Lecture Plan

Name of th	e college: Go	vernment colle	ege of arts sci	ence and commerce Sanq	uelim-Goa			
Name of Fa	aculty: Anuja	a Naik		Subject: Botany (Biofertilizer)				
Paper code	e: BOT-204			Program/Course: S.Y	B.Sc.	Division:	4	
						-		
Academic	year: 2024 - 2	2025		Semester: IV	Total Lectures: 30			
Course Ob	jectives: 1. Ini	troduce the con	cept of biofert	ilizers and elucidate the be	nefits of their applicati	on.		
2. Provide ki	nowledge abou	t the various ty	pes of biofertil	izers and the organisms use	ed in their formulations	5.		
3. Familiarise students with the principles and practices of organic farming and its role in sustainable crop production.								
Course Lea	arning Outco	me: 1. Studen	ts recall the co	ncept of biofertilizers and e	lucidate the benefits o	of their applicati	on.	
2. Students	earn about the	various types o	of biofertilizers	and the organisms used in	their formulations.			
3. Students	Familiarize the	principles and p	practices of org	anic farming and its role in	sustainable crop produ	uction.		
		•	No. of	Tonia Subtonia to		Exonoico/	ICT	
Month	Lec	tures	lectures	be covered	Learning	A ssignmen		Reference
WOIth	From:	To:	allotted		outcome	t	s	books
			unotteu	Isolation of AM spores	Students isolate	U U	5	Rai, MK
				from soil by wet-sieving	spores by wet-		Pow	(2006).
Describer	00 12 24	14 10 04	1	and decanting method	sieving and		er	Handbook of
December	09-12-24	14-12-24	1	and mass production of	decanting method		point	Microbial
				inoculum by trap	U U		pres	Biofertilizers.
				culture method.			entat	Food
				Isolation of AM spores	Students learn to		ion,	Products
				from soil by wet-sieving	mass production		hang	Press, New
January	6-1-25	11-1-25	1	and decanting method	of inoculums by		ing	York.
J	_	_		and mass production of	trap culture		chart	Dubbasi A4
				inoculum by trap	method.		S.	Bukhari, MJ
				culture method.				and

	13-1-25	18-2-25	1	Identification of any two cyanobacteria from rice fields.	Students identify and describe different types of Cynobacteria	
	20-1-25	25-1-25	1	Isolation of Rhizobium sp. from root nodules using YEMA medium	Students isolate rhizobium species from root module through YEMA medium.	
	20-1-25	25-1-25	1	Isolation of Rhizobium sp. from root nodules using YEMA medium	Students isolate rhizobium species from root module through YEMA medium.	
	27-1-25	31-1-25	1	Preparation of carrier- based inoculum of Rhizobium sp.	Students prepare carrier-based inoculum of rhizobium species.	
February	3-2-25	8-2-25	1	Induction of root nodules in a leguminous plant using Rhizobium sp. (demonstration)	Students learn about induction of root nodules in leguminous plant using Rhizobium species.	
	10-2-25	15-2-25	1	Study of Anabaena- Azolla symbiosis in Azolla leaf.	Students learn about symbiosis between azolla and azolla leaf.	
	17-2-25	22-2-25		Testing for ammonification by soil microbes using Nessler's reagent.	Students test ammonification in soil using nessler's reagent	
	24-2-25	28-2-25		Testing for ammonification by soil microbes using Nessler's reagent.	Students test ammonification in soil using nessler's reagent.	

Rodrigues, BF (2006). Techniques in Mycorrhizae. Government College, Quepem, Goa.

March	3-3-25	8-3-25	Determination of phosphate solubilizing efficiency of soil microbes using Pikovskaya agar.	Students determine phosphate solublizing efficiency of soil microbes using pikovskaya agar.	
	10-3-25	15-3-25	Determination of phosphate solubilizing efficiency of soil microbes using Pikovskaya agar.	Students determine phosphate solublizing efficiency of soil microbes using pikovskaya agar	
	17-3-25	22-3-25	Study of plants used as green manure - Azadirachta indica, Getonia floribunda, Gliricidia sepium and Delonix regia (botanical name, family and brief morphological description).	Students learn about different plants used as green manure along with its botanical description , family and brief morphological description.	Students were told to inquire about more such type of plants which are used as green manure to their ancestors.
	24-3-25	29-3-25	Preparation of compost (demonstration).	Students learn to prepare compost.	students were told to prepare compost at their home.
April	1-4-25	5-4-25	Preparation of panchagavya (demonstration)	Students learn to prepare panchagavya.	