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| Research Article

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Overview of the Typical Features, Geographical Range, and Environmental Interactions of Rodents in the Samarkand Region

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Annotation
: General characteristics, distribution and ecology of rodents in the Samarkand region, By now, the fight against rodents has become a pressing issue around the world.

Keywords: rodents, red-tailed sandflies, the large vomit-like subspecies, and the grey rat**.**

INTRODUCTION

Over the subsequent years, there was a significant surge in the rodent population in the Samarkand region, leading to a substantial problem in the agricultural sector and the whole national economy. Among these, the exponential growth in the population of gray rats, particularly the mummy species, poses a significant threat to rodents. He expressed his regrets to the hypocrites, the general public, the lowly individuals, and the deceased Hutt, which were deemed inexcusable.

Aside from rats, the growing population of small red-tailed sandflies and large vomit weasels is also causing concern among the population due to their occupation of cemeteries. This increase in numbers poses a significant danger and is contributing to the rise in epidemiological cases. Currently, the battle against rats has emerged as a critical global concern. The inclusion of the subject of combatting them in the program of the World Health Organization is not without reason. Based on the information, international airports are under the jurisdiction of rail stations, ports, and the rodent species present in those areas. The number of international airports is continuously monitored.

Rats are classified as cosmopolitan species, meaning they are found around the world.

It is widely known that they took over residences, storage facilities, underground spaces, waste disposal sites, sewer systems, trenches, and the areas surrounding large cultivated land — and for several years, they efficiently managed and inflicted unparalleled damage on humanity.

In subsequent years, the increase in cultivated areas for grain in our republic generated advantageous circumstances for the rapid multiplication of rats, which were included in the count of field rodents.

Method. Rats inhabit the Samarkand region in areas near ditches, canals, rivers, lakes, collectors, and other water sources. They also reside in sites with graves, aviaries, various sorts of garbage, and subsequently migrate to villages, buildings, and warehouses. These pests not only transmit contagious parasite diseases, but also consume agricultural crops, devastate grain and cattle in significant numbers, disable buildings and communication stations, and chew through electricity and communication lines, rendering them unusable. This highlights the necessity for the creation and execution of sophisticated strategies to combat rats in a systematic manner.

All of these methods necessitate the implementation of statistical measures to control the rodent population, a comprehensive examination of species composition, the establishment of epizootiology data monitoring, the evaluation of existing methods for combating rodents, and the widespread adoption of environmentally friendly and efficient methods for practical use.

Rats have achieved global ubiquity in terms of their range, distinguishing themselves from cosmopolitan species. They may be found in temperate regions worldwide, with the exception of Antarctica. Gray bats hold the highest position globally in terms of distribution, followed by black bats in second place, and house mice in third place.

The global distribution of the gray squid (Rattus norvegicus) excludes the distant northern regions. It encompassed the entire continents of Africa and Europe, extending from Tropical Asia. Grey bats first appeared in Europe around 1550 and spread to North America in 1775 due to human activities. By the 17th century, they had occupied all of Europe and later became abundant in the Norwegian forests. They are now found distributed throughout the British Isles. The scientific designation (Rattus norvegicus) is assigned due to its prevalence in the forests of Norway. Subsequently, it was disclosed that his native country was not Norway, but Asia.

Grey rats have a high reproductive capacity and can thrive in the frigid climates of the Russian Federation, where temperatures range from 10 to 15 degrees. The Russian region has documented 140 species of rodents. Gray rats and black rats have extensive distribution ranges. According to online sources, Alaskan circumstances of -40 degrees Celsius are suitable for the survival of organisms, both in freezing conditions and in temperatures exceeding -40 degrees. During nuclear weapons testing on Engobe, an islet in the Western Pacific Ocean, American scientists have observed that only gray rats maintain genetic health. This is evident from their ability to resist exposure to radioactive rays.

The black rat (Rattus rattus) has established populations in the islands of Hindistan, Sri Lanka, Burma, southern China, Xindixitoy peninsulas, Java, Sumatra, Climantan, the Philippines, and Asia. In the Russian Federation, the Arkhangelsky and Black Sea sokhillaridn species are found in the Far East region. The Turkestan squid (Rattus turkestanicus) is found in several regions including Uzbekistan, Tajikistan, South-Western Kyrgyzstan, South Kazakhstan, Kashmir, Punjab, China, and Taiwan.

The ground or plate-toothed bat (Nesokia indica) is found in the regions of Zarafshan, Amudarya, Syrdarya, Murghab, Tedjen, Kopetdog, and the adjacent wetland areas of Afghanistan, southern China, northern Xinjiang, Pakistan, North Africa, and Asia.

