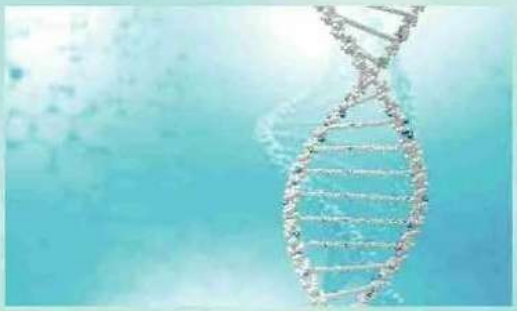
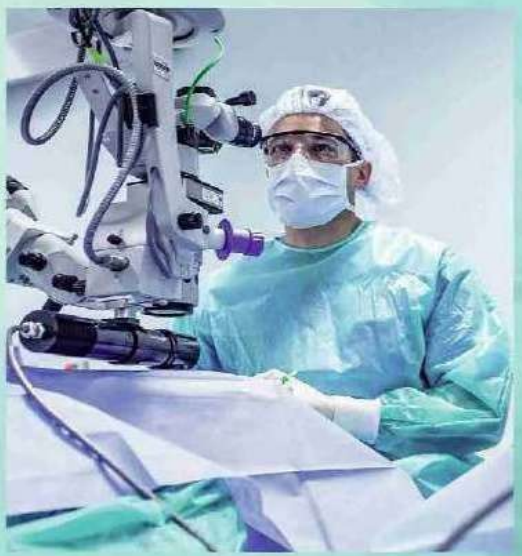
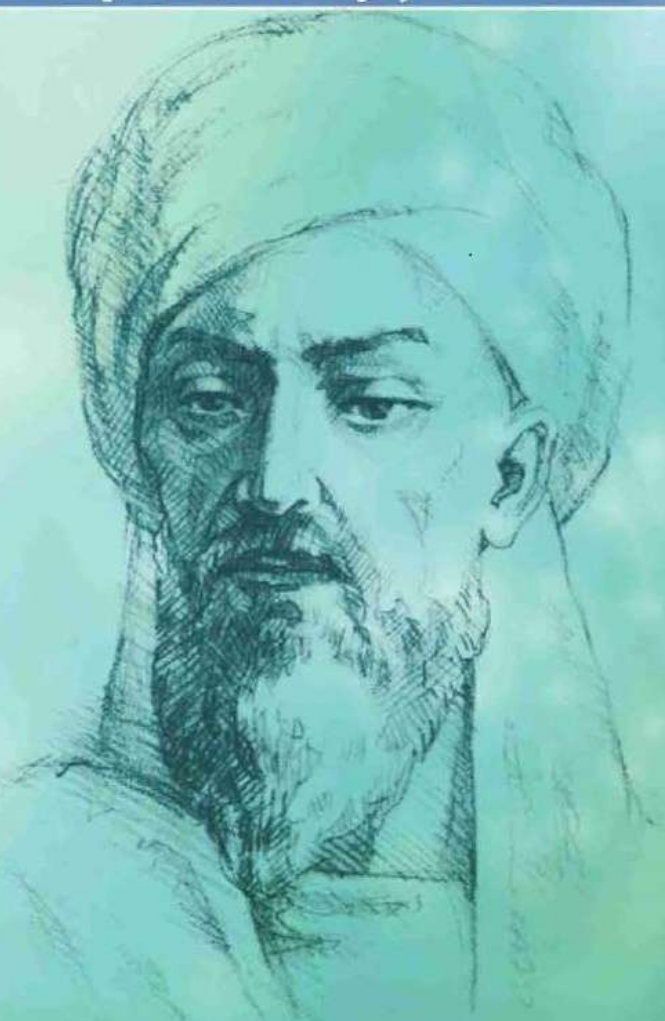
New Day in Medicine
Новый День в Медицине
NDM

TIBBIYOTDA YANGI KUN

Ilmiy referativ, marifiy-ma'naviy jurnal







AVICENNA-MED.UZ

ISSN 2181-712X.
EiSSN 2181-2187

6 (56) 2023

www.bsmi.uz
https://newdaymedicine.com
E: ndmuz@mail.ru
Тел: +99890 8061882

ТИББИЁТДА ЯНГИ КУН

НОВЫЙ ДЕНЬ В МЕДИЦИНЕ

NEW DAY IN MEDICINE

Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал

УЧРЕДИТЕЛИ:

БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»

Национальный медицинский исследовательский центр хирургии имени А.В. Вишневского является генеральным научно-практическим консультантом редакции

Журнал был включен в список журнальных изданий, рецензируемых Высшей Аттестационной Комиссией Республики Узбекистан (Протокол № 201/03 от 30.12.2013 г.)

