Rural Awareness Work Experience Programme Manual

B.Sc. (Hons.) Horticulture

ANDHRA PRADESH HORTICULTURAL UNIVERSITY
Venkataramannagudem-534 101
West Godavari (Dist), A.P.

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CONTENTS

INTRODUCTION

Rural Awareness Work Experience Programme (RAWEP) for under graduate students of horticulture is offered during 7th semester. Under this programme, every student is expected to work for 6 weeks with farmers within the vicinity of Research Stations/s of the university. This is an unique opportunity for the students to work with the farmers at their farms and identify various production, protection and marketing constraints. In addition, RAWEP develops competency in the areas of technological, managerial and communication skills among the students. The main components of the programme include Crop Production, plant protection, rural economics, extension programme and research station/attachment to Agro-based industries. Apart from this, during the programme the students will be attached with anyone of the identified agro-based industries for two days to acquaint themselves with the organizational setup, the functioning and to gain first hand information of the industries.

Duration of the programme shall be for 6 weeks corresponding to Kharif / Rabi.

A group of ten to twenty students shall be allotted to each Research Station. The students in turn shall be allotted in batches of three to five boys or six to eight girls to selected village in the vicinity of the research station/ and attached to one host farmer each. The students shall have to make their own arrangements for boarding and lodging in the village and they will be paid a stipend of Rs.1500/ -per month during the programme.

Objectives

The objectives of the programme are:

- To develop an understanding of rural and different situations prevailing in villages with special reference to horticulture among the students.
- To gain knowledge and experience on the operational aspects of horticultural technology being used/adopted by the farmers.
- To acquaint the students with the functioning of Agro-based industries and to gain first hand information.
- To provide an opportunity for practical training in crop production and plant protection through work experience.
- To familiarize with socio-economic conditions of farmers and several agencies and institutions involved in rural development.
- To help the students to understand the problems pertaining to horticulture in villages with special reference to constraints in application of latest orchard technology.
- To develop communications skills in students using extension training methods in the transfer of Horticultural Production Technology.

PROGRAMME OF WORK

The Rural Awareness Work Experience Programme consists of the following courses equivalent to a load of 10 credits.

Sl No.	Course title	Credits
1.	Crop production	5
2.	Plant protection	2
3.	Rural economics	1
4.	Extension programme	1
5.	Research station Activities	1
	Total	**10**

1. Crop production - 5 credits

The students will involve themselves to:

- Follow & work in respect of day-to-day operations along with the host farmers
- Maintain crop-wise record of horticultural operations in a diary
- Make critical observations and ascertain the reasons for non-adoption of recommended package of practices for the crops of the host farmer
- Record of production problems confronted by the host farmer
- Record of biometrical observations for minimum of three crops in the proforma prescribed and analyze for their performance in comparison to recommended horticultural technology
- Maintain a record of daily work done in the Performa prescribed

2. Plant protection (Entomology and Plant Pathology) - 2 credits

The students will be involved in conducting the following:

- Identification of insect pests, diseases, nutritional disorders, weeds and other physiological disorders in standing crop
- Maintenance of record of plant protection work undertaken in the prescribed proforma for a minimum of three crops
- Make critical observations on adoption of recommended plant protection measures for the control of diseases and insect pests of the crops
- Record the observations on plant protection separately for insect pests diseases
- Demonstration of preparation of fungicide/insecticidal spray fluids for important plant protection measures
- Submission of 10 herbarium specimens each of insect damage, plant disease symptoms nutritional disorders, weeds and physiological disorders of any of the crops grown in the village.

3. Rural Economics - 1 credit

The students will be involved in conducting the following:

- Collection of data on economic status/condition of the village, resources endowment and its utilization, population, cropping patterns, irrigation source, vital statistics, labour problems, employment and other economic aspects as per prescribed Performa/questionnaire
- Conduct of farm holding survey as per prescribed Performa and working out cost of cultivation of principal crops grown by the host farmer and one other category of farmer (if host farmer is large farmer, the other farmer should be a small/ marginal farmer and vice-versa)
- Participation in anyone of the vocational trainings listed

4. Extension programme - l credit

The students will be involved in conducting the following:

- Identification' of major horticultural problems of the village through participatory rural
- Appraisal (PRA) techniques
- Study of on-going central/state sponsored rural development and extension programmes and identification of extension approaches in the rural development programmes
- Visit to village institutions to study their role in development programmes and extension work

5. Research Station Activities - 1 credit

The students shall be given an opportunity to acquaint themselves with the various research activities / programmes of the research station concerned and also the agro climate zone in whid1 it is located. The principles and methodologies involved in conducting different types of experiments / trials, collection and analysis of experimental data, maintenance of farm records etc., shall be explained to them. The students will observe closely different aspects of research programmes / activities with the guidance of research scientists of the respective centers. They shall maintain a record of the titles of technical programmes for various research projects undertaken at the Research Station. They must also record all the items of work either carried out by them or shown to them. This exercise shall be done whenever all the students visit Research station. During the period, when the host farmer does not have much day-to-day work on his holding, or upon completion of work in the villages, the students can better attend the work at the research station concerned. During the visit, the student must record meteorological data of the preceding week / fortnight.

The data pertaining to all the courses of RAWEP are to be recorded regularly in the student's diary (annexure-I), which has to be submitted to the scientist /scientist in d1arge during his weekly visits.

During the attachment of students to the identified agro-based/ horti-based industries (one or two depending upon the availability of the facilities), the students are given an opportunity to acquaint themselves with the organizational set up, functioning, Infrastructure available, records maintained and financial, technical and marketing aspects. The students must record al the items of work either

carried out by them/shown to them during the period of attachment to the industry. At the end of the attachment period the students shall submit a project report which includes all the aspects pertaining to the infrastructures facilities, organizational set up. financial and technical aspects. In addition, the students shall also describe in their report the operational and market constraints / problems faced the industry.

ADVISORY COMMITTEE

An Advisory Committee shall be constituted for each student to provide necessary guidance in the implementation of the Rural Awareness Work Experience Programme. The Advisory Committee consists of the following members.

- Head of the Research Station -Chairman
- Scientist from Research Station
- Associate Dean's Representative
- Representative of the Department of Horticulture (not below the rank of Horticultural officer)
- The host farmer of the student concerned

The first member shall be the Chairman of the Advisory Committee.

The Chairman of the Advisory Committee shall be vested with the responsibility of formulating the Rural Awareness Work Experience Programme for each allotted student and its implementation and evaluation assisted by the other members of the Advisory Committee.

The Advisory Committee shall meet as often as necessary or at least twice by synchronizing with the visit of the Associate Dean's Representative to the research station to review the progress made by the students in the implementation of the programme, and to evaluate and suggest mid-course corrections, if any. At the last meeting of the Advisory Committee, the entIre progress of the student shall be reviewed and evaluated.

The performance of the students shall be evaluated by the members of the student's Advisory Committee in the manner prescribed.

REGISTRATION

Eligibility

A candidate should have passed all the courses of II year and should not have more than 4 courses of III years backing courses (failed).

The registration of RAWEP courses shall be done at the respective colleges within three days. Registration of RAWEP courses shall be done on the first day, but orientation will be on second and third day only. The students then shall proceed to the respective Research station centers to which they are allotted. Registration shall not be permitted beyond three days under any circumstances.

Orientation

- During the orientation programme, the following aspects shall be explained.
- Objectives and aims of programmes.
- Organizational aspects of the programme
- Items of work to be attended by the students
- The data/information to be collected course wise
- Vocational training and attachment to agro-based / horti-based industries
- Records to be maintained course wise
- Attendance requirement
- Weekly and other reports to be submitted by the students to the Chairman of the Advisory Committee
- Location of the villages and help in case of emergencies
- The Associate Dean, Heads of the Departments of the respective courses, Associate Dean / AD's Representative, all scientists /scientists in-charge of RAWEP shall participate in the orientation programme.

Attendance

The attendance of a student shall be maintained by the scientists /scientist in-charge of the RAWEP and particulars are furnished to the Chairman of the Advisory Committee after every fortnight who will in turn communicate to the Associate Dean of the college concerned. The minimum attendance required for this programme is 85%.

Attendance particulars of students shall be displayed in the notice board by the Chairman of Advisory Committee under intimation to the Associate Dean of the college. The student shall be eligible to appear for the final viva-voce examination in RAWEP as well as external evaluation of the RAWEP records, only if attendance requirement is met with. The period of stay in the village shall never be extended to make up the shortage of attendance.

In the event of falling short of attendance, the student has to register the RAWEP courses when offered next. However, during the period of this registered semester, the student shall not be eligible for RAWEP stipend.

Student discipline

Students whose activities are prejudicial to the interest of the programme / university or subject to indulging in any malpractices shall be suspended from RAWEP. The students so withdrawn shall not be paid stipend any more. Such students shall not be permitted to register RAWEP courses further in any semester until the stipend is recovered.

SCHEDULE OF WORK

First week:

1. Study of the existing situation of the village (agro-economic survey).
2. Participation in one of the vocational trainings each in extension and rural economics (one week duration).
3. Identification of major Horticultural/ Horticultural problems of the village through Participatory Rural Appraisal (PRA) techniques.
4. Development of suitable extension strategies using Gap Analysis proforma and preparation of action plan.
5. Collection, preparation and submission of the crop production practices on various crops as adopted by the farmers in the village.
6. Collection, preparation and submission of the plant protection practices (including nutritional disorders, weeds and other physiological disorders) on various crops as followed by the farmers in the village.
7. Preparation and submission of the calendar of work (crop-wise).
8. Analysis of the situation of the crop.s of the host farmer and record of comments on the following aspects as per proforma (Annexure II).
    a. Cultivation practices undertaken by the host farmer.
    b. Comparison of the farmer's adoption on each practice with recommended practices.
    c. Response of the farmer about the recommended management practices.
    d. Performance of various crops raised by the host farmer (biometric observations) as per proforma (Annexure-III).
    e. Practical involvement of the student in various field operations. listing out all crop operations carried out by the host farmer with deviations from the recommended practices along with reasons.
9. a. Recording of insect pests, diseases, nutritional disorders, weeds and other physiological disorders in standing crops of the host farmer along with their symptoms and control measures adopted as proforma (Annexure-IV).
    a. Comparison of the farmer's adoption on each control measure with recommended practices.
    b. Response of the farmer about the recommended control measures.
    c. Performance of various crops after the adoption of control measures by the host farmer.
    d. Collection of information on nematode problems, bird and rodent damage, if any.

Second week:

1. Repetition of items 8 and 9 of first week.
2. Preparation and presentation of teaching and information materials in the information centre/ information corner.

3. Collection of data on farm holding survey from host farmer.
4. Noting down the designs and treatments used in five experiments / programmes at Research Station and recording observations.
5. a Study of organizational pattern and history of research station/ to which the students are attached.

   b Recording of titles of the experiments/programmes and procedure adopted for finalizing the experiments/programmes of the Research Station.

Third week:

1. Preparation and presentation of teaching and information materials in the information centre.
2. Collection data on farm holding survey from other farmer.
3. Collection of data on family budget of Horticultural/Agricultural labourers.
4. Recording of observations on five experiments / programmes of the Research Station.
5. Record any other activities carried out at the Research Station
6. Participation in one each of crop production and protection vocational trainings as a listed (one week duration) and writing brief report and comments.
7. Collection of 4 herbarium specimens each of insect damage, pia nt disease, nutritional disorder, weeds and physiological disorders in the standing crops.
8. Writing the records on
   a. Crop production-based on 3 weeks crop-wise collected data.
   b. Plant protection-based on 3 months crop-wise collected data for pests and diseases separately item wise.
   c. Extension programmes - based on 3 months data collected.
   d. Rural economics-village survey, farm holding surveys and family budgets.

Fourth week:

1. Student's attachment with industries identified (days) and writing project report
2. Repetition of 8 and 9 of the first week.
3. Conducting participatory extension teaching methods - Training Programme, Horticultural Exhibition
4. Documentation of indigenous technical knowledge practice (ITKs) for major crops.
5. Study of Self Help Groups (SHGs) in the. village.
6. Preparation of a new cropping patterns/system or farming system as an alternate farm plant for host farmer and another farmer based on farm holding survey.

Fifth week:

1. Preparation of teaching and information materials related to crop production and plant protection for information center/information corner.
2. Writing records on
    a. Crop production- based on 4th week crop -wise collected data
    b. Plant protection- based on 4th week crop- wise collected data
    c. Extension programmes - based on data collected and activities organized item wise
    d. Rural economics- Agro economic survey, family budgets, farm holding survey of host farmer and another farmer including illustrations, alternate farm plants
    e. Research station/ activities: summarize the data collected during the four weeks on the experiments / programmes and project reports on attachment to agro-based industries.
    f. Completion and submission of crop production, plant protection, extension programmes, rural economics and research station/ activities including project report.

