Fertility and Obstetrics in the Horse

THIRD EDITION

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## Contents

*Preface*  xi  
*Abbreviations*  xii  

1. **Anatomy of the Mare’s Reproductive Tract** 1  
   1.1 General 1  
   1.2 Perineum 1  
   1.3 Vulva 1  
   1.4 Vestibule 5  
   1.5 Clitoris 5  
   1.6 Vulvo-vaginal constriction 5  
   1.7 Vagina 5  
   1.8 Cervix uteri 5  
   1.9 Uterus 6  
   1.10 Uterine/fallopian tubes (oviducts) 6  
   1.11 Broad ligaments 8  
   1.12 Ovaries 8  

2. **Endocrinology of the Oestrous Cycle and Puberty** 10  
   2.1 General 10  
   2.2 Definitions 10  
   2.3 Puberty 11  
   2.4 Normal cyclicity 12  

3. **Clinical Examination of the Mare’s Reproductive Tract** 20  
   3.1 Restraint of the mare 20  
   3.2 Approach of the clinician 22  
   3.3 External examination 23  
   3.4 Manual examination *per rectum* 23  
   3.5 Visual examination *per vaginam* 24  
   3.6 Manual examination *per vaginam* 25  
   3.7 Ultrasound examination *per rectum* 25  
   3.8 Endoscopic examination of the reproductive tract 28
4. **Cyclical Changes in the Mare’s Reproductive Tract**  
4.1 General 30  
4.2 Effect of reproductive hormones 30  
4.3 Anoestrus 31  
4.4 Transitional phase 33  
4.5 Oestrus 34  
4.6 Ovulation 35  
4.7 Development of the corpus luteum 36  
4.8 Dioestrus (interoestrus) 37  
4.9 Late dioestrus compared with early oestrus 39  
4.10 Late oestrus compared with early dioestrus 39  
4.11 Prolonged luteal phase (prolonged dioestrus) 40  
4.12 Clinical presentations 40  

5. **Manipulation of Cyclical Activity** 43  
5.1 General 43  
5.2 Induction of early-season cyclicity 43  
5.3 Shortening the luteal phase 47  
5.4 Hastening ovulation 49  
5.5 Synchronisation of oestrus and ovulation 50  

6. **The Optimum Time for Breeding and the Mating Procedure** 52  
6.1 The optimum time for breeding 52  
6.2 Signs of oestrus 52  
6.3 Detection of oestrus 53  
6.4 Teasing technique 54  
6.5 Detection of impending ovulation 54  
6.6 Restraint of the mare for mating 56  
6.7 Injuries during mating 58  
6.8 Psychological problems at mating 59  

7. **Normal Pregnancy** 60  
7.1 Development of the conceptus 60  
7.2 Anatomical and morphological changes of the uterus 63  
7.3 Placenta and fetal membranes 65  
7.4 Endocrinology of pregnancy 66  
7.5 Cervical changes 69  
7.6 Ovarian changes 69  
7.7 Multiple conceptuses (commonly twins) 70  
7.8 Duration of pregnancy 70  

8. **Pregnancy Diagnosis** 72  
8.1 Absence of subsequent oestrus 72  
8.2 Clinical examination 72  
8.3 Progesterone concentrations 73
8.4 Equine chorionic gonadotrophin 74
8.5 Placental oestrogens 74
8.6 Ultrasound examination 74
8.7 Time of ultrasound examinations for pregnancy 81
8.8 Protocol for ultrasound examination 82
8.9 Diagnosis of fetal sex 82
8.10 Uterine cysts – structures that may mimic pregnancy 83

9. Normal Parturition 85
9.1 Prediction of parturition 85
9.2 Endocrine control of parturition 85
9.3 Preparation of the environment 88
9.4 Monitoring close to parturition 88
9.5 The ‘overdue’ foal 89
9.6 First-stage parturition 90
9.7 Second-stage parturition (expulsion of the foal) 90
9.8 Third-stage parturition (expulsion of the membranes) 91
9.9 Induction of parturition 91

10. Post-partum Events 95
10.1 Uterine involution 95
10.2 Assessment of uterine involution 95
10.3 Post-partum uterine infection 96
10.4 Assessment of post-partum infection 96
10.5 Post-partum cyclicity 96

11. Normal Expectations of Fertility 99
11.1 Conception and foaling rates 99
11.2 Effect of management on fertility 99
11.3 Methods of investigating reproductive function in mares 100
11.4 Management of the mare at stud 101

12. Non-infectious Infertility in Mares 103
12.1 Prolonged dioestrus 103
12.2 Erratic oestrous behaviour early in the season 104
12.3 Erratic post-partum oestrous behaviour 105
12.4 Silent oestrus 105
12.5 Split oestrus 105
12.6 Luteinised haemorrhagic follicles 105
12.7 Cystic ovaries do not occur in mares 107
12.8 ‘Nymphomania’ 109
12.9 Granulosa cell tumour 109
12.10 Chromosome abnormalities 111
12.11 Abnormalities of the uterine tubes 112
12.12 Uterine cysts 112
12.13 Partial dilation of the uterus 113
12.14 Lesions of the cervix 114
12.15 Persistent hymen 114
12.16 Vaginal bleeding 115

