

CENTRE OF ADVANCED STUDIES

FIFTH ANNUAL REPORT

(1999-2000)

Dr. (Mrs.) Vijaya Khader

DIRECTOR

DEPARTMENT OF FOODS & NUTRITION

POST GRADUATE & RESEARCH CENTRE

ACHARYA N.G. RANGA AGRICULTURAL UNIVERSITY

RAJENDRANAGAR: HYDERABAD – 500 030

**FIFTH ANNUAL REPORT OF CENTRE OF ADVANCED STUDIES
FOR THE YEAR 1999-2000**

1. Project Title : Centre of Advanced Studies
2. Sanction No. : Proc.No.37735/H.Sc/A1/94,
Dt.22-9-95 of APAU
3. Report Period : April 1999 – March 2000
Report No. : V
4. Date of start : 02-11-1995
5. A) Name of Institute/Station : Acharya N.G. Ranga Agricultural
University, Rajendranagar,
Hyderabad.
- B) Division/Department/
Section : Centre of advanced Studies
Post Graduate & Research Centre
Department of Foods & Nutrition
Rajendranagar, Hyderabad – 500 030.
6. a) Technical Programme as approved for the scheme Appendix - I
- b) Technical Programme approved for the year
- c) Technical Programme approved for the next year : Approved
Programme
completed

7. Technical Personnel employed(list vacancy, if any)

Sanctioned Posts by ICAR	Posts filled	Posts to be filled
1. Steno – cum- Typist	U.D.Stenographer Filled on 2-9-1996	NIL
2. AVA Operator	Projector Operator Filled on 16-6-1997	NIL
Sanctioned posts by ANGRAU (Non-plan)		
Attender *	Attender Filled on 1-4-1999	NIL

- The post of attender was borne by the ICAR up to 31-3-1999. Since the ICAR had sanctioned only two posts from 1-4-1999, the ANGRAU has created a post of attender from the financial year 1999-2000.

Name of the Designation	Date of Joining	Date of Leaving
R.V.N.S. Murthy U.D.Steno	02-09-1996	----
N. Yedukondalu, Project Operator	16-06-1997	----
V. Narsinga Rao, Attender	22-06-1996	----

8. Total Outlay : **Rs. 40,15,856=45**
- Rs. 4,56,219=20 (1995-96)
 - Rs. 9,61,192=90 (1996-97)
 - Rs. 12,01,649=20 (1997-98)
 - Rs. 9,10,103=40 (1998-99)
 - Rs. 4,86,691=75 (1999-2000)
9. Total amount spent : Rs. 9,10,103=40
In Prevoius year (1998-99)
10. Total amount sanctioned /spent during the year under report
- a) Sanctioned : Rs. 9,82,000=00
 - b) Spent : Rs. 4,86,691=75

The following equipment was purchased during the financial year under report.

- I. PELICAN make Soxplus Solvent Extraction System
- II. Elico pH meter with electrodes
- III. Sensory evaluation lab cubicles, booths, work tables, stools.
- IV. Solar dryer
- V. Spiral binding machine

Proposals have been submitted to the ICAR for an amount Rs. 2,74,904/- for the purchase of the following items under revalidation.

- 1) Air conditioners with stabilizers (4 nos.) - Rs. 2,00,000/-
For existing conference hall and computer room
- 2) Colour monitor for the existing computer - Rs. 15,000/-
- 3) Tube-lights and fixtures in sensory evaluation lab - Rs. 10,000/-
- 4) Furnishing of supporting stands/frames to the air conditioners - Rs. 10,000/-
- 5) Furnishing of carpet and curtains to the existing computer room, classrooms, seminar hall & Conference hall. - Rs. 39,904/-

The specific sanction orders from the ICAR are expected during the financial year 2000-01.

11. Total No. of man-months : 12 months (From April 1999-March 2000)
During the year

12. Summary : Report objective wise enclosed

Signature:

Name & Designation : Dr.(Mrs.) Vijaya khader
Professor - cum- Director

REPORT ON ACTIVITIES CARRIED OUT UNDER CENTRE OF ADVANCED STUDIES 1998-99

I. INFRASTRUCTURE FACILITIES:

1. Staff recruitment:

The posts of Steno-cum-typist, and Projector Operator have been filled up and the two posts are being continued under the ICAR plan during the IX Five Year plan vide F.No. 1(18)/95/CAS/HRD-II, dt. 17-9-99 of the ICAR.

The Posts of attender is being borne by the University under Non-plan scheme from the financial year 1999-2000.

2. Civil Works:

Civil Works, electrical and sanitary works have been completed and handed over to this Centre. Now the Centre of Advanced Studies and handed over to this centre. Now the Centre of advanced Studies in Food & Nutrition has the following facilities.

- Seminar hall/ Lecture hall
- Conference hall
- Library room
- Equipment room/laboratory
- Computer room
- Office room
- Store room
- The university is constructing another conference hall costing Rs. 3.5 lakhs for this Centre above the existing P.G & R.C building for which tender notification was floated.

II. EQUIPMENT PURCHASED UNDER CENTRE OF ADVANCED STUDIES (1995-96 to 1999-2000)

S.No	Equipment	Cost (in Rupees)
1.	Computer; Pentium 100,640 MB, with TVS, MSP 155 Printer and HP Deskjet printer.	1,00,000-00
2.	Modi Xerox machine	1,08,000-00
3.	Air conditioners, Carrier Aircorn	55,000-00
4.	Kirloskar 5 KVA UPS	2,10,000-00
5.	Overhead Projector and slide Projector	50,000-00
6.	Microwave oven	13,000-00
7.	Samsung Refrigerator 420 litres	42,000-00
8.	Gerhardt Kjeldatherm automatic nitrogen analyser 3,28,000-00	
9.	Community nutrition equipment : Height rods, Diet survey sets	30,000-00
10.	Electronic top loading balances	25,000-00
11.	Public address system	35,000-00
12.	Furniture for Seminar Hall and Conference rooms in New building	2,50,000-00
	a. Chairs : 85	
	b. Dias table : 01	
	c. Computer tables : 02	
	d. Computer chairs : 02	
	e. Table for Xerox machine : 01	
	f. Printer Tables : 02	
	g. Rostrum	
	h. Carpets and Curtains	
	i. Bulletin boards\	
13.	Water Cooler cum purifier	17,000-00
14.	Portable refractometer and pH meter	10,000-00
15.	Double glass distillation unit	15,000-00
16.	Exide batteries – 2nos.	12,880-00

