

Book review – Boekresensie

Equine reproductive physiology, breeding and stud management

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The book is subdivided into 2 sections, both supported by many tables, line-diagrams and colour photographic plates. The 1st entitled 'Reproductive Anatomy and Physiology' comprises 10 chapters describing aspects of reproductive anatomy, physiology and endocrinology of the mare and stallion, pregnancy, parturition and lactation.

The section unfortunately contains numerous inaccuracies, while information essential to an in-depth understanding of the unique features of equine reproductive biology has been omitted. Included amongst the more jarring errors are an incorrect site of fertilisation, reference to the ovarian ovulation fossa as an 'ova fossa' and misspelling and errors of taxonomy with reference to microorganisms.

The information pertaining to endocrinology is detailed but tends to be inconsistent. Considerable detail is provided about the roles of prolactin and oxytocin in the cyclic dynamics of the mare, but no mention is made of inhibin. The description of the actions and secretory-profile of FSH is therefore erroneous in the light of present knowledge. Another significant omission occurs in the chapter describing the physiology of pregnancy, where neither the mobile phase nor fixation of the embryo, central to maternal recognition of pregnancy, are mentioned. The embryo is also reported to arrive in the uterus on day 5. These points are central to important management decisions regarding pregnancy determination and twin management, two of several potential applications. Other examples of flawed or confused descriptions involving physiology and endocrinology occur in later chapters, for example 'a drop in progesterone prior to ovulation' and 'hCG used to enhance the release of LH' in a chapter describing manipulation of the mare's cycle.

A detailed description of the anatomical barriers serving to protect the intra-uterine environment from pathogenic invaders is spoiled by the omission of the vital role of myometrial contractility. This would assist the breeder's understanding of the essentials of endometritis, particularly relating to the management and therapy of this significant disease.

The 45 photographic plates are, with the possible exception of the series on the foaling mare, disappointing, owing to poor quality and inadequate annotation. Some of the *post mortem* specimens show signs of autolysis.

Outmoded or inappropriate therapies are advocated. Foetotomy is described as 'a final and most drastic alternative', whereas it may be the first and best option in the case of a dystocia with a dead foetus. The therapeutic approach to retained foetal membranes, a relatively common problem requiring initial decision-making by the breeder, is incorrect and inadequate in terms of both the interval before intervention and the modes of therapy.

The 2nd section, 'Breeding and Stud Management', contains 10 chapters covering a broad range of topics, including the selection of mares and stallions for breeding, management of mating, pregnancy, parturition, lactation and the young foal and weaning. The final 4 chapters cover the stallion, infertility, artificial insemination and embryo transfer. Of interest are the photographs showing South African scenes.

The 2 chapters on selection of mares and stallions for breeding contain useful detail, but are marred by incorrect

statements. For example, the statement that during ultrasonic pregnancy detection the transducer is usually placed on the flank because some evidence exists that rectal palpation in early pregnancy is associated with a higher incidence of abortion must be seriously challenged. Abortion is advocated to manage twins; no mention is made of manual reduction to a singleton, one of the more useful applications of transrectal ultrasound in early pregnancy. This is potentially useful information, particularly to the Thoroughbred breeder. There are also references to 'cystic follicles' and 'ova fossa cysts' and to salpingitis being 'relatively common in mares'. The chapter on mare selection contains examples of sweeping generalisations (occurring at intervals throughout the book), which are out of place in a book with scientific aims. An example is 'rather fine tucked-up mares tend in general to be poorer breeders'. Another contentious statement appears in the chapter on infertility, relating to the difficulty in removing infective organisms and exudates.

No mention is made of teasing records, which are central to any equine breeding management system. To advocate fitting a ring to the stallion's penis to discourage masturbation is inconsistent with the book's aim of maximising animal welfare. The indication given for this cruel practice, namely 'embarrassing for owners', is inappropriate for what today is regarded as a normal, healthy aspect of stallion behaviour.

The chapter on infertility is especially poor, presenting many factual errors and confusion of definition, for example of testicular disease in the stallion. Various microorganisms are incorrectly listed and their pathogenesis is confused. The important distinction between metritis and endometritis is ignored and mention is made of 'pyrometra' and 'endometritus'. The distinction between acute *versus* chronic inflammation is consistently wrong. Questionable therapies advocated here include kerosene infusions of the uterus and treating scrotal hernias by rectal palpation.

The final 2 chapters present a reasonably structured overview of artificial insemination and embryo transfer, spoiled by some fundamental errors, such as consistent confusion between ova and embryo. Two glaring errors are embodied in the statements relating to deposition of semen ('on the same side of the ovary bearing the *corpora lutea*'), and placement of 2-4-day-old embryos in the oviducts.

The merits of this book are mostly to be found in the chapters describing the management of stallions, mares, foals and youngstock. The nutritional information presented is detailed and inclusive of all management areas. The inclusion of a chapter on lactation is a useful addition, as this topic is rarely given adequate attention in even the most detailed veterinary texts available. A further plus factor is the author's inclusion of details relating to the conditions and idiosyncrasies operative in horse breeding in South Africa. Providing information pertaining to conditions in South Africa, the Americas, Europe and Australia adds a useful dimension to this book.

The stated objectives of this book are to maximise productivity and animal welfare by the provision of 'scientific understanding of reproduction' to both the breeder and the academic. The book fails in its broad-reaching aims due to the numerous statements offering incorrect, confused and outmoded information.

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