13. Infectious Infertility 116
13.1 General considerations 116
13.2 Non-specific infections/transient endometritis 117
13.3 Mares susceptible to mating-induced endometritis 121
13.4 Chronic endometritis 124
13.5 Venereal pathogen endometritis 125
13.6 Pyometra 126

14. Swabbing and Biopsy Techniques and Diagnosis of Endometritis 128
14.1 Clitoral swabbing (for venereal disease carriers) 128
14.2 Uterine swabbing 130
14.3 Processing the swab 134
14.4 Endometrial biopsy 135

15. Treatment and Prevention of Endometritis 138
15.1 General considerations 138
15.2 Transient endometritis 139
15.3 Mating-induced endometritis 139
15.4 Chronic endometritis 144
15.5 Venereal pathogen endometritis 145
15.6 Pyometra 146
15.7 Urovagina 148
15.8 Cystic endometritis 149
15.9 Post-partum metritis 149

16. Viral Causes of Infertility 151
16.1 Equine herpesvirus 1 and 4 (EHV1 and EHV4) 151
16.2 Equine herpesvirus 3 (EHV3) – coital exanthema 151
16.3 Equine viral arteritis (EVA) 152

17. Problems during Pregnancy 153
17.1 Definitions in pregnancy development 153
17.2 Resorption 154
17.3 Mummification 154
17.4 Abortion 154
17.5 Pseudopregnancy 155
17.6 Pregnancy failure 155
18. Causes of Pregnancy Failure 158
   18.1 Bacterial infection 158
   18.2 Equine herpesvirus 1 and 4 (EHV1 and EHV4) 159
   18.3 Equine viral arteritis (EVA) 161
   18.4 Other infectious causes of abortion 162
   18.5 Multiple conceptuses (often twins) 163
   18.6 Mycotic abortion 163
   18.7 Miscellaneous causes of abortion 163

19. Other Abnormal Events during Pregnancy 165
   19.1 Premature placental separation 165
   19.2 Uterine torsion 165
   19.3 Ruptured pre-pubic tendon or abdominal wall rupture 166
   19.4 Hydrops of the fetal membranes 166
   19.5 Pseudopregnancy 166
   19.6 Prolonged gestation 167

20. Reducing Infertility Caused by Multiple Conceptuses 168
   20.1 Prevention of twin conception 168
   20.2 Diagnosis of twins 169
   20.3 Dealing with twin conception 170

21. Retained Placenta 173
   21.1 Normal expulsion 173
   21.2 Examination of the membranes 173
   21.3 Abnormal expulsion 174

22. Other Post-partum Problems 178
   22.1 Vestibular and vulval trauma 178
   22.2 Perineal lacerations 178
   22.3 Recto-vaginal fistula 180
   22.4 Ruptures of the cervix and vagina 180
   22.5 Uterine rupture 180
   22.6 Uterine haematoma 181
   22.7 Internal haemorrhage 181
   22.8 Uterine prolapse 181
   22.9 Invagination of the uterine horn 182
   22.10 Hypocalcaemia 182
   22.11 Post-partum metritis 182
   22.12 Management of the engorged mammary gland 183

23. Dystocia 184
   23.1 Definitions 184
   23.2 Significance of dystocia 185
23.3 Recognition of dystocia 185
23.4 Non-surgical treatment of dystocia 186
23.5 Surgical treatment of dystocia 188

24. Manipulation of Reproduction 190
24.1 Artificial insemination 190
24.2 Embryo transfer 195
24.3 Alternative methods of fertilisation 198
24.4 Alternative insemination techniques 199

25. The Normal Stallion 200
25.1 Anatomy 200
25.2 Endocrine control of stallion reproduction 205
25.3 Physiology of sperm production 208
25.4 Mating behaviour 209

26. Examination of the Stallion for Breeding Soundness 212
26.1 Bacteriological swabbing 212
26.2 Physical examination 214
26.3 Semen collection 215
26.4 Semen evaluation 217
26.5 Endocrinological testing of the stallion 222
26.6 Ultrasonographic examination of the stallion’s reproductive tract 223
26.7 Endoscopic examination of the stallion’s reproductive tract 224
26.8 Testicular biopsy 225

27. Diseases of the Reproductive Tract of the Stallion 226
27.1 Venereal infections 226
27.2 Poor libido 228
27.3 Abnormalities of mating 228
27.4 Poor semen quality 230
27.5 Abnormalities of the ejaculate 232
27.6 Diseases of the scrotum 233
27.7 Diseases of the testes 234
27.8 Diseases of the epididymis 239
27.9 Diseases of the spermatic cord 240
27.10 Diseases of the internal genitalia 240
27.11 Diseases of the sheath 241
27.12 Diseases of the penis 242
27.13 Stallion vices 246
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td>Reproductive Surgery of the Stallion</td>
<td>247</td>
</tr>
<tr>
<td>28.1</td>
<td>Castration</td>
<td>247</td>
</tr>
<tr>
<td>28.2</td>
<td>Cryptorchid surgery</td>
<td>251</td>
</tr>
<tr>
<td>28.3</td>
<td>Penile surgery</td>
<td>252</td>
</tr>
<tr>
<td>29.</td>
<td>Miscellaneous Conditions</td>
<td>254</td>
</tr>
<tr>
<td>29.1</td>
<td>The ‘riggy’ gelding</td>
<td>254</td>
</tr>
<tr>
<td>29.2</td>
<td>Rectal tears</td>
<td>256</td>
</tr>
<tr>
<td>30.</td>
<td>Breeding Finances</td>
<td>260</td>
</tr>
<tr>
<td>30.1</td>
<td>Breeding terms</td>
<td>260</td>
</tr>
<tr>
<td>30.2</td>
<td>Hidden costs at stud</td>
<td>261</td>
</tr>
</tbody>
</table>