S.No	Equipment	Cost (in Rupees)
17.	V. Guard Stabilizer – 3nos.	10,000-00
18.	Aspirator bottle with stop clock	1,200-00
19.	Magnetic letters	7,800-00
20.	Essae Digital Weighing Machines (2nos.)	27,600-00
21.	Executive high back chair	7,300-00
22.	Prestosign letters	11,000-00
23.	Hamilton HPLC syringe	2,750-00
24.	Blow plast chairs (30nos.)	15,660-00
25.	LCD Multi-media projector (SANYO)	
26.	Panaboard (PANASONIC)	
27.	Metal Halide Spare Lamp	
28.	Wall Mounted screen	
29.	Laser points	
30.	2 KVA UPS System	1,25,000
31.	U – shaped conference table	46,000
32.	Pentax camera with accessories	33,000
33.	Built-in Cup-boards (20nos.)	1,10,000
34.	Black/green Boards (5nos.)	16,225
35.	Single blower	1,850
36.	Door closers and door locks	
	12,000	
37.	PELICAN make soxplus solvent Extraction system	1,71,970-00
38.	Elico pH meter with electrodes	9,005
39.	Sensory evaluation lab cubicles, booths, work tables, stools	
	37,922	
40.	Solar Dryer	11,050
41.	Spiral binding machine	6,380

Furniture:

The following furniture and furnishings have been purchased to furnish the Seminar hall, Conference hall, computer room etc.

List of Furniture and furnishings:

- Dias Table : 01
- Seminar hall chairs : 85
- Rostrum : 01
- Computer chairs : 02
- Computer tables : 02
- Printer Tables : 01
- Xerox machine table : 01
- Carpet
- Curtains

III. Maintenance and Repairs

The following activities were undertaken under maintenance and repairs.

- Electrical wiring to UPS
- Maintenance for Xerox machine
- Deionizer servicing
- AMC of AC machine

All these years, for some of the equipment purchased warranty is covered. Now all the equipment purchased has to be maintained in tact by entering into AMCs with the firms for which proposals for an amount of Rs. 1,82,400/- have been submitted to the ICAR.

IV. Purchase of Books and Journals

- Advances in food colloids
- Food properties hand book
- Biochemical aspects of nutrition
- Child growth & Nutrition in developing countries
- Effective programming for developing countries
- Major issues in Food & Nutrition sciences

- Participatory rural appraisal methods and applications
- Participatory rural appraisal & quarterly survey
- Nutrition & diet therapy
- Functional properties & food components
- Hand book of cereal science and technology
- Post harvest technology of cereals pulses and oilseeds
- Food safety
- Diet planning through the life cycle in health and diseases
- Preservation of fruit processing
- Food storage and preservation
- Subscription for “Down-to-earth” made and copies being received fortnightly.

I. ACADEMIC ACTIVITIES

Objective I:

To serve As a national resource and training center for faculty in the field of Foods & Nutrition by conducting summer institutes and short courses.

One short course was conducted during 1999-2000 viz;

- Recent Advances in Nutrition for Vulnerable Groups from 2nd June to 1st July, 1999(30 days programme).

RECENT ADVANCES IN NUTRITION FOR VULNERABLE GROUPS

A short course on “*Recent advances in Nutrition for Vulnerable Groups*” was conducted from 2nd June to 1st July, 1999 at the Centre of Advanced Studie to fulfill one of the objectives of training and up-gradation of faculty members of the Department of Foods & Nutrition from State Agricultural Universities . Participants were selected from SAU’s., like Marthwada Agricultural University, Parbhani; University of Agricultural Sciences, Dharwad; Rajendra Agricultural University , Pusa, Samastipur; Orissa University of Agricultural and Technology, Bhubaneshwar; Acharya N.G. Ranga Agricultural University ; and also from traditional Universities. Profile of the participants is given as below:

S. No.	Name of the applicant	Sate	University/ Institute	Designation	Address
1.	Mrs. Ansari Begum	Maharashtra	SAU	Supervisor	Dept. of Foods & Nutrition, College of Home Science, Marthwada Agril. University, Parbhani – 431 302.
2.	Mrs. G.S. Sharada	Karnataka	SAU	Associate Professor	Maharashtra. Dept. of Foods & Nutrition, College of Rural Home Science,

3. Dr.Usha Singh	Bihar	SAU	Assistant Professor	University of Agril. Sciences, DHARWAD-580005 College of Home Science, Rajendra Agril. University, PUSA, Samasthipur-848124 BIHAR
4. Ms. Asha Arya	Maharashtra	SAU	Associate Professor	Dept. of Foods & Nutrition, College of Home Science, Marthwada Agril. University, Parbhani – 431302.
5. Dr. N.Lakshmi Devi	Andhra Pradesh	SAU	Assistant Professor	Maharashtra P.G & Research Centre, A.N.G.R Agril. University, Rajendranagar, Hyderabad – 30
6. Dr.(Mrs.)Snehalata Nanda	Orissa	SAU	Assistant Professor	Dept. of Foods & Nutrition, College of Home Science, Orissa University of Agril. & Technology Bhuvaneshwar-751003 Orissa.
7. Smt.Nagabhushanamma	Andhra Pradesh	ICAR	Training Associate	Sri Aurobindo institute of Rural Development, Krishi Vigyan Kendra(ICAR), Gaddiapally,

8. Mrs.K.Suman Kalyani	Andhra Pradesh	ICAR	Scientist (Home Science)	Nalgonda (Dist) Central Tobacco Research Institute, I.C.A.R., Rajahmundry 533105, AP
9. A.Padmaja	Andhra Pradesh	Traditional	Lecturer	St.Therasas College For women, Eluru 534002, AP
10. Dr. Y. Jagadeswari	Andhra Pradesh	Traditional	Assistant Professor	Dept.of Foods & Nutrition, Women's College Koti, Hyderabad, AP.
11. Ms.V.Bindu	Andhra Pradesh	Traditional	Lecturer	Dept.of Home Science, M.R. College for Women, Vijayanagaram,AP
12. Ms.K.Sathya Devi	Andhra Pradesh	Traditional	Lecturer	Dept.of Home Science, M.R. College for Women, Vijayanagaram,AP
13. Dr. Vijaya Lakshmi	Andhra Pradesh	Traditional	Lecturer	S.P.W. College, Tirupathi-517502 Andhra Pradesh
14. Ms.P.Harisree	Andhra Pradesh	Voluntary Organisation	Training Assistant	Rayalseema Seva Samithi, Acharya Ranga Krishi Vigyan Kendra, #9, old Huzur Office Bulidings, Tirupathi-517502 Andhra Pradesh

Health and nutrition problems of vulnerable groups attract the attention of planners and policy makers. During the last four decades, there have been some impressive gains in respect of women and child development. A great deal of work on nutritional problems of vulnerable groups has been carried out. The major vulnerable groups among the population are women in child bearing age especially pregnant and lactating women, infants and children between 0-5 years, and elder people. Recent advances point to the far-reaching effects of good nutrition in the early (intra uterine, infancy and on prevention of degenerative disease in late adult life).

