CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

2. REVIEW OF LITERATURE

2.1 Phosphorus in soils

2.2 Phosphate-solubilizing microorganisms in various soil types

2.3 Microorganisms involved in solubilization of phosphorus

2.4 Solubilization of phosphorus by microorganisms

2.5 Extent of solubilization of phosphorus by microorganisms

2.6 Phosphate-solubilizing bacteria as inoculants

3. MATERIALS AND METHODS

3.1 Soils

3.2 Incubation

3.3 Sampling

3.4 Isolation of phosphate-solubilizing bacteria from the soil samples

3.5 Purification of phosphate-solubilizing bacterial isolates obtained from the soil samples

3.6 Morphological characteristics of phosphate-solubilizing bacteria

3.7 Biochemical tests

3.8 Solubilization of phosphorus by pure cultures of bacteria

3.9 Statistical analyses
4. RESULTS AND DISCUSSION

4.1 Populations of total and phosphate-solubilizing bacteria in soils

4.1.1 Populations in black soil in first experiment

4.1.2 Populations in black soil in second experiment

4.1.3 Populations in red soil in first experiment

4.1.4 Populations in red soil in second experiment

4.2 Morphological and biochemical characteristics of the phosphate-solubilizing bacterial isolates from soils

4.3 Populations of phosphate-solubilizing bacteria in comparison with total bacterial populations in soils

4.3.1 Populations of phosphate-solubilizing bacteria in black soil in first experiment

4.3.2 Populations of phosphate-solubilizing bacteria in black soil in second experiment

4.3.3 Populations of phosphate-solubilizing bacteria in red soil in first experiment

4.3.4 Populations of phosphate-solubilizing bacteria in red soil in second experiment

4.4 Solubilization of phosphates by pure cultures of bacteria isolated from soils

4.4.1 Solubilization by bacteria isolated from black soil in first experiment

4.4.2 Solubilization by bacteria isolated from black soil in second experiment

4.4.3 Solubilization by bacteria isolated from red soil in first experiment

4.4.4 Solubilization by bacteria isolated from red soil in second experiment

5 SUMMARY

6 REFERENCES