Preface

The work recorded in this thesis is the outcome of the study undertaken during 2004-2008 on 'Remediation for Rice Cultivation on Soil Affected by Coal Mining in Jaintia Hills, Meghalaya'. The Jaintia Hills district is situated in the eastern part of the state of Meghalaya and lies between 25°5' N to 25°4' N latitudes; and between 91°51' E to 92°45' E longitudes. It covers an area of 3819 km$^2$ with a total population of 2,95,692 persons (2001 Census). The area is covered by mostly deciduous to evergreen forests and transitional tropical moist deciduous pine forests.

The thesis explains the effect of coal mining on soil quality and agricultural productivity in Jaintia Hills district of Meghalaya. A pot culture experiment was conducted on coal mine affected rice soil of Jaintia Hills with three rice varieties under different remediation options such as organic enrichment and lime treatment. Data pertaining to following aspects are included in this thesis.

(a) Variation of land utilization pattern in Jaintia Hills from 1987 to 2002
(b) Area, Production and productivity status of agricultural crops in Jaintia Hills district (1987-88 to 2001-2002)
(c) Physico-chemical analysis of soils from coal mining area
(d) Remediation of coal mine affected acidic soil by various treatments
(e) Varietal trial of rice under different remediation options.
The thesis begins with general Introduction followed by Review of Literature, Study Area, Methodology, Results and Discussion, Summary and References.

Information on land utilization and agricultural production have been analysed to know the agricultural impact of coal mining in the area. Physico-chemical analysis of soils collected from various coal mining sites of Jaintia Hills was done to know the extent of land degradation and to reveal underlying causes of such degradation. Based on the results of pot culture experiment, suitable rice variety with proper soil ameliorant has been recommended for cultivation on coal mining sites of Jaintia Hills.