Sixth week:

1. Repetition of 8 and 9 of the first week and summarization of the work on crop production and plant protection.
2. Survey on market intelligence information and suggestion to the farmers on new cropping pattern.

The records pertaining to all the courses separately shall be submitted at the end of the programme preferably when they visit next time covering all the aspects of all the courses as per the schedule of work for evaluation. The records submitted by the student shall be retained with the Research Station, which will be returned to the students after completion of the programme for final binding under certification.

EVALUATION

Attendence : The minimum attendance for this programme is 85%. The students will appear for final examination and get evaluated for the entire programme, only if this attendance requirement Is met with,

Records : Student shall complete the record work with his/her own hand writing based on daily field observation note books and weekly diaries (Annexure-l) maintained by them. The students shall not use printed typed material in the preparation of RAWEP records. The records shall be paper bound.

Evaluation Procedure:

The students shall be evaluated by internal as well as an external evaluation committee.

i) Internal:

This will be done by the Students Advisory Committee. The Advisory Committee shall meet once in a fortnight and evaluate the performance of the students periodically by observing the student when he/she is in the field work, in the collection of data, in the organization of various extension activities, as per the schedule. If the student is lagging behind, this should be indicated in the concerned observation book every week. (The marks obtained by the students during periodical evaluation shall be displayed in the notice board of the Research Station along with attendance).

ii) External:

The external evaluation committee nominated by the Dean of Horticulture consisting of four teachers from each of the discipline of Horticulture, Economics, Extension Education and Entomology/ Pathology sh~11 evaluate the records submitted by the students. The members of the committee shall evaluate the RAWEP records submitted by the students. The members of the committee shall evaluate all the records assigned to them. The average of the marks secured shall be checked and countersigned by the Head of the Department concerned.

A student shall obtain a minimum of 50% of marks in internal evaluation and 50% of marks in external evaluation for successful completion of the programme in each course. The student who records a grade point less than 5.0 or who secured grade point of 5.0 and above but obtained below 50% of marks in internal/external evaluation in any of the course(s) shall be deemed to have failed in .the course(s) and 'F' shall be indicated in the grade report. The student who had failed has to register the course(s) when offered next by paying the prescribed fee. However, if the External Evaluation Committee feels that the student can improve the standard of the failed course(s), he/she can submit the record again by re-writing. The resubmission should be done before the last working day of the next semester. Such students shall be required to pay re-examination fee as prescribed in the U.G. Regulation 9.1 (c) (iv) ?

Credit load and marks allotment

Sl No	Course Title	Credits	Internal Evaluation (Marks)	External Evaluation (Marks)	Total Marks
1	Crop production	5	50	50	100
2	Plant production	2	50	50	100
3	Rural Economics	1	50	50	100
4	Extension programme	1	50	50	100
5	Research Station activities	1	100	-	100
	Total	**10**	**300**	**200**	**500**

ROLE OF FUNCTIONARIES

A. Scientist from Research Station:

1. He acts as a primary contact person for the students in their day-to-day work
2. He shall select 4 to 6 villages at least, a fortnight in advance of commencement of the programme and the same has to be informed to the Associate Director of Research. He should see that the villages so selected shall have wet, dry and irrigated dry crops, must have transport facilities and be nearer to the Research Station/. Mono crop shall be avoided and also the village shall be changed once in three years.
3. He shall select the host farmers at least 15 days before the commencement of the programme and the same be informed to the Associate Director of Research. The host farmer shall be knowledgeable, progressive in outlook, friendly, temperamentally good, emotionally matured, accommodation hospitable and popular.
4. Ha shall help the students in clarifying their doubts.
5. He shall keep the attendance register up to data and display the list of absentees in the notice board at every week.
6. He shall maintain performance sheet for each of the student (after reviewing the work month-wise). If performance of the students is not upto the mark, the activities in which the student is lagging behind must be brought to his/her notice by giving written instructions.
7. He shall provide information on management practices for each crop raised in his jurisdiction in the first/second week of first month. Before this is done, the student shall write the management practices for all crops grown in the village.
8. He shall help the students in planning and execution of various extension activities and in the interpretation of data.
9. He shall inform the students about the field Observation book, weekly diary and records at the commencement of the programme
10. He shall carry out one or two extension activities for the observation and guidance of the students
11. He shall arrange laying out mini kits, demonstration plots etc., in RAWEP villages
12. He shall visit each village once in a week.
13. He shall. make arrangements for conducting vocational trainings and attachment of students to the industries.

B. Associate Dean's Representative (AR) :

He shall share the responsibility of executing RAWEP along with scientist/scientist in-charge. In case of girl students, Associate Dean Representative may preferably be from lady staff members. He shall submit duplicate copy of the master sheet of attendance to the Associate Dean/Principal along with report.

He shall assess the students performance based on the monthly guidelines issued as a member of the Advisory Committee and submit report to the Associate Dean/Principal and to the Chairman of the Advisory Committee.

He shall make surprise visits and sign in the diary note book and attendance register.

He shall visit villages and meet the students in the first week and third week of every month and cover all the villages in each trip. After visiting the villages, he/she shall discuss with the Head of the research station, who is the Chairman of the Advisory Committee for the students and in mutual consultation, they will examine ways and means to overcome the operational difficulties, If any.

He shall help Scientist of Research Station in arranging vocational trainings arid attachment of students to the agro-industries.

He shall disburse the stipend .to the students once in a month.

C. Assistance Director of Horticulture/Horticulture Officer:

1. The nominee of Department of Horticulture shall assist and co-operate with the Scientist/Scientist in-charge in developing activities outlined in the programme and help the students to carryout their work.
2. He shall assist the Scientist in the selection of villages host farmer and identification of agro-based industries to attachment of the students to the agro-based industries.
3. He shall evaluate the performance of the students throughout the programme as a member of the Advisory Committee.

D. Host Farmer:

1. Host farmer selected shall co-operate and communicate with the student with regard to various horticultural operations on his holding.
2. He shall co-operate with the Scientist/Scientist in-charge as well as University officials.
3. He shall help the students in setting down comfortably.
4. He shall help the students to work with him in his fields as far as possible on the advice of Scientist
5. He shall frankly give his assessment of the student's work and his/her activities in the village.
6. He shall serve as one of the members in the evaluation of the student's work to the extent necessary.
7. He shall help the Scientist in the maintenance of attendance.

E. Head of The Research Station:

1. He shall have the overall responsibility for the implementation of Rural Awareness Work Experience Programme and allot students to the farmers.
2. He shall also direct the movements of Scientist for Rural Awareness Work Experience Programme.
3. He shall visit the RAWEP villages and sign in the diary notebook and attendance sheet once in a fortnight.
4. He shall assess students performance based on the weekly guidelines issued
5. He shaII mainta in a performance sheet for each of the students.
6. He shall provide required infrastructure facilities and scientists support to the Scientist/Scientis in-charge in organizing vocational trainings and attachment of students to the agro-based industries.

F. Associate Dean:

1. He shall visit the villages once during the programme and discuss with the host farmer regarding the student's activities. He shall also review and monitor the programme.

Schedule of visits by different functionaries:

1. Scientist /Scientist in-charge shall visit each village once in a week
2. Associate Dean Representative shall visit the villages thrice i.e., in the first, third and sixth week of programme. .
3. Coordinator of /Head of the Research Station shall visit each village once in a fortnight.
4. Associate Dean of the college and Head of Extension Education Department shall visit the each RAWEP village once during the programme.

VOCATIONAL TRAININGS

Vocational trainings will be imparted to the students during RAWEP in the following areas

Crop Production

1. Organic farming
2. Agricultural meteorology
3. Herbicide, usage-techniques & precautions
4. Nursery management (production & maintenance)
5. Poly green house technology
6. Micro irrigation
7. Landscaping

8. High-tech Horticulture including cut flowers
9. Agro forestry
10. Watershed management

Plant Protection

1. Use and maintenance of plant protection equipment
2. Commercial Bee-keeping
3. Mushroom production technology
4. Vermin compost production technology
5. Post harvest technology
6. Mass production of parasites/predators/microbial
7. Mass multiplication of fungal/bacterial biocontrol agents.

Rural Economics

1. Micro & macro finance
2. Grain/fruit/vegetable market
3. Regional Rural Banks
4. Crop Insurance
5. Market intelligence

ExtensIon Programme

1. Communication skills and Horticultural Journalism
2. Group dynamics
3. Mass media support in Horticultural Extension
4. Participatory Extension Methodologies
5. Agri / Horti clinics/Plant Health Clinics.

ATTACHMENT WITH HORTI-BASED/ AGRO-BASED INDUSTRIES

The students will be attached to anyone or two of the following for a period of two weeks

- Seed industries/companies
- Biotechnological industries (Tissue Culture labs)
- Bio pesticides industries
- Commercial nurseries
- Food processing units
- Cool chain/storage units
- Agricultural finance institutions/Banks/Credit Societies etc.
- Non-Government organizations

DETAILS OF VOCATIONAL TRAININGS

I. CROP PRODUCTION

1. Farm Forestry

The significance of farm forestry in the light of soils with sloppy, infertile and unsuitable for growing economic field crops and horticultural crops is being realized in rain fed regions of the country. Identification of suitable tree species, varieties, management practices, economic usage of the end products,. and marketing of the byproducts are the priorities in farm forestry. The component of fodder valued trees and energy source of plantation are to be considered for the system. Student study the existing systems and suggest the farmers for improvement.

2. Organic Farming

The importance of organic farming is now being recognized after realizing health hazards to human and cattle due to consumption of biological products contaminated with residues of chemical and heavy metals. The soils are also degraded and spoiled due to continuous excess use of fertilizers and chemicals alone eth substituting organic sources of manures like compost, FYM, green manures, vermi-compost, Oil cakes etc" Organically produced products possess keeping quality, high nutrient value and taste and hence fetching premium market price to farmers. However, the farmers have to be guided in adopting organic farming practices by use of different organic materials at his farm. Training on vermin-compost making, also form the integrated part of organic farming.

3. Agricultural meteorology

Understanding crop weather relationship Is important from the point of better crop management. Knowledge of the rainfall pattern, prevailing temperatures, humidity during day and night, crop seasons facilitate the farmer in selection of suitable crop variety, sowing time and crop management. The present weekly weather forecasting system to a particular region is helping the farming community in respect of pest and disease incidence, input application, harvesting the crop etc., Imparting training on meteorology is essential.

4. Micro Irrigation

The use of micro-irrigation systems like drip and sprinklers in field crops and horticultural crops is increasing as the irrigation water sources are limiting year by year. The water use efficiency can be improved by the use of micro irrigation systems, there by more area can be brought under cultivation thus of micro irrigation systems, there by more area can be brought under cultivation thus reflecting in increased cropping intensity. Farmers lack proper knowledge on installation and maintenance of irrigation systems, therefore training on the above aspects to the students and maintenance of micro irrigation systems, therefore training on the above aspects to the students and in turn to the farmers is helpful.

5. Watershed Management

Many watershed management programmes are being implemented by state and national governments in dry land areas. Soil and water conservation goes simultaneously in watershed areas by construction of check dams, collection of rainwater in ponds and cultivation of recommended crops/ varieties and adoption of efficient management practices. Knowledge of proper use of conserved rainwater for cultivation of low water required agricultural and horticultural crops is essential. Therefore training to students on watershed management practices facilitate in guiding the farmers for better use of conserved rainwater for crop production.

II. PLANT PROTECTION

1. MASS MULTIPLICATION OF FUN~AL AND BACTERIAL BIOCONTROL AGENTS

Biological control is one of the important methods in developing integrated Disease management strategies for crop plants. Mass multiplication of fungal and bacterial biocontrol agents utilizes various waste horticultural by-products.

WHAT A STUDENT WILL LEARN?

- Morphology of various species of fungi and bacteria.
- Conversion of waste horticultural by-products as carriers of bio agents.
- Use of mass multiplied bio agents in different agro climatic zone.
- Effect of various horticultural by-products on the quality and of biocontrol agents.
- Production of biocontrol agents.

WHAT A STUDENT WILL LEAN?

- Utilization of various waste horticultural byproducts available in the vicinity which can be used for mass multiplication
- How to isolate and purify various species of fungi and bacteria
- Identification of isolated and purified species of fungi and bacteria
- Methods of mass multiplication using solid, liquid, and semi solid fermentation technologies
- Standardization of horticultural by-products on inoculation with various species of fungi and bacteria
- What are the common contaminants in the mass multiplied products
- Factors affecting the quality parameters of mass multiplied products
- How, when and quantity of mass multiplied biocontrol products

WHAT A STUDENT WILL RECORD?

- The quantity of horticultural by-product to be used per 10kg.
- The quantity of various species of fungi and bacteria to be inoculated per10kg
- Time taken for fermentation
- Quantity of fermented biocontrol biomass
- Economics of mass multiplied biocontrol product
- The quantity of mass multiplied biocontrolproduct to be used per acre

2. VERMICOMPOST PRODUCTION TECHNOLOGY

Vermi composting is the technique of converting biodegradable organic matter into vermin compost using earthworms.

