

C O N T E N T S

	Page
ACKNOWLEDGEMENT ..	(iii)
PREFACE ..	(v)
<u>CHAPTER - I</u> : Organotin Carboxylates : A Brief Review ..	1
Section IA : Introduction	1
IB : Preparation	1
IC : Physical properties of organotin carboxylates	7
ID : Chemical properties of organotin carboxylates	9
IE : Biological properties of organotin carboxylates	13
IF : Structures of organotin carboxylates	15
(I) Infrared spectroscopy	15
(II) Mössbauer spectroscopy	24
(III) X-ray crystallography	29
(IV) ^{119}Sn NMR spectroscopy	30
REFERENCES ..	31
<u>CHAPTER - II</u> : Phenoxyalkanoic Acids and Their Metal Complexes : A Short Review	
Section IIA : Phenoxyalkanoic acids: Well-known herbicides	39
IIB : Metal and organometallic complexes	40
REFERENCES ..	43

<u>CHAPTER - III</u> :	Preparation of Organotin Aryloxyacetates and Spectroscopic Study of Their Structures in Solution and Solid Phases.	
Section IIIA :	Introduction	45
IIIB :	Methods of preparation	51
IIIC :	Analytical data	59
IIID :	Molecular weights	62
IIIE :	Infrared spectra	63
IIIF :	^{119}mSn Mössbauer data	75
IIIG :	^{13}C , ^{17}O , ^{119}Sn NMR Spectral data	76
IIIH :	Probable structures of the aryloxy and phenylthioacetates	85
III I:	Electronic absorption spectra of the organotin aryloxyacetates	87
IIIJ :	Experimental	95
	(a) Preparation of the ligands	95
	(b) Preparation of the organotin aryloxyacetates and phenyl- thioacetates (and one organotin phenylpropionate)	98
	(c) Instrumentation and methodology	113
REFERENCES	..	114

CHAPTER - IV : Biological Properties of The
Organotin Aryloxyacetates

Section IVA : Introduction	118
IVB : The fungitoxicity of the organotin aryloxyacetates and structure-activity relationships	119
IVC : Antibacterial activity of the organotin aryloxyacetates	127
IVD : Acute oral toxicity of tributyltin phenoxyacetate against mice	128
IVE : Phytotoxicity of the organotin aryloxyacetates	129
I VF : Experimental	130
(a) Studies of fungitoxicity	130
(b) Studies of antibacterial activity	133
(c) Studies of acute oral toxicity against mice	134
(d) Studies of phytotoxicity	134
REFERENCES ..	136

ANNEXURE : Preparation and Infrared and ^{13}C , ^{17}O and ^{119}Sn NMR Spectra of Some substituted Di- and Tri-(1-Butyl)Tin Phenoxyacetates and Phenylthioacetates.