

**CURRICULUM**

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**POINTED GUARD GROWER  
(PGG)**



**Council for Technical Education and Vocational Training**  
**Curriculum Development Division**  
Sanothimi, Bhaktapur  
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## Introduction

This curriculum for “**Pointed Guard Grower**” is designed to produce lower level technical workforce equipped with knowledge and skills related to **Pointed Guard growing**. It makes the trainees able to get opportunities for wage and self-employment in the related occupational field.

## Aim

To produce lower level **Pointed Guard growing** workers (**Pointed Guard Grower**) able to provide **Pointed Guard** cultivation/**growing** services in the community being an entrepreneur/employee/self employed.

## Objectives

After the completion of this training program, the trainees will **fulfill the following objectives**:

- To make plan for growing pointed guard
- To prepare land for growing pointed guard
- To apply fertilizer
- To obtain cuttings of pointed guard
- To propagate cuttings of pointed guard
- To carry out intercultural operations
- To apply plant protection measures
- To harvest pointed guard
- To market pointed guard

## Course description

This curriculum provides skills & knowledge necessary for **Pointed Guard Grower**. There will be both demonstration by instructors/trainers and opportunity by trainees to perform skills/tasks specified in this curriculum. Trainees will practice & learn skills using typical tools, materials, equipment & machines necessary for the program.

After successful completion of this program the trainees will be equipped with the knowledge and skills related to planning for growing pointed guard, preparing land for growing pointed guard, applying fertilizer, obtaining cuttings of pointed guard, propagating cuttings of pointed guard, carrying out intercultural operations, applying plant protection measures, harvesting pointed guard, and marketing pointed guard.

## Course structure

<b>Job: Pointed guard grower</b>		Nature	Hours			Marks		
SN	Modules/sub modules		Th.	Pr.	Tot.	Th.	Pr.	Tot.
	<b>1. Planning for growing pointed guard</b>	<b>T + P</b>	<b>5</b>	<b>5</b>	<b>10</b>	<b>4</b>	<b>16</b>	<b>20</b>
	<b>2. Land preparation and fertilizer</b>	<b>T + P</b>	<b>22</b>	<b>44</b>	<b>66</b>	<b>10</b>	<b>40</b>	<b>50</b>
	1. Land preparation	T + P	11	22	33			
	2. Fertilizer application	T + P	11	22	33			
	<b>3. Propagation</b>	<b>T + P</b>	<b>19</b>	<b>38</b>	<b>57</b>	<b>10</b>	<b>40</b>	<b>50</b>
	1. Obtaining cuttings of pointed guard	T + P	8	16	24			
	2. Propagating cuttings of pointed guard	T + P	11	22	33			
	<b>4. Intercultural operations</b>	<b>T + P</b>	<b>13</b>	<b>13</b>	<b>26</b>	<b>5</b>	<b>20</b>	<b>25</b>
	<b>5. Plant protection measures-</b>	<b>T + P</b>	<b>9</b>	<b>18</b>	<b>27</b>	<b>5</b>	<b>20</b>	<b>25</b>
	<b>6. Harvesting and marketing-</b>	<b>T + P</b>	<b>18</b>	<b>26</b>	<b>44</b>	<b>6</b>	<b>24</b>	<b>30</b>
	1. Harvesting pointed guard	T + P	8	16	24			
	2. Marketing pointed guard	T + P	10	10	20			
	Sub total:		86	144	230	40	160	200
	<b>7. On the job training (OJT)</b>	<b>P</b>		<b>160</b>	<b>160</b>		<b>100</b>	<b>100</b>
	Total:		86	304	390	40	260	300

## **Duration**

The total duration of the course will be of 390 hours (three months) [230 hours of in house training plus 160 hours of OJT].

## **Target group**

The target group will be of all the **literate** and interested individuals in the field of **vegetable growing**.

## **Group size**

Maximum of thirty

## **Medium of instruction**

Nepali or English or both

## **Pattern of attendance**

- 80% attendance in theory
- 90% in practical/ performance

## **Focus of curriculum**

This curriculum emphasizes on competency /performance. 80% time is allocated for performance and only 20% for related technical knowledge. So the focus will be on performance of the specified competencies in the curriculum

## **Entry criteria**

- **Literate**
- Minimum of 16 years of age
- Should pass entrance examination

## **Follow up suggestions**

In order to assess the success of this program and collect feedbacks/ inputs for the revision of the curriculum a schedule of follow up is suggested as follows:

- First follow up: - Six months after the completion of the program
- Second follow up: - Six months after the completion of the first follow up
- Follow up cycle: - In a cycle of one year after the completion of the second follow up for five years

## **Certificate**

The related training institute will provide the certificate of “**Pointed Guard Grower**” to those individuals who passes and fulfills all the requirements of this curriculum.

## **Grading**

- Distinction: passed with 80% or above

- First division: passed with 75% or above
- Second division: passed with 65% or above
- Third division: passed with 60% or above

## Students evaluation

- Continuous evaluation of the trainees' performance is to be done by the related instructor/trainer to ensure the proficiency over each competency under each of the sub-module.
- Related technical knowledge learnt by trainees will be evaluated through written or oral tests.
- Trainees must secure minimum marks of 60% in an average of both theory and practical evaluations.
- There will be three internal evaluations and one final evaluation in each module.
- The entrance test will be conducted by the concerned training institute

## Trainers qualification

- **I. Sc. Ag or equivalent in related field**
- Good communicative and instructional skills
- Experience in related field

## Trainer-trainees ratio

- 1:10 for practical classes
- For theory, as per the class room situation

## Suggestions for instructor

### Suggestions for instruction

- 1. Select objectives**
  - Write objectives of cognitive domain
  - Write objectives of psychomotor domain
  - Write objectives of affective domain
- 2. Select subject matter**
  - Study subject matter in detail
  - Select content related to cognitive domain
  - Select content related to psychomotor domain
  - Select content related to affective domain
- 3. Select instructional methods**
  - Teacher centered methods: like lecture, demonstration, questions answer inquiry, induction and deduction methods.
  - Student initiated methods like experimental, field trip/excursion, discovery, exploration, problem solving, and survey methods.
  - Interaction methods like discussion, group/team teaching, microteaching and exhibition.
  - Dramatic methods like role play and dramatization
- 4. Select Instructional method (s) on the basis of objectives of lesson plans and KAS domains**
- 5. Select appropriate educational materials and apply at right Time and place.**

6. Evaluate the trainees applying various tools to correspond the KAS domains
7. Make plans for classroom / field work / workshop organization and management.
8. Coordinate among objectives, subject matter and instructional methods.
9. Prepare lesson plan for Theory and Practical classes.
10. Deliver /conduct instruction / program
11. Evaluate instruction/ program

### **Suggestion for the performance evaluation of the trainees**

1. Perform task analysis
2. Develop a detail task performance checklist
3. Perform continuous evaluation of the trainees by applying the performance checklist.

### **Suggestion for skill training**

Demonstrate performance

1. Demonstrate task performance in normal speed
2. Demonstrate slowly with verbal description of each and every step in the sequence of activity of the task performance using question and answer techniques.
3. Repeat 2 for the clarification on trainees demand if necessary
4. Perform fast demonstration of the task.

Provide trainees the opportunities to practice the task performance demonstration

1. Provide trainees to have guided practice
2. Create environment for practicing the demonstrated task performance
3. Guide the trainees in each and every step of task performance
4. Provide trainees to repeat and repeat as per the need to be proficient on the given task performance
5. Switch to another task demonstration if and only trainees developed proficiency in the task performance.

