EFFECT OF DIURON AND OXIFLUORFEN ON
SOME PROPERTIES OF SURFACE LAYER OF
TEA SOILS.

BY
K. G. UDBANESAN CANAGASABY

A RESEARCH REPORT
SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT
OF THE ADVANCED COURSE IN
PLANTATION CROPS PRODUCTION.

FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN AGRICULTURE
UNIVERSITY OF PERADENIYA
PERADENIYA
SRI LANKA
1986

APPROVED BY

SUPERVISOR
A. ANANTHACUMARASWAMY
DIVN. OF AGRICULTURE
TEA RESEARCH INSTITUTE OF SRI LANKA
TALAWAKKELLE
SRI LANKA.

DR. S. SANKARAM
HEAD/DEPT. OF AGRICULTURE
FACULTY OF AGRICULTURE
BATTICALOA UNIVERSITY
COLLEGE, VANTHARUMOOLAI
CHUNGALADY, SRI LANKA.
PROCESSED
Main Library, EUSL
ABSTRACT

An experiment was conducted at the Tea Research Institute of Talawakelle 1372 M (Amal) during the period November 1985 - March 1986 to test the residual effects if any, of two pre-emergent herbicides Dijeron and Oxyfluorfen and mulching on some properties on surface layer of tea soils. Dijeron was used at the rate of 1.12 kg/ha, Oxyfluorfen was used at the rate of 1.02 litres/ha. in 560 litres of water per hectare and mulching was done with Guatemalan grass (Tripsacum laxum) at a level of 15 Tons/ha. on a fresh weight basis. Determination of total nitrogen, ammonium nitrogen and nitrate nitrogen at weekly intervals for 2 months did not show any significant effect of herbicide or mulch on nitrogen transformations in the soil. It therefore appears that Dijeron and Oxyfluorfen used at recommended rates do not affect physical characteristics or bacterial activities in the treated soil suggesting that use of these chemicals for weed control in tea would not have any adverse effects.
CONTENTS

* Abstract .................................................. (1)
* Acknowledgement .......................................... (11)

1. INTRODUCTION ............................................. 01

2. LITERATURE REVIEW ....................................... 03
   2.1. Effect of Weeds .................................... 03
   2.2. Methods of Weed Control .......................... 05
      2.2.1. Chemical Weed Control ..................... 08
   2.3. Effects of Weed Control .......................... 10
   2.4. Effect of Herbicides on soil & soil
        properties ........................................ 11
      2.4.1. Effect on Soil Microflora .................. 11
      2.4.2. Effect on Soil Microfauna ................. 12
      2.4.3. Effect on Chemical Properties ........... 15
      2.4.4. Effect on Physical Properties ........... 14

3. MATERIALS AND METHODS ................................ 16

4. RESULTS AND DISCUSSION ............................... 22
   4.1. Effect of Pre-emergent Herbicides & Mulch
        on Chemical Properties of Soil ................ 22
      4.1.1. Effect on Total Nitrogen ................. 22
      4.1.2. Effect on Nitrate Nitrogen ............... 23
      4.1.3. Effect on Ammonium Nitrogen .......... 23
   4.2. Effect of Pre-emergent Herbicides & Mulch
        on Soil Physical Properties ................... 26

5. CONCLUSION ................................................ 42

6. BIBLIOGRAPHY ............................................ 43

7. APPENDIX .................................................. 46