



## AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS

### FELLOWSHIP GUIDELINES

#### *Animal Reproduction (Equine)*

#### ELIGIBILITY

1. The candidate shall meet the eligibility prerequisites for Fellowship outlined in the *Fellowship Candidate Handbook*.
2. Membership of the College must be achieved prior to the Fellowship examination.
3. Membership may be in any discipline.

#### OBJECTIVES

To demonstrate that the candidate has sufficient training, experience, knowledge and accomplishment in Animal Reproduction (Equine) to meet the criteria for registration as a specialist in this field.

It is recognised that the candidate's personal experience may be limited to a relatively small geographical area. Although this is to be expected, candidates are advised that they must be prepared to do additional study and be prepared to be examined in areas of the discipline outlined below which may be unfamiliar to them.

#### LEARNING OUTCOMES

The candidate will be expected to have:

1. Extensive practical experience and accomplishment relevant to Australia and/or New Zealand.
2. Recognition as an authority by veterinary colleagues and other professional people working in the field.
3. **Detailed**<sup>1</sup> knowledge of the normal physiology, endocrinology, anatomy, embryology and immunology of the reproductive tract of the horse.
4. **Detailed** knowledge of the aetiology, clinical signs, pathology, diagnosis, treatment and control measures for infectious and non-infectious diseases affecting reproduction in the horse.

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<sup>1</sup> Knowledge levels:

**Detailed knowledge** — candidates must be able to demonstrate an in-depth knowledge of the topic including differing points of view and published literature. The highest level of knowledge.

**Sound knowledge** — candidate must know all of the principles of the topic including some of the finer detail, and be able to identify areas where opinions may diverge. A middle level of knowledge.

**Basic knowledge** — candidate must know the main points of the topic and the core literature.

5. **Sound** knowledge of the exotic infectious diseases of the horse which could be introduced into Australia and New Zealand especially as a result of techniques used in reproduction.
6. **Sound** knowledge of infectious organisms which both directly and indirectly affect reproductive performance in the horse.
7. An understanding of comparative reproduction in other domesticated species of at least a "MACVSc" level.
8. A detailed knowledge of the core available literature on Equine Reproduction.
9. Critically evaluated the relevant literature in the field of Equine Reproduction.

### **SPECIFIC GUIDELINES**

The following list is intended as a guide to the breadth of the subject but should not be considered either comprehensive or an indication of the knowledge required to pass the examination.

#### **1. Anatomy of Reproduction**

Development of male and female reproductive tracts, including embryologic development, prepubertal, postpubertal and ageing changes. Anatomy and histology of the reproductive tracts with particular emphasis on the relation between structure and function.

#### **2. Reproductive Physiology**

Central control of reproduction, reproductive endocrinology, reproductive cycles, folliculogenesis, spermatogenesis, gamete physiology, gamete transport, coitus, fertilisation, sex determination and differentiation, embryonic development, implantation, placentation, pregnancy, maternal recognition of pregnancy and parturition.

Prenatal foetal physiology and adaptation for survival in the periparturient period.

Postpartum physiology, uterine involution and resumption of cyclicity. Effects of lactation on reproduction.

#### **3. Reproductive Behaviour**

Puberty and development of reproductive behaviour, coitus, libido, dominance and social factors affecting reproduction. Abnormalities of reproductive behaviour.

#### **4. Clinical examination of the reproductive system and data collection**

Physical examination and explanation of findings, breeding soundness examination, libido testing, collection and submission of samples for diagnosis of disease of the reproductive system, semen collection, handling, evaluation and analysis, use of ancillary diagnostic aids including ultrasonography.

5. **Artificial Breeding**

Artificial insemination and semen handling, oestrus detection and synchronisation, superovulation, embryo recovery, embryo culture, short term storage and transfer of semen and embryos and cryopreservation of gametes and embryos.

6. **Developmental Abnormalities**

Inherited abnormalities affecting reproduction, acquired and congenital defects and teratology, and reproductive pathology.

7. **Gestation**

Physiology, anatomy and endocrinology of pregnancy, pregnancy diagnosis, induction of abortion, disease of pregnancy, diseases of the foetus, embryonic loss and abortion, anatomy, physiology, endocrinology of parturition, diseases of parturition, diseases of the puerperal period, dystocia and obstetrics, post-partum physiology and diseases.

8. **Infertility**

Infectious, hormonal, environmental, nutritional, congenital, hereditary, management related and miscellaneous causes of infertility. Anoestrus, abnormalities of sexual behaviour, inability to complete coitus, failure of ovulation, fertilisation failure, failure to establish or carry pregnancy, and male infertility.

9. **Surgery of the reproductive system, including appropriate anaesthetia.**

10. **Reproductive management.**

Herd reproduction systems, pasture breeding, nutrition, herd health and herd demographics, reproductive disease control and vaccination programs, record keeping, interpretation and analysis, effects of climate, season, housing and geography on reproduction and strategies to optimise reproductive efficiency.

11. **Pharmacology of the reproductive system**

Oestrus cycle manipulation, manipulation of the breeding season, treatment of reproductive disorders, induction of oestrus, induction of parturition, induction of lactation and use of antimicrobial drugs.