### **Other suggestions**

1. Apply principles of skill training
2. Allocate 20% Time for Theory classes and 80% Time for task performance while delivering instructions
3. Apply principles of adult learning
4. Apply principles of intrinsic motivation
5. Facilitate maximum trainees involvement in learning and task performance activities
6. Instruct the trainees on the basis of their existing level of knowledge, skills and attitude.



## **List of modules and sub modules**

**Module: 1: Planning for growing pointed guard**

**Module: 2: Land preparation and fertilizer**

Sub module: 1: Land preparation

Sub module: 2: Fertilizer application

**Module: 3: Propagation**

Sub module: 1: Obtaining cuttings of pointed guard

Sub module: 2: Propagating cuttings of pointed guard

**Module: 4: Intercultural operations**

**Module: 5: Plant protection measures**

**Module: 6: Harvesting and marketing**

Sub module: 1: Harvesting pointed guard

Sub module: 2: Marketing pointed guard

## Details of modules and sub modules

<b>Module: 1: Planning for growing pointed guard</b>						
<b>Description:</b> It consists of skills and knowledge related to the planning of activities essential for pointed guard growing technology.						
<b>Objectives:</b>						
<ul style="list-style-type: none"> <li>• Identify nutritive value of / uses of / climatic requirement/ soil requirement for growing pointed guard</li> <li>• Enlist botanical characteristics of pointed guard</li> <li>• Enlist varieties of pointed guard</li> <li>• Identify the season of planting the cuttings of pointed guard</li> <li>• Make plan for :               <ul style="list-style-type: none"> <li>▪ Obtaining cuttings</li> <li>▪ Preparing land</li> <li>▪ Applying fertilizer</li> <li>▪ Propagating the cuttings</li> <li>▪ Intercultural operations</li> <li>▪ Plant protection</li> <li>▪ Harvesting and marketing the products</li> </ul> </li> </ul>						
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.						
				Time (hrs.)		
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.	
1.	Identify the followings: <ul style="list-style-type: none"> <li>• Nutritive value of pointed guard</li> <li>• Uses</li> <li>• Climatic requirement</li> <li>• Soil requirement</li> </ul>	<b><u>Introduction:</u></b> <ul style="list-style-type: none"> <li>• A perennial climbing type vegetable crop.</li> <li>• Nutrients:               <ul style="list-style-type: none"> <li>▪ Protein (2%)</li> <li>▪ vitamin 'A' &amp; 'C'</li> <li>▪ calcium, Phosphorous &amp; iron</li> <li>▪ king of vegetables</li> </ul> </li> <li>• Uses:               <ul style="list-style-type: none"> <li>▪ Young fruits as vegetables.</li> <li>▪ Health promoting vegetable</li> <li>▪ Beneficial for the patient of heart, stomach &amp; mental diseases</li> </ul> </li> <li>• Climate:               <ul style="list-style-type: none"> <li>▪ hot and wet climate of Terai &amp; inner</li> </ul> </li> </ul>	1.0	1.0	2	

		<ul style="list-style-type: none"> <li>Terai <ul style="list-style-type: none"> <li>▪ areas of high rainfall</li> </ul> </li> <li>• Soil <ul style="list-style-type: none"> <li>▪ well drained fertile loamy sand soil</li> </ul> </li> </ul>			
2.	Enlist botanical characteristics of pointed guard	<p><b><u>Botanical characteristics of pointed guard:</u></b></p> <ul style="list-style-type: none"> <li>• Botany of pointed gourd / botanical characteristics of pointed gourd</li> </ul>	0.5	0.5	1
3.	Enlist varieties of pointed guard	<p><b><u>Varieties of pointed guard and their characteristics:</u></b></p> <ul style="list-style-type: none"> <li>• White striped long</li> <li>• Green long</li> <li>• Green round</li> <li>• White striped green round</li> </ul>	1.0	1.0	2
4.	Identify the season of planting the cuttings of pointed guard	<p>Season of planting the cuttings <b><u>of pointed guard:</u></b></p> <ul style="list-style-type: none"> <li>• Bhadra to Kartic</li> </ul>	0.5	0.5	1
5.	<p>Make plan for :</p> <ul style="list-style-type: none"> <li>• Obtaining cuttings</li> <li>• Preparing land</li> <li>• Applying fertilizer</li> <li>• Propagating the cuttings</li> <li>• Intercultural operations</li> <li>• Plant protection</li> <li>• Harvesting and marketing the products</li> </ul>	<p><b><u>Making plan for growing pointed gourd:</u></b></p> <ul style="list-style-type: none"> <li>• Planning for: <ul style="list-style-type: none"> <li>▪ Obtaining cuttings</li> <li>▪ Preparing land</li> <li>▪ Applying fertilizer</li> <li>▪ Propagating the cuttings</li> <li>▪ Intercultural operations</li> <li>▪ Plant protection</li> <li>▪ Harvesting and marketing the products</li> </ul> </li> </ul>	1.0	1.0	2

6.	Enlist economic importance of growing pointed guard		<b><u>Economic importance of growing the crop:</u></b>	1.0	1.0	2
			<ul style="list-style-type: none"> <li>Economic importance of growing pointed guard</li> <li>Income per Ropani Rs.8000 to 12000.</li> </ul>			
			Sub total:	5	5	10
<b>Module: 2: Land preparation and fertilizer</b>						
<b>Description:</b> It consists of skills and knowledge related to land preparation and fertilizer application technology for growing pointed guard.						
<b>Objectives:</b>						
<ul style="list-style-type: none"> <li>To prepare land for growing pointed guard</li> <li>To apply fertilizer for growing pointed guard</li> </ul>						
<b>Sub modules:</b>						
<ol style="list-style-type: none"> <li>Land preparation</li> <li>Fertilizer application</li> </ol>						
<b>Sub module: 1: Land preparation</b>						
<b>Description:</b>						
<b>Objectives:</b>						
<ul style="list-style-type: none"> <li>To select field for growing pointed gourd</li> <li>To plow the field deeply</li> <li>To break the clods</li> <li>To remove weeds/unwanted materials</li> <li>To level the land</li> <li>To make lines on the field</li> <li>To dig pits</li> <li>To make channel</li> </ul>						
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.						
				Time (hrs.)		
SN	Task statements		Related technical knowledge	Th.	Pr.	Tot.
1.	Select field for growing pointed gourd		<b><u>Selecting field for growing pointed gourd:</u></b>	1	2	3
			<ul style="list-style-type: none"> <li>Field selection criteria for growing pointed gourd</li> </ul>			
2.	Plow the field deeply		<b><u>Plowing the field:</u></b>	1	2	3
			<ul style="list-style-type: none"> <li>Carrying out deep plowing during hot and dry season to improve the condition of the field</li> </ul>			