WHAT A STUDENT WILL LEARN?

- Conversion of the organic waste into compost.
- Morphology and Biology of earthworms.
- Behaviour of earthworms.
- Use of Vermicompost in different agro climatic areas.
- Impact of vermicompost on quantity and quality of produce.
- Production of Vermicompost.

WHAT A STUDENT WILL OBSERVE?

- Various raw materials available in the surroundings that can be used for vermicompost.
- How to prepare vermin bed and vermin shed.
- How to decompose the biodegradable material.
- How to lay vermin bed.
- How earthworms behave.
- How cocoons of different earthworms look like.
- What are the natural enemies of earth worms.
- How to prepare vermicompost.
- How much time is taken for preparing vermicompost from different biodegradable materials?

WHAT A STUDENT WILL RECORD?

- The quantity of biodegradable material to be used/bed.
- The quantity of earthworms to be used/bed.
- The time taken for decomposition with different materials.
- The quantity of vermicompost harvested/bed.
- The economics (cost) of biodegradable material, earthworms and vermicorr.post.
- The quantity of vermicompost to be used/bed.

3. SERICULTURE

Sericulture is conscious mass scale rearing of silk producing organisms in order to obtain silk from them.

WHAT A STUDENT WILL LEARN?

- Raising mulberry plants.
- About various silkworms
- Rearing of Mulberry silk worms.
- Harvesting of Cocoons.
- Marketing of Cocoons.
- Problems of silkworm rearing (pests and Diseases).
- Pests and Diseases of Mulberry.

WHAT A STUDENT WILL OBSERVE?

- Different methods of planting.
- Insect pests and diseases of mulberry plant.
- Rearing methods (Chawki and late age) of silkworm.
- Insect pests and diseases of silkworm.
- Different methods of harvesting the cocoon and marketing of cocoons.

WHAT A STUDENT WILL RECORD?

- The methods of planting of mulberry.
- The method of silkworm rearing.
- The varieties of mulberry.

- The races of silkworm.
- The insect pests and diseases of mulberry and silkworms.
- Yield of cocoon.

4. COMMERCIAL BEE KEEPING

The practice of rearing bees is called apiculture or beekeeping and the place where the hives are maintained is called as Apiary.

WHAT A STUDENT WILL LEARN?

- About honeybees, kinds, morphology, structural adaptations.
- About honey bee colony-different castes.
- About life history and habits of bee.
- About foraging of bees.
- About types of beehives and various parts.
- About locating an apiary.
- How to take care and manage an apiary.
- About enemies and diseases of honey bees.

WHAT A STUDENT WILL OBSERVE?

- The morphological characters of various honeybees.
- The mandibular glands, different legs and their modifications.
- The various castes of honeybees.
- The foraging-peak time of visiting to flower plants.
- The various flower plants available in local area and time of flowering of different plant species.
- The peak activity of honeybees in the colony.
- Various beehives, their parts and uses.
- How to increase honeybee parts and uses.
- How to increase honeybee population in case of weak stocks.
- Swarms and their control.
- Manipulations.
- How to collect honey.
- How to extract honey.
- Various enemies of honeybees.

WHAT A STUDENT WILL RECORD?

- Various types of honeybees in the area.
- Various trees as source of nectar and pollen.
- Peak flowering time of individual trees/plants.
- Peak activity of boneybees.
- The occurrence and severity of enemies.

5. MASS PRODUCTION OF PARASITES, PREDATORS AND MICROBIAL CONTROL AGENTS

Bio agents are important population regulatory agents of crop pests. In biological control use of natural enemies (Parasitoids, predators, weed insects, entomopathogents and plant disease antagonists) through periodic, inoculative, augmentative, inundative releases/applications requires live natural enemies in adequate numbers. The methods of production natural enemies which can now be practiced by the farmers at village level or by any other organizations.

The Important natural enemies which can be mass produced are:

Trlchogramma sp. ((Trichogrammatidae; Hymenoptera): These parasitoids attack eggs of many lepidopterous pests such as sugarcane borers, paddy stem borer, tomato fruit borer, cutworms, cotton' boll worms, maize stem borer etc.

Chrysopids (chrysopidae; Neuroptera): They are otherwise known as green lacewings or aphidlions.. the adults are generally free living and feed on honeydew and pollen grains. The larvae are predacious, feeding on the eggs and neonate larvae of lepidopterans, nymphs and adults of whiteflies, aphids and other homopterans.

Coccinellids (Coccinelidae; coleopteran): Coccinellid beetles specialize in predating upon coccids (scale insects), aphids, mealybugs, aleyrodids (whiteflies) psyllids etc.

Microclals: pathogens used in insect control include viruses, bacteria, fungi, protazoans and nematodes. Their utilization for insect control requires their mass production either on natural host insects or using synthetic media. Among viruses, Nuclear Polyhedrosis Viruses (NPV) are utilized for the successful suppression of various insects pests of many horticultural and horticultural crops.

WHAT A STUDENT WILL LEARN?

- Importance of parasitoids, predators and microbial agents in IPM.
- Characters of parasitoids, predators, and microbial agents.
- Mass production technology for host insects *(Corcyra cephalonica)*.

- Mass production technology for parasitoids, predators and microbial agents,
- Field release methods for parasitoids and predators.
- Field application methods for microbial agents.
- Precautions to be taken while using parasitoids, predators and microbial agents.

WHAT A STUDENT WILL OBSERVE?

- Identification of different parasitoids, predators and microbial agents.
- Difference between parasitoid and predator.
- Different steps involved in production of host insect, parasitoids, predators and microbial agents.
- Different steps in the field release of parasitoids and predators.

WHAT A STUDENT HAS TO RECORD?

- Characters of parasitoids, predators and microbial agents.
- Mass production methods for insect, parasitoids, predators and microbial agents.
- Release methods, precautions and impact of parasitoids, predators and microbial agents.

III. RURAL ECONOMICS

Micro-Macro Finance:

Micro finance deals with credit in general and agricultural credit policy and organization in particular. Micro finance a recent phenomenon looks in to credit disbursement at micro level, credit disbursement modalities with respect to.SHG, micro finance institutions, NGOs etc. By studying the modus operandi of these micro finance institutions, credit repayment pattern and the activities taken up by different SHGs at ground level, students can compare between institutions and know which the successful income generating activities etc are. At the same time the constraints or operational problems may be identified and can be better addressed in future while implementing.

Fruit / Vegetable Markets:

Market is a place where the produce is directly sold to the consumer or middlemen or traders. The various regulated markets and rythu bazaars will be covered during the training programme. The students would learn from the training such as methods of sale in grains, fruit and vegetable marketing, direct sale through rythu bazaars which were started during 1999 in Andhra Pradesh and' elsewhere, auction modes, market channels related to those commodities in particular, market fee, commissions, schemes like rythubandhu, facilities required and available with respect to infrastructure for farmers and produce like storage and operational problems faced by the farmers in marketing their produce.

Regional Rural Banks:

The credit policy during 1970s could not cater to the needs of agricultural credit and as per the recommendation of All India Rural Credit Review Committee during 1975; RRBs were established to cater to the needs of farmers. The students would learn about the salient features of RRBs, coverage, short term, medium term and long term loans, credit worthiness, repayment pattern, rate of interest, over dues, problems related to utilization and repayment patterns of credit, new innovative approaches of RRBs during the vocational training programme.

Crop Insurance:

Crop Insurance was the first introduced in India with the introduction of AII-Risk Comprehensive Crop Insurance Scheme that covered the major crops which was introduced in 1985. Thereafter several modifications were made under this scheme. Through this training the students would get the benefit of getting knowledge of features of the crop insurance scheme, crops covered. premium rates, subsidies given in the premium, coverage of loanees and non loanees, sum assured for different crops, operational units, crop cutting experiments for deciding average yield, coverage of the scheme over years, compensations, settlements, operational problems and alternative approaches like rainfall insurance.

Market Intelligence:

Gathering Market Intelligence (MI) can be critical for the success of an enterprise, and in-depth analysis of this information is helpful in understanding products, business trends, and information concerning competitors. In the context of WTO, knowing about the customer knowledge about various crops and products has become essential in competing with other countries. During the training, the students would learn from this vocational training about commodity analysis, operation and analysis of price trends in relation to area, price forecasting, market channels, price spread, international scenario, consumers preference, quality importance in domestic market as well as in international markets, various web sites for knowing price information, price display at markets, importance of net working, restrictions in marketing/storage of essential commodities and essential commodity act 1980.

Rural godowns:

Small farmers do not have the economic strength to retain produce with them till the market prices are favourable. There has been a felt need in the country to provide the farming community with facilities for scientific storage so that wastage and produce deterioration are avoided and also to enable it to meet its credit requirement without being compelled to sell the produce at a time when the prices are low. A net work of rural Godowns was will enable small farmers to enhance their holding capacity in order to sell their produce at remunerative prices and avoid distress sales. Accordingly, Gramin Bhandaran Yojana, a capital investment subsidy scheme for construction / renovation of Rural Gowns was introduced in 2001-02. the students would learn the background of these godowns, objectives, salient features, conditions for storage, credit linked assistance, subsidies, pattern of assistance and visit the rural godowns in the vicinity to get first hand information and interact with farmers who availed the facility.

IV. EXTENSION PROGRAMME

1. Communication and horticultural journalism

Communication is the process of passing the information and understanding from one person to another. A proper understanding of information is one very important aspect of communication. If the information is not understood by the receiver in the same meaning in which its sender wants him to understand it, the purpose of communication is defeated. There should not be communication gap and communication distortion and at the same time one has to be good at conveying the information to the farmers through print. The students who come out of the undergraduate course must be very good at communication skills and journalism skills for effective transfer of technology in horticulture. Besides, students can earn considerably further journalistic skills using creativity. In view of this, the vocational training proposed on communication and horticultural journalism will enable the students to acquire skills in presenting extension talk, preparation of lesson plan and visuals for talk, develop listening skills, prepare news stories, feature articles etc., importance of illustrations etc.

2. Mass media support in Horticulture Extension:

The horticulture extension machinery and information support in most states seems to have become outmoded. The staff created under the World Bank assisted Training and Visit (T&V) programme do not have much mobility.ihe need to revamp the extension services in the country by using print and electronic media and information technology along with the involvement of the private sector is being felt increasingly. The private sector, especially the input agencies and traders are now one of the main sources of information for the farmers. Radio, Television and the print media have become powerful means of "education and technology dissemination". Keeping this in view, centrally sponsored scheme on Mass Media Support to Horticulture Extension, a bold initiative was taken by Ministry of Agriculture, Govt. of India is already under implementation. The primary objective of the scheme is to use television and radio with their massive penetration as a vehicle that could be exploited for the purpose of extension. The training would give an opportunity to know the full salient features of the scheme, its beneficiaries, four components of the scheme such as narrow casting, regional and national programmes on horticulture through Doordarshan, Kisanvani with FM radio stations and monitoring and support services etc. Besides, students would acquire skills in preparing radio scripts, story board for video shooting etc.

3. Participatory Extension Methodologies:

Most of the rural Development and Extension programmes were failed just because of lack of participation of the farmers/end users in planning, implementation and evaluation. During the late 1980s and early 1990s, increasingly more field based experiences emerged creating more space for methodological and institutional innovations for horticultural research and extension. Within these participatory approaches -as they became commonly known -a special emphasis was place up on participation of local people and their communities, especially working with and through groups; and

building upon the traditional or indigenous knowledge they held. The training on participatory extension methodologies would enable the students in acquiring the skills in conducting the PRA tools such as transect walk, participatory mapping, time line, ranking techniques, seasonality, Venn diagram, Mobility mapping, focused group discussion etc. which will help them in identifying the field problems with involvement of the farmers at all levels.

4. Agri clinics / Plant Health Clinics:

Over 11,900 graduates from Agriculture and allied sectors pass .out from Agricultural and Horticultural Universities every year. However, only 2000 are able to find employment both in the Government and Private sectors. Thus a reservoir of around 9,900 graduates every year is available for supporting the horticultural production process in viable business opportunities are afforded to them. At the same time, due to a number of constraints and other reasons, public extension is shrinking, paving the way for wide extension gaps at a time when Indian Agriculture is facing more challenges than ever before. This context of an extension gap and availability of vast reservoir of untapped resource of unemployed Agriculture graduates gave birth to the centrally sponsored scheme of " Agri-clinics and Agri-Business Centres" during the year 2001. The scheme is implemented with the coordination of NABARD, SFAC and MANAGE and training is the major input given to the unemployed graduates and retired professionals given for two months in identified 62 centres across the country. The stud'ents by undergoing vocational training would get benefit of acquiring the Knowledge on the scheme objectives, training requirements, projects for self employment, project preparation procedure, bank assistance, collateral security particulars, visit to Agri-Clinics/Plant Health Clinics, interacting with agripreneurs and advantages of the scheme etc.

