



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
Sivakasi**

(Affiliated to Madurai Kamaraj University, Reaccredited with "A" Grade by NAAC,
College with Potential for Excellence by UGC & Mentor Institution under UGC PARAMARSH)

NAAC SSR Cycle IV (2015-2020)

1.3. CURRICULUM ENRICHMENT

**1.3.4. FIELD PROJECTS / INTERNSHIPS /
STUDENT PROJECTS**

FIELD VISIT




**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

**CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP
FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM
2019-2020**

 **THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS)**
Affiliated to Madurai Kamaraj University Reaccredited with 'A' Grade by NAAC
& College with Potential for Excellence by UGC
SIVAKASI

Mrs. A. Aruna, B.Sc.,
Secretary

Dr.(Mrs.)T.Palaneeswari, M.Com., M.Phil., Ph.D.
Principal

To
The Director,
Centre of Excellence for Vegetables – Indo Israel Project,
Reddiarchatram,
Dindigul.

Sir,
Sub: Industrial visit – Request to permit students – Reg.

Greetings! 59 students and 02 staff members of the Department of Botany of our
college would like to visit your esteemed institution on 16/09/2019 at 10.30 a.m. Kindly
permit them to visit and render the possible help in this regard.

Thank you

B. R. S.
(B. DEEPA)
HOR

T. Palaneeswari
PRINCIPAL
PRINCIPAL
The Standard Fireworks
Rajaratnam College
for Women,
SIVAKASI

* Enrichment with knowledge * Empowerment of women *

Phone : 04562 - 220389
Fax : 04562 - 226695

E-Mail : sfrc@sfrcollege.edu.in
Website : www.sfrcollege.edu.in



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

**Department of Botany with specialization in Plant Biotechnology
Students name list**

S. No.	Class	Roll No.	Name of the student
1.	I PG	1907101	R. ANITHA
2.		1907102	K. MAHADEVI
3.		1907103	V. RUTH VETHAWILLY
4.		1907105	S. SUGANTHI
5.		1907106	R. LAWANYA
6.		1907107	M. BHAVANI
7.		1907108	M. CHITRADEVI
8.		1907109	V. AATHILAKSHMI
9.		1907601	VASIHNAVI R
10.	II M.com HRD	1907602	MUTHUMARI G
11.		1907603	GUNASRI M
12.		1907604	NANTHINI G
13.		1907605	DIVYA A
14.		1907613	JOTHIMALA A
15.		1907614	PONANANTHI B
16.		1907615	THANGADHIVYA M
17.	1907616	PRIYANGA G	
18.	III B.Sc., PHYSICS	1907623	NITHYA J
19.		1907622	GOKILA P
20.	III B. Sc Botany	1707038	K. ALAGU PANDIYAMMAL
21.		1707023	P. ANUSUYA
22.		1707009	V. ARUMUGA KANI
23.		1707039	P. ARUNA DEVI
24.		1707015	K. ARUNA DEVI
25.		1707023	K. BHARATHI
26.		1707005	R. BHARATHI PRIYA
27.		1707006	A. DURGA
28.		1707014	G. ELAKIYALAKSHMI
29.		1707010	S. GAYATHRI
30.		1707044	K. GOWCY
31.		1707003	S. JANANI
32.		1707013	K. JAYASHRI
33.		1707007	S. KALAIVANI
34.		1707024	M. KALEESWARI
35.		1707019	M. KAMALI
36.		1707032	S. KARTHIKA
37.		1707045	P. KARTHIGA DEVI
38.		1707030	B. KAVITHA
39.	1707043	K. KAVIYA	
40.	1707011	R. KEERTHANA	



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

41.		1707026	R. MAHALAKSHMI
42.		1707042	K. MAHESWARI
43.		1707018	M. MUTHU KALEESWARI
44.		1707020	M. MUTHULAKSHMI
45.		1707047	C. MUTHU MEENA
46.		1707008	S. NIRANJANA
47.		1707036	N. NIVETHA
48.		1707017	P. PANDIMEENA
49.		1707027	C. PERUMALAMMAL
50.		1707012	M. RAJAKUMARI
51.		1707016	R. RAMYA
52.		1707004	A. SAMEENA BEGAM
53.		1707041	V. SEETHALAKSHMI
54.		1707048	M. SENTHAMIL THAI
55.		1707022	P. SIVARANJANI
56.		1707040	G. SIVASANGARI
57.		1707028	M. THAZHAMPOO
58.		1707001	M. VALARMATHI
59.		1707035	R. YOGALAKSHMI

Accompanying Staff members

1. Dr. U. Umadevi
2. Dr. Sasi Kala N.

Lab Assistant

1. Mrs. N. Maragatham

Signature of the HOD : B. Dr.

