http://www.moderntechno.de/index.php/meit/article/view/meit36-00-002
DOI: 10.30890/2567-5273.2024-36-00-002

UDC 619:636.32/599.735.3

TECHNOLOGIES FOR IMPROVING THE NATURAL FOOD SUPPLY OF WILD UNGULATES (CERVIDAE)

ТЕХНОЛОГІЇ ПОКРАЩЕННЯ ПРИРОДНОЇ КОРМОВОЇ БАЗИ ДИКИХ КОПИТНИХ ТВАРИН (CERVIDAE)

Pepko V.O. / Пепко В.О.
c.a.s., senior lecturer. / к.с.-г.н., старший викладач
ORCID: 0000-0003-2687-1958
Vinnytsia National Agrarian University, Vinnytsia, Sonyachna str., 3, 21008
Вінницький національний аграрний університет, Вінниця, Сонячна, 3, 21008

Abstract. *Reindeer breeding in Ukraine is becoming widespread and is being formed as a new direction in the field of animal husbandry. Breeding and maintenance of animals in the conditions of farms requires the development and implementation of modern approaches to the system of maintenance, animal welfare criteria, improvement of the system of feeding (supplementation), monitoring and prevention of diseases. The scientific sources of the literature, which contain research data of domestic scientists on issues of ensuring the welfare of deer, have been analyzed. Features of digestion and feeding ecology of deer are given. The technological aspects of improving pastures for deer using mixtures of perennial grasses are highlighted.*

Key words: *grass mixtures, exchangeable energy, pasture, hunting economy, wild ungulates*

Introduction .

To date, reindeer herding is becoming widespread in Ukraine, as the newest direction in the field of animal husbandry. In many regions, networks of aviaries and farm complexes have formed, which specialize in keeping and breeding animals of the Deer family. For effective keeping and breeding of deer, it is necessary to develop and implement modern approaches to the system of criteria for assessing animal welfare, improving feeding (supplementing) systems, monitoring and disease prevention [1, 2].

In the conditions of modern natural and climatic changes and anthropogenic load on the environment, it is becoming more complicated processes interaction in the system wild animals - the environment environment - activity man, which significantly affects the population of wild ungulates in Europe [2]. Breeding of animals in enclosures determines growth the number and density of animals in the conditions fragmentation natural stations housing (mainly in a limited area), which can lead to the depletion of the natural fodder base and, accordingly, has a negative impact on rural and forest economy [2,3].

In order to prevent the deterioration of the structure of forest plantations, the food of agricultural crops, the migration of animals released into natural ecosystems, as well as to solve a number of issues related to the management of animal populations and their exploitation, it is advisable to create fodder fields using modern methods of agricultural technology and taking into account the ecology of animal nutrition, the peculiarities their physiology. For such fields, it is advisable to use lands that for various reasons are not used in traditional agriculture, in particular meadows, which need improvement. Increasing the productivity of such meadows can be achieved by enriching the soil with fertilizers and sowing mixtures of perennial grasses.

Main text.

Deer belong to of the suborder Ruminantia of the order Cerviformes. A characteristic feature of the digestive system of the Ruminants suborder there are previous splitting and digestion of feed, after its entry into the scar, which occurs with participation microorganisms and further assimilation products fermentation. The alimentary canal of this group of animals has a specific anatomical structure and includes the foreguts (rum, net, book) and proper stomach - abomasum. In the stomachs complex feed components are broken down into simple compounds: carbohydrates - to the volatile fatty acids, proteins - to amino acids and ammonia, and hydrogenation unsaturated of fatty acids leads to formation lipids. Volatile fatty acids are absorbed and are used by the animal organism as plastic and energetic the material C aprofita microflora stomachs, using formed ammonia, synthesizes with the participation of amino acids proteins bacteria scar. This one feature digestion Deer in conditions ability to assimilate animals indigestible for monogastrics animal cellulose and hemicellulose, and rumen in a microflora provides organism full-fledged protein and vitamins group B [4].

The main ones limiting parameters of the diet deer is content protein, energy, and also Calcium and Phosphorus. When feeding deer, the animal's body should receive at least 3 liters of water per 1 kg of dry matter. Water is especially necessary for young animals, pregnant females, as well as males in period intensive growth of horns [5].

In the city digestible protein in diets of deer is not the same and depends from many factors. For maintenance life activities of the body of the red deer in the conditions aviary (farm) 6-8 % crude protein per 1 kg of dry matter is enough feed substances. However, to provide high productivity of animals this the indicator is significant higher - 14-22% protein per 1 kg of dry matter feed substances. With the content of digestible protein in the deer diet in the amount of 5-6% by mass bodies animals during the first year of life is growing only for 10-15 kg, if there is 10% protein the increase is 25 kg, and 13 - 16% - 50 kg [4].

