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DEPARTAMENT: ANIMAL PRODUCTIONS AND PUBLIC HEALTH

DISCIPLINE: VETERINARY HYGIENE AND ENVIRONMENT PROTECTION

Courses responsible teacher: Associate Professor Florin FURNARIS, DVM, PhD

TOPICS AND REFERENCES

General considerations: Veterinary Hygiene and Environment Protection definition, The field of study of Veterinary Hygiene and Environmental Protection, The methods of study in Veterinary Hygiene field: slides 3, 6-11, 16, 18

Air hygiene: Atmosphere definition, Layers of atmosphere, Air composition - normal air gases, air dust - air particulates, microorganisms, Air properties and their influence upon animals, air temperature, air humidity - influence of air humidity upon animals, precipitations and the influence of precipitations upon animals, air pressure and the influence upon animals, air movement and influence upon animals, solar radiations and their influence upon animals, air ionization and air ions influence, air electric field, thunderstorm electrical phenomena, condensation nuclei, Complex meteorological factors, weather and weather influence, climate and the influence upon animals: slides 21, 22, 24-27, 28-31, 33-34, 36, 37, 39, 42-45, 47-50, 51, 52, 54, 56, 60, 61, 63, 65, 67, 70, 71, 73, 75-78, 80-86, 88, 90

Soil hygiene: The role of the soil, sole action upon animals, Chemical composition of the soil, Physical properties of the soil, Living elements in the soil, Soil pollution, assessing the soil pollution, soil self purification: slides 96-98, 99-103, 105-108, 110, 112, 117-120

Water hygiene: water role, water in nature, World resources of fresh water, Sources of water (rainwater, surface water, ground water). Properties, Water pollution. Methods for assessing the degree of water pollution and self-purification: slides 129, 130, 133, 135, 136, 138, 139, 141, 142, 146-149, 154-157

Animal housing: General considerations - Housing advantages and disadvantages, Requirements in choosing the farm location, Pollutants produced by animal farms, Farm organizing, Hygiene requirements for stables' building materials, Hygienic requisites concerning construction elements, Animal houses classification, Elements of the houses - Closing elements, Foundation, Outer walls, Ceiling, Roof, Windows, Floor. Floor classification, Bedding - litter, Inner space division elements (s190): slides 160, 162-164, 166-169, 172, 173, 174, 177-179, 184, 187-189

Microclimate of animal houses: Physical factors, Chemical microclimate factors, The microclimate biological factors, The level of microclimate factors, The overall assessment of the microclimate: slides 194, 195, 197, 198, 200-203, 206-209

General hygiene measures for the prevention and control of transmissible diseases: Regulation and control of movement of people, animals, vehicles, foodstuffs and fodders, certain products of animal origin and corpses, Compliance with the hygiene and technological principle all in - all out, Disinfection (microbial decontamination) definition, classification, general considerations, disinfection stages, Rodent control general considerations, Morpho-physiological and bio-ecological characteristics of synanthropic rodents: slides 211-216, 218-220, 223-225, 232-233

Animal feeding systems: Facilities and equipment for horse feeding, Facilities and equipment for cattle feeding. Feeding of dairy cows. Feeding of the calves. Feeding of the veals, Equipment and installations for pigs feeding, Facilities and equipment for poultry feeding: hens in deep-litter system, hens in battery cages, hens in alternative system, Feeding systems for waterfowl, ostriches, fur animals, rabbits, Feeding systems for dogs and cats: slides 242, 243, 245, 248, 249, 253-258, 260-264, 266-267

Animal transportation: General considerations regarding animal transportation, Documents for animal transportation, Provisions for vehicles, Conditions for transport: animal fitness, Condition for transport: means of transport, Conditions for transport: animal loading and unloading points, Transportation by different means: slides 273-277, 280, 283, 284, 286-288, 290, 293, 294, 296-299

OVERALL: 172 slides (equivalent to 86 pages: text, images, schematics, tables)

REFERENCES

Furnaris Florin - Veterinary Hygiene and Environment Protection, Lecture notes (hyperlink)

QUESTIONNAIRE

150 questions with five appropriate possible answers

(Single select multiple-choice questions)

