

CONTENTS

	Page
INTRODUCTION	i
LITERATURE REVIEW.....	1-37
1. Spreading of chloroaromatic compounds in nature.....	1
2. Risk of contamination of environment with chloroorganic compounds.....	5
3. Role of biodegradation in cleaning up the environment from different chloroaromatic compounds	8
A. Microbial mixtures isolated from soil.....	9
B. Microbial mixtures isolated from water	11
4. Biodegradation pathways	13
5. Biodegradation mechanisms	21
A. Aerobically.....	21
B. Anaerobically	24
6. The most efficient bacterial strains in bioremediation of chloroaromatic compounds	27
7. Degradative genes.....	32
A. Plasmid mediated genes for the degradation of chloroaromatic compounds	32
B. Chromosomal mediated genes for degradation of chloroaromatic compounds	36
MATERIALS AND METHODS.....	38-45
A. Materials	38
1. Sampling sites	38
2. Sampling.....	38
3. Media.....	40
4. Chemicals	42

B. Methods.....	43
1. Cultivation of samples in low chlorine medium	43
2. Growth of different microbial communities on different chloroaromatic compounds.....	43
3. Isolation of different bacterial strains capable of growing on different chloroaromatic compounds	44
4. Effect of gamma irradiation on the viability of the selected isolated bacterial strains.....	44
5. Selection of mutants	45
6. Quantative analysis.....	45
7. Scanning electron microscope (SEM).....	45
RESULTS	47-109
DISCUSSION	110-114
REFERENCES	115-140
SUMMARY	141-144
ARABIC SUMMARY	٤-١