

1.01 Izvirni znanstveni članek

UDK 911.53:636.13(497.472)"1580/1640"

Prejeto: 1. 10. 2015

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## Izbrani vidiki okoljske zgodovine kobilarne Lipica od ustanovitve do začetka tridesetih let 17. stoletja\*

### IZVLEČEK

*Ustanovitev deželnoknežje kobilarne je spremenila okoljske in gospodarske razmere obsežnega dela Krasa in okolice. Razprava na podlagi rokopisov iz graškega arhiva dvorne komore obravnava sledeča vprašanja: 1. številčnost kobilarniške črede in njene spremembe, 2. pašna območja za kobile in žrebeta, 3. ukrepi varovanja živine na paši, 4. trajanje pašne dobe, ki se je v času spreminjalo zaradi naravnih in družbenih dejavnikov, 5. urejanje, čiščenje in varovanje kalov ter nadaljnje z njimi povezano zgodnjenoovoveško ekološko znanje, 6. negovanje travnikov s hrasti ter zgodnjenoovoveške navedbe ekološke vloge drevja na kraških travnikih, 7. vpliv spremenljivih okoljskih razmer na oskrbo kobilarne s senom ter podatki o zgodnjenoovoveški negi okoliških travnikov, 8. oskrba kobilarne z ovsom.*

### KLJUČNE BESEDE

*zgodnji novi vek, okoljska zgodovina, kulturna pokrajina, kali, pašniki, travniki, podnebje, konjereja, Kras, Lipica*

### ABSTRACT

#### SELECTED ENVIRONMENTAL HISTORY ASPECTS OF THE LIPICA STUD FARM FROM ITS FOUNDATION TO THE EARLY 1630s

*Foundation of the princely stud farm altered environmental and economic conditions on extensive parts of Karst and its surroundings. Based on handwritings, preserved in the archives of court's treasury in Graz, the following issues are discussed: 1. numbers of livestock belonging to the stud farm and their changes, 2. territorial distribution of pastures for mares and foals, 3. measures to protect grazing livestock, 4. duration of grazing period that was changing due to ecological and societal factors, 5. establishment, cleaning and protection of artificial waterholes as well as further early modern ecological knowledge related to them, 6. management of meadows with oak trees and early modern records on ecological functions of trees in karst meadows, 7. environmental change influence on hay provision and data on early modern meadow management in the surroundings of Lipica, 8. stud farm oats supply.*

### KEY WORDS

*Early Modern Period, environmental history, cultural landscape, artificial waterholes, pastures, meadows, climate, horse breeding, Karst, Lipica*

\* Dr. Mihi Preinfalku se zahvaljujem za vključitev članka v tematsko številko Kronike o Krasu, gimnazijski sošolki Urši Možina Povšič in Robertu Povšiču pa za prijazno gostoljubje, saj sta mi v času, ko mi sredstva za raziskovalna potovanja niso na voljo, omogočila brezplačno bivanje v Gradcu v času arhivskega dela.

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## S U M M A R Y

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### Selected environmental history aspects of the Lipica stud farm from its foundation to the early 1630s

Based on analysis of written sources from the archives of the court's treasury in Graz, the article discusses water and fodder supply of the Lipica stud farm, situated on the Karst plateau, as well as the issues of adequate pastures, from 1580s to the early 1630s. Taking into consideration the fact that Lipica is located close to the Adriatic Sea, winter temperatures are low, on average close to the freezing point, but alternating wind directions cause their quick changes. An account from 1632 already recognized vicinity of the sea, periods of warm southerly wind and openness of the landscape as main factors normally leading to melting of entire snow cover in less than two to three days. Vegetation period is characterised by winter dormancy. Climate, porous bedrock and in many places shallow soil result in drought

hazard. In general, the amount of precipitation is not extremely low; however in intervals of pronounced evapotranspiration quick thunderstorms prevail. In winters, strong dry wind raises the drought hazard substantially.

About 200 or more mares, colts and stallions were frequently present in Lipica in the early 17<sup>th</sup> century. Life cycle, regular displacement of animals and measures taken to improve the breeding methods caused considerable variations in numbers of reared princely livestock. In general, number of animals in 1630s was much lower than two decades earlier. The number of mares, colts and stallions, which were expected to spend the winter 1632/1633 in Lipica, was estimated to about 100. Personnel took care that breeds of horses were preserved.