1 Veterinary hygiene and environmental protection is the science which approach:

a) the complex relations between animals' behavior and animal health
b) the complex relations between animal organism and environment and promote the action of negative environmental factors
c) the diagnosis and the treatment of internal medicine diseases and disorders
d) the complex relations between hosts and parasites
e) the complex relations between animal organism and environment in order to ensure good animal welfare, raise the animal productions level, prevent the transmission of diseases from animals to human

2 The control of epidemic diseases is achieved through:

a) control program (screening, prevention, treatment)
b) consumer awareness programs
c) animal research programs
d) eradication programs
e) programs for water quality monitoring

3 Concerning the higher and higher demands of the foodstuff consumers and the general public, the guarantee for food safety and quality is ensured by applying the system (the concept):

a) from stable to table
b) first in - last out
c) all in - all out
d) battery cages system
e) saprobic system

4 According to the new expanding of the disease concept, can be considered conventional disease:

a) an injury
b) self-mutilation behavior
c) an infectious disease
d) food control
e) earth sickness

5 The use of rearing (animal husbandry) systems that doesn't imply vaccination or growth hormones and antibiotics is in compliance with:

a) the higher demands in international trade
b) the new expanding of the disease concept
c) the necessity to extend the field of veterinary hygiene
d) the higher demands of the consumers and the general public
e) the appropriate biosecurity level in farms

6 Among the methods of study in veterinary hygiene field, the physical methods (physical analysis) framing within:

a) the methods for studying the animal biochemical profile
b) the methods for study the environmental factors
c) the statistical and mathematical methods
d) the Willis methods
e) the serial dilution methods

7 According to ISAH definition, animal hygiene is the scientific interdisciplinary field intertwining animals' and humans' health and:

a) food safety

b) freedom from discomfort
c) welfare
d) biosecurity
e) life diversity

8 In which layer of the atmosphere the maximum amount of ozone can be found (ozonosphere - ozone layer):

a) troposphere
b) stratosphere
c) mesosphere
d) exosphere
e) magnetosphere

9 Which layer of the atmosphere contains 90% of water vapors quantity, of air dust and microorganisms:

a) the exosphere
b) the ionosphere
c) the thermopause
d) the mesosphere
e) the troposphere

10 Atmosphere is a complex mix of:

a) gases, water vapors, dust, microorganisms, radioactive particulates
b) various gases
c) gases and water vapors
d) gases, water vapors, mycotoxins
e) complex organic compounds containing sulfur

11 In which layer of the atmosphere are noticed high speed air movements?

a) thermosphere
b) ionosphere
c) mesosphere
d) stratosphere
e) capillarity zone

12 Which is the atmospheric layer ranging from a height of 80 km to a height of 1000 km above the terrestrial level?

a) thermosphere
b) exosphere
c) biosphere
d) troposphere
e) mesosphere

13 In which layer of the Earth atmosphere is included the ionosphere?

a) thermosphere
b) mesosphere
c) troposphere
d) chromatosphere
e) ozonosphere

14 The normal concentration of oxygen in the atmosphere is:

a) 78.08%
b) 20.95%

c) 10%
d) 0.03%
e) 0.93%

15 The normal concentration of nitrogen in the atmosphere is:

a) 78.08%
b) 20.95%
c) 10%
d) 0.03%
e) 0.93%

16 Increase of atmospheric pressure may result in the increase of the nitrogen blood amount and subsequently to:

a) hyperexcitability
b) hypobaric seizures
c) hyperbaric narcosis
d) coniosis
e) immune system stimulation

17 Regarding the oxygen in the air, life is possible as long as its concentration is higher than:

a) 11-12%
b) 5%
c) 78.08%
d) 0.03%
e) 7%

18 Hemoglobin is a carrier protein with very high affinity in oxygen binding, 1 g of hemoglobin binding:

a) 0.5 cc of oxygen
b) 1.33 cc of oxygen
c) 500 cc of oxygen
d) 1 µl of oxygen
e) 1.33 nm of oxygen

19 The main cause of greenhouse effect (associated with global warming) is:

a) ozone
b) ammonia
c) carbon dioxide
d) oxygen
e) calcium oxide

20 Ozone is an allotropic form of:

a) nitrogen
b) hydrogen
c) hydrogen peroxide
d) carbon
e) oxygen

21 The Montreal Protocol is an International Agreement to reduce the usage of chemical substances implied in the:

a) depletion of the ozone layer
b) depletion of the ionosphere

c) impairing the wildlife and the natural habitats
d) decreasing of the nitrogen
e) depletion of the oxygen

