



## Endometrial histology in a semi-feral pony herd of known high lifetime reproductive efficiency

S.M. McDonnell\*, K.M. Janson Whitesell, P.L. Sertich

University of Pennsylvania School of Veterinary Medicine, Kennett Square, PA 19348, USA

Since 1994, a herd of Shetland-sized ponies established with 13 mares and 13 stallions has been maintained for study of reproductive physiology and behavior under natural social and environmental conditions. Management includes supplemental hay in winter and removal of equal numbers of males and females annually to maintain 50 to 100 animals. Of 85 fillies born and kept in the herd through maturity, 79 were first observed in estrus and confirmed pregnant at 10 to 16 months of age to deliver foals at 22 to 27 months of age, with the remaining 6 confirmed pregnant as 2-year-olds. Mares kept in the herd have typically produced foals annually, consistent with conception at first or second postpartum estrus. Toward understanding factors contrib-

mares for histological evaluation following the Kenney protocol [Kenney, JAVMA 1978;172:241-262] with the addition of trichrome staining. Resulting classifications included Categories I, IIA, and IIB, with none as Category III. Periglandular fibrosis ranged from none to moderate. As expected postpartum, for 18 mares lymphocytic endometritis ranged from mild to moderate. The one exception was moderate-severe. Comparing younger (2-9 yrs, n=11) to older mares (10-16 yrs, n=8) differences in (a) proportions classified as I, IIA and IIB, (b) proportions with greater than mild lymphocytic endometritis, as well as (c) proportions with greater than mild periglandular fibrosis, were not significant (Fishers exact tests,  $P > 0.10$ ).

**Table 1**

2013 Age (Years)	Age at 1st Parturition (Months)	Number of Pregnancies	Kenney Category	Periglandular Fibrosis	Endometritis-lymphocytic	2013 days open (month/day of parturition)
<b>Younger Mares (n=11)</b>						
2	25	1	I	none	mild-moderate	23 (5/12)
3	27	2	IIA*	mild	mild	30 (5/17)
5	23	4	IIA	mild	mild	14 (7/20)
6	22	5	IIA	mild	moderate	7 (7/9)
7	25	6	IIA*	mild	moderate	56 (3/17)
7	24	6	IIA*	mild	moderate	57 (3/19)
7	26	5	I	none	mild	10 (5/25)
8	24	6	IIA*	mild	mild	40 (3/27)
8	35	6	IIB*	mild	moderate	23 (5/5)
9	24	8	I	mild	mild	42 (3/17)
9	24	8	IIA*	mild	mild	7 (4/21)
<b>Older Mares (n=8)</b>						
10	24	9	IIA	mild	mild	34 (3/22)
10	25	8	IIA	mild	mild	20 (4/22)
11	22	10	IIB*	mild	moderate-severe	21 (4/21)
12	22	11	IIA*	none	mild	30 (4/11)
12	23	11	IIA	mild	mild	19 (3/15)
12	32	10	IIA	mild	mild	23 (4/14)
15	35	13	IIA	mild	mild-moderate	21 (4/23)
16	25	14	IIA*	moderate	mild-moderate	18 (5/12)

\*Histology report comment "category primarily influenced by inflammation which, if resolves, would improve"

uting to sustained fecundity, in 2013 endometrial biopsy samples were obtained on Day 6 postpartum from 19 of 32

### Acknowledgements

This is a Dorothy Russell Havemeyer Foundation project.

\* Presenting author