



**A.V.V.M. Sri Pushpam College (Autonomous)**

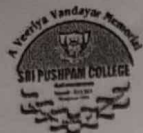
**Poondi– 613 503, Thanjavur-Dt, Tamilnadu**

*(Affiliated to Bharathidasan University, Tiruchirappalli – 620 024)*

**3.7.1 Number of Collaborative activities per year  
for research/ faculty exchange/ student  
exchange/ internship/ on –the-job training/  
project work**

## **Collaborating Agency:**

**Dr. M. Indradevi Associate Professor Dept. of Microbiology,  
Marudhupandiar College, Vallam.**



Dr. A. PANNEERSELVAM  
Associate Professor and Head (Rtd.,)  
PG & Research Department of Botany and  
Microbiology  
AVVM Sri Pushpam College (Autonomous)  
Poondi-613 503, Thanjavur-Dt, Tamil Nadu, India.

Dr. M. INDIRADEVI  
Associate Professor  
Department of Microbiology,  
Marudupandiyar College  
Vallam, Thanjavur  
TamilNadu, India.



Date: 10.11.2016.

**LINKAGE**  
**For the year 2016-2018**

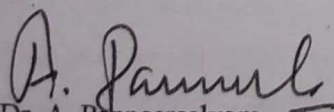
**Between**

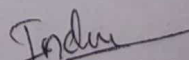
- |  |   |   |
|--|---|---|
| 1. Dr. A. Panneerselvam,<br>Associate Professor and Head (Rtd.,)<br>PG & Research Department of Botany<br>and Microbiology<br>A.V.V.M Sri Pushpam College<br>(Autonomous), Poondi – 613 503. | & | 2. Dr. M. Indradevi<br>Associate Professor,<br>Department of Microbiology,<br>Marudupandiyar College,<br>Vallam, Thanjavur. |
|--|---|---|

Considering the significance of the noble cause for the student community, we have come forward to collaborate with each other to exchange research knowledge, expertise, laboratory and library facilities to the process of scientific research and education in the field of Biological science. The parties (mentioned above as 1. & 2.) have had preliminary discussion in this matter and have ascertained areas of broad consensus. The parties now therefore agreed to enter in writing these avenues of consensus, under a flexible linkage, and this project aims to fill the gap between knowledge demand and subject expertise related to the mentioned field.

**Joint Responsibilities**

- Sharing of laboratory facilities, library resources, database etc.,
- Joint Publication of research articles, books, magazines, bulletins etc.,
- Jointly organizing conferences, seminars, symposia and workshops.
- Submitting joint proposals for research funding from agencies like UGC, CSIR, DST and TNSCST.
- Patenting Microbes, Plants patents Procedure, Product development and Novel equipments in Biological sciences (Indian and Foreign Patenting)

  
Dr. A. Panneerselvam

  
Dr. M. Indradevi



## MICROBIOLOGICAL APPROACH AND PHYSIOCHEMICAL ANALYSIS OF PESTICIDES POLLUTED SOIL FROM CUDDALORE DISTRICT

Indiradevi M.<sup>1\*</sup>, Madhanraj P.<sup>1</sup> and Panneerselvam A.<sup>2</sup>

<sup>1</sup>P.G and Research Department of Microbiology, Marudupandiyar College of Arts and Science, Vallam, Thanjavur.

<sup>2</sup>P.G and Research Department of Botany and Microbiology, A.V.V.M Sri Pushpam College (Auto), Poondi, Thanjavur.

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### \*Corresponding Author

Indiradevi M.  
P.G and Research  
Department of  
Microbiology,  
Marudupandiyar College  
of Arts and Science,  
Vallam, Thanjavur.

### ABSTRACT

Microbes are an important group of organisms and they thrive in wide variety of soil habitats. In modern agricultural practices variety of synthetic chemical compounds including pesticides, e.g., zoocides, fungicides, herbicides and others are used for crop protection. Microorganisms are first to respond to those synthetic compounds let in to the environment, the natural aquifers through the runoff water. These changes will affect the process of primary production, nutrient

circulation and decomposition of matter, as in which bacteria serve as an important function. The present investigation suggests that the \ influence of physiochemical analysis from ten different areas of Cuddalore district for one year of 2014-2015. The soil samples from Cuddalore distict of Thanjavur were collected one time and analyzed for parameters such as pH, electrical conductivity, organic carbon, available nitrogen, phosphorus, potassium, zinc, copper, iron, manganese, calcium, magnesium, sodium and potassium. Maximum pH was 8.26 in the Panruti village (site 7) and minimum 7.26 in T. mannalur (site 3) respectively. The higher concentration of carbon was also from Panruti village (site 7) i.e., 0.58 percentage when compared to other site areas. The bacterial count showed that *Streptococcus* sp. *Proteus* in constants (80%) had the highest count followed by *Streptococcus* sp, *Nitrosomonas*, *B.subtilis* (77%). Due to this organic carbon is considered as a recognizing factor for



Original Research Article

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# Effect of Pesticide on the Suppression on the Growth and Development of *Vigna mungo* Treated with *Rhizobium* sp.

M. Indiradevi<sup>1\*</sup>, P. Madanraj<sup>1</sup> and A. Panneerselvam<sup>2</sup>

<sup>1</sup>P.G and Research Department of Microbiology, Marudupandiyar College of Arts and Science, Vallam, Thanjavur.

<sup>2</sup>P.G and Research Department of Botany and Microbiology, A.V.V.M Sri Pushpam College (Auto), Poondi, Thanjavur

\*Corresponding author

## ABSTRACT

The present investigation focused the pre-emergent impact of three concentrations (100, 200 and 300 ppm/kg soil) of technical grade of monocrotophos on *Vigna mungo* plants. The assessment of Monocrotophos stressed *Vigna mungo* plants inoculated with *Rhizobium* sp. plant growth suppression was analyzed normally and the *Rhizobium* treated plant growth and development of *Vigna mungo* was observed. The plant height, root height, total height, no. of leaf, no. of hairy roots, leaf length, lead width, shoot grifth, number. of nodules, dry biomass, legheamoglobin, and seed yield parameter were analyzed. When the pesticide dose was increase with the growth also decreased. The study suggests that the different strains of *Rhizobium* sp such as RS1, RS2 and RS3 was introduced and their growth and development was measured in periodically and yield of seed, dry biomass and legheamoglobin also recorded. The application of pesticide in the soil was reduced in the higher concentration from *invitro* experiments.

### Keywords

Monocrotophos,  
*V.mungo*,  
*Rhizobium* sp.

### Article Info

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## Introduction

Nitrogen is one of the most significant and essential element required for all life processes including plant. It is a component present in all amino acids, and is incorporated into proteins. Nitrogen is present in the base that makes up nucleic acids such as DNA and RNA in plants, (Smil, 2000). Nitrogen is a nutrient that is most commonly deficient in soils, contributing to reduced agricultural yields throughout the world. Nitrogen can be supplied to crops by biological nitrogen fixation (BNF), a process which is becoming more important for not only reducing energy costs, but also in seeking more sustainable

agricultural production. Nitrogen fixing micro-organisms could therefore be an important component of sustainable agricultural systems.

Soil microorganisms contribute significantly to the maintenance of soil health by controlling the decomposition of plant and animal residues and participate of biogeochemical cycling, as nitrogen cycle. In the nitrogen cycle, biological nitrogen fixation has an important contribution. The nitrogen cycle is a biogeochemical essential process that converts different forms of