		<ul style="list-style-type: none"> <li>• Plowing 2/3 times at the time of planting the cuttings</li> </ul>			
3.	Break the clods	<p><b><u>Break the clods:</u></b></p> <ul style="list-style-type: none"> <li>• Clod breaking</li> </ul>	1	2	3
4.	Remove weeds/unwanted materials	<p><b><u>Weeding:</u></b></p> <ul style="list-style-type: none"> <li>• Removal of weeds and unwanted materials from the field</li> </ul>	1	2	3
5.	Level the land	<p><b><u>Leveling:</u></b></p> <ul style="list-style-type: none"> <li>• Leveling the field</li> </ul>	1	2	3
6.	Make 2m apart lines on the field	<p><b><u>Making lines:</u></b></p> <p>Principle and procedure for making lines on the field</p>	1	2	3
7.	Dig pits (30cm x 30cm x 30cm) on each line maintaining pit to pit distance as 1 m.	<p><b><u>Digging pits or long channels:</u></b></p> <ul style="list-style-type: none"> <li>• Size of the pit: 30cm x 30cm x 30cm</li> <li>• Distance: R-R – 2m, P-P – 1m</li> <li>• Cuttings can be planted either in the pits or in the channels</li> </ul>	1	2	3
8.	Make channel of (25cm wide and 30 cm deep) maintaining channel to channel distance as 2m (if cuttings are not planted in the pits)	<p><b><u>Making channel:</u></b></p> <ul style="list-style-type: none"> <li>• Size of the channel: 25cm wide and 30cm deep; length as per the need</li> <li>• Distance: R-R – 2m, P-P – 1m</li> <li>• Cuttings can be planted either in the pits or in the channels</li> </ul>	1	2	3
9.	Follow precautions	<p><b><u>Precautions:</u></b></p>	1	2	3

		<ul style="list-style-type: none"> <li>• Precaution to be followed</li> </ul>			
10.	Clean/store tools/materials / equipment	<p><b><u>Cleaning and storing:</u></b></p> <ul style="list-style-type: none"> <li>• Cleaning and storing tools materials and equipment</li> </ul>	1	2	3
11.	Keep records	<p><b><u>Records:</u></b></p> <ul style="list-style-type: none"> <li>• Record keeping</li> </ul>	1	2	3
		Sub total:	11	22	33
<b>Sub module: 2: Fertilizer application</b>					
<b>Description:</b> It consists of skills and knowledge related to fertilizer application technology for growing pointed guard growing.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To identify recommended doses of fertilizer</li> <li>• To calculate amount of fertilizer needed as per the recommended doses</li> <li>• To obtain the fertilizer</li> <li>• To weigh the calculated amount of fertilizer</li> <li>• To apply the fertilizer in the pits/channel</li> <li>• To mix the applied fertilizer in the soil</li> <li>• To make pits/channels ready to plant cuttings of pointed gourd</li> </ul>					
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.					
			Time (hrs.)		
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.
1.	Identify recommended doses of fertilizer	<p><b><u>Recommended doses of fertilizer:</u></b></p> <ul style="list-style-type: none"> <li>• Application of fertilizer depends upon the soil fertility status of the field</li> <li>• Dose per ropani: 3kg N, 2 kg P, 2 kg P, and 1.5 ton Fym or compost</li> </ul>	1	2	3
2.	Calculate amount of fertilizer needed as per the recommended doses	<p><b><u>Fertilizer calculation:</u></b></p> <ul style="list-style-type: none"> <li>• Formulae</li> <li>• Calculation procedures</li> </ul>	1	2	3

3.	Obtain the fertilizer	<p><b><u>Obtaining the fertilizer:</u></b></p> <ul style="list-style-type: none"> <li>• Sources of fertilizer</li> <li>• Procedure for obtaining the fertilizers needed</li> </ul>	1	2	3
4.	Weigh the calculated amount of fertilizer	<p><b><u>Weighing fertilizer:</u></b></p> <ul style="list-style-type: none"> <li>• Procedure for weighing fertilizer</li> <li>• Handling fertilizer</li> </ul>	1	2	3
5.	Apply the fertilizer in the pits/channel	<p><b><u>Fertilizer application:</u></b></p> <ul style="list-style-type: none"> <li>• 1 kg compost, 50 gm complexal and 15gm potash is to be applied in each pits</li> <li>• Fertilizer application procedures</li> </ul>	2	4	6
6.	Mix the applied fertilizer in the soil	<p><b><u>Mixing fertilizer in the soil:</u></b></p> <ul style="list-style-type: none"> <li>• Through mixing the fertilizer with the soil in the pit/channel</li> </ul>	1	2	3
7.	Make pits/channels ready to plant cuttings of pointed gourd	<p><b><u>Making pits/channel ready:</u></b></p> <ul style="list-style-type: none"> <li>• Making pits/channel ready to plant the cuttings</li> </ul>	1	2	3
8.	Clean/store tools/materials/ equipment	<p><b><u>Cleaning and storing :</u></b></p> <ul style="list-style-type: none"> <li>• Cleaning tools and equipment</li> <li>• Storing tools, materials and equipment</li> </ul>	1	2	3
9.	Follow precautions	<p><b><u>Precautions:</u></b></p> <ul style="list-style-type: none"> <li>• Precaution to be followed</li> </ul>	1	2	3
10.	Keep records	<p><b><u>Recording:</u></b></p> <ul style="list-style-type: none"> <li>• Record keeping</li> </ul>	1	2	3
		Sub total:	11	22	33
<b>Module: 3: Propagation</b>					
<b>Description:</b> It consists of skills and knowledge related to obtaining and propagating the cuttings of pointed guard.					
<b>Objectives:</b>					

	<ul style="list-style-type: none"> <li>To obtain cuttings of pointed guard</li> <li>To propagate cuttings of pointed guard</li> </ul>				
	<b>Sub modules:</b> <ol style="list-style-type: none"> <li>Obtaining cuttings of pointed guard</li> <li>Propagating cuttings of pointed guard</li> </ol>				
	<b>Sub module: 1: Obtaining cuttings of pointed guard</b>				
	<b>Description:</b> It consists of skills and knowledge related to obtaining the cuttings of pointed guard.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>To identify reliable source of obtaining cuttings of pointed gourd</li> <li>To contact the source of obtaining cuttings of pointed gourd</li> <li>To select healthy limber shoots of pointed gourd</li> <li>To make cuttings</li> <li>To collect/obtain the cuttings</li> <li>To place the cuttings in a safe place</li> </ul>				
	<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.				
		Time (hrs.)			
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.
1.	Identify reliable source of obtaining cuttings of pointed gourd	<b><u>Source of cuttings:</u></b>  Fields with already grown pointed gourd	1.0	2	3.0
2.	Contact the source of obtaining cuttings of pointed gourd	<b><u>Contacting the sources:</u></b> <ul style="list-style-type: none"> <li>Contacting the source of obtaining cuttings of pointed gourd</li> </ul>	1.0	2	3.0
3.	Select healthy limber shoots of pointed gourd	<b><u>Selection:</u></b> <ul style="list-style-type: none"> <li>Selection criteria</li> <li>Selection of healthy climber shoots of pointed gourd from the crop field</li> </ul>	1.0	2	3.0
4.	Make cuttings of 120 – 150 cm long from the selected climber shoots of pointed gourd	<b><u>Making cuttings:</u></b> <ul style="list-style-type: none"> <li>How to make cuttings of 120 – 150 cm long from the selected healthy climber shoots of pointed gourd</li> </ul>	2.0	4	6.0