Mares and colts were grazing in the majority of the year. According to data from 1632 and 1633 grazing period usually lasted from March to Christmas. Severe winters, like the one in early 1608, caused scarcity of hay. An important measure to mitigate the threat of severe winter was harvesting huge amounts of hay, far exceeding usual consumption. When stocks of hay were insufficient, they also bought additional ones; such cases seem to have accumulated in the final part of the observed time frame although number of livestock reared in Lipica was at that time much lower than earlier. When there was no snow cover, grazing period lasted the whole year long. In winter, herd was grazing on dry plants. It led to disputes with peasants from neighbouring villages who wanted to burn dry grass in late winter to promote growth of young plants. Even ecclesiastical authorities were activated by the Inner Austrian court to eliminate this practice in the pastures, which were in the interest of the stud farm. Colts, at least, were taken to shady pastures in summer, lying more than 30 kilometres away. Other pastures were situated closer to the stud farm but only some of them were in its immediate vicinity. Grazing animals were looked after by herdsman and dogs; there were 6 dogs at the stud farm in 1587. Moreover, from 1580s on, pecuniary awards were paid to hunters for killed wolves to protect the princely stud farm. The interest of local inhabitants in this kind of additional income decreased in the early 17<sup>th</sup> century because the awards were reduced. The record of wolf attack in 1632 proves that only young animals were killed by the predator on that occasion.

Stallion rearing was entirely different. They were kept in barns whole year long. Formerly they took them for short walks e.g. once a week but in the latter part of the observed time frame they almost entirely ceased to offer them this kind of recreation and a farmhand noticed how harmful it was to them. They were main oats consumers in Lipica. Huge amounts of grain of this cereal species were needed yearly to feed them. Together with dogs they ate e.g. 300 hec-

tolitres of oats per year. Oats, consumed in Lipica, was grown e.g. in the Habsburg part of Istria, or in the seignury of Postojna/Adelsberg. Difficulties in oats supply were consequences of both, natural (unfavourable weather) and societal factors.

Hay meadows in the vicinity of Lipica were overgrown by trees, mainly oaks (e.g. *Quercus cerris*). The area of karst meadows cleared of stone was enlarged shortly after the foundation of the stud farm. One of the most important ecological functions of tress in these agro-ecosystems – shading the area in summer – was recognized in the observed period. The importance of conservation of trees for shadow was stressed as early as 1581. In 1638, it was emphasized that bushes suppressing growth of grass and young tress would have to be removed and that old trees would have to be cut and replaced by new ones in order to preserve shadow. Mowing dates were late promoting quality regeneration of grasslands. Drought (e.g. in 1610) or high number of days with precipitation in the time of hay harvest (e.g. 1609 and 1633) rendered sufficient fodder supply difficult. Sources list a series of problems in the case of delayed mowing dates, like beginning of period with morning dew, lower air temperatures and decrease in day-length, all leading to longer drying period.

Artificial waterholes were main sources of water for the herd from Lipica. Foundation of the extensive stud farm called for arrangement of new waterholes following the examples of the existing ones. New waterholes were needed not only within the extensive wall surrounding the main complex of the stud farm or in its vicinity, but also on distant pastures, like in the vicinity of Rupingrande/Repen in 1602. Environmental conditions, namely the clay-rich soil horizon in the bottom of dolines, enabled fairly easy establishment of waterholes. However, also labour-intensive procedures were carried out, e.g. digging of ditches, which raised the volume of collected water. Afterwards, maintenance of waterholes – mainly removal of excess mud – was needed. Shortly after the stud farm was founded, the main waterhole lay outside the stone wall around the main complex of the stud farm. At that time, this waterhole was surrounded by a wall, the door was locked and keys held by herders from the stud farm. This was exceptional in the context of the Karst. Supervision of waterholes was no peculiarity there, but, in general, they were only overseen during droughts. However, the wall around the waterhole turned out to be uncomfortable even for princely animals which were allowed to drink there, thus the wall was removed. During severe droughts, like the one in early 1605, many waterholes dried leading to disputes with local inhabitants over the use of the remaining water and the nearby grazing land. A waterhole in the vicinity of Rupingrande/Repen had allegedly been connected with karst ground water according to a source from 1605.