6 (56)

2023

июнь

Received: 20.05.2023, Accepted: 30.05.2023, Published: 15.06.2023.

УДК 631+574/577:633.39

HYGIENIC BASICS OF WORKING CONDITIONS IN MODERN ANIMAL HUSBANDRY COMPLEXES

K.I.Ibrohimov https://orcid.org/0009-0009-3713-9683

Bukhara State Medical Institute named after Abu Ali Ibn Sina Uzbekistan Bukhara, A.Navoist. 1
Tel: +998(65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Резюме***

Inspection of the working conditions of livestock complex workers, hygienic assessment of harmful factors that may appear in the workplace. Livestock complexes of Bukhara region will achieve the planned goal and fulfill the set tasks. Microclimate of indoor buildings: temperature, relative humidity, air movement speed, carbon dioxide, ammonia, hydrogen sulfide, bacterial pollution of workplaces are checked.

Key words: livestock complex, harmful factors, gas, ammonia, workplaces, working conditions.

ГИГИЕНИЧЕСКИЕ ОСНОВЫ УСЛОВИЙ ТРУДА В СОВРЕМЕННЫХ ЖИВОТНОВОДЧЕСКИХ КОМПЛЕКСАХ

К.И.Иброхимов https://orcid.org/0009-0009-3713-9683

Бухарский государственный медицинский институт имени Абу Али ибн Сины, Узбекистан, г. Бухара, ул. А. Навои. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Резюме***

Обследование условий труда работников животноводческого комплекса, гигиеническая оценка вредных факторов, которые могут возникнуть на рабочем месте. Животноводческие комплексы Бухарской области достигнут намеченной цели и выполнят поставленные задачи. Проверяется микроклимат внутри помещений: температура, относительная влажность, скорость движения воздуха, содержание углекислого газа, аммиака, сероводорода, бактериальное загрязнение рабочих мест.

Ключевые слова: животноводческий комплекс, вредные факторы, газ, аммиак, рабочие места, условия труда.

ЗАМОНАВИЙ ЧОРВАЧИЛИК КОМПЛЕКСЛАРИДА МЕҲНАТ ШАРОИТИНИНГ ГИГИЕНИК АСОСЛАРИ

К.И. Иброҳимов https://orcid.org/0009-0009-3713-9683

Абу али ибн Сино номидаги Бухоро давлат тиббиёт институти Ўзбекистон, Бухоро ш., А.Навоий кўчаси. 1 Тел: +998 (65) 223-00-50 e-mail: info@bsmi.uz

✓ ***Резюме***

Чорвачилик комплекс ишловчи ишчилар меҳнат шароитини текшириш, ишчи ўринларида пайдо бўлиши мумкин бўлган зарарли омилларга гигиеник жиҳатидан баҳо бериш. Режалаштирилган мақсадга эришиш ва белгиланган вазифаларни бажариш Бухоро вилоятини чорвачилик комплекслари амалга оширилади. Ёпиқ бинолар микроиқлими: ҳарорат, нисбий намлик, ҳавонинг ҳаракат тезлиги, ис гази, аммиак, водород сулфид, ишчи ўринларининг бактериал ифлосланиши текширилади.

Калит сўзлар: чорвачилик комплекси, зарарли омиллар, ис гази, аммиак, ишчи ўринлари, меҳнат шароитлари.

Relevance

nformation about the technology of animal-breeding complex.

The livestock complex belonging to the Shafirkon district economy is considered the largest and most modern complex in the Bukhara region. It implements the following technology for keeping 2,500 Australian heads of Golden Cemental cattle, in a sequence related to each other: cattle care, calf breeding, milking, and meat production. In sequential production technology, cattle are divided into special sexes depending on their age, sex and physiological state.

According to the basic technology of the complex, calving, dairy cows, bulls, calves, beef cattle are distinguished into a separate group. The technological process (feeding livestock, watering, manure removal, veterinary treatment) in the livestock complex is mechanized. Animals are watered in special automatic drinkers.

The milking system of cows is also automated, only the slaughter is done manually.

Feeding of cattle in the livestock complex is carried out in a normalized mode.

Industrial and fecal wastewater leaves the workshops through specially organized channels.Гигиеническая характеристика основных производственных вредных факторов

Livestock care in the livestock complex is assigned to separate groups.