5.	Collect/obtain the cuttings	<b><u>Collecting/obtaining the cuttings:</u></b>	1.0	2	3.0
		<ul style="list-style-type: none"> <li>• Cuttings should be 85 – 90% from female plant and 10-15% from the male plant</li> </ul>			
6.	Place the cuttings in a safe place	<b><u>Handling of the cuttings:</u></b>	1.0	2	3.0
		<ul style="list-style-type: none"> <li>• Safe handling of the cuttings</li> </ul>			
7.	Follow precaution	<b><u>Precautions:</u></b>	0.5	1	1.5
		<ul style="list-style-type: none"> <li>• Precautions to be followed while carrying out this task</li> </ul>			
8.	Keep record	<b><u>Recording:</u></b>	0.5	1	1.5
		<ul style="list-style-type: none"> <li>• Record keeping</li> </ul>			
			Sub total:	8	16
<b>Sub module: 2: Propagating cuttings of pointed guard</b>					
<b>Description:</b> It consists of skills and knowledge related to propagating the cuttings of pointed guard.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To make ring of the cutting</li> <li>• To take the rings in the plantation site</li> <li>• To plant the rings in the pit</li> <li>• To plant the rings in the channels</li> <li>• To water lightly</li> </ul>					
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task					
			Time (hrs.)		
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.
1.	Obtain cuttings (120 – 150 cm long)	<b><u>Obtaining cuttings:</u></b>	1.0	2.0	3.0
		<ul style="list-style-type: none"> <li>• Male and female plants are separate</li> <li>• Male plant does not bear fruits but are essential for pollination</li> <li>• 10 – 15% of the cuttings should be from the male plants and 85 to 90% from female plant</li> </ul>			

		<ul style="list-style-type: none"> <li>Obtaining cuttings</li> </ul>			
2.	Take one cutting	<p><b><u>Handling cuttings:</u></b></p> <p>Taking one cutting at a time Safe handling of the cutting</p>	1.0	2.0	3.0
3.	Make ring of the cutting with roundness of about 30 cm exposing the both ends of the cutting	<p><b><u>Rings making procedure :</u></b></p> <ul style="list-style-type: none"> <li>Principle and procedure for making rings</li> <li>Making rings of the obtained cuttings</li> <li>Roundness of the rind should be about 30 cm</li> </ul>	1.0	2.0	3.0
4.	Make rings of all the cuttings (steps 2 and 3)	<p><b><u>Making rings:</u></b></p> <ul style="list-style-type: none"> <li>Making rings of the obtained cuttings</li> <li>Roundness of the rind should be about 30 cm</li> <li></li> </ul>	1.0	2.0	3.0
5.	Take the rings in the plantation site	<p><b><u>Handling rings:</u></b></p> <ul style="list-style-type: none"> <li>Taking the rings in the plantation site</li> <li>Safe handling of the rings</li> </ul>	1.0	2.0	3.0
6.	Plant the rings in the pit at a depth of 10cm keeping 10 – 15 cm of both the cut ends out of soil/ground	<p><b><u>Planting the rings in the pit:</u></b> <b><u>Procedure of planting rings in the pit</u></b></p> <ul style="list-style-type: none"> <li>Cut ends of the pointed gourd should be exposed out of the ring</li> <li>Burying the rings in the pits exposing about 10 – 15 cm of both the ends of the cuttings above the ground</li> <li>Row to row distance - 2m</li> <li>Plant to plant distance : 1m</li> <li>Depth of planting : 10 cm</li> </ul>	2.0	4.0	6.0

7.	Plant the rings in the channels as step no. 6 (if channel plantation is preferred) at a distance of 1 m each	<p><b><u>Planting the rings in the channel:</u></b></p> <ul style="list-style-type: none"> <li>• Burying the rings in the pits exposing about 10 – 15 cm of both the ends of the cuttings above the ground</li> <li>• Row to row distance - 2m</li> <li>• Plant to plant distance : 1m</li> <li>• Depth of planting : 10 cm</li> </ul>	1.0	2.0	3.0
8.	Water lightly	<p><b><u>Watering:</u></b></p> <ul style="list-style-type: none"> <li>• Need to water the planted cuttings lightly</li> <li>• Watering procedures</li> </ul>	1.0	2.0	3.0
9.	Clean/store tools/materials/ equipment	<p><b><u>Storing:</u></b></p> <ul style="list-style-type: none"> <li>• Cleaning tools and equipment</li> <li>• Storing tools, materials and equipment</li> </ul>	1.0	2.0	3.0
10.	Follow precautions	<p><b><u>Precautions:</u></b></p> <ul style="list-style-type: none"> <li>• Precaution to be followed</li> </ul>	0.5	1	1.5
11.	Keep records	<p><b><u>Recording:</u></b></p> <ul style="list-style-type: none"> <li>• Record keeping</li> </ul>	0.5	1	1.5
		Sub total:	11	22	33
<b>Module: 4: Intercultural operations</b>					
<b>Description:</b> It consists of skills and knowledge related to intercultural operations essential for growing pointed guard.					
<p><b>Objectives:</b></p> <ul style="list-style-type: none"> <li>• To carryout irrigation</li> <li>• To clean the field frequently</li> <li>• To carryout weeding/loosening the soil</li> <li>• To prevent unwanted root development in the climber shoots through frequent manipulation of the crop shoots</li> <li>• To fit supporting structures at the time when new branches begin to appear</li> <li>• To let the climber shoots to climb on the supporting structure</li> </ul>					

	<ul style="list-style-type: none"> <li>• To facilitate the development of more branches</li> <li>• To cut dry climber shoot/branches</li> <li>• To loosen the soil at the bottom of the plant</li> <li>• To apply manure/fertilizer</li> </ul>				
	<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.				
		Time (hrs.)			
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.
1.	Carryout irrigation	<p><b><u>Irrigation:</u></b></p> <ul style="list-style-type: none"> <li>• Irrigation is done as per the need of the crop and soil moisture level of the soil.</li> <li>• Irrigation is done at an interval of 8 – 10 days during hot season</li> <li>• Excess water should be well drained from the field</li> </ul>	1.0	2.0	3.0
2.	Clean the field frequently	<p><b><u>Cleaning the field:</u></b></p> <ul style="list-style-type: none"> <li>• Frequent cleaning of the field is necessary because grains and weeds hampers the vegetative development of the crop</li> </ul>	1.0	2.0	3.0
3.	Carryout weeding/loosening the soil	<p><b><u>Weeding/soil loosening:</u></b></p> <ul style="list-style-type: none"> <li>• Weeding/soil loosening is done 3 – 4 times since the date of plantation of the cuttings to the fruit bearing stage. 3 – 4 times per year</li> </ul>	1.0	2.0	3.0
4.	Prevent unwanted root development in the climber shoots through frequent manipulation of the crop shoots	<p><b><u>Manipulation of the crop shoots:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and need</li> <li>• Preventing unwanted root development in the climber shoots through frequent manipulation of the crop shoots</li> </ul>	1.0	2.0	3.0

5.	Fit supporting structures at the time when new branches begin to appear	<p><b><u>Supporting structures:</u></b></p> <ul style="list-style-type: none"> <li>Supporting structure of bamboos and rope:</li> <li>Size : 2 m wide, 1.25 m high &amp; length as per the need</li> </ul>	2.0	4.0	6.0
6.	Let the climber shoots to climb on the supporting structure	<p><b><u>Letting the climber shoots to climb on the supporting structure:</u></b></p> <ul style="list-style-type: none"> <li>Concept and need</li> <li>Climbed shoot on the supporting structure gives more fruits</li> </ul>	1.0	2.0	3.0
7.	Facilitate the development of more branches by cutting climbing shoots leaving only 22 – 30 cm length from the ground after harvesting the first lot of fruits	<p><b><u>Facilitating the development of branches:</u></b></p> <ul style="list-style-type: none"> <li>More branches give the more fruits / product</li> </ul>	1.0	2.0	3.0
8.	Cut dry climber shoot/branches leaving only ½ m from the ground	<p><b><u>Cutting dry climber shoot/branches:</u></b></p> <ul style="list-style-type: none"> <li>Dry climber shoot / branches is cut to facilitate the development of more branches from the main root and the soil should be loosened and apply fertilizer</li> </ul>	1.0	2.0	3.0
9.	Loosen the soil at the bottom of the plant	<p><b><u>Loosening the soil:</u></b></p> <ul style="list-style-type: none"> <li>Need</li> <li>Loosening the soil at the bottom of the plant</li> </ul>	1.0	2.0	3.0
10.	Apply manure/fertilizer	<p><b><u>Manure/fertilizer application</u></b></p> <ul style="list-style-type: none"> <li>Methods</li> <li>Precautions</li> </ul>	1.0	2.0	3.0
11.	Apply fertilizer since second year of crop	<p><b><u>Applying fertilizer since</u></b></p>	1.0	2.0	3.0

	grown (Ashwin - Kartic)		<b><u>second year of crop grown :</u></b>			
			<ul style="list-style-type: none"> <li>Fertilizer to the crop of second year on ward should be applied for each year during Ashwin – Kartic at the rate of 50 gm. Urea and 1kg FYM/plant</li> </ul>			
12.	Follow precautions		<b><u>Precautions:</u></b>	0.5	1	1.5
			<ul style="list-style-type: none"> <li>Precaution to be followed</li> </ul>			
13.	Keep records		<b><u>Records:</u></b>	0.5	1	1.5
			<ul style="list-style-type: none"> <li>Record keeping</li> </ul>			
			Sub total:	13	26	39
<b>Module: 5: Plant protection measures</b>						
<b>Description:</b> It consists of skills and knowledge related to plant protection essential for growing pointed guard.						
<b>Objectives:</b>						
<ul style="list-style-type: none"> <li>To identify common insects / diseases</li> <li>To control fruit rot disease of pointed gourd</li> <li>To control Seto Dhusi (सेतो ढुसी) disease of pointed gourd</li> <li>To control fruit rot maggots of pointed gourd</li> <li>To control other insects of pointed gourd</li> </ul>						
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.						
				Time (hrs.)		
SN	Task statements		Related technical knowledge	Th.	Pr.	Tot.
1.	Identify common insects / diseases		<b><u>Common insects / diseases:</u></b>	1.0	2.0	3.0
			<ul style="list-style-type: none"> <li>Concept of plant protection</li> <li>Common disease and insects of pointed gourd <ul style="list-style-type: none"> <li>fruit rot disease</li> <li>Seto Dhusi (सेतो ढुसी)</li> <li>Fruit rot maggots</li> <li>other insects</li> </ul> </li> <li>Signs / symptoms, identification, and nature of damage caused by fruit rot disease of pointed gourd</li> </ul>			

2.	Control fruit rot disease of pointed gourd	<p><b><u>Controlling fruit rot:</u></b></p> <p>Spray 0.3% solution of copper oxychloride 50 E.C. to control fruit rot disease</p>	1.0	2.0	3.0
3.	Control Seto Dhusi (सेतो ढुसी) disease of pointed gourd	<p><b><u>Controlling Seto Dhusi (;]tf] (':L):</u></b></p> <ul style="list-style-type: none"> <li>• Signs/symptoms, identification and nature of damage caused by the Seto Dhusi (सेतो ढुसी) disease of pointed gourd</li> <li>• Spraying 0.1% ketathane to control Seto Dhusi (सेतो ढुसी) disease</li> </ul>	1.0	2.0	3.0
4.	Control fruit rot maggots of pointed gourd	<p><b><u>Controlling fruit rot maggots:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of fruit rot maggots</li> <li>• use of Marathione 50 E.C., 10 - 15 days interval 2 or three times</li> <li>• use Malathione or savin to control other insects of pointed gourd</li> <li>• preparation of solutions of fancied/insecticide and principles and procedures of spraying</li> </ul>	1.0	2.0	3.0
5.	Control other insects of pointed gourd	<p><b><u>Controlling other insects of pointed gourd:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of other insects of pointed gourd</li> <li>• Controlling other insects of pointed gourd</li> </ul>	2.0	4.0	6.0
6.	Follow precautions	<p><b><u>Precautions:</u></b></p> <ul style="list-style-type: none"> <li>• Precaution to be followed</li> </ul>	1.0	2.0	3.0

7.	Clean/store tools/materials/ equipment	<b><u>Cleaning and storing:</u></b>	1.0	2.0	3.0
		<ul style="list-style-type: none"> <li>• Cleaning tools and equipment</li> <li>• Storing tools, materials and equipment</li> </ul>			
8.	Dispose / store chemicals safely	<b><u>Using the mask:</u></b>	0.5	1	1.5
		<ul style="list-style-type: none"> <li>• Need to use mask</li> <li>• How to use mask</li> <li>• Handling the mask</li> </ul>			
9.	Keep records	<b><u>Recording:</u></b>	0.5	1	1.5
		<ul style="list-style-type: none"> <li>• Record keeping</li> </ul>			
		Sub total:	9	18	27
<b>Module: 6: Harvesting and marketing</b>					
<b>Description:</b> It consists of skills and knowledge related to harvesting and marketing of pointed guard.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To harvest pointed guard</li> <li>• To market pointed guard</li> </ul>					
<b>Sub modules:</b>					
1. Harvesting pointed guard					
2. Marketing pointed guard					
<b>Sub module: 1: Harvesting pointed guard</b>					
<b>Description:</b> It consists of skills and knowledge related to harvesting of pointed guard.					
<b>Objectives:</b>					
<ul style="list-style-type: none"> <li>• To inspect the field</li> <li>• To identify the fruits of pointed guard that are ready to harvest</li> <li>• To pluck/harvest the fruits twice per week</li> <li>• To clean the harvested fruits of pointed guard</li> <li>• To store the cleaned fruits of pointed guard</li> </ul>					
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.					
			Time (hrs.)		
SN	Task statements	Related technical knowledge	Th.	Pr.	Tot.
	Inspect the field	<b><u>Inspecting the field:</u></b>	1.0	2.0	3.0
		<ul style="list-style-type: none"> <li>• Field inspection to find out the time of harvesting</li> </ul>			



	Identify the fruits of pointed guard that are ready to harvest	<p><b><u>Identifying the fruits of pointed guard that are ready to harvest:</u></b></p> <ul style="list-style-type: none"> <li>• Green young fruits of pointed guard are used as vegetables</li> <li>• Plants give fruits from Falgun to Jestha</li> </ul>	1.0	2.0	3.0
	Pluck/harvest the fruits twice per week	<p><b><u>Plucking/harvesting the fruits:</u></b></p> <ul style="list-style-type: none"> <li>• Plucking of fruits can be done twice per week</li> </ul>	1.0	2.0	3.0
	Clean the harvested fruits of pointed guard	<p><b><u>Cleaning of fruits:</u></b></p> <ul style="list-style-type: none"> <li>• Cleaning of the harvested fruits of pointed guard</li> <li>• Safe handling while cleaning</li> </ul>	1.0	2.0	3.0
	Store the cleaned fruits of pointed guard	<p><b><u>Storing fruits:</u></b></p> <ul style="list-style-type: none"> <li>• Storing the cleaned fruits of pointed guard</li> <li>• Safe handling while storing</li> </ul>	1.0	2.0	3.0
	Follow precautions	<p><b><u>Precautions:</u></b></p> <ul style="list-style-type: none"> <li>• Precautions to be followed while harvesting the pointed gourd product.</li> </ul>	1.0	2.0	3.0
	Clean/store tools used	<p><b><u>Cleaning / storing:</u></b></p> <ul style="list-style-type: none"> <li>• Cleaning tools and equipment.</li> <li>• Storing the tools, material and equipment.</li> </ul>	1.0	2.0	3.0
	Keep records/ be familiar with the yield/keep records of yield	<p><b><u>Recording and yield:</u></b></p> <ul style="list-style-type: none"> <li>• Record keeping</li> <li>• Yield:</li> </ul>	1.0	2.0	3.0