Signature of the Principal



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

Date : 16.09.19

Field Visit : Centre for Excellence for Vegetables, Indo Israel Project, Reddiarchatram,
Dindigul





**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

FIELD VISIT- Report

Department of Botany arranged field visit to the Centre for Excellence for Vegetables, Indo Israel Project, Reddiarchatram, Dindigul on 16.09.2021. 59 students of various departments actively participated and got training about the establishment of home garden and growing of vegetables and fruits through organic farming.

B. Deeba
(B. DEE PA)
Signature of the HOD

Head of the Dept. of Botany
The Standard Fireworks Rajaratnam
College for Women, Sivakasi.

T. Palaveeri
Signature of the Principal
PRINCIPAL
The Standard Fireworks
Rajaratnam College
for Women,
SIVAKASI



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

Course Syllabus

**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN
(AUTONOMOUS), SIVAKASI.**

*(Affiliated to Madurai Kamaraj University, Nationally Re-accredited with 'A GRADE' by
NAAC, College with Potential for Excellence by UGC)*

Department of Botany

Certificate Programme in Agricultural Entrepreneurship

ACAE11 – Organic farming

(For those admitted in June 2019 and later)

Total number of hours per semester : 30

Number of credits : 03

Course outcomes:

On successful completion of the course, the learners should be able to

CO1: outline the basics of agriculture practices and impact of pollution.

CO2: summarize about sustainable agricultural practice by organic farming.

CO3: explain the preparation of various organic fertilizers and allied products.

CO4: elaborate the importance, method of application and production of biofertilizers.

CO5: develop entrepreneurial skill through farming.

Unit – I (6hrs)

Agriculture – traditional and modern Agricultural practices. Agricultural pollution – soil, fertilizer, elementary toxicity and hazards of pesticidal pollution.

Unit – II (6hrs)

Organic farming - agronomic importance and its advantages. Organic manures and its significance. Preparation of enriched farmyard manure with their benefits.

Unit – III (6hrs)

Preparation and advantages – organic compost, vermicompost, Effective microbes (EM), Panchakavya, biomicrobicides, biopesticides, bioinsecticides.

Unit – IV (6hrs)

Biofertilizers – definition, importance and methods of application. Blue green Algae. Cultivation of Azolla.

Unit – V (6hrs)

Certification of organic products. Entrepreneurial opportunities. Government policies and regulations for Agribusiness. Setting up location and steps for starting a small scale agrobased industry.

Study material will be provided.

Text Books

1. Mahesh MahadeoKadam and RushikeshNanasahebBhise. 2018. **A Text Book on Agricultural Entrepreneurship**. NPH publishers, New Delhi.
2. G. AnjaneyaSwamy (1988), **Agriculture entrepreneurship in India**. Chugh Publications, Allahabad



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN AGRICULTURAL ENTREPRENEURSHIP

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN
(AUTONOMOUS), SIVAKASI.**

*(Affiliated to Madurai Kamaraj University, Nationally Re-accredited with 'A GRADE' by
NAAC, College with Potential for Excellence by UGC)*

Department of Botany

Certificate Programme in Agricultural Entrepreneurship

ACAEIL - Practical (Organic farming)

(For those admitted in June 2019 and later)

Total number of hours per Semester : 60
Number of Credits : 06

Course outcomes (CO):

On successful completion, the learners should be able to

- CO1: elaborate the vitality of organic farming and biofertilizers.
- CO2: illustrate the preparation of various organic fertilizers for plants.
- CO3: assess the effectiveness of biopesticides, bioinsecticides and biomicrobicides.
- CO4: adapt and practice cultivation of algae in domestic scale.
- CO5: develop entrepreneurial skill in the field of organic farming utilizing government support

Preparation

1. Organic Compost
2. Vermicompost
3. Effective microbes
4. Panchakavya
5. Biopesticides
6. Biomicrobicides
7. Bioinsecticides
8. Enriched farmyard manure

Cultivation of biofertilizers

1. BGA
2. *Azolla*

Preparation of proposal to apply for bank loan with subsidy for Agricultural purpose.



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

DEPARTMENT OF BOTANY

B.Sc. BOTANY WITH SPECIALIZATION IN PLANT BIOTECHNOLOGY

FIELD VISIT TO CENTRE OF EXCELLENCE FOR VEGETABLES, REDDIARCHATRAM

2019-2020

**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN, SIVAKASI
DEPARTMENT OF BOTANY
B.SC. BOTANY WITH SPECIALIZATION IN PLANT BIOTECHNOLOGY
MAJOR ELECTIVE COURSES
SEMESTER VI**

GLBP6L2 - PRACTICAL V

(Microbiology and plant pathology / Herbal Medicine/ Ecology and Biodiversity / Economic Botany)
(For those admitted in June 2017 and later)

Contact hours per week : 03 + 03
Total number of hours per semester : 45 + 45
Number of credits : 03

On successful completion of the course, the learners should be able to
CO1: analyse the nature of vegetation by quadrat method.
CO2: explain the anatomy of various groups of plants.
CO3: demonstrate the preparation, sterilization and culturing of microbes.
CO4: classify the group of microorganisms based on staining.
CO5: inspect the role of plants in economy.

