

**Vertebrate  
Pest Control**  
**and Management Materials: 5th Volume**

Shumake/Bullard, *editors*

STP 974



***Vertebrate Pest Control  
and Management Materials:  
5th Volume***

*Stephen A. Shumake and Roger W. Bullard, editors*



Special Technical Publication (STP) 974

1916 Race Street, Philadelphia, PA 19103

## Library of Congress Cataloging-in-Publication Data

Vertebrate pest control and management material/[editors] Stephen A. Shumake and Roger W. Bullard.

(ASTM special technical publication; 974)

"ASTM publication code number (PCN) 04-974000-48."

Papers presented at the 5th Symposium on Test Methods for Vertebrate Pest Control and Management Materials, held in San Diego, Calif., 7 Mar. 1986, and sponsored by ASTM Committee E-35 on Pesticides.

Includes bibliographies and indexes.

ISBN 0-8031-0991-1

1. Vertebrate pests—Control—Equipment and supplies—Testing—Congresses. I. Shumake, Stephen A. II. Bullard, Roger W., 1937– . III. Symposium on Test Methods for Vertebrate Pest Control and Management Materials (5th: 1986: San Diego, Calif.) IV. ASTM Committee E-35 on Pesticides. V. Series

SB993.4.V46 1987

87-37424

628.9'6—dc19

CIP

Copyright © by AMERICAN SOCIETY FOR TESTING AND MATERIALS 1988

### NOTE

The Society is not responsible, as a body,  
for the statements and opinions  
advanced in this publication.

### Peer Review Policy

Each paper published in this volume was evaluated by three peer reviewers. The authors addressed all of the reviewers' comments to the satisfaction of both the technical editor(s) and the ASTM Committee on Publications.

The quality of the papers in this publication reflects not only the obvious efforts of the authors and the technical editor(s), but also the work of these peer reviewers. The ASTM Committee on Publications acknowledges with appreciation their dedication and contribution of time and effort on behalf of ASTM.

# Foreword

This publication, *Vertebrate Pest Control and Management Materials: 5th Volume*, contains papers presented at the 5th Symposium on Test Methods for Vertebrate Pest Control and Management Materials, which was held in San Diego, California, 7 March 1986. The symposium was sponsored by ASTM Committee E-35 on Pesticides in conjunction with the 12th Vertebrate Pest Conference. William B. Jackson, Bowling Green University, presided as symposium chairman. Stephen A. Shumake and Roger W. Bullard, Denver Wildlife Research Center, served as coeditors of this publication.

# Contents

<b>Introduction</b>	1
<b>Key Word Standardization in Vertebrate Pest Control—R. M. TIMM, T. P. SALMON, AND R. H. SCHMIDT</b>	3
<b>Surveys as an Approach to Gathering Animal Damage Information— A. C. CRABB, T. P. SALMON, AND R. E. MARSH</b>	12
<b>BIRDS</b>	
<b>Evaluating Corn Varieties for Resistance to Damage by Blackbirds and Starlings—P. P. WORONECKI, R. A. DOLBEER, AND D. L. OTIS</b>	27
<b>Evaluation of Repellent Seed Treatments and Effects on Early Corn Performance—A. E. KOEHLER, R. J. JOHNSON, O. C. BURNSIDE, AND S. R. LOWRY</b>	39
<b>A Test Method that Evaluates Avian Perch Repellents—E. J. SCOTT AND E. W. SCHAFER, JR.</b>	52
<b>Efficacy Testing of an Ultrasonic Bird Repeller—R. E. GRIFFITHS</b>	56
<b>Procedures for Assessing Secondary Poisoning Hazards of Rodenticides to Owls— B. A. COLVIN AND P. L. HEGDAL</b>	64
<b>RODENTS</b>	
<b>Levels of Strychnine in Poisoned Ground Squirrel Stomachs—J. M. O'BRIEN</b>	75
<b>Correlation of Two Census Methods (Food Consumption and Gnawing Evidence) for Assessing Norway Rat Populations—S.-P. YO, R. E. MARSH, AND T. P. SALMON</b>	81
<b>Efficacy Determinations of Rodenticide Use and Trapping for Reduction of Coconut Loss in the Philippines—P. P. MILAN AND W. B. JACKSON</b>	89
<b>Evaluation of Rodent Bait Station Use Under Controlled Conditions—D. E. KAUKAINEN</b>	103
<b>Evaluating Rodenticide Use Impacts on Agricultural Production—T. P. SALMON</b>	115
<b>Metallic Flake Particle Markers for Determining the Feeding Behavior of Rats at Bait Points—M. W. FALL AND B. E. JOHNS</b>	128

<b>Tetracyclines as Fluorescent Bone Markers in Cotton and Roof Rats—</b> L. W. LEFEBVRE, J. F. PENDERGAST, AND D. G. DECKER	134
<b>PREDATORS/DEER</b>	
<b>Retention of Physiological Marks by Coyotes Ingesting Baits Containing Iophenoxic Acid, Mirex, and Rhodamine B—</b> F. F. KNOWLTON, P. J. SAVARIE, C. E. WAHLGREN, AND D. J. HAYES	141
<b>Test Methods for Steel Foothold Traps: Criteria and Performance Standards—</b> S. B. LINHART AND R. G. LINScombe	148
<b>A Methodology for Identifying Sources of Indirect Costs of Predation Control: A Study of Wyoming Sheep Producers—</b> L. J. JAHNKE, C. PHILLIPS, S. H. ANDERSON, AND L. L. MCDONALD	159
<b>A Review of Some Mule Deer Capture Operations—</b> M. E. R. GODFREY, R. W. BROWNE, AND L. O. SMITH	170
<b>Summary</b>	177
<b>Indexes</b>	179

ISBN 0-8031-0991-1