Women's poor health and nutritional status, childhood infections and malnutrition are the three primary factors causing high maternal and infant mortality. Maternal and child morbidity besides mortality is a serious concern for all academicians, scientists, medical personnel, policy makers etc. Antenatal care, reduction in infection along with good nutrition can enhance mother and child survival and reduction in morbidity. In recent years, the science of gerontology has gained much importance. This recent interest on gaining stems largely from the fact that the proportion of old people in the present society is much larger and they need utmost care to lead their later life peacefully.

Maintenance of optimal nutrition and positive health of the vulnerable population through assured nutrient intake is national priority.

Hence, the short course was planned with the following objectives.

1. To make the participants understand with depth, the existing knowledge with respect to nutritional modifications for vulnerable groups.
2. To update the knowledge of the participants on the complications in vulnerable groups and management systems to be adapted to overcome.
3. To equip participants with the first hand experience of scientist directly involved in programs and policies related to vulnerable groups.

The course content was planned by reviewing the last 10years research in the field by the **Course co-coordinators Dr. K. Aruna and Dr. K. Uma Maheshwari** under the overall supervision of the Course Director **Dr. (Mrs) Vijaya Khader.**

Experts in the relevant areas of the course within the faculty were selected for giving lectures on various aspects related to vulnerable group[s] and for conducting practical's. In addition to them, eminent speakers from Institutions such as National Institute of Nutrition, Government Maternity Hospital , Neiloufer Hospital, Indian Institute of Health and Family Welfare, Women Development & Child Welfare Department of A.P., Cooperative American Relief Everywhere (CARE), and UNICORN Pvt. Ltd. Further, medical practitioners were also invited to deliver lectures and to interact with the participants.

COURSE EVALUATION BY THE PARTICIPANTS:

The course was successfully completed and the valedictory function was held on 1st July 1999. Dr. I.V. Subba Rao, Vice-Chancellor, ANGRAU, was the Chief Guest Certificates and course manuals were presented to the participants by the Chief Guest.

The participants were given a detailed questionnaire to evaluate each topic with respect to usefulness and coverage of the topic as well as the overall course. The details are furnished in Annexure-III. Summary of the views are presented here. The response of all the 14 participants has been consolidated and presented below:

- Majority of the participants considered the course as “very useful” (57%) and “useful” (43%).
- Participants were satisfied about the coverage of the topics. Majority of the participants considered that the topics were “fully covered” (76%) and few considered as “partially covered” (22%)

Participant's views

- All the participants except one, were satisfied with discussions following each session.
- Majority of the participants were satisfied with the skill and knowledge acquired.
- All the participants felt that the social atmosphere of the short course was congenial and enjoyable.

- All the participants opined that the trainer-trainee relationship was very good.
- Majority of the participants preferred to have the training for 30days (50%) followed by 21 days (25%) and 28days (14%).
- Majority of the participants opined that the frequency of organization of short course be once in a year.
- The participants were either highly satisfied or satisfied with the practical content of the programme.

Participant's Suggestions:

Suggestions were also given by the participants to include few more topics viz.,

- More of income generating technologies.
- More of guest lecturers from International organizations.
- Few more visits to Processing industries related to weaning foods, formula foods, specialty foods etc.
- Pregnancy confirmation tests.

All the values are expressed in percentage.

1. Opinion on “coverage” and usefulness of the topics covered in the short course:

S. No	Topic	Usefulness of the topic (%)			Coverage (%)		
		Very Useful	Useful	Not useful	Fully covered	Not covered	Partially covered
1.	Introduction to the course	36	64	-----	79	----	21
2.	An overview on recent advances in nutrition for vulnerable groups	7	57	36	50	----	50
3.	Statistics related to health and nutrition of vulnerable groups	43	57	----	60	----	36
4.	Prevalence of deficiency disorders	57	43	----	10	----	----
5.	Anthropometric indices for assessing the nutritional status of vulnerable groups	43	57	---	100	---	---
6.	Biochemical	50	50	---	100	---	----

	parameters for assessing the nutritional status of vulnerable Group						
7.	Dietary guidelines for vulnerable groups	57	43	---	71	----	29
8.	Basis of arriving at nutritional requirements in pregnancy and lactation	57	43	---	71	---	29
9.	Antenatal care during pregnancy	50	50	---	100	---	---
10	General publications in pregnancy and management	21	79	----	79	7	14
11	Identification and management of high risk pregnancy & adolescent pregnancy	64	36	---	86	---	14
12.	Effect of maternal nutritional status on the outcome of pregnancy	64	36	---	71	---	29
13.	Maternal	29	71	---	36	14	50

	mineral nutritional status and its influence on pregnancy outcome						
14.	Indicators to monitor maternal health goals	43	57	---	79	----	21
15.	Challenges in reproductive research	71	29	----	100	----	----
16.	Management of complications in lactation	64	36	---	71	7	21
17.	Nutritional considerations in pregnancy and lactation	64	36	---	71	---	29
18.	Use of drugs in pregnancy and lactation	71	29	---	86	---	14
19.	Qualitative aspects of breast milk	86	14	---	93	---	7
20.	Milk banking in third world	64	36	----	93	--	7
21.	Infant milk formulas	79	21	---	93	---	7
22.	Problems of anaemia during pregnancy in india	64	36	--	71	---	29
23.	Feeding in infancy	71	29	---	86	---	14
24.	Nutrient	50	50	---	71	---	29