The number of workers in groups is determined based on the number of livestock. The main production technology is cattle fattening. Distribution of feed to livestock is carried out as follows: hay is brought by machines and distributed to workers during the operation of machinery. At the same time, a lot of physical pressure is exerted on the employee. The figure of the worker is in a forced position, there is physical pressure on the muscles of the arms, shoulders and legs [1,3,11].

Also, in the process of distributing feed to cattle, there is a strong dusting of the respiratory organs of workers. Dust mainly consists of (vegetable) dust.

In the open and closed buildings of the complex, the removal of manure and urine is carried out using a conveyor, the loading of these substances into the conveyor is carried out manually by workers. At the same time, the height of the workers is in a forced position, and the muscles of the arms, shoulders and legs are under great physical stress.

In the calf care department, workers divide the animals into groups based on their physical condition. In addition, they carry premature calves to the isolation ward on their hands. Calves are transferred to mother cows and fed by hand, while the posture of workers is forced, there is physical pressure on the muscles of the shoulders, arms and legs [4,5,12].

The purpose of the study: To study the hygienic bases of working conditions in modern livestock complexes

Materials and methods

In addition, in the process of sorting calves, there is a high load on the organs of vision.

The milking parlor is mostly run by women. At the same time, putting the device on the cow's udder and removing them after milking is done manually. In this case, the female figure is forced, and there is physical pressure on the muscles of the shoulder, arms and legs. The pressure is also on the workers.

Milking of cattle is carried out in a special milking parlour. The living room wall is lined with polyethylene tiles, the ceiling is painted with oil paint. A special pit was built for decapitation of livestock. Blood through a separate channel enters the small pelvis[11].

Cattle are slaughtered by hand. Decapitation and skinning is done by hand. At the same time, the executioners are subjected to strong physical pressure, their body is forced to take a position, the muscles of the arms, shoulders, and legs are subjected to physical pressure.

It is also necessary to cut off the head of the mole, remove the skin, clean the internal organs, and press hard on the organs of vision.

In addition, butchers are exposed to various harmful biological factors (bacteria, viruses, parasites). Among the workers of this workshop, the appearance of various kinds of injuries is inevitable (fingers are cut, many have damaged feet, etc.).

The complex production workshop of livestock complexes is located in a separate building. In this workshop, the ingredients needed to prepare the tripe of the omukhta are brought into the bunker by hand. This, in turn, creates static and dynamic pressures on workers[12].

Results and discussions

Our studies have shown that chemicals are factors that have a harmful effect on the workers of this livestock complex.

The air in the premises of livestock complexes is polluted with gas mixtures that occur during decay and decomposition of manure.

Hydrogen sulfide and ammonia, mercaptans, indole, amines are the cause of an unpleasant odor in the premises where livestock is kept.

Hydrogen sulfide and ammonia mercaptan were found by us in the air at workplaces (Table 1).

As can be seen from the figures given in the table, it was noticed that the amount of the above gases was higher than the indicated amount. However, it was noted that the amount of gases from the area where the calves were kept did not exceed the established norm (Table 1).

There was an increase in the amount of ammonia by 1.1 and 1.3 times, the amount of mercaptan by 0.9 and 1.2 times, the amount of hydrogen sulfide by 0.8 and 1.0 times, respectively, in indoor areas where dairy cows are kept for meat, and in the open. verandas (Table 1).

table. 1

Verified source	Permissible limit of the amount of harmful substances mg/m³	The number of harmful substances registered at workplaces
1 Where livestock is kept A) closed building B) Open veranda;	Hydrogen sulfide 10.0 mercaptan 0.8 Ammonia 20.0 -###-	15,1±0,7 1,2±0,2 29,2±0,5 12,2±0,6 1,0±0,1 24,4±0,4
2. Closed delivery rooms	Hydrogen sulfide 10.0 mercaptan 0.8 Ammonia 20.0 -###-	16,9±0,9 1,4±0,3 30,2±0,8
3. Calves are kept A) closed building B) open veranda;	 Hydrogen sulfide 10.0 mercaptan 0.8 Ammonia 20.0 -###-	 11,2±0,6 0,9±0,2 22,3±0,6 10,1±0,4 0,9±0,2 21,1±0,5
Workshop for the production of ham "Omukhta"	Hydrogen sulfide 10.0 mercaptan 0.8	10,4±0,6 0,4±0,07

Hydrogen sulfide and mercaptans and ammonia are mainly formed during the decay and decomposition of manure and fodder residues in the above areas.