12. **Contraception**

13. **Miscellaneous**

Public health implications of reproductive disease. Exotic disease affecting the reproductive systems. Ontogeny of development of the equine reproduction system. Reproduction in non-domestic equids. Diseases of the mammary gland only as pertinent to reproduction.

**EXAMINATIONS**

Refer to the *Fellowship Candidate Handbook*.

## **TRAINING PROGRAMS**

Refer to the *Fellowship Candidate Handbook*.

1. The candidate should be involved in patient-oriented (or herd-oriented) teaching rounds, regular teaching seminars, journal and text reviews. Clinically relevant didactic lectures and continuing education conferences should be attended where appropriate. Participation in regional, state, national and if possible international meetings is encouraged.
2. The candidate must make at least ONE(1) presentation at a national or international scientific meeting.

## **TRAINING IN RELATED DISCIPLINES**

Refer to the *Fellowship Candidate Handbook*.

Candidates for Fellowship in Equine Reproduction must spend time as stipulated by the *Fellowship Candidate Handbook* in any or all of the following related disciplines: medicine, surgery, epidemiology, statistics and reproduction in other species.

## **EXTERNSHIPS**

Refer to the *Fellowship Candidate Handbook*.

## **ACTIVITY LOG CATEGORIES**

Refer to the *Fellowship Candidate Handbook*.

The Activity Log should be recorded using *Fellowship Candidate Handbook* Appendix 8.6.

The Activity Log Summary should be divided by technical procedure using the example in *Fellowship Candidate Handbook* Appendix 8.9.

## **RECOMMENDED READING LIST**

The candidate is expected to research the depth and breadth of the knowledge of the discipline. This list is intended to guide the candidate to some core references and source material. The list is not comprehensive and is not intended as an indicator of the content of the examination.

### **1. Texts**

Reproduction in Farm Animals (1987). ESE Hafez (ed). 5th edition. Lea and Febiger, Philadelphia, PA.

Physiology of Reproduction (1991) Marshall (reference incomplete?)

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Veterinary Reproduction and Endocrinology (1989). LE McDonald and MH Pineda (eds). Lea and Febiger, Philadelphia, PA.

Current Therapy in Theriogenology I and II (1980, 1986). DA Morrow (ed), WB Saunders Co. Philadelphia (III due in 1996)

Veterinary Obstetrics and Genital Diseases (1986). SJ Roberts, published by the author, Woodstock, Vermont.

Laboratory Diagnosis of Livestock Abortion (1990). CA Kirkbride (ed). Iowa State University Press, Ames, Iowa.

Pathology of Domestic Animals (1985). KVF Jubb, PC Kennedy, and N. Palmer. Academic Press Inc., London.

Bovine and Equine Urogenital Surgery (1980). DF Walker and JT Vaughan. Lea and Febiger, Philadelphia, PA.

Surgery of the Reproductive Tract of Large Animals (1982). JE Cox, Liverpool University Press, Liverpool.

Reproductive Pathology of Domestic Mammals (1990). K McEntee, Academic Press Inc., San Diego, CA.

Large Animal Internal Medicine (1996). BP Smith (ed) Mosby-Year Book, Ontario, Canada.

Current Therapy in Food Animal Practice (1992). J. Howard (ed). W.B. Saunders Co. Philadelphia, PA

The Stallion (1993) Varner D. D. (reference incomplete)

Equine Reproduction (1994) McKinnon and Voss (reference incomplete)

Ultrasound Imaging and Reproductive Events in the Mare (1986). Equiservices, Cross Plains, Wisconsin, USA.

Reproductive Biology of the Mare (1992) . Ginther 2nd ed. Equiservices, Cross Plains, Wisconsin, USA.

### **Journals - Research**

Journal of Reproduction and Fertility  
 Biology of Reproduction  
 Endocrinology  
 Journal of Endocrinology  
 Molecular Reproduction and Development  
 Animal Reproduction Science

### **Journals - clinical relevance**

Theriogenology  
 Journal of Animal Science  
 American Journal of Veterinary Research  
 Journal of the American Veterinary Medical Association  
 Australian Veterinary Journal

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Veterinary Record  
 British, New Zealand, Canadian, South African Veterinary Journals.  
 Equine Veterinary Journal  
 Equine Veterinary Science

### **Journals - review articles**

Compendium on Continuing Education in Veterinary Practice  
 Veterinary Medicine  
 Veterinary Clinics of North America

### **Symposia**

Proceedings of the Society for Theriogenology Annual Meeting  
 Proceedings of the University of Sydney Post-Graduate Committee in Veterinary Science  
 Proceeding of the International Congress on Animal Reproduction  
 Supplements to the Journals of Reproduction and Fertility (Equine Reproduction I to V)  
 Monograph 1 of the Biology of Reproduction (Equine Reproduction VI)

Selective reading for an exam such as this is an acquired art. Many books will contain the same information, some will be out of date. Some journals will contain more information than is needed. The exam requires a comprehensive clinical understanding with a sound basis in physiology. The best approach is to study the basics from books and supplement with comprehensive and recent review articles. Many of the listed journals are strictly scientific publications which should be scanned to glean -

1. Significant advances in understanding of Equine Reproduction
2. Up to date clinical applications of recent knowledge without necessarily studying all reproductive research.

### **FURTHER INFORMATION**

For further information contact the College Office

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