The Samarkand region is predominantly inhabited by Gray and Turkestan rats. However, the Gray rats are rapidly increasing their territory and displacing the Turkestan rats, gradually overtaking the entire valley.

An empirical study on the population of rats and their preferred habitats revealed that Gray rats were more abundant in the Samarkand region, specifically in the Urgut and Oqdarya district zones. The initial surge in their population was documented in the Urgut and Oqdarya districts of the province. Subsequently, it was observed that their numbers also grew in other districts of the province and in the city of Samarkand. Our research indicates that there has been a rise in the population of gray rats in the eastern border areas, namely in red birch forests and surrounding industrial facilities.

Analysis and results. Within the vicinity of Rudaki Street Siyab market in Samarkand City, it has been observed that populations of khududi villages can reach densities of 23-45 rats per acre. Rats exhibit a diverse dietary preference, encompassing not only cereals but also fruits, vegetables, legumes, seeds, and grains in cobs. Predators of this species have the ability to consume poultry, including their eggs and young, as well as bite domesticated animals and prey upon newly hatched offspring.

The amount of grains, nuts, and crushed nuts kept and collected for the winter ranges from 7 kg to 40-50 kilos, depending on the conditions. Adult bats have a weight range of 120-450 g, a body length of 150-250 mm, a tail length of 120-210 mm, two relatively small eyes on the head, and ears that are 12-17 mm in height.

Each Gray rat has the capacity to consume 7-15 kilograms of nutritious food annually, with an average daily intake of 25-40 grams of dry feed and water in microns. Rat nests have been observed to contain varying amounts of grain, vegetables, pollen, wild birds, chicken and duck eggs, meat, goose, cotton, polyethylene plinths, and metal fragments.

The specific quantities depend on the types of food sources available in the environment. Sheep excrete urine and small, spherical feces, which vary in quantity according on their daily intake of food and water. Additionally, they shed around 50-100 strands of fine wool. It contaminates the environment with garbage, hence contaminating animal feed and food goods.

Rats exhibit caution when encountering any newly available food and have a preference for fresh, clean food, particularly those that are rich in meat, fat, and oil, as opposed to old or unappetizing food. Hence, failure to implement consistent measures in the oil, milk, and meat industries, as well as in the vicinity of completed product warehouses and landfills, may result in a 2-3 times quicker increase in these areas compared to the overall industry growth.

In Andijan, the proliferation of rats to such an extent that the peasant's harvest of grain crops, including as corn and wheat, was significantly reduced due to the rodents.

This also affected his tobacco crop. Hatto was observed engaging in the act of segregating and consuming cotton seeds. The abundance of rats did not surpass the usual number of grapes, dates, and nuts from fruit trees. There was a surge in the occurrences of rat bites on animals, and domestic poultry had significant deterioration due to rats. The act of a squid hurling and gnawing at an individual resulted in an intolerable condition. Those who transformed rodents into animals, humans, infants, and lifeless bodies have committed an atrocious act. In 2001, a total of 1,355 individuals in the Andijan region were reported to have been bitten by rats.

Additionally, 151-128 residents in Fergana and Margilan sought medical assistance for rat-related injuries during a period of 9 months. The provision of various agricultural commodities to the king of animals and poultry necessitated the resolution of the matter at the governmental level.

Given the rats' high sensitivity, gracefulness, cleverness, and hierarchical social structure, combating them has become an immediate priority. It is crucial to develop comprehensive understanding and effective strategies to combat them, including identifying techniques for their indiscriminate eradication. The order of rodents has 30 families, among which the species that coexist with humans, known as sinanthropes, include rats and mice. Central Asia is home to a diverse spectrum of bat species, including gray, black, Turkestan, and ground squid varieties.

Rodent turkeys encompass species that inhabit both terrestrial and aquatic habitats. Their minority consists predominantly of plants. Their teeth are most notable for their specialized structure, which is well-suited for crushing tough plant matter. Each of the lower and upper jaws will possess a set of exceptionally big teeth resembling shovels. The teeth of the animal continue to grow throughout its lifespan. The cutting edge of these teeth has acquired a sharpness similar to that of a chisel, while the front surface is coated with a dense layer of enamel. As a result, these teeth are irregularly worn down and consistently develop a sharp edge by self-sharpening.

There are no teeth specifically designed for eating food. Jaw teeth can be differentiated from curved teeth by the presence of a toothless ridge known as a diastema. Rodents have also evolved to excel in locomotion, including running, jumping, and evading predators. Additionally, certain species of rodents have developed specialized skills in maintaining and modifying their habitats. The Uzbek God is home to about forty species of rodents. The majority of its representatives are widely regarded as significant nuisances and serve as vectors for hazardous diseases, resulting in substantial harm to individuals.