Appendix: Codes of Practice 263
Further Reading 300
Index 301
Preface

In its third edition, this book returns to the original title, ‘Fertility and Obstetrics in the Horse’. The book was initially published 16 years ago by my inspiration and teacher, the late Dr W. Edward Allen. In a sense this remains Ed’s book and I have attempted to maintain his vision of an up-to-date text in which concise but clinically useful information is presented in a readily accessible format.

In this edition the entire text has been revised. Particular attention has been paid to male and female endocrinology and exogenous control of breeding, the aetiology, diagnosis and practical treatment of various types of endometritis, and the evaluation and treatment of stallion diseases. I am grateful to Mr John Newcombe, Dr Jon Pycock and Professor Rob Lofstedt for argument and debate that has influenced my clinical opinion and, indirectly, to the way in which I have presented the new text.

I am indebted to Dr Sarah Freeman for providing some of the new figures, and for caring for our two beautiful daughters and supporting me during the preparation of this edition.

I hope that Ed’s book continues to be a primary source of information for breeders, veterinary students and practitioners, as well as stimulating further study of equine reproduction.

G.C.W. England, 2004
### Abbreviations

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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>artificial insemination</td>
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<tr>
<td>AV</td>
<td>artificial vagina</td>
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<tr>
<td>BHS</td>
<td>β-haemolytic <em>Streptococcus</em></td>
</tr>
<tr>
<td>CAM</td>
<td>chorioallantoic membrane</td>
</tr>
<tr>
<td>CEM</td>
<td>contagious equine metritis</td>
</tr>
<tr>
<td>CEMO</td>
<td>contagious equine metritis organism</td>
</tr>
<tr>
<td>CH</td>
<td><em>corpus haemorrhagicum</em></td>
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<tr>
<td>CL</td>
<td>corpus luteum</td>
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<tr>
<td>DEFRA</td>
<td>Department for the Environment, Fisheries and Rural Affairs</td>
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<tr>
<td>eCG</td>
<td>equine chorionic gonadotrophin</td>
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<tr>
<td>EHV</td>
<td>equine herpesvirus</td>
</tr>
<tr>
<td>ET</td>
<td>embryo transfer</td>
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<tr>
<td>EVA</td>
<td>equine viral arteritis</td>
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<tr>
<td>FSH</td>
<td>follicle stimulating hormone</td>
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<tr>
<td>GnRH</td>
<td>gonadotrophin releasing hormone</td>
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<tr>
<td>hCG</td>
<td>human chorionic gonadotrophin</td>
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<tr>
<td>ICSI</td>
<td>intra-cytoplasmic sperm injection</td>
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<tr>
<td>LH</td>
<td>luteinising hormone</td>
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<tr>
<td>PG</td>
<td>prostaglandin</td>
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<tr>
<td>PMN</td>
<td>polymorphonucleocyte</td>
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<tr>
<td>PMSG</td>
<td>pregnant mare serum gonadotrophin</td>
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<td>VI</td>
<td>virus isolation</td>
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</tbody>
</table>
Chapter 1
Anatomy of the Mare’s Reproductive Tract

1.1 General

An understanding of the normal anatomy of the mare’s reproductive tract is important to enable distinguishing between normality and reproductive disease. The morphological appearance of the caudal reproductive tract and the normality of the perineum are crucial for maintaining fertility in the mare. Common distortions of the normal anatomy may result in the presence of air within the vagina, increasing the opportunity of bacteria to reach the cranial reproductive tract (13.2).

The normal anatomy provides three ‘seals’ to protect the reproductive tract:

(1) The vulval seal – created by apposition of the vulval lips;
(2) The vestibulo-vaginal seal – created by the narrowing at the junction between the vestibule and the caudal vagina;
(3) The cervix.

1.2 Perineum

The perineal tissue surrounds the vulva and includes tissue ventral to the tail and around the anus. This region is frequently injured at foaling.

- The normal anus is dorsal to, and vertically in line with, the vulva (Fig. 1.1).
- The normal position results in faecal material falling clear of the vulva at defecation.
- The position of the anus is influenced by the body-condition score of the mare. In thin mares, for example, the anus may be sunken-in, i.e. cranial in position compared with normal.

1.3 Vulva

The vulva lies ventral to the anus and is therefore at risk of faecal contamination. The normal vulva is almost vertical in position, and the vulval lips are