5. Horticulture Disaster Management:

Disaster is an unexpected happening causing a huge loss of life, crop production and property. It may be both natural as well as man made. Disasters may come in the form of earthquakes, cyclones, floods, drought: outbreak of pests and diseases, fire etc., and ruin the life, crop production, animals and property of the people. Proper planning and effective management can reduce effects and hazards of disasters. To prevent disasters, there should be pre planning of all avaIlable resources, communication facilities, manpower etc., the students would learn about the different types of disaster, horticultural losses and damages in diseases and measures to be taken, psychological stresses of disaster victims, agro met advisory services in disaster management, preparing community for disaster mitigation, role of communication and crisis management, community based disaster management, drought management, disaster preparedness plan, extension strategies for disaster management etc.

ANNEXURE - I

DIARY OF THE STUDENT

Rural Awareness work Experience programme report for the week from ……...to …..……..

1. Name of the Student :

2. I.D. No. :

3. Name of the college :

4. Name and address of the host farmer :

5. Research Station :

6. Abstract of work :
(Indicate in brief the activities of week)

Week Days	**Abstract of Work done**
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

7. New experience gained during this week

Experience or skills I would like to gain

8. Period of absence from work

Reasons for absence

Days……. Hours……..

Signature of the Student

9. Comments of the Advisory committee

Signature of the Chairman
of the Advisory Committee

10. Date of receipt of the diary by the Chairman of the Advisory Committee ……

11. Date of Communication of comments if any to the student . ……

ANNEXURE - II

CROP PROOUCTION

RECORO OF HORTICULTURAL OPERATIONS

Name of the Student :

Name of the college :

Name of the Research Station :

I. Year and Season

Survey No. and location of the field :
Area of the field :
Soil type :
- Soil characteristics :
- Textural group :
- pH and EC :
- Available NPK (Kg ha^{-1}) :
- (indicate low, medium or high)

Crop
- Previous crop and manures applied along with yield and returns
- Present crop or crops and variety/varieties

Details of cultivation (if already completed particulars may be obtained)
- No. of ploughings, harrowings and implements used
- Whether optimum or not
- Soil and Water conservation measures adopted, if any

II. Seeds and sowing

Seed quality

Seed treatment

Seed rate

Method of sowing

Method of raising nurseries and fertilizes applied

Method of planting

Spacing

Whether sown or planted in appropriate time, if not give reasons

If transplanted, age of seedlings and no. of seedlings per hill

Gap filling or thinning

III. Horticultural crops (Vegetatively propagated)

Layout and planting
Systems of planting and spacing
Digging and filling up of pits
Selection of plant material (layers, budded plants or grafts)
Planting main crop & filler plants, if any)
Wind breaks
Fencing (Live/barbed wire fence)
Any other information (pandal erection if grapes etc)

IV. Manures and Manuring

Organic manures and rate of application
Source of nutrients and rate of application
Time and method of application
Natural and physiological disorders, if any (write the sysmptoms)
Foliar application of nutrients -name and dose
Soil amendments, if any
Other particulars.

V. Weed control

No. of weedings and stage of crop growth
Implements/tools used
Dominant weeds
Details of herbicides, if used
Whether weeds are controlled in time, if not, give reasons

VI. Irrigation

Source
Quality of water
Limited or adequate
Method of Irrigation
Depth of irrigation (cm)
Number of irrigations
Whether Irrigations are given at right time, if not, specify reasons
Whether water is efficiently used if not, give reasons
Mid-season drainage for rice
Other particulars

VII. Special operations

Dessicating, disbudding, deshooting, wrapping, propping, topping, nipping etc
Mid season corrections in dryland horticulture (thinning, mulching, water harvesting, supplementary

irrigation rationing etc.)
Training and pruning
Application growth regulators(Purpose, concentration, time and number of applications)
Bahar treatment in citrus
Other details, if any

VIII. Intensive cropping

Cropping sequence
Intercropping (Plant population and crop geometry)
Mixed cropping (Plant population and crop geometry)
Cash crops in orchards
Relay cropping (Plant population and geometry)
Time of sowing of component crops
Fertilizer schedule
Any other information

IX. Harvesting, processing, storage etc

Days to 50% flowering
Symptoms of crop maturity {Fruit/grain/pod/bulb/tuber/rhizome/leaf)
Number of day to flowering and maturity
Method of harvest
Method of threshing
Method and duration of drying
Number of pickings/harvests
Processing (Sugarcane, cotton, turmeric etc)
pre-cooling, if any
Method of packing fruits, vegetables flowers
Method of storage for seed and horticultural produce (including cold storage)
Method of storage of non-seed
Method of ripening of fruits
Shelf life of fruits, vegetables and flowers in days after harvesting
Methods of extending shelf life of fruits, vegetables and flowerrs
Use of growth regulators in ripening of fruits and vegetables
Preparation of fruit products if any
(pickles, jam, jelly, squash, chutney, dehydrated products etc.)

X. Yield and returns

Grain yield (kg ha $^{-1}$) and its value (Rs.)
Straw yield (tons ha^{-1} and its value (Rs.)
Value of by products, if any

Average fruit/rhizome/bulb/tuber/seed weight (based on 25 fruits/rhizomes/bulbs/ tubers/l000 seed weight in case of seds)
Fruit/rhizome/bulb/tuber/seed yield
Fruit/rhizome/bulb/tuber (average length and width based on 25 numbers)
No. of seeds per fruit/pod
No. of cloves/bulb
No. of fingers/rhizomes per plant
No. of flowers/per plant
Flower yield/ha
Number of berries/fruits/fingers per bunch

XI. Weather data

Rainfall during the crop period and its distribution
No. or rainy days
Drought spells during the crop period'
Crop stage at which it is subjected to drought/flood
Temperature (max. and min.) at different stages of crop growth
Other weather abnormalities, if any
Indicate whether the weather conditions were optimum to the crop.

XII. Farm machinery including plant protection equipment

Inventory of the farm machinery available with the host farmers and village
Efficiency of the farm machinery relative the farmers' own practices
Area/quantity covered by each machine
Source, capacity (in H.P.) and cost of the machinery
Access to mechanics and spare parts in the village or nearby town
Farmers opinion in the use of farm machinery
Any other information

XIII. Farm forestry

Multipurpose species and varieties used by the farmer and in the village
Source of the material for planting
Management practices including methods of planting, spacing, plant arrangement in the field
Purpose for which the species are used
Yield, returns and distribution of returns over the years
Disposal of the produce
Energy plantations, if any, in the locality sponsored by the Government

XIV. Critical observation of the crop production practices adopted by the farmers

Reasons for not adopting certain recommended practices, new practices, adopted, causes for yield difference between normal and actual yield obtained and suggestions for improving the productivity of crops may be indicated.

ANNEXURE- III

BIOMETRICAL OBSERVATIONS OF IMPORTANT CROPS

Turmeric

Variety
Spacing
Initial plant population/ ha (based on 10 m^2 area)
Final plant population/ ha (based on 10 m^2 area)
No. of days taken to sprouting on rhizomes from sowing
Plant height (cm) at monthly interval upto harvest (based on 10 randomly selected plants)
No. of leaves/plant at monthly intervals (based on 10 randomly selected plants)
leaf length & width (cm} (based on 10 randomly selected plants at monthly intervals}
Symptoms of maturity
No. of days taken to harvest from sowing
No. of mother rhizomes/plant (g) (based on 10 randomly selected plants}
Fresh weight of rhizomes/plant (g) (based on 10 randomly selected plants)
Fresh rhizomes yield/ha (q/t) (based on 10 m^2 area)
Dry rhizomes yield/ha (q) (based on 10 m^2 area)
Curing percentage
Grades
- Mother rhizomes (%)
- Finger rhizomes (%)
- Small pieces (%)

Tomato / Brinjal

Initial plant population/ha (based on 10 m^2 area)
Final plant population/ha (based on 10 m^2 area)
Plant height (cm) (based on 10 randomly selected plants) at
- 30 days after transplanting
- 60 days after transplanting
- 90 days after transplanting

No. of branches/plant (based on 10 randomly selected plants) at
- 60 days after planting
- 90 days after planting

Days taken to first flower appearance
Days to 50% flowering
Per cent fruit set (based on 100 flowers)
Days taken from flowering to fruit maturity.
Maturity indices
Fruit shape (based on 10 randomly selected fruits in 1st and 2nd harvests)

Fruit weight (g) (based on average of 50 fruits)
Per cent seed content
Percent pulp content
No. of fruits and weight/plant (kg) (based on 10 randomly selected plants)
Yield ha (t) (based on 10 m^2 area)
Flesh thickness (mm) (based on 10 randomly selected fruits}

Bhendi

Variety
Initial plant population/ha (based on 10 m^2 area)
Final plant population/ha (based on 10 m^2 area)
Plant height 9cm) (based on 10 randomly selected plants) at
- 30 days after sowing
- 60 days after sowing
- 90 days after sowing
- fruit harvest

No. of branches/plant (based on 10 randomly selected plants) at
- 60 days after sowing
- 90 days after sowing
- fruit harvest

Days taken to first flower appearance
Days to 50% flowering (based on 10 m^2 area)
Days taken from flowering to pod harvest (based on 50 randomly selected flowers)
No. of fruits/pods/plant (based on 10 randomly selected plants)
Pod length and girth (cm) (based on 100 pods or 1^{st} and 2^{nd} harvest)
Number of pickings
Pod yield/plant (g) (based on 10 randomly selected plants)
Pod yield/ha (t) (based on the yield of 10 m^2 area)
No. of seeds/pod (based on 100 pods)
Pod to seed ratio
Seed yield/ha (kg) (based on 10 m^2 area)

Chillies

Variety
Initial plant population/ha (based on 10 m^2 area)
Final plant population/ha (based on 10 m^2 area)
Plant height and spread (cm) (based on 10 randomly selected plants) at
- 30 days
- 60 days
- 90 days

120 days
150 days
180 days
final harvest

No. of branches/plant (based on 10 randomly selected plants) at
60 days
90 days
120 days
150 days
180 days

Days taken for first flower appearance after transplanting
Days taken to 50% flowering
Per cent fruit set (based on 100 randomly selected flowers)
Maturity indices
No. of pods/plant (based on 10 randomly selected plants in all the pickings)
pod yield/plant (g) (based on randomly selected plants)
Green pods/plant (g)
Ripe pods/plant (g)
Dry pods/plant (g)
Dry chilli yield/ha (t) (based on 10 ml area)
Curing percentage
Pod length and width (cm) (based on 100 randomly selected pods)

a. Green mature
b. Ripe
c. CDry

Per cent seed content (based on 100 randomly selected dry pods)
Per cent shell content wt. (based on 200 g randomly selected pods)
Per cent non edible stalk (based on 200 g randomly selected pods)
Fruit wt. (g) (based on 100 randomly selected pods)

a. green mature
b. ripe
c. Dry

Note: for other crops, if any, similar observations are to be recorded. Reasons for the difference in estimated and recorded yield may be discussed critically.

ANNEXURE -IV
PLANT PROTECTION
PART-A
(Pertains to Host farmer)

1. Name of the host farmer
2. Name of the village
3. Name of the crop
   Variety
   Area (ha)
4. Previous crop sown
   Variety
   Area (ha)
5. Seed Treatment
   Fungicide / lnsecticide/bio agent used
   Source
   Dosage
   Method of Treatment
   Cost/ha
6. Diseases/Insect pests observed
   Stage of the crop
   Name of the disease or insect pest or any other pests (rodents/birds/nematodes)
   (Mention the common, scientific and vernacular name of the causal organism/insect pest).
   Symptoms/nature of damage of insect pests/diseases (mention separately)
7. a) Control measures adopted.
   b) If fungicide/insecticide/bioagent is used, mention dosage and time of application, no. of applications, whether applied alone or in combination.
   c) Control measures suggested (mention the fungicides/insecticides along with dosage, time of application, number of applications, frequency of application and cost per ha.)
   d) Type of sprayer/duster used
   Own or hired (if hired, mention rental charges and source)
   Labour used (Cost/ha.)

PLANT PROTECTION
PART- B
(Pertains to the village)

8. a) No. of exhibits prepared for information centre with plant diseases and insect pests (mention separately for diseases and pests)
   b) Name of the diseases/insect pests for which exhibits prepared for information centre (Write in detail about these in the plant protection record)

c) Response of the farmer for these exhibits/information centres

d) No. of farmers visited

9. a) No. of charts/posters prepared regarding insect pests and plant diseases to display in exhibitions/ group discussions etc.

   b) Names of the diseases and insect pests displayed.

   c) Response of the farmer for these charts and posters.

10. Survey on

    Adoption of recommendations on control measures for crop diseases/insect pests by local farmers in the village.

    Incidence/occurrence of different diseases/insect pests and different crops in the villages. Precaution being taken by farmers while spraying.

    Any cases (s) of poisoning (humans/animals) being reported in the area while spraying.

11. a) constraints/problems faced by the farmers regarding plant protection operations / application of pesticides/availability of pesticides and plant protection equipmet etc.

    b) Any other specific problems of the farmer regarding plant protection measures which are not mentioned above.

12. Facilities for minor repairs to the plant protection equipment \available or not)

13. Critical observations on the plant protection measures adopted by the farmer (reasons for not adopting certain recommended practice/new practices adopted)

14. Normal and actual yield obtained by the plant protection measures and suggestions for improving the productivity of the crops by adopting the plant protection measures.

15. a) Awareness about Economic Threshold Levels of the pests

    b) Whether any farmer is following.

16. a) Knowledge about rodents/birds/nematode pests and their damage

    b) Knowledge about control measures of non-insect pests.

17. Knowledge about precautions to be taken while spraying/dusting of the pesticides.

18. Knowledge about the correct preparations of spray fluids of pesticides.

19. Knowledge about the presence of weed flora on the occurrence of pests and diseases on crop plants.

20. Knowledge about the compatibility of various pesticides.

21. Demonstrations of preparation of spray fluids (fungicides and insectivides, Bordeaux mixture, Bordeaux paste, neem decoction etc.)

22. Knowledge about weather parameters of disease incidence/pest out break.

23. Knowledge about post harvest. treatments of farm produce (stored grain pests and diseases).

ANNEXURE - V

RURAL ECONOMICS

ECONOMIC SURVEY

1. Identification

Village	mandal
	District
Investigator	date of survey

1.1 Location and approach

a) How far is the village from the revenue division and district?

b) Is the village easily accessible in all seasons of the year? If not, in which part of the year and what is the mode of approach?

c) Topography.

d) Infrastructure

S.No.	Item	Distance from the village (km)
i)	Mandal headquarters	
ii)	District headquarters	
iii)	Post office/ telegraph office	
iv)	Railway station/ RTC bus station	
v)	All weather motorable road	
vi)	Primary /middle school	
vii)	High school/college	
viii)	Godown/ware house	
ix)	Commercial bank / regional rural bank	
x)	Primary Agril. Co-op. Credit society	
xi)	Other important centres	

1.2 Transport and marketing facilities

a) Transport facilities

b) Storage facilities (number, capacity and rates)

c) wholesale and retail markets (location, distance and produce handled)

d) Regulated market (location and distance)

Disposable pattern of agril. Produce

1.3 Vital statistics

S.No.	Population	Census year		Increase/decrease over 1991(%)
		1991	2001	
i)	Males			
	a) Adults			
	b) Children (below 15 yrs)			
	Sub-total			
ii)	Females			
	a) Adults			
	b) Children (below 15 yrs)			
	Sub-total			
	Grand total			

Sex ratio: (females per 1000 males)

1.4 Occupational distribution

S.No.	Particulars	1991	2001	Difference
i)	No. of cultivators			
ii)	No. of agricultural labourers			
iii)	No. of non-agricultural workers			
iv)	Others			

1.5 Structural distribution of holdings

S.No.	Farm size (hectares)	Number	Percentage to total	Area	Percentage to total
i)	Less than 1,00				
ii)	1,00-2,00				
iii)	2,00-4,00				
iv)	4,00-6,00				
v)	6,00-8,00				
vi)	8,00-10,00				
vii)	10,00 and above				

2. Land utilization, irrigation and cropping pattern

2.1 Soil type

Black ( ) Red ( )

Chaika ( ) others ( )

2.2 Land utilization (area in ha)

S.No.	Particulars	Current year	Decade back	Differences
i)	Geographical area			
ii)	Forests			
iii)	Barren and uncultivable land			
iv)	Land put to non agricultural use			
v)	Cultivable waste			
vi)	Permanent pastures and other grazing land			
vii)	Land under misc, tree crops and groves			
viii)	Current fallow land			
ix)	Other fallow land			
x)	Net area sown			
xi)	Area sown more than once			
xii)	Total cropped area			

2.3 Irrigation (source-wise)

S.No.	Source	Number	Area
i)	Canals		
ii)	Tanks		
iii)	Wells		
iv)	Tube wells		
v)	Others		
	Total net area irrigated		
	Total area irrigated		

2.4 Cropping pattern

a) Area under different crops

Crop	Unirrigated	Irrigated dry	Irrigated
Kharif			
1.			
2.			
3.			
4.			
Rabi			
1.			
2.			
Summer			
1.			
2.			
Total			

1.4 b) Crop rotation

One year rotation
Two year rotation
Three year rotation

2.4 c) Inter cropping

1.
2.
3.
4.

1.5 Problems of irrigation, drainage and soil management, if any

3. Input supply

3.1 Extent of area covered under HYV and Local Varieties

Crop	HYV	Local
1. 2. 3. 4. 5. 6.		
Total		

3.2 Source from which HYV seed obtain

Source/ Agency/Institution	Quantity obtained	Area covered
1. 2. 3. 4. 5.		

3.2.1 Indicate the difficulties faced by the farmers in getting HYV

1.
2.
3.
4.

3.3 Manures and fertilizers

Crop	Manures/ha Quantity, price	Fertilizers/ha Quantity, price	N.P.K. Quantity/ha	Total cost Rs.
1. 2. 3. 4. 5. 6.				

3.3.1 Difficulties experienced in securing manures and fertilizers, if any

1.
2.
3.

3.4 Plant protection chemicals per hectare

Crop	Insecticides		Fungicides		Others		Total cost Rs.
	Quantity	Price	Quantity	Price	Quantity	Price	
1. 2. 3. 4. 5. 6.							

*Others: bactericides, nematicides, herbicides etc.

3.4.1 Problems in securing pesticides

1.
2.
3.

4. Agricultural Labour

4.1 Available methods of employment and modes of wages payment
4.2 Estimate the supply of labour units per annum
4.3 Work out the demand for labour units based on the per crop and hectare
4.4 Whether the labour is adequate or deficit, comment
4.5 Wage rates (all crops) in Rs.

Operation	*CPD	Men	Women	Child	Contract
1. land preparation a) ploughing b) leveling c) others 2. transplanting 3. weeding 4. intercultivation 5. plant protection 6. harvesting 7. threshing 8. others					

*CPD-Cattle Pair Day

5. Agricultural credit

A) Institutional

i) Crop loans

Crop	Co-operatives		Commercial		RRB	
	SF	RI	SF	RI	SF	RI
1. 2. 3. 4. 5. 6.						

(SF-scale of finance, RI -rate of interest, RRB- Regional Rural Bank)

ii) Medium term loans

Purposes wise	Co-operatives		Commercial bank		RRB	
1.	NI	RI	NI	RI	NI	RI
2. 3. 4.						

iii) Long term loans

Purpose-wise	Max. borrowing (range)	Rate of interest	No.of instalments	remarks
1 2. 3. 4. 5.				

NI-No.of instalments; RI-Rate of interest

B) Non-institutional (money lenders)
Extent of availability
Rate of interest
Other problems

6. Village Industries

6.1.1 What are the different agro-based industries existing in the village
6.1.2 Indicate further scope of set up of any other type of agro-based industry

7. Whole sale and retail prices of horticultural products (Rs/qty.)

Produce	Source	Prices at	
		Sowing	Harvesting
1. 2. 3. 4.			

8. Prepare an appropriate plan for the agro-economic development of the village taking into account of all the resources

Reference Records

1. Records of
a) Village Admission Officer
b) Village Development Officer
c) Village Extension Officer
d) Mandal Revenue Officer
2. Survey report of the mandal-Mandal Development Officer
3. Records of Horticultural Officer-Assistant Director of Horticulture

ANNEXURE - VI

FARM HOLDING SURVEY

1. General

Village — Name of the farmer

Main occupation — Subsidiary occupation

2. Details of family

Name	Age	Relationship To head	Literary level	Occupation		Remarks
				Main	subsidiary	

3. Farm labour

3.1 Family labour available for farm use — Males, Females, Children

3.2 Permanent labour engaged

Seasonal/ Annual	Number	Purpose	Payment

4. (i) Details of holding

Item	Unirrigated	Irrigated	Irrigated Dry	Total Area
Owned Leased in Leased out Present value per acre Sales value per acre Land revenue/ cess/per ha				

Total extent of operated holding under
Unirrigated
Irrigated
Irrigated dry

4 (ii) History of the holding
a) Give history and subdivision of holding for atleast two generations
b) Sketch a diagram showing the information of holding at present
c) Relative advantages and disadvantages of land with regard to soil, drainage and irrigation

4 (iii) Market intelligence

Are you receiving information in advance of the crop season regarding minimum support price(MSP)/ Market prices. If yes, give details of crops end prices

SI.No.	Crop	Market prices (Rs/q) / MSP	Season	Remarks

What is the source of information:Radio / TV/News papers/Market Yard/Neighbours/Horticultural Department/Others (specify)

4 (iv) : Do you decide your cropping pattern on the basis information on MSP/Market Prices(yes./ no) If yes, how do you allocate your area under different crops.

S.No.	Crops	Previous Area(ha)		Present Area(ha)		Changed Area(%)	
		Kharif	Rabi	Kharif	Rabi	Kharif	Rabi

4 (v): Do you think that the allocation is rational?(yes/no)
If no, give reasons for irrational allocation of crops
(a)
(b)
(c)
(d)

4 (vi): Give suggestions for rational allocation of crops

(a)

(b)

(c)

(d)

4 (vii) Are you disposing the crop produce according to market information on process.(yes/no) If yes, mention the market places where you are disposing?

5. Livestock

Kind	No.	Breed	Age	Home bred	purchased	Present value	Remarks

5.1 Do you wish to increase {or) change the existing types of livestock ? Yes or no
If yes, what changes you would like to bring?

a)

b)

5.2 Indicates the additional resources required and associated problems

a)

b)

c)

6. Farm implements and machinery

Kind	No.	Value	Life span	Year of purchase		Depreciation		Remarks
				Rate	Amount	Rate	Amount	

6.1 indicate whether the existing implements and machinery are adequate Yes or No

a. If not, indicate the items required

b. What are the financial and maintenance problems?

6.2 Whether sufficient service (repair) facilities are available in the village for the implements and machinery?

6.3 If not, .where do they get the machinery repaired?

7. Farm buildings

Particulars	Cost	Life span	Year of Purchase / construction	Depreciation		Repairs & Maintenance charges	Remark;s
				Rate	Amount		

7.1 Do you have adequate facilities to store farm produce ? Yes/No

7.2 If noy, what are the problems?

8. Irrigation

Description	No.	Area Irrigated	Period of availability	Life span	Depreciation	Repairs & Maintenance charges	Remarks
1. open well 2. bore well 3. submersible pump 4. tube well 5. motor 6. pumpset 7. others							

8.1 Is the existing water availiability sufficient for the present cropping scheme? Yes or No.

8.2 If not, what changes do you propose in the existing cropping scheme ?

9. Permanent improvements

Nature of improvement	Total cost	Proportionate charges per year

9.1 Do you like to have additional permanent improvements? Yes or No

9.2 If yes, indicate the proposed improvements with costs and benefits

10. Agriculture loans

S.No.	Type of loan	Agency	Purpose	Amount	RI	Amount repaid	loans out standing	Remarks

Do you feel that the credit available is sufficient and timely? Yes or No

10.3: Mention the scale of finance extended for different crops by the bank.

10.4: Compare the scale of finance with cost of cultivation and comment.

