

**Equine Drugs
and
Vaccines**

Equine Drugs and Vaccines

A Guide for Owners and Trainers



Eleanor M. Kellon, V.M.D.

in consultation with
Thomas Tobin, M.V.B., M.R.C.V.S.

Breakthrough

Copyright © 1994 by Eleanor M. Kellon, VMD

All rights reserved.

No part of this work covered by the copyright herein may be reproduced or used in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems—without permission in writing from the publisher.

For information address:
Breakthrough Publications
Ossining, New York 10562

Manufactured in the United States of America

Library of Congress Catalog Card Number: 94-079199

ISBN: 0-914327-55-0

Cover design by Jean Criscola
Text design by Michael Mendelsohn, MM Design 2000 Inc.

5 4 3 2 1 0 9 8 7 6 5 10 9 8 7 6 5 4 3 2

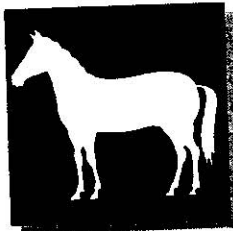
CREDITS: Abbreviated sources are given under each illustration. Full sources are as follows:

AAEP: Drawings by Robin Peterson, D.V.M. Reproduced by courtesy of the American Association of Equine Practitioners.

Univ. of Georgia: International Veterinary Pathology Slide Bank at the University of Georgia, Dr. Wayne Crowell, Director.

New Bolton: University of Pennsylvania, New Bolton Center, Department of Pathology.

AFIP: Department of Veterinary Pathology of the Armed Forces Institute of Pathology, Department of Defense, Washington, D.C.

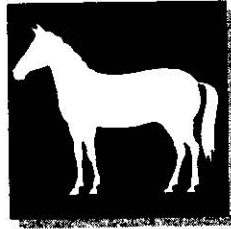


CONTENTS

Acknowledgments		xi
Introduction		xiii
PART I	Trade Name Index	3
PART II	Detailed Description of Frequently Used Equine Drugs	13
	How to Use This Section	14
	Explanation of Symbols	15
	Description of Performance Drug Classifications	16
	ARCI Classification	16
	AHSA Classification	17
	AQHA Classification	19
	Drug Testing in Performance Horses	20
	Definition of Terms	20
	What's in a "Positive"?	20
	Factors Affecting Withdrawal Times	21
	Drug Listings	23
PART III	Commonly Used Agents	183
CHAPTER 1	Use of Tranquilizers	185
CHAPTER 2	Vitamins and Minerals	190
	Minerals	190
	Vitamins	200
	Feed Analysis and Formulating a Diet	209
CHAPTER 3	Vaccinations	210
	Diseases and Recommended Vaccination Schedules	211
	Available Vaccines	217

CHAPTER 4	Worming	221
	Common Intestinal Parasites of Horses	221
	Special Worming Problems of Young and Older Horses	230
	Some Worming Myths	231
CHAPTER 5	Hormones and Anabolic Steroids	234
	The Female Hormones	234
	The Male Hormones: The Androgens	239
CHAPTER 6	Pain Controlling Drugs	241
	Analgesics Versus Anesthetics	241
CHAPTER 7	ACTH and the Corticosteroids	245
	ACTH	245
	The Corticosteroids	246
CHAPTER 8	Performance Drugs and Medications	251
	<i>by Thomas Tobin in consultation with Eleanor Kellon</i>	
	Medication to Win	253
	Medication to Lose	257
	Medication to Restore Normal Performance	258
	Medication to "Dilute Out" Other Drugs	265
	Medication to "Mask" Other Drugs	266
	Hematinics; "Blood Doping," Bicarbonate Doping, "Jugging"	266
	Miscellaneous Substances	271
PART IV	Medical Approach to Common Problems	275
CHAPTER 9	Arthritis	277
	Pain Control	277
	Alternative Treatments	280
CHAPTER 10	Chronic Lung Problems	282
	Lung Bleeding	282
	The Allergy/Heaves Complex	287
CHAPTER 11	Colic	290
	Pain Relief	290
	Treating the Cause of Colic	292
CHAPTER 12	Eye Problems	297
	Trauma	297
	Administering Eye Medications	300