It is noted that the amount of hydrogen sulfide, mercaptans, ammonia in enclosed spaces is personally higher in the morning.

This situation is due to the fact that in the evening the buildings are closed, which is associated with low air exchange [5,6,7].

It should be noted that the concentration of hydrogen sulfide, mercaptans and ammonia on open verandas is slightly lower than in enclosed spaces, but their amount is higher than the permissible one.

Dust is one of the factors negatively affecting the health of livestock farm workers.

As a result of our inspections, it was noted that the dust content was increased in all sections of the complex (except for the section for keeping calves) (Table 2).

table 2

The amount of dust at the workplaces of the livestock complex

Sources of checks	Permissible norm of dust mg/m³	Amount of dust found at workplaces, mg/m³
1) Buildings where livestock is kept A) closed building B) open veranda	Dust 4.0	 9,2±0,7 6,5 ±0,5
2) Closed maternity ward	Dust 4.0	8,6±0,6
3) The building where the calves are kept A) closed building B) open veranda	Dust 4.0	 4,8±0,2 4,2±0,3
4) Omukh border preparation shop	Dust 4.0	10,6±0,5
5) when distributing coarse hay to livestock, workers around the respiratory system	Dust 4.0	7,6±0,4

As can be seen from the figures given in the table above, the amount of dust in different areas of the livestock complex is not the same (Table 2).

The composition of the dust generated during the technological process in complex departments is an example of coarse ash, soft scar, skin epithelium, cattle hair.

Organic substances contained in the dust can increase the sensitivity (sensitization) of the body of workers and cause allergic diseases in them. The amount of dust in the air of a closed livestock building is 9.2 ± 0.7 mg/m³, at an open entrance it is somewhat less, 8.6 ± 0.6 mg/m³, in the shop for the preparation of sweet hem - 10.6. ±0.5 mg/m³, when distributing hay-roughage to livestock - 7.6±0.4 mg/m³, which is 2.1-2.6 times more than the allowable norm.

It was noted that the amount of dust in the air of workplaces in the indoor and outdoor building of the department for keeping young calves did not exceed the PM (Table 2).

Measurement of the noise level in the main departments of the studied livestock complex gave the following results (Table 3).

Table 3

Noise level indicators in the shops of the livestock complex.

Verified sources	Standard noise level, dB	Registered noise level dB
Closed housing for dairy and beef farming	80	71-88
Closed housing where calves are kept	80	70-82
Omukhta hem preparation shop	80	88-92
Kushkhana	80	82-86

So, it was found that the noise level in a closed room where dairy and meat animals are kept is 71-85 dB, which is practically not within the established norm.

However, there was a 15.4% higher noise level when distributing feed to livestock. It was noted that the noise level in the calf keeping shop did not exceed the established norm.

It was found that the noise level increased by 14.6-22.3 percent as a result of the operation of the equipment installed in the Omukhta ham preparation shop. At the slaughterhouse, the noise level in the process of cutting livestock for slaughter was 82-86 dB, which is 4.3-9.2 percent higher than the permissible limit.

It should be noted that the impact of noise on workers in the main workshops of the economy is 1.0-1.5 hours. Noise affects the workers of the Omukhta podrub preparation shop for 5.0-5.5 hours, and in the slaughterhouse for 4.0-5.0 hours (due to timing).

When checking the parameters of the microclimate in the main production shops of the livestock farm, different indicators of air temperature, humidity and air velocity in summer and winter were recorded (Table 4).

Table 4

Microclimate indicators (average) in the main areas of the livestock complex.

Verified Sections	Параметры микроклимата	Зимой (январь)	Летом (Июль))
1)Fattening section for milk and meat A) closed building B) open veranda	Temperature C° Moisture % Air movement m/s Temperature C° Moisture % Air movement m/s	 5,47±0,9 10,0±0,9 0,5±0,1	 +35,0±0,9 90,0±1,7 0,4±0,03 +38,0±0,9 40,0±1,1 0,2±0,02
2) Calf storage department	Temperature C° Moisture % Air movement m/s	+24,0±0,7 60,0±0,9 0,2±0,04	24,0±0,7 65,0±1,0 0,2±0,04
3) Maternity ward	Temperature C° Moisture % Air movement m/s	3,5±0,8 80,0±0,9 0,4±0,04	36,0±1,2 85,0±0,8 0,5±0,04
4) Kushkhana	Temperature C° Moisture % Air movement m/s	-6,2±0,8 95,0±1,2 0,3±0,05	+30,0±0,7 98,0±1,3 0,2±0,04

It was found that the parameters of the microclimate are different in the main branches of the economy.

