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CHOSEN REPRODUCTIVE INDICATORS OF SHETLAND MARES[1]

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Abstract: The aim of the study was the analysis of reproductive indicators of Shetland mares. The analysis was carried out on information concerning 12 mares (44 horse-seasons) used in breeding in 2000-2003 in Chrzanów stud. All mares were divided into groups concerning their age at fertilization: I (2-5 years), II (6-7 years) III (8-11 years). The improving tendency of fertility, foaling mares and foals born alive indicators was observed in groups of 6-7 years and 8-11 years old mares. The highest number of barren mares was noted in a group of the youngest mares; in this group the highest percent of abortion was stated. The highest number of weaned and reared foals was observed in group of 6-7 years old mares. The youngest mares were characterized by highly significantly shortest pregnancies. Average length of periods between pregnancies and between foalings were significantly and highly significantly shorter in group of 6-7 years old mares comparing to younger and older mares.

Key words: Shetland pony, mare's age, reproductive indicators

Introduction

It is generally known that Shetland Ponies gained their special traits like endurance, very good health, diseases resistance and high fertility as an effect of very difficult natural and climatic conditions of the area of Shetlands origin. In cultural conditions which they are bred there is a possibility to loose these traits. *Van Buiten et al*. (1998) noted that fertility of Shetland ponies varied between 48% and 80% concerning the breeding system. The aim of this study was to analyze the reproductive indicators of Shetland mares divided into age groups.

Matrial and Methods

Materials for this work were collected in Shetland Ponies Stud in Chrzanowo between 2003-2004 years. The research concerned 12 mares used in breeding in 2000-2—3 years (44 observations). Evaluated mares were divided into groups according their age at fertilization: I. (2-5 years), II (6-7 years), III (8-11 years). For each age group some reproductive indicators were evaluated: fertility, barren, foaling mares, abortions, twin pregnancies, foals born alive, weaned foals, foals' rearing, mortality of foals and length of pregnancy, of period between pregnancies, of period between foalings (*Łuszczyński et al. 2004a; Łuszczyński et al.2004b*). Obtained results were statistically verified using one factor variance analysis and NIR test.

Results and discussion

The lowest fertility percent was stated for the youngest mares (64,3%) and for the oldest was the highest – 86,7% (Tab. 1).

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Table 1. Chosen reproductive indicators of Shetland pony.

Indicator [%]	Mares groups according to their age [years]		
	I. 2-5 n=14	II. 6-7 n=15	III. 8-11 n=15
% of fertility	64,3	73,3	86,7
% of barren mares	35,7	26,7	13,3
% of foaling mares	57,1	73,3	86,7
% of abortions	7,1	0	0
% twin pregnancies	0	0	0
% of foals born alive	57,1	73,3	80,0
% of weaned foals	88,9	100,0	92,3
% of foals' rearing	100,0	100,0	92,3
% of foals mortality	0	0	8,3
duration of pregnancy [days]	310,0 AB	337,4 A	332,2 B
lenght of period between pregnancies [days]	279,6 A	60,9 AB	281,0 B
lenght of period between foalings [days]	534,3 a	405,1 aA	602,7 A

Means with the same small letters differ significantly at P≤ 0.05 and with the same capital letters, highly significantly at P≤ 0.01

Mares 2-5 years old were characterized by the highest indicator of barren opposite to 8-100 years old mares. In third age group % of foaling mares was 86,7% and was higher than in firs or second group (respectively 13,4 % and 29,6 %). High percent of abortion was observed in groups of the youngest mares (7,14%). In other groups any case of abortion was noted. In all analyzed population of Shetland mares any case of twin pregnancies were observed. The highest indicator of foals born alive (80%) was characterized for 8-10 years old mares, the lowest (50%) was noted for the youngest mares. From all mares from second age group all foals were weaned. Similar high average of this indicator (more than 90%) was shown for the oldest mares . The lowest percent of weaned foals was characterized for the youngest mares (88,9%). He highest value of reared foals indicator was observed in group of mares 2-5 and 6-7 years old (100%), the lowest percent of reared foals (92,3%) was obtained for the oldest mares. The only age group, in which the case of foals mortality was observed (8,3%) was the group of 8-10 years old mares. In other groups any mare lost her foal in first week after parturition. The shortest length of pregnancy – 310 days was observed for mares in I age group. Highly significantly longer, respectively for 22,23 and 27,45 days lasted pregnancies, lasted pregnancies o folder mares. The shortest period between pregnancies was noted for 6-7 years old mares (60,9 days) and it was highly significantly shorter than in the youngest mares (279,67 days) and in the oldest mares, where this indicator obtains ed the highest value (281,00 days). Similar tendency was noted for period between foalings. In group of mares from II group this period lasted only for 405,14 days and was highly significantly shorter than for mares from I group (536,33 days) and from III group (602,73 days). During the analysis of similar subjects in Thoroughbred horses *Łuszczyński et al.* (2004a) stated that the highest fertility and percent of foals born alive was characterized for the youngest mares, the lowest for 16-year old mares so opposite than in this work. The significant effect of mother's age on fertility and percent of foals born alive was proved by *Pikuła et al*. (1997) who stated that the best fertility was obtained by the youngest mares but they are also characterized by the lowest percent of weaned foals. Better results concerning reproduction were obtained by mares younger than 10 years as it was stated by *Tomczyński et al*. (1988), oraz *Brucka et al*. (1993). *Hemberg et al*. (2004) noted that the percent foals born by 13-years old and older mares is significantly lower. Similarly like in this work, the period of pregnancy was lengthened together with the mares age (*Łuszczyński et al., 2004b*; *Walkowicz and Jodkowska, 2003*). Similar tendency was observed by *Giger et al*. (1997) for Freiberger mares. Summing up it is necessary to state that higher value of fertility, foaling mares and live born foals indicators were characteristic for older mares. The youngest mares obtained higher percent of barrens and abortions. The highest number of weaned and reared foals was 6-7 years old mares. Highly significantly shorter pregnancies were characterized for the youngest mares. The average length of periods between pregnancies and foalings for 6-7 years old mares was highly significantly and significantly shorter than for the oldest and the youngest mares.

ODABRANI REPRODUKTIVNI POKAZATELJI KOD ŠETLAND KOBILA

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Rezime

Opšte je poznato da su šetland konji dobili svoje posebne osobine kao što su izdržljivost, veoma dobro zdravstveno stanje, otpornost na bolesti i visoku plodnost kao rezultat uticaja veoma teških prirodnih i klimatskih uslova u regionu Šetland. U novim uslovima gajenja ove rase postoji opasnost od gubitka tih osobina. *Van Buiten et al*. (1998) su zabeležili da plodnost šetland ponija varira između 48% i 80% zavisno od sistema gajenja. Cilj ovog istraživanja je bio analiza reproduktivnih indikatora kobila rase šetland. Analiza je izvedena na podacima za 12 kobila (44 konjske sezone) koje su gajene od 2000-2003 na ergeli Chrzanów. Sve kobile su bile podeljene u grupe prema uzrastu pri oplodnji: I (2-5 godina), II (6-7 godina) III (8-11 godina). Tendencija poboljšanja plodnosti, kobile koje su se ždrebile i broj živorođenih mladunaca su indikatori koji su praćeni u grupama kobila starosti 6-7 godina i 8-11 godina. Najveći broj jalovih kobila je zabeležen u grupi najmlađih kobila; u toj grupi je registrovan i najveći procenat pobačaja. Najveći broj zaličenih i odgajenih mladunaca je zabeležen u grupi kobila starosti 6-7 godina. Kod mladih kobila je zabeležen signifikantno kraći period bremenitosti. Prosečna dužina perioda između trudnoće i ždrebljenja je bila signifikantno manja i visoko signifikantno manja kod kobila starosti 6-7 godina u poređenju sa mlađim i starijim kobilama.

Ključne reči: šetland poni, starost kobile, reproduktivni indikatori

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