22 The reduced oxygen supply in tissues (the tissues' lack of oxygen) is called:
a) hypoxemia
b) hypercapnia
c) hypoxia
d) rumenitis
e) hyperbarism

23 According to Gibbs, air dust (air particulates) can be classified in:
a) Organic and inorganic particulates
b) Flugge droplets, droplet nuclei and organic dust
c) Coarse particulates, fine particulates and ultrafine particulates
d) Common dust, cloud and smoke
e) 10 classes of quality

24 The highest prevalence of conioses can be recorded:
a) for digestive system
b) for the respiratory system
c) for the nervous system
d) for the locomotor system
e) for H.A.C.C.P. system

25 The main action of dust with charcoal and petroleum compounds is:
a) photodynamic effect
b) fibrotic effect
c) immunogenic effect
d) oncogenic effect
e) allergic reaction

26 Flugge droplets, as a form of microorganisms' presence in the air, are implied in disease transmission by:
a) airborne transmission
b) telluric transmission
c) vector transmission - vector borne diseases
d) allergic reactions
e) direct contact

27 Carried by Flugge droplets, the pathogens can disperse to a maximum distance of:
a) 1 km
b) 2.5 km
c) 5 m
d) 20 m
e) 10 m

28 Turbulence is an air warming phenomenon defined as:
a) rise of the warmer air placed next to the terrestrial surface and its replacement with colder air from altitude
b) heat transmission from warmer air masses to other close, colder air masses
c) a disorderly air motion in all directions
d) heat flow from the Earth surface to the atmosphere
e) water vapors condensation which results in air warming

29 Air temperature in outdoor conditions is measured in shadow, at a height of:

a) 5-10 cm
b) 10 m
c) 2 m
d) 8 m
e) 0.5-0.7 m

30 Adiabatic expansion can be classified as:

a) an air warming phenomenon
b) a form of soil degradation
c) a form of water secondary pollution
d) the working principle of the light meters
e) an air cooling phenomenon

31 The sensible heat can result in from 3 routes, namely radiation, thermal conduction and:

a) evaporation
b) advection
c) convection
d) eutrophication
e) desalination

32 The latent heat (insensible heat loss) represents the heat transfer from the animal to the environment by:

a) water evaporation
b) radiation
c) thermal conduction
d) convection
e) skin insulation

33 The process by which an animal copes (adjusts) to higher temperature of the environment, is called:

a) thermogenesis
b) thermal cautery
c) thermal anemometers
d) homeothermy
e) thermolysis

34 The air temperatures frame (interval) in which the animal internal temperature remains stable with a minimum engage of thermal regulation system is called:

a) upper critical temperature
b) thermal neutral zone
c) zone of homeothermy
d) the life-possible temperatures zone
e) thermal electrical effect

35 Animal adjustments in cold condition DOESN'T include:

a) gathering
b) head-under-wing position
c) ruffling
d) peripheral vasoconstriction
e) wing-fluttering and waving

36 In foals and calves, the thermal regulation system is completely developed at:

a) day 40 of life
b) 2-3 months

c) first day of life
d) day 3 of life
e) 10 days

37 The joint action of low air temperature and high humidity generates:

a) frostbite, necrosis
b) a frigore and rheumatoid diseases
c) hyperthermia
d) heat stroke
e) telluric diseases

38 Specify the item which is NOT an air humidity term:

a) hygroscopicity
b) relative humidity
c) absolute humidity
d) maximum humidity
e) dew point

39 The frostbites' appearing is facilitated in low temperatures' condition and low relative air humidity values, below:

a) 5 Lx
b) 500 RLU
c) 40%
d) 75%
e) 90%

40 The synthetic index reflecting the relation between temperature and humidity and their joint action upon organism is called:

a) chill index
b) heat index
c) color render index
d) indoor air quality index
e) required thermal insulation index

41 High air humidity:

a) facilitates the development of microorganisms, parasites and intermediate hosts
b) may result in frostbites appearing on ear or tails
c) may result in crowding syndrome
d) may result in obtaining safe and mycotoxins - free vegetal products
e) may result in reducing the number of bacteria in the air