			<ul style="list-style-type: none"> <li>▪ First Year : 300 - 400 kg per Ropani</li> <li>▪ Second year : 600 - 800 kg per Ropani</li> </ul>			
			Sub total:	8	16	24
<b>Sub module: 2: Marketing pointed guard</b>						
<b>Description:</b> It consists of skills and knowledge related to marketing of pointed guard.						
<b>Objectives:</b>						
<ul style="list-style-type: none"> <li>• To grade the harvested fruits of pointed gourd.</li> <li>• To weigh the graded fruits of pointed gourd.</li> <li>• To make packages</li> <li>• To fix grade wise price</li> <li>• To transport the product packages</li> <li>• To sell the product</li> <li>• To calculate cost</li> <li>• To calculate profit / loss</li> </ul>						
<b>Tasks:</b> Each task consists of its related technical knowledge essential to perform the task and time allocation for both the theory and practical classes for the task.						
				Time (hrs.)		
SN	Task statements		Related technical knowledge	Th.	Pr.	Tot.
1.	Grade the harvested fruits of pointed gourd.		<b><u>Grading the fruits:</u></b> <ul style="list-style-type: none"> <li>• Grades and grading criteria.</li> </ul>	1	1	2
2.	Weigh the graded fruits of pointed gourd.		<b><u>Weighing the graded fruits:</u></b> <ul style="list-style-type: none"> <li>• Weighing and handling the balance safely.</li> </ul>	1	1	2
3.	Make packages		<b><u>Packaging:</u></b> <ul style="list-style-type: none"> <li>• Packaging materials and making packages.</li> </ul>	1	1	2
4.	Fix grade wise price		<b><u>Pricing:</u></b> <ul style="list-style-type: none"> <li>• Pricing technique and market price information.</li> </ul>	1	1	2
5.	Transport the product packages		<b><u>Transporting:</u></b> <ul style="list-style-type: none"> <li>• Economic means of transport.</li> </ul>	1	1	2

6.	Sell the product	<p><b><u>Selling:</u></b></p> <ul style="list-style-type: none"> <li>• Selling technique</li> </ul>	1	1	2
7.	Calculate cost	<p><b><u>Costing:</u></b></p> <ul style="list-style-type: none"> <li>• Safe handling the fruits of pointed gourd.</li> </ul>	1	1	2
8.	Calculate profit / loss	<p><b><u>Profit / loss:</u></b></p> <ul style="list-style-type: none"> <li>• Calculation of cost</li> <li>• Calculation of profit and loss</li> </ul>	1	1	2
9.	Follow precautions	<p><b><u>Precautions:</u></b></p> <ul style="list-style-type: none"> <li>• Precautions to be followed</li> </ul>	1	1	2
10.	Keep records/be familiar with income	<p><b><u>Recording:</u></b></p> <ul style="list-style-type: none"> <li>• Records keeping</li> <li>• Income: Rs. 8000 - 12000 per Ropani</li> </ul>	1	1	2
		Sub total:	10	10	20
		<b>Total:</b>	86	144	230

## On the job training

### Objectives of OJT

- To practice/ apply the skills/ knowledge developed by the trainees through institutional training in the real world of the related occupation
- To practice the skills gained through institutional training that the trainees have not got enough opportunity to practice and apply them due to the institutional constraints and or limitations
- To gain world of work experiences
- To acquire skills and knowledge recently developed in the related field of occupation
- To make trainees familiar with the future occupation / job they are going to hold
- To provide trainees with supporting skills and knowledge necessary for the related occupation
- To make trainees familiar with the day to day administrative / management activities applicable in their related occupation.

### OJT placement

The related training institute needs to perform the followings for OJT placement of the trainees:

1. Make list of the employer agencies:
  - Agriculture farms run by the government / private agencies/farmers
  - Agriculture farms run by NGOS / INGOS
  - Agriculture projects
  - Others
2. Select the employer agencies / related farms:
  - Obtain the curriculum
  - Match the skills specified in the curriculum with the occupational activities conducting by the farm.
  - Select the employer agency / farm for OJT which: -
    - Is well equipped and can provide maximum opportunity to practice /develop / apply the skills and knowledge included in the curriculum
    - Can provide recently developed knowledge / skills in the related occupation
    - Has the possibility to offer job for the trainees having satisfactory job performance after the completion of OJT.
    - Can offer facilities to the trainees during OJT.
3. Contact to the farm / employer agency for OJT
4. Make agreement with the farm / employer agency regarding OJT.
5. Orient the employer / farm regarding supervision & evaluation of the trainees on OJT.
6. Assign the trainees who have passed institutional training to the selected farms / employer agencies
7. Orient the trainees for OJT (Objectives, curriculum, activities in which they have to be involved, recording, supervision & evaluation etc.)

8. Send trainees with official letter for OJT.
9. Manage / provide salary (at least to cover the living cost) to the trainees (if applicable)
10. Have initial supervision to help socialize and guide the trainees sent for OJT
11. Have periodic supervision and evaluation of the trainees at least three times during the period of OJT.
12. Collect feedback as inputs for the revision of the curriculum in the future
13. Keep records.

### **Orientation to the Trainees for OJT:**

The trainees who are placed on OJT are to be oriented by the related institute about the followings:

1. OJT Activities
2. OJT Evaluation
3. OJT curriculum

### **Suggestion for Trainees for OJT:**

1. Receive orientation for OJT provided / delivered by the related training institute
2. Obtain curriculum
3. Obtain official letter for joining OJT
4. Contact the assigned farm / organization
5. Maintain attendance
6. Manage accommodation
7. Obtain job description
8. Visit / observe the activities related
9. Study the characteristics of the related farm unit(s)
10. Obtain curriculum
11. Match the tasks specified in the curriculum with the actual tasks / activities being carried in the farm.
12. Make lists of tasks:
  - You need to practice for confidence building
  - You need to practice the skills that are not covered in the institutional training
  - You need to practice the skills that are not included in the curriculum but need to perform in the real world of the occupation for successful job performance.
  - Recently developed skills through research applicable to your level of job after OJT.
13. Finalize the task list consulting with your supervisor & instructor
14. Practice / perform / develop as many related skills as possible related to your level of job
15. Perform related administrative functions
16. Perform / develop skills related to the duties and tasks specified in the JOB description provided by the farm / employer during OJT.
17. Get help form the senior (s) / supervisor (s) to perform the tasks \ develop skills as maximum as possible.
18. Develop daily diary / log book
19. Fill the daily diary / log book

20. Get the daily diary / log book signed by your supervisor regularly
21. Seek & follow suggestion from seniors
22. Show excellent job performance to influence your senior (s) / supervisor so that they could willingly recommend to the employer to offer you the job after OJT.
23. Develop professionalism.

