

UNITED STATES DEPARTMENT OF AGRICULTURE
Miscellaneous Publication No. 372

Washington, D. C.

May 1940

A SURVEY AND
DISCUSSION OF LYSIMETERS
AND
A BIBLIOGRAPHY ON THEIR
CONSTRUCTION AND PERFORMANCE

By

HELMUT KOHNKE and F. R. DREIBELBIS

Assistant Soil Technologists, Hydrologic Division

and

J. M. DAVIDSON

Assistant Soil Conservationist

Conservation Experiment Stations Division

Soil Conservation Service



UNITED STATES
DEPARTMENT OF AGRICULTURE
MISCELLANEOUS PUBLICATION NO. 372

Washington, D. C.

May 1940

A SURVEY AND DISCUSSION OF LYSIMETERS AND A BIBLIOGRAPHY ON THEIR CONSTRUCTION AND PERFORMANCE

By HELMUT KOHNKE and F. R. DREIBELBIS, *assistant soil technologists, Hydrologic Division*, and J. M. DAVIDSON, *assistant soil conservationist, Conservation Experiment Stations Division, Soil Conservation Service*

CONTENTS

	Page		Page
Lysimeters: A survey and discussion.....	1	Lysimeters: A survey and discussion—Con.	
Introduction.....	1	Conclusion.....	30
Classification of lysimeters.....	2	Bibliography on lysimeters.....	31
History of lysimeter studies.....	5	Content and organization.....	31
Discussion.....	19	Bibliography by countries.....	32
Established lysimeter findings.....	24	United States.....	32
Findings with respect to the moisture relationships of soils.....	24	Great Britain.....	45
Findings with respect to the chemical constituents of the percolate.....	25	Asia.....	50
Suggestions for future lysimeter studies.....	27	Europe.....	52
Construction of lysimeters.....	27	Africa.....	63
Experimental plan.....	29	Author index.....	66
Publication of data.....	30		
Supplementary studies.....	30		

LYSIMETERS: A SURVEY AND DISCUSSION

By HELMUT KOHNKE and F. R. DREIBELBIS ¹

INTRODUCTION

With the great impetus that soil conservation and flood-control work have given to the study of the relations of water to soil, lysimeters have received wider attention during the past decade than at any previous time. They have been used for at least two and a half centuries in studies of the percolation of water through soil. The purpose of such studies may be strictly hydrological, attention being given only to the rate and amount of the percolate. In most of the more recent investigations the chemical composition of the percolate is analyzed, generally as a part of the study of the fertility balance of the soil, but, in some cases, in connection with studies of the genesis and development of soils.

¹ The authors wish to express their appreciation to W. U. Garstka, Hydrologic Division, Soil Conservation Service, for guidance and valuable assistance given in the development of this publication.