42 A form of precipitation generated on terrestrial surface is:

a) fog
b) rain
c) drizzle
d) dew
e) hail

43 Concerning the cloud coverage - the extent to which the sky is obstructed by clouds, can be described as sunny days the days with:

a) 10 conventional degrees
b) 0-7.5 conventional degrees
c) 7.6-10 conventional degrees
d) 0-3.5 conventional degrees

e) greater than 60 conventional degrees

44 A line connecting points (places) on a geographic map having equal rainfall at a certain time or for a specific period is called:

a) isohyet
b) isotherm
c) isobar line
d) isotropic
e) skyline

45 Concerning air pressure influence upon animals, blood oxygen ranges normal values (has very good value) in altitudes:

a) greater than 3500 m
b) greater than 500 m
c) up to 360 m
d) between 2000 and 3400 m
e) up to 200 cm

46 The Beaufort scale has:

a) 12 degrees
b) 10 conventional degrees
c) 5 degrees
d) 9 degrees
e) 50 degrees

47 Regarding the increasing of animal heat losses due to wind direct influence, the highest loss value can be found:

a) at an angle of 90 °
b) at an angle of 30 °
c) at an angle of 15 ° F
d) at an angle of 2%
e) at an angle of 180 °

48 Ultraviolet radiations have wavelength of:

a) 700-2500 nm
b) 1-10 mm
c) 150-400 nm
d) 400-780 nm
e) 780-3000 nm

49 α and β radiations are:

a) corpuscular radiations
b) electromagnetic radiations
c) types of infrared radiations
d) types of ultraviolet radiations
e) microwaves of 7 mm wavelength

50 Actinotherapy for wounds healing stimulation uses mainly the positive effect of:

a) α radiation
b) ultraviolet radiation
c) β radiation
d) visible light
e) gamma radiation

51 From retina, light stimuli can be directly transmitted to hypothalamus and limbic system by:

a) Arnold's nerve
b) Frey pathways
c) Phrenic nerve
d) Radial nerve
e) Airborne transmission pathway (route)

52 The period of dark within 24 hours is called:

a) solstice
b) phototaxis
c) photoperiod
d) chemoperiod
e) scotoperiod

53 The implication of the visible light in photosynthesis (plant conversion of the light energy into chemical energy) is one of the visible light's:

a) informational effect
b) allergic action
c) immunogenic reaction
d) irritative action
e) energetical action

54 The lifetime of small air ions in clean air is:

a) 20 minutes
b) 1 second
c) 72 hours
d) 30 days
e) 20 years

55 Air ionization can be measured by:

a) light meters
b) sound meters
c) Arago Davy psychrometers
d) Ebert and Gardien electro-meters
e) sling psychrometers

56 Via physical and biological mechanisms, the negative air ions:

a) increase the total number of bacteria in the air
b) inducing stress (distress)
c) reduce the total number of bacteria in the air
d) inhibit the thyroid and the pituitary glands secretion
e) stimulate thermogenesis

57 Concerning air electric field, chose the gradient value for fine weather conditions:

a) 20'000 V/m
b) 2 g / cc
c) 500 g / sqm / 30 days
d) 90 °F
e) 120 - 150 V/m

58 Air electric field:

a) bypasses altitude differences and large objects including animal houses
b) doesn't bypass altitude differences and large objects
c) causes the dew formation

d) has a major influence upon the prevalence of the parasitic diseases
e) has a major influence upon the light intensity in the animal house

59 CG lightning:
a) is an electric discharge within layered clouds
b) is an electric discharge between clouds and the Earth's surface
c) is an electric discharge between unlayered clouds with opposite electrostatic charge
d) is a natural lighting system in animal husbandry
e) is an animal feeding system

60 Lightning strike is caused by:
a) IC lightning
b) Cloud-to-cloud lightning
c) CG lightning
d) Water sublimation on condensation nuclei
e) Lichtenberg figures

61 Highlighting the venous arborization - a high predictive sign of lightning strike in human is called:
a) Lichtenberg figures
b) Hoffmann figures
c) Khlebnikov signs
d) Gibbs figures
e) Grandin signs

62 Condensation nuclei are:
a) coarse particles (PM10-2.5)
b) fog
c) smog
d) air dust (air particulates)
e) solid particles suspended in the air, the cause of precipitation

63 Weather is:
a) the physical state of the atmosphere at a certain time
b) all the meteorological elements of the atmosphere in a certain space for a long period
c) the process of formation and evolution of electrical charged particles
d) the upper layer of the Earth's surface
e) the field of study of animal nutraceutical

64 Choose an anticyclone bellow:
a) Mediterranean Low
b) Icelandic Low
c) Saharan Low
d) Siberian High
e) Azores Middle

65 Neuroses, neuralgia and migraines are:
a) anemopathies
b) cyclonopathies
c) visible light positive effects
d) sebaceous glands disorders
e) common infectious diseases

66 The alpin (alpine) climate ranges:
a) in altitudes lower than 500 m

b) at sea-level
c) in altitudes higher than 1000 m
d) in altitudes of 500-1000 m
e) only in Alps and Rocky Mountains

67 Soil is NOT:
a) base for animals and shelters
b) storage place of nutrients
c) the main cause of greenhouse effect
d) supplier of nutrients for plants and animals
e) purifying system - converting any kind of residues

68 Occurrence of injuries in the contact areas (pressure ulcers or bedsores) is:
a) a soil direct action
b) a soil indirect action
c) a water direct action
d) an air indirect action upon animals
e) a form of eutrophication

69 The telluric diseases are transmitted by:
a) air
b) water
c) soil
d) contact
e) wind

70 Healthy soils are:
a) located on low altitude
b) located on wet and floodable lands
c) located on cold lands
d) located on sunny lands
e) contaminated soils

71 Diseases correlated with soil excess or/and deficiency in mineral elements are called:
a) telluric diseases
b) geochemical endemic diseases
c) airborne diseases
d) coniosis
e) salinization

72 The following statement is true for the acidic pH soils:
a) the activity of microorganisms is inhibited
b) plants growing on such soils are balanced in term of chemical composition
c) can be obtained higher yields per hectare
d) the growth of microorganisms is favored
e) they can generate H.A.P.E.

73 Among the Hoffman areas of water distribution in the soil structure, the upper zone is represented by:
a) the filtration zone
b) the forbidden zone
c) the capillarity zone
d) the real zone of groundwater

e) the evaporation zone

74 Capillary pores in the soil have diameter:

a) greater than 10 cm
b) greater than 2 mm
c) less than 2 mm
d) less than 10%
e) greater than 2 cm

75 Permanent or autochthonous bacteria in soil are:

a) bacteria brought in soil by organic fertilizer
b) bacteria which increase in number when fertilizers are applied
c) bacteria invading the soil habitat, entering by fertilizers, animal manures, corpses
d) microorganisms pathogenic to humans
e) bacteria adapted to unfertilized soil

76 The maximum persistence in the soil of the vegetative bacteria form and the sporulated bacterial form are:

a) 4-10 weeks, 20 years
b) 2 days and 30 days, respectively
c) 20 minutes and 3 hours, respectively
d) 1 week, 2 years
e) similar for the two bacterial forms, 20 days

77 Regarding the microorganisms (bacteria) distribution in the soil, the largest number can be found:

a) from the surface to a depth of 2-3 cm
b) at 4-30 cm depth beneath the ground level
c) at depth more than 3 meters
d) at depth more than 15 m
e) in the troposphere

78 From the processes bellow, choose the one which is NOT a soil degradation form:

a) erosion
b) compaction
c) desertification
d) salinization
e) eutrophication

79 Regarding soil pollution with street sweeping wastes, the wastes resulting in markets have values of:

a) 15 mg / cm
b) 17 g / sqm / 30 days
c) 1 cm / 1000 sqm / day
d) 10 l / 1000 sqm / day
e) 2 g / 1000 cm / day

80 Special wastes implied in soil pollution can be considered:

a) farmyard manure
b) household wastes
c) fodder leftovers
d) residues generated by hospitals
e) deep litter from germ-free animal shelters

81 Regarding the Khlebnikov index (the sanitary number), a value greater than 0.95 classifies the soil as:

a) intense polluted

b) mild polluted
c) unpolluted
d) average polluted
e) the respective index concerns the air, not the soil pollution

82 The presence of Cl. perfringens (perfringens bacteria) in the soil and the lack of E. coli shows:
a) an older or previous pollution
b) a recent contamination
c) doesn't indicate soil pollution
d) indicate water radioactivity
e) the infestation degree with parasitic elements

83 Bacteriophages can be used to accurately specify the moment of soil pollution. In the case of organic pollution, first time can be encountered:
a) Coli phages
b) SS phages
c) Vibrio phages
d) Bacillus phages
e) Aspergillus phages

