

# **Production Functions, Isoquants, Isoclines and Economic Optima in Corn Fertilization for Experiments With Two and Three Variable Nutrients**

by William G. Brown, Earl O. Heady,  
John T. Pesek and Joseph A. Stritzel

Department of Economics and Sociology  
Department of Agronomy



Tennessee Valley Authority  
cooperating

---

**AGRICULTURAL EXPERIMENT STATION, IOWA STATE COLLEGE**

**RESEARCH BULLETIN 441**

**AUGUST, 1956**

**AMES, IOWA**

## CONTENTS

	Page
Introduction .....	807
Source of data .....	807
Carrington experimental data .....	807
Regression analysis for Carrington soil .....	808
Production surface for Carrington soil .....	809
Yield isoquants for Carrington soil .....	812
Yield isoclines for Carrington soil .....	812
Economic optima for Carrington soil .....	813
Carrington soil presentation for practical use .....	815
Moody experimental data .....	815
Regression analysis for Moody soil .....	816
Production surface for Moody soil .....	816
Yield isoquants for Moody soil .....	819
Yield isoclines for Moody soil .....	819
Economic optima for Moody soil .....	820
Moody soil presentation for practical use .....	821
Haynie experimental data .....	822
Regression analysis for Haynie soil .....	822
Production surface for Haynie soil .....	823
Yield isoquants for Haynie soil .....	827
Yield isoclines for Haynie soil .....	828
Economic optima for Haynie soil .....	830
Presentation for practical use on Haynie soil .....	830
Use of production functions under limited capital .....	831
Summary .....	832