	requirements of normal, preterm and low birth weight infants and children and management						
25.	Growth pattern in young children, and anthropometric indices useful for assessing the nutritional status	36	64	---	57	---	43
26.	Disorders of growth and development in children	43	57	---	93	---	7
27.	Determinants of nutritional status of preschool children	43	57	---	71	---	29
28.	Malnutrition & psychological development among the nutritionally vulnerable children	50	50	---	71	---	29
29.	Bone mineralization in infancy	50	50	---	86	---	14
30.	Nutritional	86	14	---	93	---	7

	rickets in India?						
31.	Nutrition, Infection and Immunity in young Children	57	43	---	71	---	29
32.	Management of nutrition in diarrhea of young children	64	36	---	86	---	14
33.	Food allergy manifestation during infancy	86	14	---	93	---	7
34.	Nutritional aspects of inborn errors of metabolism in early childhood	79	21	---	93	----	7
35.	Mother – Baby Package	86	14	---	93	---	7
36.	High risk children and management	71	29	---	64	---	36
37.	Pathology of malnutrition in younger children and management	64	36	--	86	---	14
38.	Nutrition profile of the elderly	36	64	---	64	---	36
39.	Changes in	50	50	---	71	---	29

	body composition and physiological functions during aging						
40.	Physical and psychological factors affecting nutritional status of elderly	50	50	---	71	---	29
41.	Nutrition status and immune response in aging	57	43	---	50	50	50
42.	Is it possible to enhance the age?	93	7	---	86	---	14
43.	Speciality foods for the elderly	57	43	---	71	---	29
44.	Health and family welfare programme in operation for vulnerable groups	57	36	---	86	---	14
45.	National nutrition programme's for vulnerable groups	64	36	---	86	---	14
46.	Health and	50	50	---	64	---	36

	nutrition policies for vulnerable segments						
47.	Government NGOs strategies for the upliftment of nutritional status of vulnerable groups	71	29	---	86	---	14
48.	Nutrition surveillance system	50	50	---	86	---	14
49.	Prevalence and strategies for controlling anemia among vulnerable groups	64	36	---	86	---	14
50.	Targets and achievements related to health and nutrition of vulnerable groups	57	43	---	57	---	43
51.	Evolutionary aspects of diet and disease	71	29	---	86	---	14
52.	Interaction of nutrients and contraceptives	57	43	---	50	---	50
53.	Computer	50	50	---	64	---	36

	applications in nutrition related to vulnerable groups						
54.	Planning, monitoring and evaluation of projects and programmes	86	16	---	93	---	7
55.	Suitable technologies for socio-economic upliftment of vulnerable groups	57	43	---	57	---	43
56.	International scenario on fabricated nutritious foods for the vulnerable groups	36	50	14	36	36	29
57.	Problems of anemia during pregnancy	64	36	---	71	---	29

2. What other topics would you like to have included in the present training.
 - a. Income generating technologies
 - b. Guest lecturers from UNICEF
 - c. Visit to processing industries

3. What topics in the present programme would you like to delete.
 - a. International scenario
 - b. An overview on “Recent Advances in Nutrition for Vulnerable Groups”

4. Was there enough opportunity for discussions during the session
 - a. More than enough
 - b. Just as equal
 - c. Should have been more

5. Do you think that this short course has helped you have better skills and knowledge as a teacher?
 - a. Yes, to very great extent
 - b. To some extent
 - c. Not much

6. Do you find the social atmosphere of the short course congenial and enjoyable?
 - a. Excellent
 - b. Quite good
 - c. All right
 - d. Definitely not

7. What is your opinion on trainer – trainee relationship during the period?
 - a. Very good
 - b. Average
 - c. Needs improvement

8. In your opinion, what should be the duration of such short courses(effective days)
 - a. 30 days
 - b. 28 days
 - c. 21 days
 - d. 15 days

9. In your opinion what should be the frequency of organizing such short courses.
 - a. Twice in one year
 - b. Once in one year
 - c. Once in two years

d. Others

10. Were you satisfied with the practical content of the programme?

- Highly satisfied
- Satisfied
- Not satisfied

11. What are your suggestions to improve the practical content of the programme?

(list the suggestions).

- a. Preparation of speciality foods
- b. Biochemical tests of pregnancy confirmation

12. Wae/were the field visit(s) satisfying and educative?

- a. Highly satisfying and educative
- b. Somewhat educative
- c. Not at all educative

13. Any more suggestions

Repetition of the topics

SKILL ORIENTED TRAINING PROGRAMME ON “BAKERY AND FLOUR CONFECTIONERY”

A training programme with 10 days duration on “bakery and flour confectionery” was conducted for the housewives and school drop-outs of Hyderabad and Secunderabad twin cities from 21-3-2000 to 31-3-2000 by this Centre at College of Home Science, Hyderabad. A total strength of 10 members had undergone training.

Various bakery products viz., cakes, biscuits, pastries, icings were demonstrated and the participants had on hand experience and the skill of preparing bakery products. The programme went on very well. The detailed report along with the evaluation of the course by the participants will be submitted in due course. The programme was conducted on 31st March 2000. Dr. S. Renuka, Associate Dean, College of Home Science was the chief guest for the function. Competitions were also held on the last day and prizes were awarded to the participants.

Objective II:

To update the curriculum and courses of Foods & Nutrition to strengthen teaching and evaluation at UG and PG level.

Four year degree programme at UG and PG level has been formulated and ready for implantation.

Two specific areas of nutrition i.e., Nutrition and Dietetics and Community Nutrition which were approved in the Academic Council of the University during 1996 have been implemented for M.Sc. (Foods & Nutrition) programme from the academic year 1997-98 onwards.

New PG programme viz., Food Science & Technology is actively under consideration with the collaboration of the Foods & Nutrition Department (Home Science faculty), Veterinary faculty, Agriculture faculty and the departments of Horticulture, Agricultural engineering and Dairy Technology. Various courses as well as modalities have been worked out by the Director, Centre of Advanced Studies, Agriculture faculty and Veterinary faculty and consecutive meetings were held on 31-3-2000 under the chairmanship of Dr. M.V. Shantaram, Dean of PG studies.

The PG curriculum in the Home Science faculty based on the “Broad subject matter area meeting” held at NAARM ON 7TH and 8TH February 2000, is also in view of the implementation of the IV year B.Sc. degree programme, various courses in the Foods & Nutrition department under three different units i.e., 1) Community nutrition; 2) Nutrition and dietetics; and 3) Food science and human nutrition – have been worked out at length. The courses finalized on 18th & 19th of April 2000 at the workshop on “Restructuring of PG Education including course curricula in Home Science” at Punjab Agricultural University, Ludhiana.