84 In autumn or in spring, the soil self-purification process:
a) lasts 5 days
b) lasts 10 days
c) lasts 60 days
d) stops
e) lasts 24 hours

85 In animal husbandry, water:
a) has only a biological role - as nutrient
b) has ecological and saprobic role
c) has biological role and technological role
d) has ecologic role and toxicologic role
e) doesn't have any role

86 From the total amount of water covering the Earth, the atmospheric water represents:
a) 2.15%
b) 3%
c) 0.01%
d) 97.2%
e) 50%

87 From the total amount of water covering the Earth, the sea and ocean water represents:
a) 2.15%
b) 3%
c) 0.01%
d) 97.2%
e) 50%

88 From the world resource, fresh water used in industry represents a percent of:
a) 90%
b) 5%
c) 1%
d) 70%

e) 25%

89 World Health Organization estimates that the biologic water need is:

a) 5 l / day / citizen
b) 100 l / day / citizen
c) 20-70 l / day / citizen
d) 200 cc / day / citizen
e) 5 cm / day / citizen

90 The third (the last) moment in rainwater pollution is:

a) eutrophication
b) when precipitations are forming on condensation nuclei
c) when touching the ground (the soil)
d) when precipitation falls (atmosphere washing)
e) when is collected and used without processing as drinking water source

91 Among flowing water bodies (streams), torrents can be described as:

a) permanent
b) accidental
c) artificial channels
d) rivers
e) intermittent

92 For backwater (stagnant water bodies), different smell and taste changes can occur mainly due to:

a) phytoplankton and zooplankton overgrowth
b) pollution with heavy metals
c) pollution with PAH
d) salinization
e) pollution with carbon dioxide

93 Wetlands (swamps, mires, marshes) are accumulations of water in Earth's crust hollows with depth:

a) greater than 20 m
b) below 5 m
c) below 2 km
d) less than 20 cm
e) less than 1 km

94 In term of the aquifer layer depth, groundwater can be classified as:

a) phreatic water and high depth groundwater
b) streams, backwater and wetlands
c) in four quality classes
d) sparkling and still mineral water, medicinal water, thermal water
e) permanent, intermittent, accidental bodies of water

95 For the phreatic water, the water layer depth ranges:

a) 5-50 m
b) 10-100 m
c) 1-10 m
d) 2-20 m
e) 50 cm-7 m

96 Choose a specific item implied in the water pollution with organic micropollutants:

a) Phosphates
b) Eutrophication

c) Mercury
d) Aluminium
e) Detergents

97 In 4th quality class water, according to saprobic system, the number of bacteria:
a) is less than 10'000 / ml
b) is less than 100 / ml
c) is less than 100'000 / ml
d) exceeds 1 million / ml of water
e) exceeds 300 / ml of drinking water

98 In the third quality class water, according to saprobic system, can be found:
a) polysaprobic organisms
b) alfa-mesosaprobic organisms
c) beta-mesosaprobic organisms
d) gamma-mesosaprobic organisms
e) oligosaprobic organisms

99 In the first quality class water, according to the saprobic system, the number of bacteria:
a) is less than 10,000 / ml
b) is less than 100 / ml
c) is less than 100,000 / ml
d) exceeds 1 million / ml of water
e) exceeds 300 / ml of drinking water

100 Choose a disadvantage (a drawback) of animal housing:
a) ensuring the optimal microclimate
b) reducing animal locomotion
c) the easier surveillance of the livestock
d) protecting the animal from the negative action of the excessive environmental factors
e) the lack of possibility to proper perform the veterinary actions as vaccination and parasite control

101 Select the right requirement in choosing a good farm site:
a) to have a slope of 1-3°
b) to face North or North-East
c) to lack nearby pastures
d) to be crossed by high-voltage electric network
e) to have land with low soil permeability

102 In Romania, the minimum distance farm-communities (city/village) for pig units is:
a) 100 m
b) 10 km
c) 500-1'000 m
d) 22 m
e) 18 m

103 Odorant gases (smell gases) from farm generate discomfort and can be felt up to:
a) 18 m distance from farm
b) 22 m distance from farm
c) 20 sqm distance
d) 1'000-1'500 m distance from farm
e) 15 km distance from farm

104 Concerning the first requirement in farm organizing - namely space isolation - the zone where livestock unit buildings are located is:

a) The Hoffman area
b) The protection area
c) The forbidden area
d) The screening area
e) The defense area

