

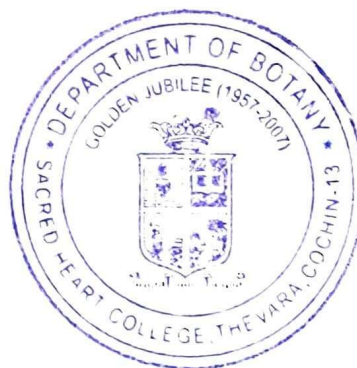
**A COMPARATIVE STUDY ON THE  
ANTIMICROBIAL AND LARVICIDAL EFFECTS  
OF FRUITS AT DIFFERENT RIPENING STAGES  
OF *Wodyetia bifurcata* A.K. Irvine**

*Dissertation Submitted to  
Mahatma Gandhi University, Kottayam  
In partial fulfilment of the  
Degree of Master of Science in Botany*

**Submitted By**

**SMEERA KURIAN**

**Register No. 17PBOT1761**



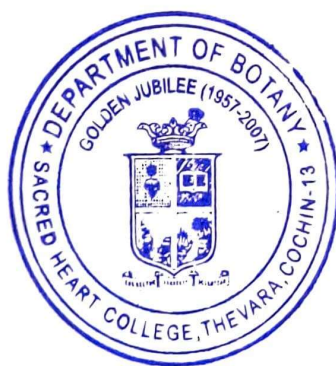
1. Valued  
2. *[Signature]*  
4/6/19

**SACRED HEART COLLEGE (AUTONOMOUS), THEVARA  
POST GRADUATE AND RESEARCH DEPARTMENT OF BOTANY  
2017 – 2019**

## CERTIFICATE

This is to certify that this project report entitled “A comparative study on the antibacterial and larvicidal effects of fruits at different ripening stages of *Wodyetia bifurcata* A. K. Irvine” is a bonafide report of work carried done by Miss. Smeera Kurian (Register No. 17PBOT1761), 4<sup>th</sup> semester, M. Sc Botany, Sacred Heart College, Thevara, Ernakulam, under my guidance for the Degree of Masters in Science in Botany from Mahatma Gandhi University during the academic year 2018-2019. No part of the work embedded in this dissertation has been submitted earlier for the award of any other degree.

Place: Thevara  
Date: 04-06-2019



**Fr. Dr. Jose John**  
**Supervising Teacher &**  
**Head of the Department**

Dr. (Fr.) Jose John M.Sc., Ph.D., M.Ed., PGDCA  
Head of the Department of Botany  
Sacred Heart College (Autonomous)  
Thevara, Cochin-682 013

# DECLARATION

I do hereby declare that this dissertation entitled “**A comparative study on the antibacterial and larvicidal effects of fruits at different ripening stages of *Wodyetia bifurcata* A. K. Irvine**” submitted to Mahatma Gandhi University for the award of Master of Science in Botany is a bonafide record of original research work carried out by Smeera Kurian under the supervision of Fr. Dr. Jose John, Head of Botany Dept, Sacred Heart College (Autonomous), Thevara and this has not previously been the basis for the award of any other degree, diploma or similar titles in the university.

Place: Thevara

Date: 04-06-2019



Smeera Kurian

Reg. No: 17PBOT1761

## Urkund Analysis Result

Analysed Document: Smeera project.pdf (D53389307)  
Submitted: 6/4/2019 7:10:00 AM  
Submitted By: sanjojose@gmail.com  
Significance: 9 %

### Sources included in the report:

<https://www.ajol.info/index.php/ajb/article/view/127931>  
<https://www.ncbi.nlm.nih.gov/pubmed/27729284>  
[https://www.researchgate.net/publication/272713875\\_Antibacterial\\_activity\\_of\\_Phoenix\\_dactylifera\\_L\\_leaf\\_and\\_pit\\_extracts\\_ag  
ainst\\_selected\\_Gram\\_negative\\_and\\_Gram\\_positive\\_pathogenic\\_bacteria](https://www.researchgate.net/publication/272713875_Antibacterial_activity_of_Phoenix_dactylifera_L_leaf_and_pit_extracts_against_selected_Gram_negative_and_Gram_positive_pathogenic_bacteria)  
[https://repository.cardiffmet.ac.uk/bitstream/handle/10369/8151/Chemical%  
20characterisation-%20Taleb.pdf?sequence=3&isAllowed=y](https://repository.cardiffmet.ac.uk/bitstream/handle/10369/8151/Chemical%20characterisation-%20Taleb.pdf?sequence=3&isAllowed=y)  
<https://en.wikipedia.org/wiki/Wodyetia>  
<https://en.fotolia.com/id/250786845>  
[http://www.pacsoa.org.au/w/index.php?title=Wodyetia\\_bifurcata](http://www.pacsoa.org.au/w/index.php?title=Wodyetia_bifurcata)  
05fe527e-99f8-4b9a-9b10-cd47b705f957

### Instances where selected sources appear: