

The composition of intestinal ciliates in kulans and wild horses kept on common grazing

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Equids are known to harbour a large number of ciliate species closely related to those from the ruminants, but inhabiting the large intestine of their hosts. The present study was aimed at the comparison of intestinal ciliate composition in kulans (*Equus hemionus kulan*) and wild horses (*E. przewalskii*), kept on semi-wild conditions in the same enclosure in Askania-Nova plain reservation (Ukraine).

A set of 10 samples was taken along the large intestine from each animal postmortally. Each sample of digesta was strained and intestinal liquid was fixed by 10 % formol solution (1:1). Ciliate species were identified following the descriptions of Strelkow (1939, Uchen Zap Leningrad Pedagog Inst Gert, 17, 1-262).

As a result 19 genera, 50 species and 6 forms of ciliates were registered. All species were known before from domestic horses. Composition of ciliate species in kulans and wild horses was rather similar, 32 species and 32 forms being common for both hosts. However, some of the taxa were host-specific, i.e. 9 species and 4 forms were only found in horses and 9 species in kulans only.

Two main groups of ciliates are usually discerned in horse - entodiniomorphs (Entodiniomorpha) and holotrichs (Buetchliidae and Paraisotrichidae). Most of the equids' entodiniomorphs are large in size, with well-developed endoplasmic sac. They may ingest and degrade plant fragments (Bonhomme, 1985, *Reprod Nutr Develop*, 25, 1A, 127-139). The holotrichs are smaller, without sac and engulf tiny plant particles, the content of plant cells and bacteria. So, the biochemical capabilities of these ciliates might be different. There were significant correlations ($P < 0.01$) between the number of entodiniomorphs (E) and holotrichs (H) species in samples ($r = 0.384$ and 0.652 in kulans and horses, respectively). Mean E/H ratio in kulans was twice higher than in wild horses ($P < 0.001$).

The result of the present study demonstrates the occurrence of some difference between ciliate composition in the two hosts in spite of common grazing. Significant difference was in their E/H ratio, that may indicate existence of the different food selection and/or peculiarities of digestion between two non-domestic equid species.

Host	Number of ciliate species and forms			E/H ratio per specimen	
	total	max	mean	mean	SE
Kulan (n = 14)	41 spp + 2 ff	28	13	1.23	0.15
Wild horse (n = 12)	41 spp + 6 ff	25	14	0.64	0.06