	Insect-Related Problems	301	
	Viral Problems	302	
	Periodic Ophthalmia/"Moonblindness"	302	
	Acute Intraocular Inflammation	303	
	Tumors	304	
	Cataracts	304	
	Other Problems	304	
CHAPTER 13	Infections		305
	Bacterial Infections	305	
	Viral Infections	307	
	Fungal Infections	307	
APPENDIXES			
APPENDIX I	Classifications of Drugs		311
APPENDIX II	Testing for Drugs Affecting Performance: ELISA Testing, by Thomas Tobin		315
APPENDIX III	AHSA Medication Report Form		324
	Definitions of Technical Terms		326
	General Index		331



ACKNOWLEDGMENTS

No effort has been spared in the preparation of the material contained in this book. This work has been read, edited, revised, reread, in whole and in part, too many times for any of us to remember. Up-to-the-minute information was added literally days before the book went to press.

An undertaking of this size was not accomplished by one person. The enthusiasm, dedication, and exceptional competence of the behind the scenes staff has made all the difference between just another book and one we hope will prove to be a genuinely unique and valuable contribution. With this in mind, I wish first to bow to the efforts of Rhona Johnson, my editor, and Lillie Mikesell, our production editor. Special thanks also to Cornelia Guest, who did an exhaustive job of editing the special chapters.

I also wish to acknowledge the contribution of Dr. Charles Short, Head of the Department of Veterinary Physiology, Pharmacology, and Toxicology, School of Veterinary Medicine, Louisiana State University, who was kind enough to take the time to read the manuscript and give us the benefit of his comments.

Thanks also to Dr. E. T. Lyons and the other members of the Parasitology Group at The Gluck Equine Research Center for reviewing the chapters on worming drugs and colic, to Dr. Dan Harkins who read the chapter on the eye, and to Dr. David Powell who reviewed the vaccination information.

For assistance in compiling information regarding drug testing policies, procedures, and performance drugs, thanks to Dr. Thomas Tobin and Dr. Charles Short, as well as Dr. John Lengle of the American Horse Shows Association (AHSA) and Mr. Griffith of the American Quarter Horse Association (AQHA).

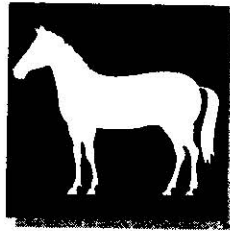
Thanks to the following for providing in-depth background and product information: Mr. Joseph Corbett, ELISA Technologies; Mr. Carl Zimmerman, Hoffmann-La Roche Inc.; and Vetraceutical Services, Inc.

For their valuable and much appreciated contributions to the artwork and illustrations, I would like to thank Ms. Robin Peterson; Linda Caddel and the American Association of Equine Practitioners (AAEP); Dr. Tracy McNamara, Veterinary Pathology Department of The Bronx Zoo; Dr. Wayne Crowell, Director of the International Veterinary Pathology Slide Bank and Professor of Veterinary Pathology, University of Georgia, and Drs. R. Conger, K. Lattimer, and D. E. Taylor, also of the University of Georgia. My special thanks also to Dr. Helen Acland and Dr. Perry Habecker, University of Pennsylvania, New Bolton Center, Department of Pathology; and Major Bruce H. Williams, Department of Veterinary Pathology of the Armed Forces Institute of Pathology (AFIP), Washington D.C., for generously giving of their time in compiling an extensive collection of slides from which to choose the illustrations in this book.

Special Thanks

A special note of gratitude goes to my contributing author and consultant, Dr. Thomas Tobin, of The Gluck Equine Research Center, at the University of Kentucky. Dr. Tobin was responsible for the compilation of data related to recommendations on detection times, as well as for sections of the book that explain the background and complexity of drug testing and how it applies to owners and trainers. Dr. Tobin also lent his extensive experience to the review of this manuscript, particularly with reference to the performance drugs.

Dr. Tobin would like to dedicate his contributions to his parents, Nicholas and Mary Tobin, who made him a veterinarian and writer; to his wife, Vicki, and his daughter, Mary Courtney, who encouraged him to write; and to the University of Kentucky and the horsemen of Kentucky, who have made his career in equine medication research possible.