10.5: Crop insurance

Insurance premiums paid and compensation received the farmers surveyed

Give crop wise details of insurance claims cleared during the last five years

S.No.	Year	Crop	Area(ha)	Sum insured	Premium Paid	Claims	Remarks

Remarks: reasonable for claiming the policy (drought/flood/pest outbreak, if any)

10.6: What are your suggestions for effective implementation of crop insurance scheme?

a)

b)

c)

d)

11. Cost of cultivation (Give separately for major crops)

A) Labour cost

S. No.	Operation (2)	Owned labour					Hired labour					Wage labour					Amount
		TP (3)	CPD (4)	M (5)	W (6)	C (7)	TP (8)	CPD (9)	M (10)	W (11)	C (12)	TP (13)	CPD (14)	M (15)	W (16)	C (17)	(18)
1.	Land Preparation																
a.	Removal of Stubbles																
b.	Ploughing																
c.	harrowing																
d.	Leveling																
e.	Puddling																
f.	Trimming of Bunds																
g.	Forming ridge And furrows																
h.	Others																

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
2.	Application of manures																
a.	Carting																
b.	Spreading																
3.	Sowing/ Transplanting																
4.	Fertilizer Application																
5.	Earthing up																
6.	Intercultivation																
7.	Weeding																
8.	Irrigation																
9.	Wrapping and proping																
10.	Plant protection																
11.	Harvesting																
12.	Treshing and winnowing																
13.	Bagging and transportation																
14.	Total																

Note: TP- Tractor Power CPD-Cattle Pair Day M-Men W-Women C-Children

B) Material costs

S.No.	Item	Quantity Owned	Purchased	Rate	Value
1.	Seeds				
2.	FYM				
3.	Fertilizers				
I					
II					
4.	Plant Protection Chemicals				
I					
II					
	Total of A and B				

C) Interest on working capital
Total operational cost (A+B+C)

D) Fixed costs

1.	land revenue				
2.	Depreciation				
3.	Rental value of owned land leased in land				
4.	Interest on fixed capital				
	Total cost (A+B+C+DI				

11.1 What items of costs have higher proportion in the total costs
11.2 Indicate suggestion to reduce such costs

12. Live stock maintenance charges

Name of the livestock enterprise Number

S.No	Farm produced		Purchased		Total value	Remarks
	Quantity	Value	Quantity	Value		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
I.Concentrates a) Rice bran b) Horse gram c) Cotton seed d) Oil cake e) Mineral mixtures f) Vitamins g) Salts h) Others II. Roughages a) Paddy straw b) Jowar straw c) Bajra straw d) Groundnut haulms e) Sunnhemp f) Bhusa						

(1)	(2)	(3)	(4)	(5)	(6)	(7)
III.Green fodder a) Jowar b) Napier grass c) Others						

12.1 What items of costs have higher proportion in the maintenance costs?

12.2 Indicate suggestion for reducing such costs

13. Disposal of farm produce

Name of produce	Agency	Village market	Mode of transport	Transport costs	Bagging costs	loading and Unloading costs	Market fee	Total Marketing costs	Remarks

13.1 Do you feel that the price received by you is remunerative? Yes or No
If not, what price do you expect?

13.2 Do you feel; that available marjet facilities are sufficient? Yes or No
If not, what are the problems you face in marketing? Give suggestions

14. Returns from crop enterprises

Name of the Crop	Area	Season	Main product		By product		Total value Rs.	Remarks
			Quantity	Value	Quantity	Value		

14.1 Did you get the expected returns from the crops? Yes or No
If not, what are the reasons ?

15. Returns from livestock enterprises

Type of product	Quantity	Unit price Rs.	Value Rs.	Remarks

ANNEXURE - VII

(GUIDE SHEET FOR ANNEXURE V & VI)

ECONOMIC SURVEY

General

The information for the successful conduct of the agro-economic survey can be had from the following sources. The particulars are available from different sources but the student must draw the particulars and reorganize them in an appropriate way.

Sources

i) Statistical register of the village (Village Administrative Officer)
ii) Registers maintained by the Village Development Officer
iii) Records at Mandal Revenue/Development Office
iv) Statistical abstract published by the Government

Item-wise details

The location, distance, communication etc., from the focal point can be got from the village Administrative Officer or Village Development Officer. Keen observation is also very helpful.

Information on storage and marketing facilities can be had through discussion with progressive farmers, V.A.O/V.D.O etc.

Vital statistics can be had from the V.A.O/Statisticaf Assistant at Mandal Revenue Office.

Occupational distribution can be obtained from the V.D.O/Statistical Assistant at Mandal Revenue Office.

Information on structural distribution of holding can be secured from the VAO.

2.1 Regarding nature of soils, the student can acquire information by his observation.

2.2 (a) Land utilization particulars can be had from the Statistical Register (Grama Goshwara) of the concerned village.

2.3. Information on (a) area under different crops, (b) crop rotation and (c) intercropping patterns can be had from the V.A.O and the progressive farmers.

2.4 Information on problems of irrigation, drainage and soil management, if any, can be gathered through discussion from farmers.

1.1 The extent of area under high yielding varieties crop-wise can be had from village Development Officer. Horticultural Officer of the locality will also provide information.

3.2 The V.D.O or any progressive farmer will be able to provide the information on the sources of HYV seed. The Horticultural Officer or Co-operative society of progressive farmers will form sources of information. Otherwise, based on the area and acre requirement, the quantity can be easily estimated. Other problems can be elicited through discussion with progressive farmers.

3.3 The students are expected to provide general and standard applications to each crop. This can be taken from Annexure -VII or can be obtained from any progressive farmer or the V.D.O.

4. Farm Labour :

Availability of agricultural labour, mode of payment, wage rates etc have to be elicited from any experienced farmer and the figures can qe checked with V.D.O. the balance sheet of agricultural labour units, taking the supply and demand is calculated as follows

Example : Population of the village, both males and females = 1000.
Potential labour (16 to 60 years) = 70%
Potential labour Units = $\frac{1000 \times 70}{100} = 700$

(If males and females are taken separately, labour units are to be calculated on the basis of 2:3 ratio)

No. of work days in any region in an agricultural year is:
Single cropped area = 120 to 140 days (Average 130 M.W.D)
Double cropped or inter cropped= 180 to 200 days

Supply total labour units available:700x130=91,000 M.W.D
Accordingly, if it is a double ropped or intercropped area, the available labour can be worked out.

Demand prepare a labour schedule for each crop per hectare operation wise. The total labour units may be arrived at in terms of man work units.

Take the area under each important crop.

Multiply the work units for each crop with the respective areas and total up, which will give the total man work units required for cultivation of the total area of all the crops.

Example

	Area (ha)	M.W.D/ha	Total M.W.D
Crop 1 Crop 2 Crop 10	l00 50 80	55 80 70	5500 4000 5600
		Total	15100

(Supply) man work days 91,000
(Demand) man work days 15,100

a. If supply is greater than demand, how the surplus labour is utilized.
b. If demand is greater than supply, how the shortage of labour is made good

4.1 Wage rates for different operations can be obtained from local farmers.

5. Agricultural credit: Cultivators take crop and term loans from co-operatives, commercial banks, Regional Rural Banks. Information regarding the loans granted, scale of finance for each crop, rate of interest, period of repayment, purpose etc. may be collected for one year (agricultural year).

6. This information can be elicited in consultation with V.D.O village officials and progressive farmers. The student has to make some thinking and indicate the scope for establishment of agro-based industries, taking into account the resources that sre available in the village and neighbouring places.

7. The prices can be obtained from the nearest whole-sale, retail and regulated markets. If these institutions are not available, the particulars can be elicited from the progressive farmers.

8. a) After observing the village situations from all angles i.e. economic, social and political, the student has to find out urgent needs of the village and understand various problems and fix priorities.

b) Then 'for each priority (project) the probable estimates are to be prepared and then, the resources for meeting the estimates are to be considered. Under this category it is to be considered, to what extent villages can contribute by way of money, material and labour. Further, the student has to find out from officials the different grants-in-aid for various projects either from the government or service organization. Then both the resources side and expenditure side are to be adjusted.

Farm Planning and Budgeting

Farm planning and budgeting is one of the most effective ways to illustrate in a convicing manner, the costs and benefits of using new technology on the farm.

Farm planning is the technique of making sound decisions by the farmers, contemplating profitable changes in the farm. It is a scheme for the operation and organization of the farm business.

Farm budgeting assesses the 'Farm Plan' in terms of costs and returns and indicates the economics, of farm plan. Thus, planning and budgeting must go hand in hand for a successful operation of a farm business.

Steps in farm planning

The success of any plan depends on the systematic procedure followed, which must be easily adoptable and feasible.

1. Evaluating the present farm situation with respect to
i) Resource position or inventory
ii) Different crops grown
iii) Extent of resources used
iv) Level of production
v) Costs and returns

I Resources position: detailed information is needed regarding

a) Land: Area-dry, wet and irrigated, type of soil, topography, drainage, soil conservation and water management measures, soil nutrient status etc.

b) Labour: Extent of family labour, permanent labour, hired labour, availability depending upon the type of work, wages, peak period, demand and supply etc.

c) Cattle and mechanical power- Availability and their hiring charges.

d) Funds: Requirement or funds availability on hand, credit required, sources available, extent of debits of interest, repayment schedule etc.

e) Management: Skill of the farmer with respect to the production of different crops and livestock enterprises and extent of knowledge regarding each of them.

f) Irrigation: Source-coverage, period of availability, charges etc.

g) Other information: Farm buildings, equipment, machinery and other farm enterprises, their maintenance costs and returns, the level of complementary and supplementary of them with respect to crop production.

ii) Crops Grown: Information must relate to type of crops, rotations, variety, their cultivation practices and reasons for deviation from the package of practices.

iii) Extent of resources used: This gives in detail the totality of each resource being used on the entire farm. Information must related to the acre unit area i.e. being cultivated, amount of labour being utilized and wages paid, extent of family labour involvement, total amount of capital in terms of variable inputs being used in different enterprises. Such information is useful for identification of resources usage in different enterprises and possibility of readjustment from one crop enterprise to the other.

iv) Levels of, production: The information here indicates the amount of main and by products being obtained from each farm enterprise.

v) Costs and returns: This is to arrived at the profitability of each crop & livestock enterprises.

2. List out the risks to farm production:

Incidence of pests and diseases possibility of drought, cyclones, floods etc. are to be borne in mind while formulating an alternate plan.

3. Identifying the weakness of the existing plan

For immediate or short term changes that are to be brought, one must first identify the operational weaknesses like the suitable variety, type of fertilizer and plant protection chemicals, their marketing, cultural practices etc. Minor operational changes may help in increasing the returns from a particular crop or farm enterprise.

4. Specification of technical coefficients of production

For the specified production coefficients, average prices are to be determined to estimate the expected returns.

6. Preparation of enterprise budget

The enterprise budgets can be prepared with the help of extension leaflets, research station reports, publications etc. these budgets will give the input-output relationship of each enterprise.

7. Preparation of alternate plan

With the help of the profitability-ranking chart, select such farm enterprises, which are feasible within the resources of the farm, keeping in view the weaknesses both structural and operational of the existing farm plan. At the same time, try to incorporate the latest technology by preparing a few alternate plans. Again these must involve minimum risk possible.

8. Analyse the alternate plan to check the profItability

It is necessary to have a clear comprehension about the partial plan (partial budget) and alternate plan (full budget}. In the former case, any single aspect of change in technology is considered. For example introduction of new variety, fertilizer, cultural operation, plant protection etc. in this case, the extra returns per rupee investment are estimated.

Example: Partial budget

ANNEXURE - VIII

GAP IN ADOPTION AND PROPOSED EXTENSION STRATEGY FOR IMPROVING THE PRODUCTIVITY/ INCOME FROM HORTICULTURAL CROPS

Name of the farmer: Crop:

Village:

S.I No.	Items of Package	Existing Practice (Farmer Practice)	Recommended practice	Gap in adoption	Specific Reasons For the Gap*	Farmer Proposed Extension Strategy**
1	2	3	4	5	6	7
1. 2. 3. 4. 5. 6. 7.	Land preparation Sowing -Time -Method Varieties Seed rate (per ha.) Seed treatment Organic Manure (t/ha) Fertilizer/ nutrient(kg/ha) -Basal (N+P+K) -Top dress					
	Total					
8. 9. 10.	Method of Fertilizer use -Basal -Top dress Micro nutrient (Specify) -Basal -Top dress Pest Management					

1	2	3	4	5	6	7
11. 12. 13. 14. 15. 16. 17. 18.	Disease management Weed Management -Mechanical -Herbicide Water Management -Number of Irrigations -Method of irrigation Land Management -Salinity/acidity; -Water logging , Method of harvesting Post harvest handling Any other Average yield -Grain -Fodder					

Note: 1. Gap analysis has to done three major crops raised by the farmer(s).
2. If any practice not covered in proforma, the student can include in the table

* specific reasons for the gap: lack of awareness/knowledge/skill/finance/availability of inputs/ conviction/motivation/ marketing/ recommendation / suitability of recommendation traditional practice is the best or any other.

** farmer proposed extension strategy could be -creating awareness through mass media/training/ result demonstration/ skill teaching/method demonstration/field visit/exhibition/group discussion or any other

ANNEXURE- IX

STUDY ON HORTICULTURAL INFORMATION SOURCES

Name of the farmer

Village Mandal District

S.No.	information source(s)	Extent of utilization regularly	Occasionally	Rarely	Never	Rank*
I. Formal						
1.	Assistant Director of Horticulture /Horticultural officer/AAO					
2.	Gram Surpanch					
3.	Bank Officers					
4.	ANGRAU Scientists					
5.	ICAR scientists					
6.	Cooperatives					
7.	Market committees					
8.	School teachers					
9.	NGOs/waterlay organization					
10.	Call Centers					
	(a) Kisan Call Center					
	(b) State Level Call Center (Parishkaram)					
II. Informal						
1.	Fmily member					
2.	Neighbours					
3.	Friends & Relatives					
4.	Progressive farmers					
5.	Input agencies					
6.	Private input Dealers					
7.	Agri-clinics					
III. Mass Media						
1.	News papers					
2.	Periodicals/Magazines					
3.	University publications					
4.	Department information bulletins					
5.	Journals					
6.	Radio					
7.	T.V					
8.	Audio cassettes					
9.	Film shows					
10.	Information kiosks					
11.	Internet					
12.	Others (pi. specify)					

* Ranking shall be given for each category separately (i.e. formal, informal and mass media) as perceived by the farmers. Simultaneously students shall get information on problems with regard to public and private Horticultural Extension Systems.

