

UDC 636.5.636.1.066
AGRIS L73

https://doi.org/10.33619/2414-2948/101/26

DERMATITIS CAUSED BY STRESS IN QUAILS AND MEASURES TO COMBAT THEM

©Mammadova A., Ganja State University,
Ganja, Azerbaijan, aytacmamedova@gmail.com

ДЕРМАТИТ, ФОРМИРУЮЩИЙСЯ ПРИ СТРЕССЕ У ПЕРЕПЕЛОВ И МЕРЫ БОРЬБЫ С НИМ

©Мамедова А., Гянджинский государственный университет,
г. Гянджа, Азербайджан, aytacmamedova@gmail.com

Abstract. The research work was carried out in the vivarium of the Faculty of Veterinary Medicine of ASAU and in the Education-experimental Center for Quail Breeding on White texas breed quails in the period of temperature stress in the building and under the shed. When quail broods are kept under shed in June, July, August, temperature stress occurs among quails as a result of air temperature higher than 38-42°C, and as a result, large changes in homeostasis occur, as well as due to prolonged sunlight during the day, as in ornamental birds. Dermatitis disease also occurs among quail birds. Dermatitis disease is different — allergic, chemical, physical, etc. arises under the influence. The article shows ways to prevent dermatitis caused by temperature stress and strong sunlight. 100 grams of Anti Stress Forte WSP drug was added to 120 liters of water in order to prevent the formation of large changes in homeostasis and the formation of the photo-contact form of dermatitis on the skin of quails as a result of temperature stress during this period, as a result of the rise in temperature and the long duration of direct sunlight should be applied, in case of prolonged exposure to the sun's rays, a curtain made of white polyethylene should be placed on the front part of the shed. While investigating the dermatitis disease caused by temperature stress and long-term exposure to sunlight, we determined the clinical-physiological condition and productivity of the mother quails.

Аннотация. Научно-исследовательская работа проводилась в виварии факультета ветеринарной медицины Азербайджанского государственного аграрного университета и в «Учебно-экспериментальном центре по разведению перепелов» на техасских белых перепелах в условиях температурного стресса в здании и под навесом. В июне, июле, августе при содержании перепелиных выводков под навесом у перепелов возникает температурный стресс из-за температуры воздуха выше 38–42 °С, что приводит к изменениям в гомеостазе, так же встречаются дерматиты. Заболевания дерматитами различны — аллергические, химические, физические и т. д. В статье показаны способы профилактики дерматитов, вызванных температурным стрессом и сильным солнечным светом. 100 граммов препарата Anti Stress Forte WSP добавляют в 120 литров воды с целью предотвращения формирования больших изменений гомеостаза и формирования фотоконтактной формы дерматита на коже перепелов. При длительном воздействии солнечных лучей следует задернуть штору из белого полиэтилена на половину. Мы определили клинико-физиологическое состояние и продуктивность перепелов при исследовании заболевания дерматитом, вызванным температурным стрессом и длительным воздействием солнечных лучей.

Keywords: quails, temperature, temperature stress, relative humidity, air current, dermatitis disease, sunlight.

Ключевые слова: перепела, температура, температурный стресс, относительная влажность, поток воздуха, дерматит, солнечный свет.

Dermatitis is a common skin disease that develops with inflammatory processes in quails (<https://kurl.ru/TAyHK>). The disease spreads more or less depending on the way the quails are kept in their cages and mats, as well as on their sanitary hygiene. Keeping quails inside the building and under sheds in atmospheric air has a great role in the development of the disease [1, 11].

Many scientists point to keeping birds, especially ornamental birds, in unsanitary conditions to prevent dermatitis in birds [7].

Specialists and farmers conducting research in this field associate the occurrence of dermatitis in birds with the high protein content in the feed given to the birds and the lack of zinc (Zn) element in the feed ration [10].

Many scientists dealing with bird diseases shows that the fungus that is always present on the skin causes dermatitis as a result of a decrease in the immunity of birds in the hot months and a decrease in feed intake [8, 9].

Quail breeding researchers show that many factors cause dermatitis in quails, but in quails kept on mats, water and feed mixed with the mat material accumulates on the quails' fingers in many cases, and the ball-shaped mass prevents the quails from moving for a long time [7, 12].

