

76817  
P.D.  
15/11/79

පුස්තකාලයේ පිටතට  
නිකුත් කළ නොහැකියි

LB/Don/11/79

2312/2002/2152  
 2012  
 2012  
 2012

1. INTRODUCTION STUDIES ON BIOLOGY AND CONTROL  
OF EUPATORIUM ODORATUM LINN.  
2. REVIEW OF THE LITERATURE

1.a-Distribution	...	by	...	...	4 - 5
1.b-Ecology	...	...	...	...	5 - 6
1.c-Classification and Biology	...	...	...	...	6 - 9
1.d-Economic importance	...	...	...	...	9 - 10

CONTROL WILFRED LIONEL WEERAKOON

2.a-Mechanical	...	...	...	...	11 - 12
2.b-Biological	...	...	...	...	12 - 13
2.c-Chemical	...	...	...	...	13 - 16

පුස්තකාලය තුළ කියවීම  
සඳහා නිකුත් කළ නොහැකි  
පාඨක බලපත්‍රයකට පමණකි

3. MATERIALS AND METHODS  
BIOLOGY  
submitted to

1.a-Distribution	...	...	...	...	17
1.b-Reproductive capacity	...	...	...	...	17 - 19
1.c-Factors affecting germination	...	...	...	...	19 - 24

VIDYODAYA CAMPUS, UNIVERSITY OF CEYLON

76817

in fulfillment of

2.a-Mechanical	the requirements for the	...	...	...	24 - 25
2.b-Biological	degree of	...	...	...	25 - 28
2.c-Chemical	MASTER OF SCIENCE	...	...	...	28 - 32
2.d-Effect of Tribolium	...	...	...	...	32

76817  
July 1972

could be achieved by spraying a mixture of 2,4-D and 2,4,5-T to the regenerated growth after slashing, at the rate of 2 pints in 40 - 60 gallons of water per acre. The cost of this treatment

### SUMMARY

has been compared with that of manual weeding. It should be noted however that the mixture at this concentration is harmful to coconut seedlings and young nuts, if the spray comes into direct contact with the palm. Its characteristics have been studied in relation to its importance as a weed. The change in the population density of the weed under coconut cultivation, the reproductive capacity of the plant and viability of the seed under various environmental conditions have been studied, as they form the principal medium of distribution.

The cardinal temperatures for germination of E. odoratum seed in the presence of light, air and 70% - 80% MHC are 18°C minimum, 28°C ± 2° optimum and 36°C maximum.

The weed can be controlled by uprooting at intervals of 5 months. The nutrient content and C/N ratio at the time of flowering and its importance as a green manure have also been discussed. Attempts to develop a method of biological control of the weed with the aid of pests or fungal diseases proved unsuccessful.

Contact, pre-emergence and systemic herbicides were tested for control of E. odoratum and it was found that effective control

could be achieved by spraying a mixture of 2,4-D and 2,4,5-T to the regenerated growth after slashing, at the rate of 2 pints in 40 - 60 gallons of water per acre. The cost of this treatment has been compared with that of manual weeding. It should be noted however that the mixture at this concentration is harmful to coconut seedlings and young nuts, if the spray comes into direct contact with the palm.

I also thank very much Professor A.C.J. Weerakoon, Head of the Department of Biological Sciences, University of Ceylon (Vijayawada Campus) for his keen interest and encouragement. The weeds that grow in succession when E. odoratum is controlled has also been studied, and their significance discussed.

My thanks are also to Professor F.W. Spasingha and Mrs. Manda Spasingha for allowing me to use the land for field experiments.

Mr. V. Abeywardene, Biometrician, Coconut Research Institute for helping me with statistical analysis of the data.

The Board of Management of the Rubber Research Institute for permitting me to use the Laboratory facilities and

Mr. R.H.D.C. Perera for typing.

This work was supported partly by Don Kirigoris Appahary scholarship awarded by the University of Ceylon (Vijayawada Campus).

4. RESULTS TABLE OF CONTENTS

		PAGE
	1.a-Observations on Ecology and Biology	
1.	1.b-Geographical distribution ... ..	37 - 40
	INTRODUCTION ... ..	1 - 3
	1.c-Incidence in coconut areas ... ..	40 - 43
2.	REVIEW OF THE LITERATURE	
	1.a-Distribution ... ..	4 - 5
	2.a-Distribution ... ..	44 - 45
	1.b-Ecology ... ..	5 - 6
	2.b-Reproductive capacity ... ..	46 - 51
	1.c-Classification and Biology ... ..	6 - 9
	2.c-Factors affecting germination ... ..	51 - 57
	1.d-Economic importance ... ..	9 - 10
	2.d-N, P, K and C contents of <i>N. odoratum</i>	76 - 79
	CONTROL	
	2.a-Mechanical ... ..	11 - 12
	3.a-Mechanical ... ..	80
	2.b-Biological ... ..	12 - 13
	3.b-Biological ... ..	61 - 62
	2.c-Chemical ... ..	13 - 16
	3.c-Chemical ... ..	63 - 81
3.	MATERIALS AND METHODS	81 - 82
	BIOLOGY	
5.	DISCUSSION AND CONCLUSIONS ... ..	83 - 96
	1.a-Distribution ... ..	17
6.	1.b-Reproductive capacity ... ..	17 - 19
	1.c-Factors affecting germination ... ..	19 - 24
	1.d-Nutrient content ... ..	24
8.	ACKNOWLEDGEMENT ... ..	104
	CONTROL	
9.	BIBLIOGRAPHY ... ..	105 - 111
	2.a-Mechanical ... ..	24 - 25
	2.b-Biological ... ..	25 - 28
	2.c-Chemical ... ..	28 - 32
	2.d-Effect of Tributon on coconut ... ..	32

## 4. RESULTS

1.a-Observations on Ecology and Biology	33 - 37
1.b-Geographical distribution ...	37 - 40
1.c-Incidence in coconut areas ...	40 - 43
BIOLOGY	
2.a-Distribution ... ..	44 - 45
2.b-Reproductive capacity ... ..	46 - 51
2.c-Factors affecting germination ...	51 - 57
2.d-N,P,K and C contents of <i>E. odoratum</i>	58 - 59
CONTROL	
3.a-Mechanical ... ..	60
3.b-Biological ... ..	61 - 62
3.c-Chemical ... ..	63 - 81
3.d-Effect of Tributon on coconut ...	81 - 82
5. DISCUSSION AND CONCLUSIONS ... ..	83 - 98
6. SUGGESTIONS FOR FURTHER WORK ... ..	99 - 101
7. SUMMARY	102 - 103
8. ACKNOWLEDGEMENT ... ..	104
9. BIBLIOGRAPHY ... ..	105 - 111