ANNEXURE-X

DETAILED INSTRUCTIONS FOR CONDUCT OF EXTENSION PROGRAMMES

It is impossible to teach practical extension in the class room. The most effective practical training in extension education can be imparted if the students are made to stay in the village for a period of at least one semester, so that they will have opportunities to learn, practice the techniques and methods of extension in real village atmosphere.

During their stay, the students will be required to work with farmers as the field extension workers under the direct supervision of Scientist. To help the students in learning extension techniques, they will be involved in the following extension programmes.

1. Identification of major horticultural problems of the village through Participatory Rural Appraisal Techniques (PRA).
2. Development of extension strategies using Gap Analysis (Annexure-IX) and preparation of action plan.
3. Organizational of participatory extension teaching methods such as extension talk, skill teaching/ method demonstration, group discussion, brainstorming/ role play, field visit, training programme, rythu sadassu, exhibition etc.,
4. Establishing of Horticultural Information Centre maintenance of information corner in the village.
5. Study of public and private Horticultural Extension Information sources and to find out major problems in public and private horticultural extension systems.
6. Study of on-going Central /State sponsored rural development and extension programmes.
7. Visit to village institutions to study their role in development programmes and extension work.
8. Documentation of Indigenous Technical Knowledge Practices (ITKs) for major crops.
9. Study of self help groups (SHGs) in the village.
10. Gender participation in horticultural activities.
11. Documentation of success/failure stories of farmers in the village
12. Report and comments on vocational training.

1. Identification of major horticultural problems of the village through Participatory Rural Appraisal Techniques (PRA)

For identification of village horticultural problems, the students as a group allotted to a village shall collect information from different sections of the farmers using Participatory Rural Appraisal Techniques -transect walk, time line, trend analysis resource and social mapping, ,seasonality, ranking techniques, venn diagram, mobility mapping, wealth ranking, problem tree analysis problem prioritization etc. Before using these techniques students must buildup rapport with the farmers. They

have to clearly state the purpose of practicing these techniques to the farmers. These techniques will help the students to identify horticultural Problems / constraints / indigenous technical knowledge (ITK)/training needs of farmers. Students shall record at least 10 technical along with diagrams, explanation given by farmers, interpretation, problems identified in crop production, marketing etc.

2. Development of suitable extension strategies using gap analysis and preparation of action plan

Each student shall collect information on three (3) major crops from 10 farmers in the village as per prescribed proforma (Annexure-IX). It enables the student to find out the gaps in adoption, reasons for gaps and draw the extension strategies as proposed by the farmers. Accordingly the student shall prepare action plan for organizing various partidpatory extension teaching methods activities to reduce the gaps in the adoption of recommended technologies in major crops.

3. Oaganisation of participatory extension teaching methods such as extension talk, skill teaching/method demonstration, group discussion, brainstorming/role, field visit, training programme, rythu sadassu, exhibition etc.

Based on extension strategies drawn and action plan prepared under item 2, the students shall carry at least participatory extension teaching methods viz., extension talk. skill teaching/method demonstration, group discussion, brainstorming/role-play, field visit training programme, rythu sadassu, exhibition etc. under the field guidance of Scientist in-charge of RAWEP.

a) Presentation of extension talk

Extension talk is a verbal explanation (presentation or communication) to a group of people to impart knowledge by activating the learners. Extension talk is different from the lecture method. In lecture, most of the time flow of information is one way and interaction between communicator and receiver is very less. Interaction is much higher in talk. The talk in general is given to adults who are experienced and had sufficient knowledge and they are not passive listeners. Keeping this in view each student shall plan giving extension talk on a topic identified as a knowledge gap under item.

The student has to plan thoroughly and the presentation has to be divided into four parts viz., introduction, body, summary and questions (recapitulation). The introduction shall attract the audience by way of thentain quotation, telling a story, telling an experience an or stressing the importance of the topic from the farmers point of view. Not more than 10-15 percent of the time devoted for this. Body of informationis the major part and subject has to be delivered in detail on essentials, desirables and possible principle and 75 percent of the time can be given for the body Summary gives scope for the audience to crystallize important key points and conclusion shall be given as natural ending and the topic shall not be closed abruptly and 5 percent of time can be given for this purpose. At the end, certain of the questions have to be asked to the participants. This session gives for getting feedback whether the participants gained knowledge from the talk or not Each student shall fill the proforma of plan of extension talk given here under and is to be incorporated in the record.

b) Demonstration of skill teaching

The skill teaching is defined as "to train the learner to perform a job as quickly as possible under supervision". Most of the skill involved practices demonstrated to a group may not be sure that one has acquired the skill or not. This is one to one method. The aim of the skill teaching is for 'how to do something'. The method 'how to do a job' is demonstrated and thus training In skill is imparted through the triple process of seeing, hearing and doing.

Each student shall plan giving skill teaching for the gaps of skills identified in the item 2.

The students have to thoroughly prepare and arrange the required material in advance without giving scope for searching the materials on the spot. The necessary guidance shall be obtained from the Scientist (TOT) in-charge. While teaching a skill, step-by-step what has to be done: and how and why aspects are to be explained to the farmer. Some important points and cautions have to explained and repeated If necessary. Before giving the skill teaching the student has to fill the following proforma and include in the record. It is better to rehearse skill teaching before presenting it to the farmer. While demonstrating a skill, the student must involve the farmer n discussion and involve him in the activities. Afterwards, the farmer has to do the skill on his own The students has to leave the farmer only after attaining the perfection in doing the skill. l4ter, the student can observe the farmer on the field

c) Conduct of method demonstrations

The students under the guidance of should conduct method demonstrations to teach the farmers certain new skills and new technologies developed which are necessary in the new adoption of new farm practices, for example mixing of pesticides with correct dosages, control of insects, pests and diseases, preparation of raised .seed beds for nurseries etc., depending upon the local problems.

By conducting method demonstrations, lot of interest will be created among the villagers regarding some improved practices and introduction of new skills, proper mixing of pesticides etc., Many farmers who are motivated to try new practices naturally required to be trained in certain skills needed and also require demonstration of new appliances.

For this purpose all the students allotted to a village must select 30 farmers at random from a list of total farmers in the village with proportionate sample from big, medium and small farmers.

In this connection, a record must be maintained by the students with the following details.

Date (s) of conducting method demonstrations(s}
Purpose of conducting the method demonstration(s)
Planning aspect of conducting the method demonstration(s)
Methods adopted for publicizing the demonstration(s)
Rehearsal of the method demonstration(s)

Procedure followed while .conducting the demonstrations(s)
Number of farmers attending the demonstration(s)
Reaction of farmers after conducting the method demonstration

d) Organization of farmers, group discussion

The students shall organize group discussion solve the horticultural problems identified by them under Item 1. They must prepare well on some of the selected topics of interest to the farmers in the village and organize group discussion preferably during evening hours or any convenient time with the help of the host farmers and other village leaders. The students should prepare teaching aids well in advance based on the topics they would like to discuss. While preparing for the discussions, they should check up the physical facilities made available for conducting the discussions and make advance arrangements for informing the farmers as well as deciding about the place, time and date in consultation with the farmers as well as Scientist. In these discussions they may distribute some of the leaflets published by the Andhra Pradesh Horticultural University. If the students want assistance of any specialist for these discussions, a request may be made to the Head of the research station in advance so that arrangements could be made to depute the required specialist to attend the group discussions and assist the students. The student speakers should motivate the farmers' attending the meeting by telling the merits of the discussions in solving their own problem in economic terms.

At the end of the group discussion an appeal be made to the farmers to implement the solution commonly agreed upon.

The students shall write the following in the record
Date(s) and place (s) of conduct of group discussion
Problem selected for group discussion and recognition of the problem
Definition and diagnosis of problem
Selection of the leader and physical arrangements made
Solutions offered by the farmers along with farmers names
Critical analysis of each solution and finally selected solution on consensus basis
Action plan for implementing the solution
Farmers reaction on the group discussion

e) Conducting role play

Recommended technologies can effectively be disseminated through role play technique by assuming different roles to influence of participant farmers and it helps to change the attitude of the people towards modern technology.

Role-playing is a teaching/training technique where, without a script participants act out 2 situation in front of the rest of the group. In order to decide what they will say and do in the role-play, participants are given a situation described in detail and assigned a role to play. Role players and observe are aware of the general situation, but individual role players may be the only ones aware of the intricacies of

their respective roles. The intricate are either told to the role players individually, or written on a slip of paper for each role player. After the role-play is completed, it is discussed by the entire group. All the process has to be documented by the students in the record stating the purpose, roles assigned, how they have acted, discussion held after enacting roles, interpretation and final solutions arrived etc.,

f) Organization of farmers training programme

In each village, there are good leaders and progressive farmers who are enthusiastic to do some useful service for the .community. Very rarely their services are used for promoting horticultural programmes. If they are given some simple and useful training in the field of horticulture, they could be of considerable use to community. Therefore, the students are required to organize farmers training camp/Rythu sadassu of one-day duration for such farmers. The training programmes should be prepared well in advance keeping in view some of the following objectives.

1. To give detailed information on some of the new farm practices relevant to the local farming situation.
2. To teach skills involved in the introduction of new farm practices.
3. To organize a simple horticultural exhibition related to local problem.

Students shall invite the specialists from Research station who would deliver the training content and give clarifications to the queries posed by the farmers.

The students shall write the particulars of title of the training programme, date and place of the training programme, purpose of the training programme, planning aspect, procedure followed while conducting the programme, names of the scientists and topics covered by them, no. of participant farmers, publicity before and after and reaction of the farmers towards the training programme.

4. Establishment of Horticultural Information Centre/maintenance of Information corner in the village

It is common experience that new farm information rarely reaches the villages farmers. In order to ‘provide farm information to the farmers, the students shall establish and maintain one information center at a commonly accepted place during their stay in the village. The information center shall include village information, soil types, characteristics, crop varieties and their characteristics, management facilities followed by farmers, recommended practices, gaps, pests and diseases, nutritional deficiencies, organic farming, natural resource management, IPM, post harvest management, value addition, market intelligence, prices of crop produce, cost of cultivation particulars etc., All the students have to contribute in this activity considerably,. In addition. students shall maintain visitors’ register and their feedback.

If sufficient space is not available in the village for establishing the information centre, students need to maintain information corner in the village. This has to be decided during the first week of the RAWEP itself in consultation with Scientists of the Research station. Information corner provides an

opportunity to students for communicating new horticultural information and field problems to the villagers in simple and effective way through well maintained information corner. Students are responsible for maintenance of information corner. The students will prepare simple teaching aids like charts, poster, and collect specimens relating to horticultural problems identified in various activities and field observation display in information corner. The information corner should be maintained at a place central to the village where large no of villagers pass by or gather.

A brief .report on the information displayed, date, teaching aids used, number of farmers who visited the information corner on each day and opinion expressed by them should be maintained.

5. Study of Public and Private Horticultural Extension Information sources and to find out major problems in public and private horticultural extension systems.

Farmers are receiving information on farm technology from different sources. Each student has to collect information from 10 farmers as per the prescribed proforma. (Annexure - X). he was to analyze the information as well as find out the problems faced by the farmers who regard to these sources through discussion and are to be recorded.

6. Study of on-going Central / State sponsored rural development/extension programmes

The students shall study any of the two on-going Central/State sponsored rural development / extension programmes like Swamajayanti Gram Swarojgar Yojana (SGSY)/Sampoorna Grameena Rojgar Yojana (SGRY)/ ICDS/ PMGY/ MSY/ RMK/ IWDG/ Indira Awas Yojana/Food for work/ RLGEP/Anyodaya/Rythu Chaitanya Yatra/Rythula polallo sastravethalu etc., regarding its background, objectives, year of initiation, salient features of the programme/scheme, methodology / approach for identification of beneficiaries in the village, financial details, immediate benefits realized, employment generation, extension approach followed, feedback from beneficiaries and non-beneficiaries, operational problems and suggestions for improving the modalities of programme/scheme. At the end students shall write their comments on the functioning of these programmes.

7. Visit to village institutions to study of their role in extension work

The students allotted to each village are required to visit the basic village institutions, it panchayat, school and co-operative society with a particular objective of understanding their role and responsibilities in promoting horticultural programmes in the village. The following points are suggested for the study of these organizations. In addition, the student may add their own points of observations.

The Panchayat

Name of the office bearers

Names of the members of the various sub-committees

Total budget of the panchayat and funds allocated to horticultural work.

Activities of the horticultural sub-committees of the panchayat

Whether the panchayat has prepared the horticultural production plan ? And if so, since when?

Methods used in preparing the horticultural production plan

Procedure followed in implementing the horticultural production plan

Reaction of the members towards the panchayat horticultural production in the plan.

What is the effect of the plan on the individual farmers involved in the plan ?

Role of panchayat and for its horticultural sub-committee in village extension work like organizing village meetings, establishing demonstrations, conducting field days, organizing field trips, conducting leader training camps etc. ,

The School

The type of school

No. of students, classes and the teachers

Extracurricular activities of the students

Role of the school in promoting horticultural programmes by way of providing physical facilities available at the school, type of teachers, participation in the horticultural programmes, part played by scho~1 students in horticultural extension work.

Any establishment of youth organization attached to the school.

The Co-operative Society

Date of establishment

Name of the office bearers

Number of member (Village wise)

Amount of share capital

Physical facilities available-

Amount of cash, credit available.

Number of members to whom loan has been given during last three years

Amount of loan given during the last three years.

Number of defaulters

Deposit of members at the co-operative society

Whether possess license for sale of fertilizers

Quantity of fertilizer handled during the last year

Difficulties if any, In getting the required fertilizer quantity

Type of insecticides and fungicides stocked and supplied to village farmers

list of horticultural equipment stocked by the society for the benefit of members and the rate of charges for their hire

Part played by the society in implementing the panchayat horticultural production plan

Educational services offered by the society

Whether demands are fully met by the society

8. Documentation of Indigenous Traditional Knowledge Practices (ITKs) for major crops

Farmers all over the world have developed their indigenous system of farming and have evolved indigenous techniques for horticultural management. Each student shall record at least two ITKs adopted by the farmers in the village. Particulars of name of the practice, purpose, method of application, dosage, time of application, rationale behind ITK, extent of adoption, constraints in .adoption and opinion of the farmers towards ITKs are to be recorded. Students must bring these ITKs to the notice of the scientists of research station and record the scientific reasoning of these ITKs documented.

9. Study of Self Help Groups (SHGs) in the village

There are several groups functioning formally and informally in the village in the name of DWCRA, Rythu Mitra Groups. Watershed Committees, Commodity Interested Group and Water User Associations etc. Each Student shall select two SHGs and record purpose of formation of SHG, No. of members and their names, working age of the SHG, occupation, activities under taken, group task functions and maintenance functions, trust and openness among the members, frequency of meetings, participation of. members, cooperation and coordination among the members, benefits due to SHG formation, impact of group and other details. At the end student must mention his own remarks on functioning of SHGs and give suggestions for effective functioning of SHGs in the village duly discussing with groups.

10. Gender participation in horticultural activities

Each student shall collect information from S families regarding involvement of men and women in farming practices of three major crops grown by the respective farmers (Annexure –XI (a) and their pattern of decision- making related to certain farm activities (Annexure -XI (b)). The information thus collected has to be analyzed and inferences have be drawn. In addition, student shall write his comments on this aspect.

11. Documentation of success/failure stories in the village

Success stories highlight the success being achieved with an involvement of human being. Each student shall record at least one success story and one failure story of any horticultural technology adopted by the farmers. Student shall obtain the guideline from Scientist in charge of RAWEP activity for writing these stories. He / She shall record the name of the farmer, name of the technology, source of information, interest shown by the farmer, timeliness, technology adoption particulars, factors leading to success/failure, cost benefit particulars, diffusion of technology in case of success, farmer opinion towards technology, problems in adoption, suggestions for further improvement of technology and furnish other relevant details. Success stories should end with an appeal for action.

12. Report on Vocational Training

Students shall write a brief report on the vocational training undergone during the RAWEP giving details of topics covered, methodologies followed in training, practical components and their coverage etc. Besides, students shall give his own comments about the training, its content and how it is useful to him.

ANNEXURE - XI

ANDHRA PRADESH HORTICULTURAL UNIVERSITY

HORTICUL TURAL COLLEGE ———————————————————-

RURAL AWARENESS WORK EXPERIENCE PROGRAMME

CERTIFICATE

Certified that this is a bonafide record of practical work done and data collected by Mr/Kum/Smt _____ I.D.No. _____ in Rural Awareness Work Experience Programme during first semester of final year B.Sc.(Hons) Horticulture course during the academic year _____

Signature of the Chairman

Signature of the Advisory Committee

1. Chairman of the Advisory Committee :
2. Scientist :
3. Associate Dean's Representative :
4. Host farmer :
5. Representative from Department of Horticulture :

ANNEXURE-XII

PERFORMANCE SHEETS

PERFORMANCE SHEET –1(a)
(Internal evaluation)

S.No	Name of the Student	I.D.No.	Each week's work for 50 marks					Total (50 marks)
			1st (10m)	2nd(10m)	3rd(10m)	4th(10m)	5th(10m)	

Signatures of the members of Advisory Committee

Chairman | Scientist | Associate Dean's Representative | Representative of the Dept. of Horticulture

PERFORMANCE SHEET -1(b)
(External evaluation)

Name of the College: Name of the Research Station:
Crop production: First Semester _____

S. No.	Name of the student	ID No.	Technical component of the crop production report (60m)	Comparison with recommended management practices (10m)	Information on the observations on crops (10m)	Reasons for adoption and non-adoption of the recommended management practices (10m)	Comments of the students about 1) Crop growth variety, yield etc., 2) Skill, knowledge and practice 3) Technical feasibility etc., (5m)	Report and comment on vocational training (5m)	Total (100m)	Reduced to 50m

Signatures of the evaluators

1.

2. Head of the Dept. of Horticulture

3.

PERFORMANCE SHEET - 2(a)
(Internal evaluation)

S.No	Name of the Student	I.D.No.	Each week's work for 50 marks					Total (50 marks)
			1st (10m)	2nd(10m)	3rd(10m)	4th(10m)	5th(10m)	

Signatures of the members of Advisory Committee

Chairman	Scientist	Associate Dean's Representative	Representative of the Dept. of Horticulture

PERFORMANCE SHEET - 2(b)
(External evaluation)

Name of the College: Name of the Research Station:
Crop production: First Semester _____

S. No.	Name of the student	ID No.	Technical component of the crop production report (60m)	Comparison with recommended management practices (10m)	Information on the observations on crops (10m)	Reasons for adoption and non-adoption of the recommended management practices (10m)	Comments of the students about 1) Crop growth variety, yield etc., 2) Skill, knowledge and practice 3) Technical feasibility etc., (5m)	Report and comment on vocational training (5m)	Total (100m)	Reduced to 50m

Signatures of the evaluators

1.

2. Head of the Dept. of Horticulture

3.

PERFORMANCE SHEET - 3(a)
(Internal evaluation)

S.No	Name of the Student	I.D.No.	Each week's work for 50 marks					Total (50 marks)
			1st (10m)	2nd(10m)	3rd(10m)	4th(10m)	5th(10m)	

Signatures of the members of Advisory Committee

Chairman	Scientist	Associate Dean's Representative	Representative of the Dept. of Horticulture

PERFORMANCE SHEET - 3(b)
(External evaluation)

Name of the College: Name of the Research Station:
Crop production: First Semester _____

S. No.	Name of the student	ID No.	Technical component of the crop production report (60m)	Comparison with recommended management practices (10m)	Information on the observations on crops (10m)	Reasons for adoption and non-adoption of the recommended management practices (10m)	Comments of the students about 1) Crop growth variety, yield etc., 2) Skill, knowledge and practice 3) Technical feasibility etc., (5m)	Report and comment on vocational training (5m)	Total (100m)	Reduced to 50m

Signatures of the evaluators

1.

2. Head of the Dept. of Horticulture

3.

PERFORMANCE SHEET - 4(a)
(Internal evaluation)

S.No	Name of the Student	I.D.No.	Each week's work for 50 marks					Total (50 marks)
			1st (10m)	2nd(10m)	3rd(10m)	4th(10m)	5th(10m)	

Signatures of the members of Advisory Committee

Chairman	Scientist	Associate Dean's Representative	Representative of the Dept. of Horticulture

PERFORMANCE SHEET - 4(b)
(External evaluation)

Name of the College: Name of the Research Station:
Crop production: First Semester _____

S. No.	Name of the student	ID No.	Development of extension strategies using gap analysis (15m)	Conduct of participatory extension teaching methods (20m)	Establishment of public and private horticultural information sources (5m)	Study of publi8c and private horticultural information sources (5m)
1	2	3	4	5	6	7

Study of ongoing central/ stage sponsored rural development / extension programmes (10m)	Visit to local institutions and study their role in extension programmes (5m)	Documentation of ITKs in the village (5m)	Study of SHGs (5m)	Gender participation in Horti. Activities (5m)	Documentation of success/ failure stories (5m)	Report and comments on vocational altaining (5m)	Total (100m)	Reduced to 50m
9	10	11	12	13	14	15	16	17

Signatures of the evaluators

1.

2. Head of the Dept. of Horticulture

3.

PERFORMANCE SHEET - 5(a)
(Internal evaluation)

Name of the Research Station

Periodical evaluation of Research Station First semester _____
Activities and attachment to agro-based industries

S.No	Name of the Student	I.D.No.	Each month's work for 12.5 marks					Total (50 marks)
			1st (12.5 m)	2nd (12.5 m)	3rd (12.5 m)	4th (12.5 m)	5th (12.5 m)	

Signatures of the members of Advisory Committee

Chairman | Scientist Research Station | Associate Dean's Representative | Representative of the Dept. of Horticulture

PERFORMANCE SHEET - 5(b)
(External evaluation)

Name of the Research Station
Research Station Activities
And attachment to agro-based industries

First semester _____

S. No.	Name of the student	ID No.	The details of experiments, Design, staffing pattern of the research station, technical programmes of the scientist, observations recorded and also the comments of the student (15m)	Details of the industry, profile, Functioning, infrastructure facilities available, no. of employees (technical and non-technical) Financial and marketing aspects etc, observations recorded and comments of the student (15m)	Viva – voce (20m)	Total (50m)
1	2	3	4	5	6	7

Signature of the members of Advisory Committee

Chairman | Scientist Research Station | Associate Dean's Representative | Representative of the Dept. of Horticulture

ANNEXURE - XV

GUIDELINES FOR EVALUATION OF DIFFERENT COURSES

1.	**Crop production**	
a)	Internal evaluation (50 marks)	
	Each month's work is to be evaluated for 10 marks	10x5=50 marks
b)	External evaluation (50 marks)	
	i. technical component of the crop production reportstudent shall write information for a minimum ofthree crops, each carries 20 marksthe split up of 20 marks is mentioned hereunder	60 marks
	a)l to 12 items@ 1.5 marks each (1.5x12)	18.0 marks
	b)13th item 2.0 marks 2.0 marks :	2.0 marks
	ii. comparision with recommended management practices	10.0 marks
	a) for three crops 3x3	9.0 marks
	b) over and above 3 crops	1.0 marks
	iii. information on the biometrical observations of crops as outlined in Annexure	10.0 marks
	iv. reasons for adoption and non-adoption as outlined in part ii	10.0 marks
	v. comments of the students about the crops	5.0 marks
	a. crop growth, variety, yield etc.	2.0 marks
	b. skill and knowledge	2.0 marks
	c. technical feasibility	1.0 marks
	vi. report and comments on vocational training	5.0 marks
	Total 100 marks have to be reduced to 50 marks	
2.	**Plant protection**	
a)	Internal evaluation (50 marks)	12.5x4=50 marks
	Each week's work is to be evaluated for 12.5 marks (based on weekly report)	
b)	External evaluation (50 marks)	
	1. technical component of the plant protection	60 marks
	2. comparison with the recommended management practices	10 marks
	3. information on observation of crops	10 marks
	4. reasons for adoption and non-adoption of the recommended manage practices	10 marks
	5. comments of the students about on plant protection aspects	5 marks
	6. report and comments on vocational training	5 marks
3.	**Rural economics**	
a.	Internal evaluation (50 marks)	
	Each week's work is evaluated for 12.5	12.5x4=50 marks
b.	External evaluation (50 marks)	30 marks
	a. Agro-economic survey 7 items 2x7=14 marks	
	If all items completed = 1 mark 8^{th} item = 15 marks	

B. Farm Holding Survey 25 Marks

Crop	Production costs	Cost concepts	General Information	Total
First crop	5 Marks	5 Marks	5 Marks	5 Marks
Second crop	5 Marks	5 Marks		

C. Alternate Farm Plans 30 Marks

	Existing Plan	Alternate Plan	Interpretation	Total
Host Farmer	5 Marks	5 Marks	5 Marks	15 Marks
Another Farmer	5 Marks	5 Marks	5 Marks	15 Marks

D. Family Budget 10 Marks

	Data Collection	Illustration and interpretation	Total
Host Farmer	2 Marks	2 Marks	4 Marks
Agril. Labourers	2 Marks	2 Marks	4 Marks
Overall Interpretation			2 Marks

E. Report and comments on vocational training -5 marks

Total 100 marks have to be reduced to 50 marks

4. Extension Programme

a. Internal Evaluation (50 marks)

Each month's