PHYSIOLOGICAL STUDIES ON THE YIELD AND QUALITY OF CUCUMBER SEEDS

By

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Approval Sheet

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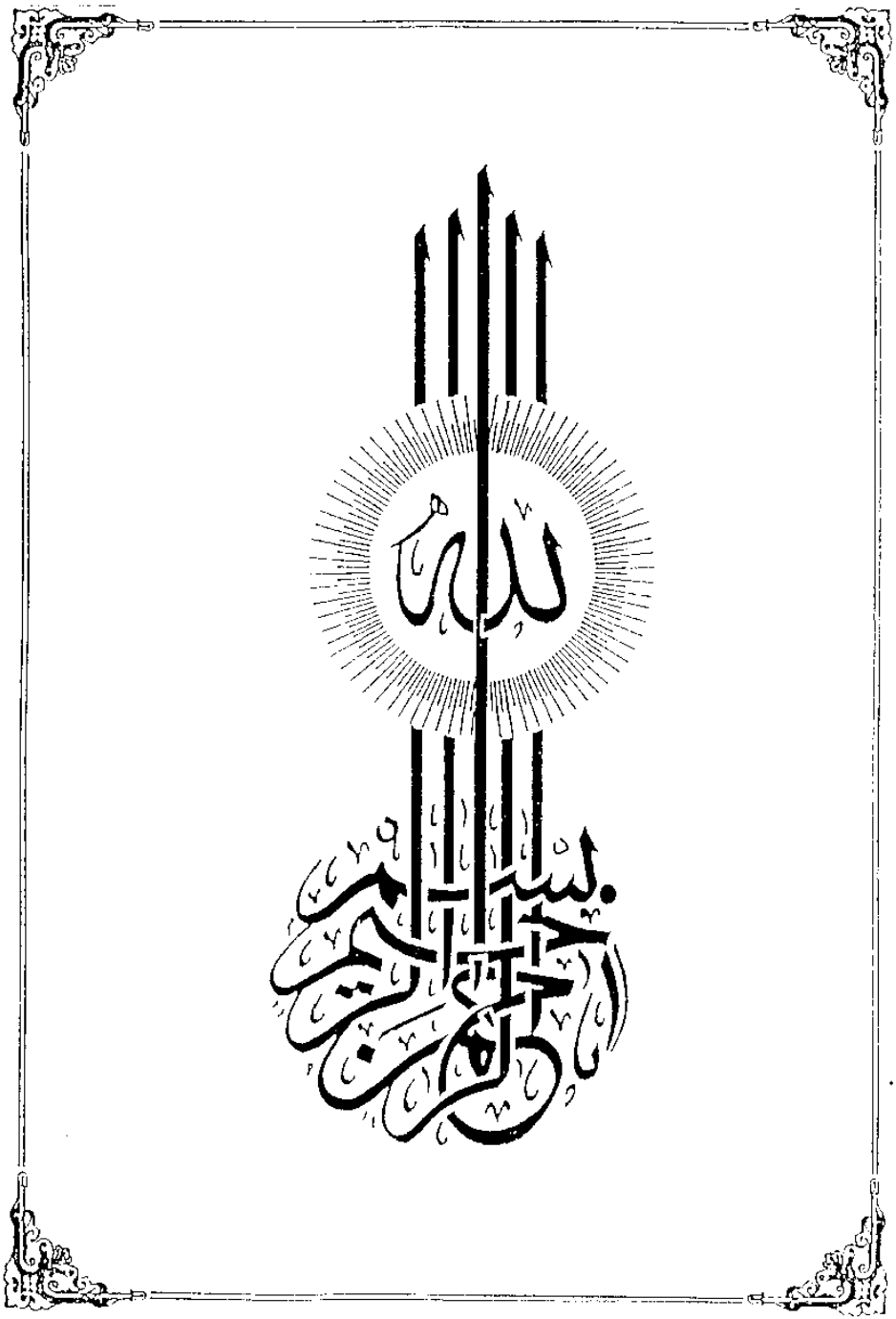

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ABSTRACT

Cucumber seeds (Cucumis sativa cv. Beta-alpha) were sown in the Vegetable Crops Department, University of California, Davis, USA. in 1990 and 1991 seasons. This study carried out to ivestigate the effects of three factors (sodium and calcium chloride, some calcium anions and root-zone temperature and sodium chloride).
key words : cucumber, salinity, Root, Zone Temperature and Anions.

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CONTENTS

LIST OF FIGURES

INTRODUCTION

Cucumber (Cucumis sativa L. cv. Beta-alpha) is a major vegetable crop grown in winter under protected cultivation in Egypt. Productivity of the winter season is reduced, largely due to less favorable environmental conditions which restrict cucumber yield potentials. Soil salinity and quality of the irrigation water represent major constraints particularly as production moves to more saline environments in the newly reclaimed areas. Also, low root-zone temperature consider another factor which restrict cucumber production in the winter season.

The work described here characteres the effects of salinity and root-zone temperature on germination, early seedling growth, biochemical changes, tissue constituents, fruit characters and seed yield and quality of cucumber.

The quality and quantity of seed production is an indispensible step in establishing a successful and highly productive agricultural system. Modern plant cultivation systems require rapid, uniform and complete germination. Failure of a seed to germinate, or if germination is so sporadic that the plants grow differentially, can result in extremely variable and delayed crop development.

This is problematic whether the edible fruit is desired for market or whether the grower is concerned with the seed crop. For the later objective, fruit harvest must coincide with optimum seed maturity and quality. Multiple fruit harvests may be necessitated by dispersion in fruit maturity among plants in a developmentally variable population.

This research represents part of longer term investigations into the physiological and genetical bases of salinity and root-