Graduate Program for Health Social Sciences	De La Salle Univer- sity	Jun 1996 May 1997	1 yr.	Ford Foundation
Laconsay, Eduardo	IPES	In-Service Training for Teachers	Yamawashi, Japan	Oct. 1996 March 1998	1.5 yrs	Ministry of Educ., Monboshu, Tokyo
Lando, Lily Ann	CTE/HS	PhD Plant Pathology	UPLB	Jun 1995 May 1988	3 yrs	BSU Faculty Staff Development
Laurean, Carlito	CA	PhD Soil Science	UPLB	June 1994 May 1977	3 yrs	PCARRD
Lee, Gloria	CAS	DPA	UP Diliman	Nov 1995 Oct 1988	3 yrs	BSU Faculty Staff Development
Lirio, Lorenza	CAS	PhD Crop Science	Univ. of Ghent, Bel- gium	Feb 1996 Jan 1999	3 yrs	Belgian Adm. For Dev't Cooperation
Lubrica, Joel	CAS	PhD Science Ed.	Univ. of New Eng- land, Australia	Jan 1997 July 20001	55 mos.	Australian Agency for Int'l Dev't.
Magpala, Asuncion	CA	PhD Plt Pathology	UPLB	June 1996 May 1998	3 yrs	BSU Faculty Staff Development
Mamaryl, Erma	CA	Advanced Studies on Soil Sciences	Univ of Ghent, Bel- gium	Oct. 1996 Sept. 1977	1 yr.	Belgian Adm. For Dev't Cooperation

Milo, Victoria	CA	PhD Horticulture	CLSU	Jan 1996 May 1999	3yrs	On study leave
Mula, Rossana	CAS	PhD Social Dev't Studies	Univ. of Ghent, Belgium	Feb 1996 Jan 1999	3 yrs	Belgian Adm. For Dev't Cooperation
Naoe, Eduardo	CTE/Elem	MA-Values Educ.	Univ. of Asia & the Pacific, Pasig City	April 1977 March 1998	1 yr.	Study leave
Padua, Danilo	CA	PdD Agric'l Studies	Univ of Ghent	Sept 1996 July 1997	9 mos	Belgian Adm. For Dev't. Cooperation
Paran, Canuto	CTE/HS	MA in Education	BSU	Jun 1996 May 1997	1 yr.	Study leave
Perez, Hilario	CA	MS-Horticulture	BSU	Jun 1996 May 1999	1 yr.	Study leave
Ramos, Charito	CAS	PhD Crop Science	Univ of New England, Australia	Jun 1995- 2000	5 yrs	Australian Sponsored Training Scholarship
Salda, Violeta	NPRCRTC	PhD. Agronomy	Univ of Hongkong	May 1995 May 1998	3 yrs.	JH Graduate Assistantship
Sito, Leonila	CTE/OSA	PhD Educ'l Mgmt	BSU	Nov 1996 Oct 1997	1 yr	Study leave
Tabanda, Ma. Elena	CHET	Advanced Studies in Food Science & Technology	University of Ghent, Belgium	Oct. 1996 Sept. 1997	1 yr.	Belgian Adm. For Development Cooperation
Tad-awan, Bernard	CA	PhD Crop Production	Univ of Adelaide Australia	Jul 1995 Jul 1999	3 yrs	Australian Sponsor Trng. Scholarship
Tallayo, Lourdes	ADM	PhD. Agricultural Science	Gregorio Araneta Univ. Foundation	Dec. 1996 May 1997	6 mos	Study leave
Victor, Florencia	CAS	PhD Filipino	UP Diliman	Jun 1996 May 1977	1 yr.	BSU Faculty Staff Development

FINANCIAL RESOURCES

The Financial Services Division is under the supervision of the Office of the Vice President for Administration. It is composed of the Budgeting, Accounting and Cashiering units. These units take care of the financial transactions and is

responsible in the allocation, disbursement and accountability of the funds of the University.

For Calendar Year 1996, the total Appropriation of the University from the National Government amounted to P99,058,883.00.

