

Sustainable Reproductive Management in Veterinary Science

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Preface

Reproductive efficiency is a cornerstone of sustainable livestock production, directly influencing animal health, productivity, economic viability, and environmental stewardship. The book, *Sustainable Reproductive Management in Veterinary Science*, has been developed to provide a comprehensive understanding of the scientific principles and practical approaches that support efficient and sustainable reproductive management in domestic animals.

Recent advances in reproductive physiology, assisted reproductive technologies, precision livestock farming, molecular diagnostics, and digital monitoring systems have transformed veterinary reproductive practice. These innovations enable early disease detection, improved fertility management, enhanced genetic progress, and optimized breeding programs while promoting animal welfare and reducing resource use. Sustainable reproductive management also contributes to lowering greenhouse-gas emissions by improving reproductive efficiency and reducing the environmental footprint of livestock production.

This volume brings together contributions from veterinary scientists, clinicians, researchers, and academicians to present current knowledge on reproductive anatomy and physiology, fertility management, reproductive disorders, obstetrics, biotechnology, herd reproductive health, and emerging innovations in veterinary reproduction. Emphasis is placed on integrating scientific evidence with practical field applications to improve reproductive performance and ensure sustainable livestock systems.

The editors hope that this book will serve as a valuable resource for veterinary students, researchers, practitioners, extension professionals, and livestock producers. We sincerely acknowledge the contributions of all authors and reviewers whose expertise and dedication have made this publication possible. It is our hope that this volume will foster innovation and promote sustainable reproductive management in veterinary science.

Dr. Deepak Kumar Chaurasia
Prof. Purna Chandra Mishra
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