INTRODUCTION

Horses exist in limbo—somewhere between pets and commercial livestock. Although the equine industry is certainly significant, it does not compare in market size to either pets or livestock. As a consequence, there are many unique problems that are associated with the use of medications in horses.

Because it is not profitable to do so, many pharmaceutical companies do not have their products FDA approved specifically for use in horses. As a result, veterinarians and hospitals often have to experiment with and/or perform their own research on specific drugs to determine correct dosages for horses and possible side effects from the use of certain drugs. More complex questions, such as safety in pregnancy and interaction with other drugs, may never be answered, at least to the same extent that they are with human, pet, or other livestock medications.

This is a big problem for the veterinarians who must treat horses; larger still for owners or trainers treating their own horses.

The basic purpose of this book is to educate owners and trainers on the actions of drugs in horses, their indications, contraindications, and possible side effects and interactions with other drugs. Something as simple as an over-the-counter worming preparation or antibiotic could cause serious problems when mixed with other drugs.

The book will also explain some of the nuances of using drugs. It often becomes routine to use the same tranquilizer, antibiotic, or other medication when what seems an appropriate situation arises, and to give it in the same dose to all horses. This practice, however, can also lead to less-than-desirable results.

Drug interactions also receive far less attention than is warranted. Often, only the owner or trainer really knows a horse's complete drug history up to the most recent treatments. It is critical for them to understand that combinations of even widely used drugs may produce serious complications.

The consequences of improper drug use and dangerous drug interactions are especially important in high-performance animals, such as race horses. The physical demands of racing can, and do, magnify the side effects of drugs. Complications arise when the horse is treated by one or more track veterinarians, by the trainer, and even by state veterinarians, as often happens in the case of regulated medications such as furosemide (Lasix®). It is, therefore, imperative that the trainer have a source of information on drug side effects and interactions, and this book is such a source.

Finally, this book provides the most up-to-date information on drug classifications and detection times for all horses involved in sports that have drug testing programs. Owners and trainers attempting to abide by medication rules need far more information than has been readily available to comply with medication guidelines. Far too often, they learn the hard way (i.e., by a medication violation) that a drug was given too close to a competition time. Just as often, they come away not really knowing exactly why a withdrawal time that they thought to be adequate was not so. By using the information available in the various sections of this book, owners and trainers can be more successful in avoiding this problem.

The book is divided into two basic sections: A drug listing section that gives in-depth information on selected, commonly used drugs; and special chapters that discuss commonly used classes of drugs and common medical problems that require the prescription of medications.

This book does not claim to discuss every medication in use in horses. Specifically, many topical medications have been excluded because the potential for problems to develop with their use is extremely low. Also, medications that are rarely, if ever, used outside of a hospital/clinical setting are not discussed (for example, cardiac medications) because the likelihood of owners or trainers being directly involved in their use is slight. In addition, because of the wide variety of vitamin/mineral tonic/supplements available on the market and the lack of any single source for indentifying all of them, no attempt has been made to discuss such products individually. Rather, the individual vitamins and minerals, with in-depth recommendations on requirements, have been dealt with in a separate chapter.

With some exceptions, the drugs covered in this book are those approved for use in horses. In a few instances, drugs that are being used experimentally but with great promise have also been included. The indications for a drug's use, as well as the "usual" dosages, will correspond to those described by the manufacturer for the most part, with any deviations from those dosages discussed.

Every effort has been made to make this book as up-to-date as possible. However, changes in drug regulation policy, drug company buy- and sell-outs, and the emergence of new drugs, combine to make the field of equine pharmacology very fluid. The author welcomes input from veterinarians, owners and trainers regarding areas where information should be expanded or added to better serve the needs of the industry.

Although many drugs used in horses have not been specifically approved for equine use, as has been mentioned, it does not necessarily mean that these drugs are dangerous or unsuitable for horses. This forces veterinarians across the country, however, to use their experience and clinical judgment in prescribing treatments that use "unapproved" drugs. While the recommendations for these drugs may be similar among the various veterinarians in any given area, differences may exist between veterinarians in different parts of the country, or in treating different types of horses. Therefore, your veterinarian may make a recommendation that differs from the information in this book—or, prescribe a drug that you are unable to find in this book. Listen to your veterinarian; he or she knows your horse best.