Table 9. Allotment release order during the fiscal year 1996

	TOTAL	PERSONAL SERVICES	MAINT & OTHER OPER. EXP.	CAPITAL OUTLAY
A. Current Year's Allotment	88,184,505.38	71,739,331.00	7,895,174.38	8,550,000.00
Special Purpose Fund				
-Poverty Allev'n fund	800,000.00		800,000.00	
-PASUC Scholarship	321,340.00		321,340.00	
-Const. Water System	275,530.00			275,520.00
- Use of Income	4,825,794.00		1,956,524.00	2,869,270.00
- Terminal Pay	767,010.00	767,010.00		
- Retirement Gratuity	3,884,703.00		3,884,703.62	
TOTAL	99,058,883.00	72,506,341.00	14,857,742.00	11,694,800.00
B. Prior Year's Allotment (continuing appropriation)	4,043,856.68			4,043,856.68
GRAND TOTALS	103,102,739.68	72,506,341.00	14,857,742.00	15,758,656.68

The total cash allocation received for 1996 was as follows:

Personal Services and Maint. and Other Operating Expenses	P86,905,302.00
Capital Outlay	7,685,311.00
Accounts Payable	<u>4,330,592.00</u>
Total Cash Allocation	<u>P98,921,205.00</u>

A total income for General fund (101) which were remitted to the National Treasury amounted to P4,828,254.18. Out of this income realized, a special budget of P4,825,794.00 was requested to cover the release of appropriation for Student welfare programs, projects and augmentation of allotment for Capital Outlay of the University.

The income account were as follows:

Tuition fees	P2,656,826.07
Athletics	84,723.50
Diploma	79,994.00
Entrance fee	60,254.50
ID	46,853.30
Laboratory fees	907,498.24
Library	338,594.76
Matriculation	183,187.00
Medical/dental	197,289.00
OTR	27,905.00
Miscellaneous	240,562.31
Out of state fees	4,566.50

Total Income	P4,828,254.18
	=====

During the calendar year 1996, the University personnel were granted financial benefits, to wit:

1. Clothing allowance
2. Cash loyalty award
3. Step increment
4. Monetization of earned leaves
5. Salary differential as a result of NCC 69
6. Year-end Christmas bonus and cash gift
7. Productivity and incentive bonus
8. Subsistence and laundry allowance to our medical staff
9. Hazard pay
10. Anniversary bonus

PHYSICAL RESOURCES

To cope with the accreditation requirements of State Universities and Colleges of the country and to have a convenient working environment, several infrastructure projects were completed like the College of Teacher Education, College of

Forestry (Phase I), College of Arts and Sciences (Phase I), College of Nursing (Phase III), College of Veterinary Medicine Laboratory Clinic, High School Home Management Building and perimeter fencing of University reservation areas including the fabrication, repair and renovation of existing buildings.



Part of the University Perimeter (Fencing (Elem.- Forestry))

On-going construction of the College of Nursing building.





Renovated High School Home Economics Building.

College of Veterinary Medicine Laboratory Clinic



Cattle and Horse Pen of the College of Veterinary Medicine.



The College of Teacher Education.

The College of Forestry



BSU HYMN

Hail! Benguet State University
Our Alma Mater we love the best
To thee we raise our voices
Thy loyal sons and daughters are we
The lofty aims that thou posses
Lighting stars of culture made aflame
Over mountains, valleys, hills and plains
We'll ever sing of thee
BSU! We hail thee
Alma Mater we adore!

BSU! We hail thee
Our guide forever be
Thy torches we'll hold up high
Grateful sons we'll ever be
Our love that shall never die
Will linger long and clear
More glories to thy name we'll bring
Let our duties noble and loving
BSU! We hail thee
Alma Mater we adore
Alma Mater we adore!

1996 ANNUAL REPORT

This report covers all the consolidated University undertakings for the Fiscal Year 1996, specifically stressing out the four-fold functions of the University, i.e. RESEARCH, INSTRUCTION, PRODUCTION and EXTENSION.

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**A million thanks to all those who, in one way or the other
helped in the publication of the BSU 1996 Annual Report.**



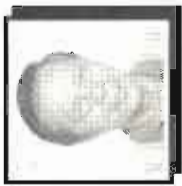
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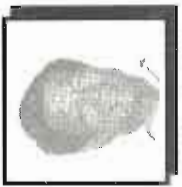
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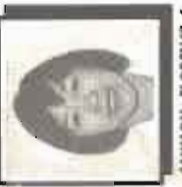
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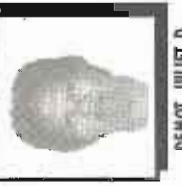
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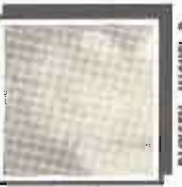
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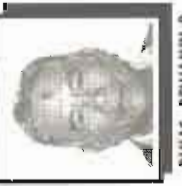
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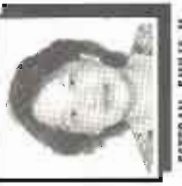
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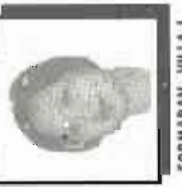
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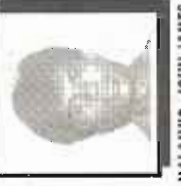
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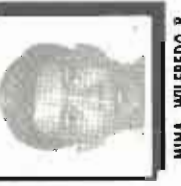
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