When the mixture of ball-shaped concretions is crushed, fingernails are injured, and as a result, germs fall into the blood, causing dermatitis in quails. Scientists show that in such a case, the fingers should be placed in a container with hot water, after soaking the concretions; they should be cleaned from the nails. From the literature summary, it is clear once again that the moisture content of the bedding material for keeping quails should not exceed 25%, and measures should be taken so that the feed and water do not mix with the bedding material. In these cases, during additional temperature stress, the amount of sun's rays directly falling on the mother quails kept under the shed should be reduced. Taking into account the above, during the research we conducted, we aimed to improve the sanitary-hygienic conditions under the shed, prevent temperature stress, organize the temperature-humidity regime and air exchange under the shed according to zoo hygienic rules, and use the Anti Stress Forte WSP drug to prevent temperature stress during this period [2–6].

Material and Methods

The research work was carried out in the vivarium of the Faculty of Veterinary Medicine of ASAU and in the Education-experimental center for quail breeding on White texas breed quails in the period of temperature stress in the building and under the shed. During the experiment, Anti Stress Forte WSP drug was used in the experimental group to neutralize the effects of temperature stress and sunlight. While investigating the dermatitis disease caused by temperature stress and long-term exposure to sunlight, we determined the clinical-physiological condition and productivity of the mother quails.

Experimental and control groups were kept in separate buildings and under sheds. Mother quails were kept in cages and on thick mats under the shed. Sawdust was used as bedding material for quails kept in cages under the shed. The rules for keeping, feeding and watering quails on mats under the shed were carried out in the same way. During the experiment, 10 grams of Anti Stress

Forte WSP preparation was used for 15 liters of water of the quails in the experimental groups only. The prepared solution can be used within 24 hours.

In order to diagnose dermatitis during the study, we first used UF lamps, Trichogram, plucking the quails and looking at changes in the skin, and using adhesive tapes to take samples from hairless areas.

Research results and their discussion

The study was conducted in June, July, and August, when the temperature under the shed was 33–37 °C. White texas quail were less heat tolerant than other quail breeds during this period, so between 12³⁰ and 17³⁰ hours more than 70% of the quails were drinking only water. These indicators were observed both in control groups and experimental groups. In both groups, 50-60% of the feed remained unused in the feed containers during this period. Because of this, metabolic disorders and a decrease in immunity were observed.

It was determined by us that the lowering of immunity in the body causes large changes in homeostasis under the influence of temperature stress. During the care period of quails, it was determined that as a result of long-term exposure to sunlight, most quails had signs of dermatitis. During this period, the internal temperature was set at 41.17–41.09 °C in both groups. We determined that the number of heart beats in quails is 239–260 times per minute, and the number of respiratory movements is 77–79 times per minute.

Due to the effect of temperature stress and prolonged direct sunlight on the quails, the effect of temperature stress was even greater. During this period, the blood tests showed that the erythrocytes were even lower than the physiological norm at $1.9\text{--}2.1 \times 10^{12}$ /l, and the amount of hemoglobin was 68–76 g/l. During this period, the rate of sedimentation of erythrocytes increased to 6.1–6.2 mm/h in one hour.

In accordance with the materials and methodology of the experiment, the data provided by the Institute of Hydrometeorology in June, July, and August were collected, and on the days when the atmospheric temperature would be high, the drug Anti Stress Forte WSP was added to the water of the quails kept in the experimental group in order to reduce the effect of the direct rays of the sun in the section where the experimental group was kept. in the shed, direct sunlight falling on the quails was reduced by drawing a 60 cm wide curtain down from the ceiling.

After carrying out the above, the brood quails kept in the control and experimental groups were replaced with new ones in both groups. The mother quails included in the experimental group were kept in a shed with the newly applied method, adding Anti Stress Forte WSP drug to their drinking water. At the end of the experiment, we determined clinical and physiological indicators in the blood of mother quails in both groups.