In the conditions of farms and aviaries farms deer kept on exclusively pasture fodder, exclusively on grain and legume concentrates or for use pasture with feeding grains mixtures - depending on production purpose. The best pasture for deer is considered herbaceous in the period of young growth deciduous plants, as well as plants late vegetation before the beginning of flowering . Energetically, such a pasture can provide contents exchange energy more than 10.5 MJME per 1 kg of dry matter substances. With increase maturity plants is happening quick decrease content exchange energy that approaches 1 MJ OE per 1 kg of dry matter substances [6].

Thus, the development of scientific and practical recommendations, measures and elements of the technology for improving summer pastures for deer is an actual applied issue at the current stage of the formation of reindeer husbandry as an industry in Ukraine.

On the first stage i improvement pastures are carried out preparatory works , namely: destruction available shrubs and small forests, leveling bushes. After clearance conduct cultivation soil from application heavy disc harrows BDN-2, mounted plow PLN5-35, mounted cultivator, heavy them water supply smooth

KGVN-1,6 rollers. Plowing conduct in the fall, on frost to a depth of 25-27 cm with a plow foreskin. In the spring are closing moisture harrowing in two tracks, carried out cultivation and sowing of grasses with grain and grass seeder with mandatory rolling before and after sowing [7].

When selecting grass mixtures, it is carried out taking into account the characteristics of the soil, seasonal phenomena in the life of deer throughout the year, taking into account gender and age. The greatest need of females in feed is observed during the summer solstice, the smallest - during the winter solstice. Males consume the least feed during the rutting period [8,9].

To provide deer with highly nutritious forage in Canada (Pasture and Forages for Wapiti) to create cultural pasture practice the use of highly productive legumes and cereals herb mixture on the basis of alfalfa [7].

Cereal plants easier adapt to adverse conditions (e.g. sour soils), so they are faster develop and prevail in grass stands. If environment favorable for legumes perennial herbs, then by selection cereals, use and application of fertilizers you can regulate the balance of the species composition of the grass stand [10]. In the selection of legumes and cereals herbal mixtures it is important that legumes perennial grasses provided high yield in mixed herbaceous and cereal components, contributing formation elastic turf and feed balance, did not suppress them. Therefore, for promotion productivity and improvement feed quality of leguminous-cereal herbage during grazing using above all need select legumes component mixtures [7].

Cereals components must be presented different biological groups - non-dense bush and rhizome species. In terms of Western Forests on medium-moist meadows with mineral soils sow in a mixture Timothy meadowsweet (5-6 kg/ha), firewood meadow grass (*Festuca pratensis* Huds., 7-8), buckwheat collective (*Dactylis glomerata* L., 4-5), or stoker thornless (*Bromus inermis* Leyss., 6-8), fenugreek perennial (*Lolium perenne* L., 4-5 kg/ha). On peat soils instead fenugreek perennial , which freezes, sow 3-4 kg/ha of kostyrica red (*Festuca rubra* L.) or thin-legged meadowsweet (*Poa pratensis* L.). On areas with frequent waterlogging sow grasses that are resistant to excess moisturizing : foxtail meadow (*Alopecurus pratensis* L., 7-8 kg/ha), warbler ordinary (canary) (5-6), firewood reed (*Festuca arundinacea* Schreb., 6-8), thin legs swamp (*Poa palustris* L., 3-5), broom white (*Agrostis stolonifera* L., 2-3 kg/ha). Such herbal mixtures able provide up to 7.8 t/ha dry substances from by city of crude protein up to 10.57%. General crude protein yield is 0.61-0.82 t/ha [11].

Sowing herbal mixtures are carried out with grain and grass seeder in a spread-line manner. Seed fenugreek perennial, wheatgrass national team, Košice red they are sown in rows through coulters to a depth of 0.5-1.5 cm, and legumes components and timothy Luchnoi - spread over the surface from a smaller one seed box [7].

In a year sowing is not recommended graze grass resistant, if not used cover culture. For spring coverless method of sowing in the case achievement altitude plants 25-30 cm herbaceous they mow, thereby destroying the weeds as well. Considering low level software soil nutritious elements to receive highly productive pasture entry is mandatory mineral fertilizers. Before sowing it is recommended to

introduce perennial herbs mineral fertilizers in a dose of $N_{60} P_{60} K_{90}$ [11].

In autumn make phosphorous and potassium fertilizers in a dose of $P_{60} K_{90}$ and feed cereal grasses with nitrogen in the spring at a dose of N_{60} kg/ha active substances. Spring introduction are divided into two stages: at least 60% of the norm of fertilizers are applied before the start of active growth and development of the grass stand (immediately after restoration vegetation), and the rest - after the first pasture cycle use The best way to use a grass stand is small-scale grazing for which animals stay in one pen for 1-2 days, as well as portioned when they are in one area are no more than 3 - 4 hours. Maximum effect from portioned grazing is achieved after weeding of overgrown grass (more than 30 cm). Grassland grazing is advisable start after his achievement of the pasture maturity, i.e. for a height of 15-25 cm, moreover digestion start from those paddocks in the grass whose prevail early ripening species cereal grasses [7].

The second cycle is advisable start after 20-25 days from the beginning of the first Detachments which the animals did not make it fall out to the beginning earing cereal grasses, mowed for harvesting fodder for the winter. For pasture period carry out up to 4-5 cycles digestion.

Period between with two cycles of digesting leguminous and cereal grasses can change in spring within 20-25 days, in the middle summer - 30-35 days, in autumn - 45-50 days. Grazing of animals was organized in such a way that the beginning of calving each year began with different ones squads variable hay-pasture using increases viability plants and productivity pasture [7].

Conclusions .

Thus, the creation of fodder fields and pastures using mixtures of perennial grasses for deer is an integral part of the system of biotechnical measures. Improving the system of reindeer feeding by improving the natural fodder base contributes to solving a number of economic issues related to livestock management, preservation of the composition and structure of phytocenoses, and prevention of animal migration.

The organization of farms specialized in keeping and breeding deer is possible in territories that are not used in traditional agriculture. For tinning it is advisable to use pastures for deer located on moderately moist soils a mixture of from timothy meadowsweet (*Phleum pratense* L.), wheatgrass collective (*Dactylis glomerata* L.), fenugreek perennial (*Lolium perenne* L.), cornflower (*Lotus corniculatus L.)* and clovers hybrid (*Trifolium hybridum L.)* .

Literature:

1. Hunchak R. V., Hunchak V. M., Soltys M. P. Red deer (Cervus elaphus L.). Some biological and production aspects of maintenance - an overview. Scientific Bulletin of the Lviv National University of Veterinary Medicine and Biotechnologies. Series: Agricultural sciences. 2024. Vol. 26, №. 100. P. 112-120. https://doi.org/10.32718/nvlvet-a10017

2. Kratyuk O. L. Typological structure of forest stands and biotope characteristics of Central Polissia enclosures. Scientific bulletin of NLTU of Ukraine. 2019. Vol. 29, № 2. P. 62-64. https://doi.org/10.15421/40290212

3. Apollonio, M., Belkin, V.V, Borkowski, J., et al. Challenges and science-based implications for modern management and conservation of European ungulates populations. Mammal Research. 2017. Vol. 62. P. 209-217. https://doi.org/10.1007/s13364-017-0321-5

4. Woodmaska I. V., Petruk A. P., Kolisnyk B. I. Ecology of deer feeding. Scientific bulletin of NLTU of Ukraine. 2016. Issue 26.1. P. 54-62.

5. Surijala-Quist, L., & Salonen, J. Effect of protein and energy supply he nitrogen utilization in reindeer Acta Zool. Fenn. 1994. Vol. 175 P. 53-55.

6. Mulley, R. C. The feed requirements of adult ed deer Nutrition Symposium: The nutrition and management of deer he grazing systems. Proceedings of a New Zealand Grassland Association (Inc) Symposium held at Lincoln University, New Zealand, 2003. P. 51-55. URL: https://www.grassland.org.nz/publications/nzgrassland_publication_2510.pdf

7. Bugryn L. M., Partyka T. V., Pokhalyuk O. M. Elements of the technology of creating pastures for red deer in conditions of aviary breeding. Scientific bulletin of NLTU of Ukraine. 2018. Vol. 28, № 2. P. 37-40. https://doi.org/10.15421/40280205

8. Cook, J. G, Cook, R. C, Davis, R. W, & Irwin, L. L Nutritional ecology of elk during summer and autumn in the Pacific Northwest. Wildlife Monographs. 2016. Vol. 195 (1). P. 1-81. https://doi.org/10.1002/wmon.1020

9. Jiang, Z., & Hudson, R.J Seasonal energy requirements of wapiti (Cervus elaphus) for maintenance and growth. Canadian Journal of Animal Science. 1994. Vol. 74(1). P. 97 - 102. https://doi.org/10.4141/cjas94-015

10. Veklenko Yu. I. Dudchenko V. I., Kharchuk A. S. The influence of the composition of grass mixtures, the rates of sowing components on the productivity of the grass stand of perennial grasses for indirect-pasture use. Fodder and fodder production. 2011. Issue 70. P. 124-129.

11. Veklenko Yu. I. Dudchenko V. I., Kharchuk A. S. Productivity of perennial pasture grass mixtures of different intensities of ripening in the conditions of the Western Polissia. Fodder and fodder production. 2015. Issue 80. P. 163-168.

Анотація. *Оленярство в Україні набуває поширення і формується як новий напрямок в галузі тваринництва. Розведення та утримання тварин в умовах фермерських господарств потребує розробки та впровадження сучасних підходів до системи утримання, критеріїв добробуту тварин, удосконалення системи годівлі (підгодівлі), моніторингу та профілактики захворювань. Проаналізовано наукові джерела літератури, які містять дані досліджень вітчизняних вчених з питань забезпечення добробуту оленів. Наведено особливості травлення та екології живлення оленів. Висвітлено технологічні аспекти покращення пасовищ для оленів з використанням сумішок багаторічних трав.*

Ключові слова: *травосумішки, обмінна енергія, пасовище, мисливське господарство, дикі копитні.*

Stat sent: 20.11.2024.