In order to ascertain the use or detriment of a particular rodent species, a comprehensive investigation into its life patterns and behaviors is required. Undoubtedly, both their crucial function in preserving ecological equilibrium in nature and their distinctive characteristics, such as being pests: causing damage to crops, consuming crops, and spreading infectious disease pathogens, must also be utilized. Hence, it is crucial to conduct a thorough and complete study of them, focusing on their biology and ecology.

The method of managing rodents will mostly rely on the initial population density in their abandoned habitats, the availability of food and water supplies, and prevailing meteorological conditions. The scheme provides a comprehensive compilation of taxa for Gray rats, encompassing all relevant situations. This study identifies five distinct food sources that facilitate rat reproduction at varying levels: meat and oil-based feeds, cereals, vegetables and fruits, undesirable plants in a disadvantaged state, and tree bark and other third-level products. Additionally, the rat population can be reduced through measures such as starvation, disease, capturing, and controlling dogs and cats. The data collected and the mathematical calculations conducted suggest that it is feasible to derive accurate values for Hakikat by satisfying the year-to-year approximation through the division of the time interval into one year. This is done in relation to the exchange of factors and seasons in the process of increasing the rat population over time.
In natural conditions, it is anticipated that a pair of rats will produce 7-10 offspring 3-6 times per year. These offspring will reach full sexual maturity within 3-4 months and experience rapid growth during the months of bakhor and autumn. In the summer season, reproduction is limited to 20-30% compared to other seasons. Birth and death rates are balanced during the winter months, with a decrease of 50-60%. The range of values is as follows: 20-25, 5000-8000 in two years, 800-3500, 200-300, 300-500 thousand in three years, 15-150 thousand, 1.5-4.5 thousand, and in four years-20-30 million, 0.8-6.0 million, 15-85 thousand.

The literature connected to theoretical estimation of rat numbers and the computations of kupincha derati - zators contain far bigger values than the ones mentioned above. When doing these estimates, it is important to consider the projected mortality rate of the male portion of rats after birth and the fact that not all of them are able to reproduce.

The robust reproductive capacity of rats is evident in the following information. Italy is the European country where Grey bats are most prevalent, as it is bordered by oceans on three sides. Historical records indicate that about this matter, it was noted that the population of rats in a particular Roman city reached a staggering 15 million. Due to the arrival of the Year of the Mouse in 1985, anti-rodent measures were temporarily halted on Taiwan. This led to the loss of 6,000,000 tons of rice and an increase in the rat population to 60 million.

Determining if the number of rats mentioned above matches the current number is not a challenging task, as a single rat can accumulate an average of 10 kg of feed per season or consume a significant amount of ozuka over a year. Upon its arrival in 1997, which coincided with the year of the mouse, there was no notable surge in their population. However, rodents and pests from the Bashkir region resulted in a 20% reduction in crop yield.

A total of 16,000 rats were euthanized within a span of 4 weeks at the animal slaughter facility in Paris. At the cattle farm located outside the town, a significant number of deceased horses were consumed by rats overnight. If, on average, each rat perishes after consuming 25 grams of meat, the population of rats in the farm of God would be estimated to be approximately 600,000 to 800,000.
In 1970, there was a notable increase in the number of rodents in rice-producing countries in Asia, as well as in several countries that produce fodder and technical grains, including USA, Canada, France, and the Bashkir States. Statistics indicate that rodents have caused the destruction of 15 million tons of wheat, corn, and Sully in USA this year, as well as 87 million tons of grain in Xinjiang. These figures demonstrate that the rat population in the countries amounted to 1.5 and 8.7 billion, respectively, when computed using the aforementioned method. Assuming that the mating of rats in a particular region took place for a duration of two years, it is found that the population of rats in these regions is estimated to be 1 million and 5-6 million, respectively.

Conclusion. Rodents exhibit a social structure characterized by a familial hierarchy, in which male individuals hold dominating positions. Sexually mature individuals establish new families starting from the third and fourth month of their life and commence reproducing vigorously. Several well-known families form distinct groups. When combating them, it is crucial to consider the fragmented obstacles.In the biological control of rodents, domestic animals such as cats, dogs (specifically certain breeds like terriers and fox terriers), and birds (such as owls, vultures, and migratory birds) are utilized in domestic and field settings. Additionally, animals like minks, silent flies, foxes, and reptiles (such as goats and chipor snakes) are employed in field situations.

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