In the existing PG programme, minor modifications have been carried out and submitted to the University based upon the present day-to-day needs.

ALLOCATION OF SEATS UNDER P.G. PROGRAMME

M.Sc.

Over and above the sanctioned strength of 14 M.Sc students four more candidates who have been nominated by ICAR were admitted under Centre of

Advanced Studies (one from Assam, one from Kanpur, however, two have discontinued due to personal reasons).

Ph.D.

Ms. Mary Walingo an inservice candidate from Kenya who had been nominated by ICAR and admitted in Ph.D during the year 1995-96, has completed her research on “Impact on dairy programme on nutritional status of vulnerable groups in kenya”, at Kenya. She had obtained her Ph.D degree during the year 1998. She is the first international candidate to have been admitted into the Ph.D programme of the department.

DEVELOPMENT OF TEXT BOOKS

Two university text books viz., “Food storage and preservation” and “Food Science and Technology” have been published by Dr. Vijaya Khader, Director, Centre of Advanced Studies with the financial support of the University Grants Commission.

A University level text book entitled “Food Science & Technology” with the financial support of ICAR is in press.

Two chapters on “Food facts and fallacies” and “Nutrition in emergency” have been contributed by Dr. Vijaya Khader for the text book on “Community Nutrition” being published by the ICAR.

Objective III

This centre is conducting refresher courses and arranging lectures of eminent scientists for the benefit of the staff members as well as students and for the benefit of the technical staff working in the Nizam’s Institute of Medical Sciences, National Institute of Nutrition, State Directorate of Women and Child Welfare etc.

Dr.(Mrs) Vijaya Khader, Director, is a member of the council of State Food & Nutrition constituted by the Government of Andhra Pradesh. This Council periodically sits in order to give recommendations/suggestions to the government as to the food and nutritional status.

Objective IV:

To disseminate nutrition information to personnel of different sectors.

Action plan

To bring out quarterly issue of Foods & Nutrition bulletin for circulation among the lien departments and the organizations involved in nutritional related programmes.

QUARTERLY ISSUE OF FOOD & NUTRITION BULLETIN

Three quarterly issues of “Food & Nutrition News”, were brought out for circulation among the lien departments and the organizations involved in nutritional related programmes to disseminate nutrition information to personnel of different sectors.

S.No	Title	Month	Year	Volume	Number	Issue Editor
1.	Soybean the miracle golden bean	April	1999	4	1	Dr.Krishna Kumari
2.	Nutrition in respiratory Disorders	August	1999	4	2	Dr.Anurag Chaturvedi
3.	Geriatric Nutrition	Dec.	1999	4	3	Dr. N. Lakshmidevi

Faculty improvement in terms of teaching, research and extension

- Two independent adhoc research projects on various are on-going in the department.
- All India Coordinated Research Project in the Department of Foods & Nutrition on-going from the inception of the project.
- Two inservice students and three regular students have obtained Ph.D degrees during 1999.

ON GOING RESEARCHPROJECTS

Title	Agency
All India Co-ordinated Research Project	I.C.A.R
Development of nectar from fruit and fruit blends available in A.P and their storage studies	I.C.A.R

Formulations of ready to bake cake mixes and to study the acceptability and nutrient composition	ANGRAU
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SEMINARS/SYMPOSIUM/WORKSHOPS

All the staff of the Centre of Advanced Studies have undergone computer training in MS-OFFICE under the Agricultural Human Resource Development (AHRD) programme at CMC, Hyderabad.

The staff have also undergone training in educational technology and pedagogy at NAARM and Extension Education Institute, Hyderabad respectively. Some staff of the department have attended Annual; meeting (IFCON) of the Association of Food Scientists and Technologists at Mysore. Dr. (Mrs).N. Lakshmi Devi, Assistant professor won the best poster award for her paper on “Geriatric foods”.

Abroad Training/Seminars/Workshops attended by the staff

Dr. (Mrs) R. Manorama, Assistant Professor, had been invited to present two papers on “*Effect of supplementation on serum lipids and anti-oxidants of healthy subjects and iron status of anaemic adolescent girls*” and “*Purification of palm carotene extracts from red palm oil and evaluation of their stability and vitamin A potency*” at PIPOC-99 (PORIM international Palm Oil Congress) held at Kaula Lumpur, Malaysia, in February, 1999 and 12th International carotenoid symposium at Cairns, Australia 18-23rd July, 1999.

Dr. Vijaya Khader, Professor & University Head, had been invited to participate in Pre-Congress Satellite Workshop on “*Dietary approaches to vitamin A deficiencies*” and presented a paper on “*Operational feasibility of introducing red palm oil into the supplementary feeding programme in urban ICDS centres*” on 27-28th August, 1999 and also presented a paper on “*Home based low cost energy protein rich preparations using horsegram for vulnerable groups*” in the 8th Asian Congress of Nutrition held at Seoul, South Korea from 29th August to 4th September, 1999.

Dr.K. Krishna Kumari, Associate Professor, had been invited to present a paper on “*Sale of supplementary food at subsidized price and its impact on health*”

and nutritional status of preschool children” at VI world soyabean Research Congress, Chicago, U.S.A., from 4-7th August, 1999.

Dr. Kamini Devi, Assistant Professor, had attended a training programme on “*Food additives in product development*” at Animal Sciences & Industry, Kansas University, U.S.A. from 3-5-99 to 28-7-99.

Dr. N.Lakshmi Devi, Assistant Professor, had been invited to present a paper on “*Dietary patterns of institutionalized elderly in Andhra Pradesh*” at 3rd International Conference on “Nutrition and Aging” organized by International Life Sciences Institute, Tokyo, Japan from 21-22nd September, 1999.

Overseas study tour

Dr. Vijaya Khader, Director, Centre of Advanced Studies and Professor & University Head, Dept. of Foods & Nutrition, P.G. & research Centre,(Home Science), under went on a study tour to University of Maryland, Iowa State University, Ames and Texas A&M University at U.S.A and University of Wales, Bangor, University of Nottingham, University of London, Wye College at U.K under AHRDP from 2nd to 20th November, 1999, with an objective of studying educational programmes at undergraduate and postgraduate level, the syllabi, curricula etc., the latest research projects undertaken and innovation made at postgraduate level and also the administration so as to improve and implement in the department at ANGRAU.