In a closed room where livestock is kept for milk and meat, the air temperature in winter is -5.4±0.4, in summer the air temperature is +35±0.9, the humidity is 90.0±1.2, the air velocity is 0.4± 0, 03, an excess of the established norm of the temperature parameter in winter and summer was noted.

As a result of the installation of a deflector device for heating in winter and cooling in summer in the calf keeping department, it was found that the microclimate parameters do not exceed the established norm.

In addition to the speed of air movement in the maternity ward, it was noted that the temperature and humidity did not meet acceptable standards.

According to veterinary standards, the temperature is +22C, humidity is 60 percent. A similar situation is observed in terms of the microclimate parameters in the greenhouse.

The reason for such a negative situation in terms of the temperature parameter in the main sections of the complex is the lack of a device (heat exchanger) that controls this indicator [11,12].

Evaporation of manure and urine in departments and the use of pressurized water (water flushing) in cleaning rooms cause air pollution in workplaces. It has been observed that the humidity in the farm, where dairy and meat animals are kept, and in the delivery room is 95 percent, and even 100 percent.

Conclusions

As a result of the above information, we can conclude that the work of workers working in livestock complexes is carried out on the basis of a high level of physical activity, unpleasant physical (high, low dustiness, temperature, high humidity), chemical ones appear (carbonic anhydride, carbon monoxide, hydrogen sulfate , ammonia) jobs, mercaptans, aldehydes, biological (gels, bacteria) factors.

LIST OF REFERENCES:

1. Бакиров А.Б. Сравнительная характеристика состояния здоровья работниц современного животноводческого комплекса по данным самооценки и объективного исследования / А. Б. Бакиров, В. Ф. Сафин Нефть и здоровье: матер. Всеросс. научно – практ. конф. - Уфа, 2007 265-268.
2. Бакиров А.Б. Труд и быт в формировании здоровья женщин-работниц, занятых в животноводстве / А.Б Бакиров, В. Ф. Сафин Материалы II Всероссийского съезда врачей - профлатологов - Ростов-на-Дону, 2006 13-15.
3. Безрукова Г.А., Новикова Т.А., Спирин В.Ф., Шалашова М.Л., Михайлова Н.А. Гигиенические факторы риска и профилактика профессиональных болезней органов дыхания у работников животноводства Медицина труда и экология человека. – 2015 3:50-64.
4. Бринчук М.М. Экологическое право. Учебник. Материал подготовлен с использованием правовых актов по состоянию на 1 декабря 2008 года.
5. Вторый В.Ф., Вторый С.В., Ильин Р.М. Влияние зимних погодных условий на концентрацию аммиака в коровнике Инновации в сельском хозяйстве. 2018 2(27):260-267.
6. Вторый В.Ф., Вторый С.В., Ильин Р.М. Исследования температурно-влажностного режима коровника в зимне-весенний период Известия СПбГАУ. – 2019 1(54):134-140.
7. Вторый В.Ф., Вторый С.В., Ильин Р.М. Результаты исследований влияния зимних погодных условий на концентрацию аммиака в коровниках АгроЭкоИнженерия. – 2018 2(95): 174-181.
8. Вторый В.Ф., Гордеев В.В., Вторый С.В., Ланцова Е.О. Влияние погодных условий на формирование температурно-влажностного режима в коровнике Вестник ВНИИМЖ. – 2016 3(23):68-72.
9. Endotoxin responsiveness and subchronic grain dust-induced airway disease / C.L. George, H. Jin, C.L. Wohlford-Lenane, M.E. O'Neill, J.C. Phipps, P. O'Shaughnessy, J.N. Kline, P.S. Thorne, D.A. Schwartz Am J. Physiol. Lung Cell Mol Physiol. – 2001 280:203-13.
10. Ibrohimov K. I. Chorvachilik Komplekslari Xodimlarining Ish Sharoitlari. Brusellyoz Kasalligi Bilan Kasallanish Ko’rsatkichlari Amaliy va Tibbiyot fanlari ilmiy Jurnali. 2022 10(12):20-23.
11. Ibrohimov K.I. Features of Lobor in Agriculture Central Asian journal of medical and Natural Sciences | 2022 Jan-Feb 2(07):87-91 ISSN: 2660-4159.
12. Ibrohimov K.I. Hygienic Features of Sorting and Spinning in the Production of Wool Middle European Scientific Bulletin 2022 Mar 22:12-15 ISSN 2694-9970.

Entered 20.05.2023