## OJT evaluators

The OJT will be evaluated by:

- Related supervisor of the farm/ organization
- Related instructor/supervisor of the related training institute
- CTEVT (representative or assigned expert)

## Marks distribution schedule for OJT evaluation

The marks distribution for the OJT evaluation of the trainees will be as follows:

S.N.	Evaluators	Marks Distribution	
		Full Marks	Percentage
1.	Related Supervisor of the farm / Organization	50	50%
2.	Related supervisor / instructor of the training institute	25	25%
3.	CTEVT representative or assigned expert	25	25%
Total		100	100

## **Objectives of OJT for pointed guard grower**

1. To practice/ apply the skills/ knowledge developed by the trainees through institutional training in the real world of the related occupation
2. To practice the skills gained through institutional training that the trainees have not got enough opportunity to practice and apply them due to the institutional constraints and or limitation
3. To gain world of work experiences
4. To acquire skills and knowledge developed in the related field of occupation
5. To make trainees familiar with the future occupation/ job they are going to hold
6. To provide trainees with supporting skills and knowledge necessary for the related occupation
7. To make trainees familiar with the day to day administrative / management activities applicable in their related occupation.

## **Skills to be developed during OJT for pointed guard grower**

The trainees who are placed on the job training will develop specific skills as maximum as possible utilizing the opportunity to practice skills in the assigned job environment.

The Skills related to the following areas will be practiced as maximum as possible during OJT.

- Planning for growing pointed guard
- Land preparation for growing pointed guard
- Fertilizer application for growing pointed guard
- Obtaining cuttings of pointed guard
- Propagating cuttings of pointed guard
- Intercultural operations necessary for growing pointed guard
- Plant protection measures to be applied for protecting the plants of pointed guard
- Harvesting pointed guard products
- Marketing pointed guard products

## **Reading materials**

1. Instructor selected reading materials available in the market based on this curriculum
2. Instructor prepared handouts and manuals based on this curriculum

## **Facilities:**

1. Well equipped class rooms
2. Agricultural field available to use.
3. Related books/ reading materials available to use.

## **Tools/materials/equipment**

1. Chalk
2. Duster
3. Blackboard
4. Audio-visual Aids
5. Fruit/plant of pointed gourd
6. Sample of varieties of pointed gourd
7. Handout / reading materials
8. Paper/pencil/pencil cutter/eraser/pen
9. Record book
10. Plow set/oxen
11. Clod breaker
12. Leveler
13. Rake
14. Doko/basket/sacks
15. Khukuri
16. Kuto/Kodalo/Khanti/Sickle
17. Measuring tape
18. pegs/rope/chuche kuto
19. FYM/compost
20. Fertilizer (N, P & K)/ complexal/murate of potash
21. Shovel
22. Balance set
23. Water/watersource/hazari/pipes/soap
24. Money
25. Cuttings of pointed gourd
26. Knife
27. Bamboo/choya/ropes
28. Urea
29. Bowl/bucket
30. Copper oxychloride
31. Kerathane
32. Malathione



33. Savin
34. Sprayer
35. Mask
36. Insect catching box/bottle
37. Measuring cylinder
38. packaging materials
39. Means of transport
40. Other teaching and learning materials and supplies as per needs.

## **Product of job analysis**

Duty: 1: Plan for growing pointed guard

### **Tasks:**

1. Make plan for obtaining cuttings
2. Make plan for preparing land
3. Make plan for applying fertilizer
4. Make plan for propagating the cuttings
5. Make plan for intercultural operations
6. Make plan for plant protection
7. Make plan for harvesting and marketing the products
8. Make plan for enlist economic importance of growing pointed guard

Duty: 2: Prepare land

### **Tasks:**

1. Select field for growing pointed gourd
2. Plow the field deeply
3. Break the clods
4. Remove weeds/unwanted materials
5. Level the land
6. Make 2m apart lines on the field
7. Dig pits (30cm x 30cm x 30cm) on each line maintaining pi to pit distance as 1 m.
8. Make channel of (25cm wide and 30 cm deep) maintaining channel to channel distance as 2m (if cuttings are not planted in the pits)
9. Follow precautions
10. Clean/store tools/materials / equipment
11. Keep records

Duty: 3: Apply fertilizer

### **Tasks:**

1. Identify recommended doses of fertilizer
2. Calculate amount of fertilizer needed as per the recommended doses
3. Obtain the fertilizer
4. Weigh the calculated amount of fertilizer
5. Apply the fertilizer in the pits/channel
6. Mix the applied fertilizer in the soil
7. Make pits/channels ready to plant cuttings of pointed gourd
8. Clean/store tools/materials/ equipment
9. Follow precautions
10. Keep records

#### Duty: 4: Obtain cuttings of pointed guard

##### **Tasks:**

1. Identify reliable source of obtaining cuttings of pointed gourd
2. Contact the source of obtaining cuttings of pointed gourd
3. Select healthy limber shoots of pointed gourd
4. Make cuttings of 120 – 150 cm long from the selected climber shoots of pointed gourd
5. Collect/obtain the cuttings
6. Place the cuttings in a safe place
7. Follow precaution
8. Keep record

#### Duty: 5: Propagate cuttings of pointed guard

##### **Tasks:**

1. Obtain cuttings (120 – 150 cm long)
2. Take one cutting
3. Make ring of the cutting with roundness of about 30 cm exposing the both ends of the cutting
4. Make rings of all the cuttings (steps 2 and 3)
5. Take the rings in the plantation site
6. Plant the rings in the pit at a depth of 10cm keeping 10 – 15 cm of both the cut ends out of soil/ground
7. Plant the rings in the channels as step no. 6 (if channel plantation is preferred) at a distance of 1 m each
8. Water lightly
9. Clean/store tools/materials/ equipment
10. Follow precautions
11. Keep records

#### Duty: 6: perform intercultural operations

##### **Tasks:**

1. Carryout irrigation
2. Clean the field frequently
3. Carryout weeding/loosening the soil
4. Prevent unwanted root development in the climber shoots through frequent manipulation of the crop shoots
5. Fit supporting structures at the time when new branches begin to appear
6. Let the climber shoots to climb on the supporting structure
7. Facilitate the development of more branches by cutting climbing shoots leaving only 22 – 30 cm length from the ground after harvesting the first lot of fruits
8. Cut dry climber shoot/branches leaving only ½ m from the ground

9. Loosen the soil at the bottom of the plant
10. Apply manure/fertilizer
11. Apply fertilizer since second year of crop grown (Ashwin - Kartic)
12. Follow precautions
13. Keep records

**Duty: 7: Apply plant protection measures**

**Tasks:**

1. Identify common insects / diseases
2. Control fruit rot disease of pointed gourd
3. Control Seto Dhusi (सेतो ढुसी) disease of pointed gourd
4. Control fruit rot maggots of pointed gourd
5. Control other insects of pointed gourd
6. Follow precautions
7. Clean/store tools/materials/ equipment
8. Dispose / store chemicals safely
9. Keep records

**Duty: 8: Harvest pointed guard**

**Tasks:**

1. Inspect the field
2. Identify the fruits of pointed guard that are ready to harvest
3. Pluck/harvest the fruits twice per week
4. Clean the harvested fruits of pointed guard
5. Store the cleaned fruits of pointed guard
6. Follow precautions
7. Clean/store tools used
8. Keep records/ be familiar with the yield/keep records of yield

**Duty: 9: Market pointed guard**

**Tasks:**

1. Grade the harvested fruits of pointed gourd.
2. Weigh the graded fruits of pointed gourd.
3. Make packages
4. Fix grade wise price
5. Transport the product packages
6. Sell the product
7. Calculate cost
8. Calculate profit / loss
9. Follow precautions
10. Keep records/be familiar with income