A diet exhibition sponsored by CAS was organized on “Nutrition – Womb to Tomb Complications” at the Nizam Institute of Medical Sciences. Dr.P.V.Rao, Medical Superintendent inaugurated the exhibition and highlighted the importance of diet from the beginning of life-conception through various stages of life. Posters, folders, charts models, sample menus & diet displays were used to explain the various nutritional facts Dr. Vijaya Khader, President, IDA, welcomed the gathering.

Lectures on nutrition in Cancer, nutritional disorders, clinical experience and internet facilities etc., were organized in different sessions. Later Dr. Rameshwar Sharma, General Secretary, IDA, A.P Chapter proposed a vote of thanks.

XXXI ANNUAL NATIONAL CONFERENCE

December 16-17,1998

The XXXI Annual national Conference of Indian Dietetic Association was held from 16th-17th December, 1998 at Cooperative Training Institute Auditorium, near ANGRAU, Rajendranagar, Hyderabad. Indian Dietetic Association, AP Chapter hosted the conference. Dr.(Mrs.) Vijaya Khader, Director of CAS who is also the president of the AP Chapter was the President of the meeting. On 16th, the Director Medical Education Dr.(Ms) T.E.Anandavalli switched on lamp to inaugurate the two day conference with the theme “Nutrition support Systems”. Dr. (Mrs) Vijaya Khader, President of IDA, AP Chapter and convener of the conference welcomed the gathering, while IDA, National President Dr. Molly Joshi presented a brief profile of the association. In his presidential address, the Vice-chancellor of ANGRAU, Dr.I.V.Subba Rao emphasized that food and nutrition security was vital to the nation. Scientists and agriculturists ensured food availability but others have to take care of food accessibility. The Director of NIN Dr. (Mrs.) Kamala Krishnaswamy said nutritionists and dietitians had to role with the changing times and the increasing number of people suffering from disorders and diseases. Among others present were Organizing Secretaries Dr.K.V. Ramesh war Sharma and Mr. Veerender Singh.

The conference has exposed nutritionists and dietitians to the recent trends in the discipline of dietetics in the field of preventive and curative care of the patients and the community at large. Dr. Kalyan Bagchi, the former secretary IDA and presently the Director of Nutrition Syndicate delivered A.K.Bose memorial lecture on “Socio economic transitions in India and their nutritional implications”. The Malaysian Palm oil Promotion Council was kind enough to sponsor several stalwarts in nutrition as guest speakers at the conference. They include Dr. Nevin S Scrimshaw from USA, Dr. A.J.S. Benade from South Africa, and Dr. David Kritchevsky from USA and Koh Chu sing from Malaysia. Dwelling on the importance of palm oil and its contribution to good health, Dr. Hashim said people in countries like India needed to consume more of palm oil. He said that while the world average consumption was of 17Kg of fats and oil per capita and the World Health Organization stipulated 20Kg. the per capita consumption in India was less than 10Kg. He also released a souvenir. Apart from this several nutritionists and

dietitians participated in several award sessions and non won awards. Kellogg has sponsored an oration on food fortification to combat nutritional anaemia and recipient of the maiden oration award in the form of gold medal is Dr.B.S.. Narsinga Rao, Ex-Director of NIN. The presentation of the award to Dr. Rao by Ms. Mallika Janaki Raman, Nutrition Manager, Kellogg India Ltd., marked the launch of a public service initiative on iron deficiency anaemia by the IDA and the firm.

Ms.Maxine Burch, Dietician from USA was the chief guest of the valedictory function. Dr. Molly Joshi, President of IDA National presided over the function.

Dr.Vijaya Khader was awarded the **Registered Dietician Certificate** which will help the students in their academic programmes.

The Conference deliberations are a feast of scientific content and knowledge and participating delegates have fully benefited from the proceedings.

POPULAR ARTICLES

About 25 popular articles on nutritional significance of various food products and importance of various foods in human nutrition, fallacies with regard to papaya consumption, methods of preventing food losses, etc., have been published in news papers and magazines such as Swathi, Vartha, Annadata, Swarna Sugam by the staff member of the centre.

TV PROGRAMMES

T.V programmes on “*Mushroom cultivation and spawn preparation*” by the Director, CAS was telecasted in “Annadata” a distant education program of doordarshan, Hyderabad, on 23-4-99,15-6-99, 27-8-99 and 5-10-99.

RADIO TALKS

10 radio talks on various aspects of Nutrition including deficiency diseases and their cure, Nutrient composition of food stuffs, reducing processing losses, etc were delivered by the staff.

SCIENTIFIC PAPERS

Fifteen papers have been published by the staff of Department of Foods & Nutrition on various aspects such as Nutritional anthropometry, diet and morbidity of tribal school children in Kurnool district of A.P., Development and storage stability of cereal based papaya products etc., which were published in various national and international journals such as, *Indian Journal of social work*, *Journal of Food Science and Technology*, *Plant foods for human nutrition* and *asia Pacific Journal of Clinical Nutrition* etc.

Award	Year	Name	Instituted
INTERNATIONAL			
Century's most notable Medal "2000 Millenium Medal of Honor"	1999	Dr. Vijaya Khader	The American Biographer Institute, North Carolina, USA.
Award for the "International Cultural Diploma of Honor"	1999	Dr. Vijay Khader	-do-

Award	Year	Name	Instituted
UNIVERSITY			
Best Teacher Award	2000	Dr. Yashoda Devi	ANGRAU

M.Sc.

Award	Year	Name	Instituted
Best paper award	1999	Ms. Alkananda & Dr. Vijaya Khader	Indian Journal of clinical Practice
Sagarlal Goenka Award for the best paper presented in the area of clinical nutrition	1999	Ms. Ameena Sadiya and Dr. Anurag Chaturvedi	Indian Dietetic Association, Annual Conference, 1999 at New Delhi.

OTHER ACTIVITIES

A project on "Formulation of ready to Bake Cake Mixes and to study the acceptability and nutrient composition" was undertaken as a departmental

research programme. Six formulations were developed using various flavours. Out of 6 Formulations, 2 flavors were selected which were most acceptable by the panel members i.e., vanilla and chocolate. Consumer studies and storage (keeping quality) studies are undergoing. Instant doughnut mix was also developed and the consumer acceptability and storage study are in progress.