CO-PO Mapping table (Course Articulation Matrix)

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7
COs							
CO1	3	9	1	1	3	-	-
CO2	3	9	3	1	-	-	-
CO3	9	3	9	1	3	-	-
CO4	3	9	3	3	-	-	-
CO5	3	3	3	3	-	-	-
Weightage of the course	21	33	19	9	6	-	-
Weighted percentage of Course contribution to POs	2.03	4.5	4.99	2.6	4.29	-	-

Microbiology and plant pathology

- ❖ Preparation of culture media – nutrient agar and nutrient broth.
- ❖ Culture techniques – serial dilution technique.
- ❖ Plating techniques –streak plate, pour plate and spread plate.
- ❖ Slant and stab culture.
- ❖ Bacterial staining – simple and Gram staining
- ❖ Fungal staining.
- ❖ Determination of bacteria by coliform test.

- ❖ Biochemical test for identification of bacteria – indole, methyl red, Voges-Proskauer, citrate utilization, urease, catalase, TSI agar.
- ❖ Enumeration of bacteria – Haemocytometer.
- ❖ Bacterial movement - Hanging drop technique.
- ❖ Micropreparation of *Cercospora / Albugo*

Spotters

- ❖ Ultra structure of bacterium.
- ❖ Shapes of bacteria.
- ❖ Types of flagella.
- ❖ Endospore.
- ❖ Reproduction in bacteria - binary fission, budding, fragmentation, conjugation.
- ❖ Structure of T₄ bacteriophage.
- ❖ Lytic cycle, Lysogenic cycle.
- ❖ Growth curve.
- ❖ Colony counter.
- ❖ Trickling filter.
- ❖ Oxidation pond.
- ❖ Symptoms of plant diseases - smut, black rust, chlorosis, necrosis
- ❖ Bunchy top of banana
- ❖ Red rot of sugarcane
- ❖ Citrus canker

Herbal Medicine

To identify the medicinal plants with reference to botanical name, family, morphology of the useful parts and their uses.

- *Aloe vera*
- *Mentha arvensis*
- *Curcuma longa*
- *Gymnema sylvestre*
- *Hibiscus rosa-sinensis*
- *Lawsonia inermis*
- *Ocimum sanctum*
- *Phyllanthus emblica*
- *Solanum trilobatum*
- *Aerva lanata*

Study of the following drug plants with special reference to the botanical name, family, morphology of the useful part and uses.

- ✓ Drugs obtained from root - Indian Sarsaparilla and Asafoetida.
- ✓ Drugs obtained from bark - Cinnamon.
- ✓ Drugs obtained from stem – Ephedrine.
- ✓ Drugs obtained from leaves - Digitalis. Drugs obtained from flowers – Saffron.
- ✓ Drugs obtained from fruits - Coriander, Pepper and Myrobalan.
- ✓ Drugs obtained from seeds – Fenugreek.

Industrial visit.

Economic Botany

Spotters

Study of economic produces with special reference to the botanical name, family, morphology of the useful part and the uses of the following crops.

- Cereals: wheat, ragi, sorghum.
- Pulses : black gram, bengal gram, soybean.
- Fruits : pine apple, pomegranate, grapes.
- Nuts : badam, cashew nut, walnut.
- Spices and Condiments: Pepper, clove, cardamom.
- Resins and Gums: canada balsam, turpentine.
- Dyes : haematoxylin and indigo
- Fibre : jute, cotton.
- Latex : guttapercha and rubber.
- Tannin : wattle bark and myrobalan.
- Wood and cork: teak wood, sandal wood and cork.

Ecology and Biodiversity

1. Spotters

- Ecosystem- pond, terrestrial and forest.
- Inverted pyramid of biomass in pond ecosystem
- Pyramid of biomass in a grass land ecosystem
- Pyramid of energy in forest ecosystem
- Food chain in grass land ecosystem
- Food web in grass land ecosystem
- Energy flow.
- Hydrophytes - *Hydrilla*, *Pistia*, *Eichhornia*, *Nelumbo*, *Nymphaea* and *Marsilea*,
- Xerophytes-*Aloe vera*, *Agave*, *Sansevieria*, *Euphorbia splendens* *Opuntia*, *Muehlenbeckia*, *Ruscus*, *Asparagus*, *Casuarina*, *Acacia*,
- *Parkinsonia*, *Zizyphus jujuba*, *Calotropis*, *Pinus* needle.
- Halophytes- *Rhizophora*, *Pneumatophores*, *Vivipary*.
- Pollution – air, water, land, radioactive and noise.
- Rain water harvesting.
- Biogeochemical cycle-carbon, nitrogen, sulphur and water.

2. Sectioning

- T.S. of *Hydrilla* stem
- T.S. of *Nelumbium* petiole
- T.S. of *Casuarina* cladode
- T.S. of *Nerium* leaf
- T.S. of *Parkinsonia* phyllode

3. Quadrat study in different places.