## Modules, sub modules, tasks, and time allocation

Module	Sub module	SN	Tasks	Th.	Pr.	Tot.
Planning for growing pointed guard		1.	Identify the followings: <ul style="list-style-type: none"> <li>• Nutritive value of pointed guard</li> <li>• Uses</li> <li>• Climatic requirement</li> <li>• Soil requirement</li> </ul>	1.0	1.0	2
		2.	Enlist botanical characteristics of pointed guard	0.5	0.5	1
		3.	Enlist varieties of pointed guard	1.0	1.0	2
		4.	Identify the season of planting the cuttings of pointed guard	0.5	0.5	1
		5.	Make plan for : <ul style="list-style-type: none"> <li>• Obtaining cuttings</li> <li>• Preparing land</li> <li>• Applying fertilizer</li> <li>• Propagating the cuttings</li> <li>• Intercultural operations</li> <li>• Plant protection</li> <li>• Harvesting and marketing the products</li> </ul>	1.0	1.0	2
		6.	Enlist economic importance of growing pointed guard	1.0	1.0	2
		6	Sub total:	5	5	10
Land preparation and fertilizer	Land preparation	7.	Select field for growing pointed gourd	1	2	3
		8.	Plow the field deeply	1	2	3
		9.	Break the clods	1	2	3
		10.	Remove weeds/unwanted materials	1	2	3
		11.	Level the land	1	2	3
		12.	Make 2m apart lines on the field	1	2	3
		13.	Dig pits (30cm x 30cm x 30cm) on each line maintaining pi to pit distance as 1 m.	1	2	3
		14.	Make channel of (25cm wide and 30 cm deep) maintaining channel to channel distance as 2m (if cuttings are not planted in the pits)	1	2	3
		15.	Follow precautions	1	2	3
		16.	Clean/store tools/materials / equipment	1	2	3
		17.	Keep records	1	2	3
		11	Sub total:	11	22	33

	Fertilizer application	18.	Identify recommended doses of fertilizer	1	2	3
		19.	Calculate amount of fertilizer needed as per the recommended doses	1	2	3
		20.	Obtain the fertilizer	1	2	3
		21.	Weigh the calculated amount of fertilizer	1	2	3
		22.	Apply the fertilizer in the pits/channel	2	4	6
		23.	Mix the applied fertilizer in the soil	1	2	3
		24.	Make pits/channels ready to plant cuttings of pointed gourd	1	2	3
		25.	Clean/store tools/materials/ equipment	1	2	3
		26.	Follow precautions	1	2	3
		27.	Keep records	1	2	3
		10	Sub total:	11	22	33
Propagation	Obtaining cuttings of pointed guard	28.	Identify reliable source of obtaining cuttings of pointed gourd	1.0	2	3.0
		29.	Contact the source of obtaining cuttings of pointed gourd	1.0	2	3.0
		30.	Select healthy limber shoots of pointed gourd	1.0	2	3.0
		31.	Make cuttings of 120 – 150 cm long from the selected climber shoots of pointed gourd	2.0	4	6.0
		32.	Collect/obtain the cuttings	1.0	2	3.0
		33.	Place the cuttings in a safe place	1.0	2	3.0
		34.	Follow precaution	0.5	1	1.5
		35.	Keep record	0.5	1	1.5
		8	Sub total:	8	16	24
	Propagating cuttings of pointed guard	36.	Obtain cuttings (120 – 150 cm long)	1.0	2.0	3.0
		37.	Take one cutting	1.0	2.0	3.0
		38.	Make ring of the cutting with roundness of about 30 cm exposing the both ends of the cutting	1.0	2.0	3.0
		39.	Make rings of all the cuttings (steps 2 and 3)	1.0	2.0	3.0
		40.	Take the rings in the plantation site	1.0	2.0	3.0
		41.	Plant the rings in the pit at a depth of 10cm keeping 10 – 15 cm of both the cut ends out of soil/ground	2.0	4.0	6.0
		42.	Plant the rings in the channels as step no. 6 (if channel plantation is preferred)	1.0	2.0	3.0

			at a distance of 1 m each			
		43.	Water lightly	1.0	2.0	3.0
		44.	Clean/store tools/materials/ equipment	1.0	2.0	3.0
		45.	Follow precautions	0.5	1	1.5
		46.	Keep records	0.5	1	1.5
			11 Sub total:	11	22	33
Intercultural operations		47.	Carryout irrigation	1.0	2.0	3.0
		48.	Clean the field frequently	1.0	2.0	3.0
		49.	Carryout weeding/loosening the soil	1.0	2.0	3.0
		50.	Prevent unwanted root development in the climber shoots through frequent manipulation of the crop shoots	1.0	2.0	3.0
		51.	Fix supporting structures at the time when new branches begin to appear	2.0	4.0	6.0
		52.	Let the climber shoots to climb on the supporting structure	1.0	2.0	3.0
		53.	Facilitate the development of more branches by cutting climbing shoots leaving only 22 – 30 cm length from the ground after harvesting the first lot of fruits	1.0	2.0	3.0
		54.	Cut dry climber shoot/branches leaving only ½ m from the ground	1.0	2.0	3.0
		55.	Loosen the soil at the bottom of the plant	1.0	2.0	3.0
		56.	Apply manure/fertilizer	1.0	2.0	3.0
		57.	Apply fertilizer since second year of crop grown (Ashwin - Kartic)	1.0	2.0	3.0
		58.	Follow precautions	0.5	1	1.5
		59.	Keep records	0.5	1	1.5
			13 Sub total:	13	26	39
Plant protection measures		60.	Identify common insects / diseases	1.0	2.0	3.0
		61.	Control fruit rot disease of pointed gourd	1.0	2.0	3.0
		62.	Control Seto Dhusi (सेतो दुसी) disease of pointed gourd	1.0	2.0	3.0
		63.	Control fruit rot maggots of pointed gourd	1.0	2.0	3.0
		64.	Control other insects of pointed gourd	2.0	4.0	6.0
		65.	Follow precautions	1.0	2.0	3.0
		66.	Clean/store tools/materials/ equipment	1.0	2.0	3.0
		67.	Dispose / store chemicals safely	0.5	1	1.5
	68.	Keep records	0.5	1	1.5	

			9	Sub total:	9	18	27
Harvesting and marketing	Harvesting pointed guard	69.	Inspect the field		1.0	2.0	3.0
		70.	Identify the fruits of pointed guard that are ready to harvest		1.0	2.0	3.0
		71.	Pluck/harvest the fruits twice per week		1.0	2.0	3.0
		72.	Clean the harvested fruits of pointed guard		1.0	2.0	3.0
		73.	Store the cleaned fruits of pointed guard		1.0	2.0	3.0
		74.	Follow precautions		1.0	2.0	3.0
		75.	Clean/store tools used		1.0	2.0	3.0
		76.	Keep records/ be familiar with the yield/keep records of yield		1.0	2.0	3.0
			8	Sub total:	8	16	24
	Marketing pointed guard	77.	Grade the harvested fruits of pointed gourd.		1	1	2
		78.	Weigh the graded fruits of pointed gourd		1	1	2
		79.	Make packages		1	1	2
		80.	Fix grade wise price		1	1	2
		81.	Transport the product packages		1	1	2
		82.	Sell the product		1	1	2
		83.	Calculate cost		1	1	2
		84.	Calculate profit / loss		1	1	2
		85.	Follow precautions		1	1	2
		86.	Keep records/be familiar with income		1	1	2
			10	Sub total:	10	10	20
			86	Total:	86	144	230