Dr. (Mrs) Vijaya Khader, Director, Centre of Advanced Studies, has been included in a committee constituted by the Andhra Pradesh Nutrition Council/A.P. Foods – Diversification of Foods for ICDS/Special nutrition programme – Programmes in the State of Andhra Pradesh.

Dr.(Mrs) Vijaya Khader, Director of this Centre has been elected **Executive Member** of the Home Science Association of India for the next quadrennium i.e., from 1999 to 2002. She has also been elected to the **Executive Committee of the Nutrition Society of India** for a period of two years, i.e., 1999-2001.

Dr. Vijaya Khader, Director of this Centre had participated in the workshop on “*Animal commodities – milk cheese and meat processing*” held on 24th March 2000 at the University Teacher’s Home, Secunderabad. She had chaired the technical session – III(Unit processing in food industry) as the Co-Chairman and the technical session has made the following recommendations.

1. Post harvest technologists have to be exposed to the new emerging technologies (electro heating, pulsed Electric fields Process (PEP), High Pressure Process (HPP), aseptic packaging technologies, etc), especially in the field of processing industry.
2. There is a big gap in the country in the field of fruit and vegetables process engineering. The personnel should be trained to take up the challenges in this decade. The backup of the process engineering in combination with post harvest technology could only give the answer for the problems in the processing industry. The technology input from the developed countries can be adopted with the blend of indigenous expertise in those particular fields.
3. Aseptic processing technology of tropical fruits should be taken up as a pilot project by Acharya N.G. Ranga Agricultural University with the

- help of Department of Food Processing Industry, Government of India, New Delhi, in consultation with the Italian food processing industry.
4. Development of indigenous products from minor fruits like custard apple, jamun, etc., by the above technologies for export purpose.
 5. Development of processed biosafe-health foods from minor fruit crops, which have medicinal value and much in demand in the developed countries.

Interaction meetings:

An interaction meeting was held on 31st March 2000 at the Centre of Advanced Studies, P.G. & R.C., Rajendranagar, on planning a new M.Sc. programme in food science & Technology in collaboration with veterinary faculty, agriculture faculty, horticulture department and post harvest technology department. Dr.M.V.Shantaram, dean of P.G.Studies chaired the session and addressed the members of all the faculties. The efficacy of planning a common PG course which could be self supporting and skill oriented towards employment generation had been discussed at length Dr.Y.N.Reddy, ANGRAU Dr.B.V.Raghavendra Rao, Head, Dept. of Livestock products technology, College of Veterinary Science ANGRAU had strongly recommended for the introduction of the new M.Sc. programme.

The Indian Dietetic Association Annual Meeting

The IDA annual meeting A.P. Chapter was held on 12-6-99 at Sarojini Devi Eye hospital, Hyderabad. The staff and PG students of the Foods & Nutrition department participated in the meeting. Dr.N.Lakshmi Devi, Asst.Professor presented a paper on "*Nutritional profile for institutionalized elderly in Andhra Pradesh*".

Interaction meeting with government and other organizations

The user agencies meet for vocationalisation of Home Science Education is held on 7-3-2000 at College of Home Science. Director, Centre of Advanced Studies as well as staff members from the department of foods & Nutrition actively participated to discuss about proper interaction with the industry people and user agencies in order to provide employment opportunity to the undergraduate

as well as graduate students of the Home science faculty. The main idea of the meet is to study the feasibility of absorption of home science graduates in their organizations/institute/industry and to come to an understanding between the university and the user agencies.

The ICAR was pleased to sanction a sum of Rs.5,00,000/- during the financial year 1999-2000 towards the purchase of a vehicle "TATA SUMO". The vehicle has been purchased by the university.

WORLD FOOD DAY

The Department of Foods & Nutrition, College of Home Science has celebrated "World Food Day" on 16-10-99 at Kappapahad village, Ibrahimpatnam Mandal, in association with the Non-Governmental organizations 'LIFE' and 'SMRAN'. About 200 people including women, men and school children attended the function. Importance of food and different nutrients in the maintenance of health and nutrition of population, role of youth in promoting nutrition with an emphasis on selection of right type of food within the available budget, methods of prevention of nutrient losses and the nutrition challenges facing the country were explained to the group. Certain questions raised by the group regarding nutritional deficiency diseases were clarified by suggesting them appropriate dietary management methods using low cost locally available foods. An interactive session was conducted involving the school children of the village regarding their nutrition knowledge. An exhibition on sources of various nutrients, different types of nutritional deficiency disorders, methods of preventing nutrient losses and health & hygiene was organized for the benefit of participants. Dr.S.Sumathi, Dr.Kamini Devi, Dr.K.Uma Maheswari and Dr. N. Lakshmi Devi from from the Dept. of Food & Nutrition participated in the function. An article written by Dr. Vijaya Khader, Professor & University Head, Department of Food & Nutrition on "Rythu Rajyam" was published in "Eenadu", Telugu daily on 16-10-99.

WORLD DIABETIC DAY

Staff and students of Department of Foods & Nutrition celebrated World Diabetic Day on 14th November 1999 at Osmania Medical College in collaboration with Juvenile Diabetic Foundation. In this connection a diet

exhibition was organized and several diets suitable for different age groups and activity were displayed. The exhibition was inaugurated by Dr.G.Shyam Sunder, Vice Chancellor, NTR University of Health Sciences. More than thousand people have visited the exhibition. Dr. Kakarla Subba Rao, Director, NIMS; Dr.C.Chandrasena, Director, Medical Education and Dr. M.M.Reddy, Principal, Osmania Medical College also participated in the programme. Insulin packages were distributed to juvenile diabetic children. An exhibition on hypoglycemic drugs, insulin, insulin syringes clothing and foot wear for diabetics was displayed by various pharmaceutical companies.

NUTRITION WEEK (1st – 7th September, 1999)

Nutrition week was celebrated at the College of Home Science on 1-9-99 jointly organized by Food & Nutrition Board and college of Home Science. A State level workshop on preventing malnutrition among children under two years was organized.

VISITORS

The Quinquennial Review Team consisting of the following had visited this centre on 30-11-99 and 1-12-99.

- 1) Dr.K.Pradhan, Ex. Vice-Chancellor, OUAT, Bhubhaneshwar.
- 2) Dr.S.Shanmuga Sundaram, Ex. Vice- Chancellor, TNVASU, Chennai.

A report was presented by the Director of this Centre to the team.