Table

CLINICAL-PHYSIOLOGICAL INDICATORS OF BLOOD DURING THE PERIOD
 OF INCREASED EXPOSURE TO HIGH TEMPERATURE AND SUNLIGHT
 UNDER SHEDS OF WHITE TEXAS QUAILS (M±m)

| <i>Clinical and physiological indicators</i> | <i>Groups</i> | |
|---|----------------|-------------------|
| | <i>Control</i> | <i>Experience</i> |
| Internal temperature °C | 41.76±0.7 | 40.84±1.23 |
| The number of heart beats, 1 min. | 251.4±2.86 | 164.9±1.93 |
| The number of respiratory movements in 1 minute | 66.7±2.1 | 48.6±1.44 |
| Erythrocytes, 10^{12} /l | 2.53±0.02 | 3.19±0.02 |
| Leukocytes, 10^9 /l | 21.9±0.02 | 20.6±0.8 |

| Clinical and physiological indicators | Groups | |
|---------------------------------------|-----------|------------|
| | Control | Experience |
| Hemoglobin, g / l | 89.6±1.73 | 110.4±2.11 |
| Platelets, 10 ⁹ / l | 239±2.76 | 224±2.44 |
| EHS, mm/h | 5.6±0.02 | 4.4±0.01 |

As can be seen from table number one, it is clear from the table that the clinical indicators in the experimental group were changed around the physiological norm, and the blood indicators did not exceed the upper limit of the physiological norm. We found that the amount of hemoglobin in the control group was 89.6 g/l, while the amount of hemoglobin in the blood of the mother quails kept in the experimental group was 110.4 g/l. In addition, we found that the rate of sedimentation of erythrocytes even reached 5.6 liters per hour in the control group. While examining the clinical indicators in the blood of quails, the presence of dermatitis in different areas of the skin of quails was observed. Out of the 500 head quails in the unit, signs of dermatitis were observed in only 12 heads in the experimental group, and after using the diagnostic rules specified in the research methodology, it was determined that they had dermatitis. In the control group, the number of quails with dermatitis was determined to be 62. Compared to the experimental group, we identified Seborrheic dermatitis in 6 heads, as opposed to ordinary dermatitis. Seborrhea (*from the Latin sebum — fat, rheo — to flow*) is a very common chronic disease of the areas of the skin rich in sebaceous glands.

We associated the occurrence of Seborrheic dermatitis in the farm with temperature stress, direct sunlight, and the increase in the fat layer of the skin of quails as a result of the excessive use of oily plants, fishmeal, and fish oil used in feeding quails. In quails kept in the control group, it was clarified as a result of the diagnosis that dermatitis was caused by fungi. So, in the control group, water is sprayed under the shed to lower the temperature and increase the humidity. At this time, solid matter from various concretions (feed, dung, bedding material) adheres to the nails of quails and takes a wine-like shape. As the solid substance separates from the nail, the nails in that area break off, and the bleeding area from the injured fingers falls into the Malassery fungus, which is a form of dermatitis. In 9 quail heads, it was clarified that the Malassery disease caused by the fungus was dermatitis. In the experimental group, 8 quails were found to develop normal dermatitis only under the influence of temperature stress and direct rays of the sun. The drug Anti Stress Forte WSP prevents dermatitis caused by temperature stress and sun rays on the skin of brood quails, and at the same time, the amount of eggs obtained from the brood quails kept in the experimental group where the drug Anti Stress Forte WSP was applied was 18.9% more than the amount of eggs obtained from the broods kept in the control group.

Conclusion

1. In order to save electricity during the storage of brood quails, brood quails can be kept under a shed from May 15 to September 30 in different regions of Azerbaijan with a hot climate.
2. 100 grams of Anti Stress Forte WSP drug was added to 120 liters of water in order to prevent the formation of large changes in homeostasis and the formation of the photo-contact form of dermatitis on the skin of quails as a result of temperature stress during this period, as a result of the rise in temperature and the long duration of direct sunlight should be applied, in case of prolonged exposure to the sun's rays, a curtain made of white polyethylene should be placed on the front part of the shed.
3. In order to reduce the effect of temperature stress when keeping quails under the shed, the air exchange per kilogram of live mass under the shed should be maintained at 4.0-4.5 m³/h.

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*Работа поступила
в редакцию 02.03.2024 г.*

*Принята к публикации
13.03.2024 г.*

Ссылка для цитирования:

Mammadova A. Dermatitis Caused by Stress in Quails and Measures to Combat Them // Бюллетень науки и практики. 2024. Т. 10. №4. С. 179-184. <https://doi.org/10.33619/2414-2948/101/26>

Cite as (APA):

Mammadova, A. (2024). Dermatitis Caused by Stress in Quails and Measures to Combat Them. *Bulletin of Science and Practice*, 10(4), 179-184. <https://doi.org/10.33619/2414-2948/101/26>