Dr.H.S.Nainawatee, Asst.Director General (HRD-II), ICAR, New Delhi had visited this Centre on 26-2-2000 to sort out the issues relating to Head-wise and year –wise savings from 1995-96 to 1998-99. A detailed report was submitted to the ADG.

On 25th March 2000, a team of Italian delegation under the leadership of Dr. Botazzi, Catholic University, Italy had visited this Centre. There was an interaction between the Italian delegation and the department of foods & Nutrition. The rapporteur Dr. Vijaya Khader had explained the activities of this Centre to the following Italian scientists.

- 1) Dr. Cocconcelli, Catholic University, Italy
- 2) Dr.Emaldi, Dairy Institute, Lodi, Italy
- 3) Dr. Seolari, Catholic University, Italy
- 4) Dr. Mora, CNR, Quality Control Expert (Parmacocio Industries, Parma), Italy
- 5) Dr. Lanzarini, University of Porenza, Italy
- 6) Dr.Duva, Director, Caserta, Italy
- 7) Dr. Palmieri, Engineer, Experimental Station for Food Preserves, Italy
- 8) Dr. Tedone Pierluigi, CNR, Raisa, Italy.

The Dean of P.G. Studies and other Heads of Faculties had interacted with the Italian delegation and the staff of the department of Foods & Nutrition, P.G. & research Centre.

PROPOSALS FOR THE YEAR 2000-2001

APPENDIX – II

WORKPLAN FOR CENTRE OF ADVANCED STUDIES

FOR THE NEXT PLAN PERIOD FOR APPROVAL

Department of Foods & Nutrition
Post Graduate & Research Centre
Andhra Pradesh Agricultural University
Rajendranagar, Hyderabad 500030

I. OBJECTIVES

1. To serve as a national resource and training centre for faculty in the field of foods & Nutrition.
2. To upgrade the curriculum and courses of Foods & Nutrition to strengthen teaching and evaluation at UG and PG level.
3. To support the government in training personnel.
4. To disseminate nutrition information to personnel of different sectors.

II. OUTPUTS / PROGRAMMES TO BE IMPLEMENTED DURING THE CURRENT PLAN PERIOD

Objective 1

To serve as a national resource and training centre for faculty in the field of Foods & Nutrition in State Agricultural Universities.

Action plan

A. Short Courses

Conducting two Short Courses in priority areas of Foods & Nutrition.

Priority areas identified for summer Institute Programme / Short Courses

1. Recent developments in therapeutic nutrition.
2. Fruit and Vegetable Processing.
3. Grain processing.
4. Nutritional assessment and methods.
5. Nutrition toxicology.

B. Allocation of seats under PG programme

Provision of seats in M.Sc. and Ph.D. in Foods & Nutrition to outside State candidates selected by ICAR through a common test would be decided (as a policy matter) under AHRD subject to the approval state Government.

Objective 2

To update the curriculum and courses of Foods & Nutrition and strengthen teaching and evaluation at UG and PG level.

Action Plan

- To implement the course curriculum for UG programme keeping in view the recommendation of Deans Committes (Workshop organized on 7th-12th June, 1993 at APAU, Hyderabad – Report awaited).
- To organize one work shop for developing PG curriculum during III year of the programme.
- Preparation of one CD-ROM lesson and two video lessons.
- Practical Manuals preparation
Intermediary metabolism, Maternal and child nutrition, Assessment of food standards and quality control

Objective 3

To support the Government in training personnel and in implementing and evaluation of nutrition programmes.

Action Plan

- Assessing and developing the training needs of the line departments (women's Development & Child Welfare; Social & Tribal Welfare; Panchayat Raj & Rural Development) through meetings and group discussions.
- Food & Nutrition information through mass media (TV, Radio and Press).

Objective 4

To disseminate nutrition information to personnel of different sectors.

Action Plan

- To bring out quarterly issue of Food & Nutrition Bulletin for circulation among the line departments and the organizations involved in nutrition related programmes.

Title of the Topic	Month of issue	Issue Editor
1. Food security	April, 2000	Dr. Uma Maheshwari
2. Determinants of nutritional Status in preschool children	August, 2000	Dr. YAsoda Devi
3. Food additives	Dec. 2000	Dr. Kamini Devi
4. Energy Balance	April, 2001	Dr. V. Vijaya Lakshmi

III. EXPECTED OUTCOME BY THE END OF THE PLAN PERIOD

1. Providing common resource material for teaching and evaluation of food and nutrition programmes at UG and PG level.
2. Faculty improvement in terms of teaching, research and extension.
3. Strengthening postgraduate Education and research in Foods & Nutrition in other State Agricultural Universities.
4. Conducting need based multicentre studies to provide feedback to the planners and policy matters.

BUDGET PROPOSALS FOR 2000-2001

1. Salaries of Staff (2 nos.)	Rs. 2,50,000/-
2. T.A/D.A incl.LTC	40,000/-
3. Books & Journals	40,000/-
4. Recurring contingencies	2,00,000/- (justification submitted)
5. Color monitor for existing computer	15,000/-
6. Computers with printers (2nos.)	2,50,000/-
7. Maintenance & Repirs	1,83,000/- (justification submitted)
8. Vehicle maintenance (oils & Lubricants)	1,00,000/-
Total	Rs. 10,78,000/-

Note: Apart from the above budget proposals sent along with the annual report 1998-99 (reproduced below) may kindly be considered for grant.

SI.No.	Particulars	Amount (Rs.Ps)
1.	Training of staff for Multi-media CD-ROM Software development NON-RECURRING CONTINGENCIES	1,00,000=00
2.	Upgradation of existing Pentium computer 630 MB HDD, 66 MHZ speed, 16 MB RAM, 16 bit, to Celeron processor, 4GB HDD, 350 MHZ speed, 64 MB RAM, 32 bit, PCI-VGA card	30,000=00
3.	HP Office Jetpro-1175c-printer –cum-copier-cum- Scanner	75,000=00
4.	CD-ROM writer	25,000=00
5.	Compacts discs and preparation of CD lessons	3,00,000=00
6.	Video cassettes/video lessons preparation	1,00,000=00
7.	Atomic Absorption Spectrophotometer	20,00,000=00
8.	Electronic weighing balance for weighing bulk food items	1,00,000=00
9.	Ice cubing machine	50,000=00
10.	Walk in Cold room	5,00,000=00

11. Number machine for printing page numbers

12. False roofing for computer room

GRAND TOTAL

32,80,000/-