105 For ensuring a proper house lighting, the minimum distance between animal barns without outdoor access areas is:

a) 2 m
b) 3 m
c) 200 m
d) 15-30 m
e) 6-10 m

106 Thermal conductivity coefficient (k) for doors and windows in animal houses has values of:

a) 2-5 kcal / sqm / h / °C
b) 50 kcal / °C
c) 0.2 kcal / sqm / h / °C
d) 100 kcal / sqm / h / °C
e) 1 mcal / sqm / h / °C

107 For animal houses with natural lighting and ventilation, is not recommended that the width to be more than:

a) 18 m
b) 5 m
c) 12 m
d) 36 m
e) 20 cm

108 Choose a type of animal house which can be easily adapted to any site or livestock and has no permanent foundation:

a) common house
b) modular house
c) manufactured house
d) house with artificial lighting system
e) house with wind-driven ventilation

109 Choose a type of barn foundation which extends over the entire loaded area:

a) raft foundation
b) strip foundation
c) pad foundation
d) roof lights
e) wall footing

110 From the barn total amount of heat losses to the outside, the heat loss through the ceiling is:

a) 25%
b) 1%
c) 50%
d) 100%
e) 50 °F

111 The slope of flat roofs for animal houses is:

a) 30%
b) greater than 20%
c) less than 45°
d) less than 5%
e) greater than 5 kPa

112 In adult horses, the required quantity of litter (bedding) is:
a) 1 kg / day
b) 4-8 kg / day
c) 2 kg / day
d) 0.1-0.2 kg / day
e) 50 kg / day

113 The sanitary veterinary unit, smallest subdivision which ensures animal health surveillance, is:
a) animal house
b) animal house compartment
c) pens, boxes, cubicles, cages
d) troughs, walls and corner feeders
e) nest boxes

114 Choose the right statement for the case of artificial ventilation with exhaust system:
a) free air admission and forced air evacuation
b) forced air admission and free air evacuation
c) both air admission and evacuation are forced
d) both air admission and evacuation are free
e) the outside pressure is lower than the pressure inside the house

115 Regarding the noises in animal houses, the maximum admitted limits in houses in intensive husbandry system is:
a) 50-60 dB
b) 10 dB
c) 80-90 dB
d) 300 RLU
e) 70 Lx

116 Which is the toxic level of carbon dioxide in the air of the animal houses?
a) 10,000 ppm
b) 5,000 ppm
c) 3,000 ppm
d) 1,000 ppm
e) 2,500 ppm

117 The maximum admitted value for ammonia in the air of the houses for ostriches is:
a) 10 ppm
b) 26 ppm
c) 4 ppm
d) 15 ppm
e) the admitted limit was not established

118 The maximum admitted limit for hydrogen sulfide in the air of the animal houses is:
a) 4 ppm
b) 10 ppm
c) 26 ppm

d) 1000 ppm
e) 15 ppm

119 In animal houses, the maximum admitted limit for airborne microorganisms is:
a) 300 / m3 of air
b) 12,500 / m3 of air
c) 1 million / m3 of air
d) 250,000 / m3 of air
e) 15 mg / m3 of air

120 According to Petkov overall microclimate assessment scale, the inappropriate microclimate is considered the one having the final score of:
a) 90 points
b) 90-100 points
c) 80 points
d) 70-90 points
e) less than 70 points

121 The synanthropic rodents tolerate temperatures of:
a) 38-40 °C
b) 5-35 °C
c) above 45 °C
d) less than 5 °C
e) less than 0 °C

122 The control of vehicles entering the farm unit and their disinfection is ensured by the presence of:
a) the warm zone facility - the sanitation building
b) farm entrance footbath
c) delivery ramps
d) vehicle disinfection baths
e) sanitation and decontamination stations

123 The sanitary zone of a warm-zone facility (sanitation building or decontamination area) in large commercial farms must have 2 lines of rooms, each line including a number of:
a) 2 rooms
b) 7 rooms
c) 3 rooms
d) 5 rooms
e) 4 rooms

124 According to veterinary hygiene measures, how much lasts the quarantine (the prophylactic isolation)?
a) 20 days
b) 24 hours
c) 60 days
d) 48 hours
e) 35 days

125 The washing and disinfection stations must have a hot water supply, providing water at a temperature of:
a) 70 °C
b) 50 °C
c) 80 °C
d) 180 °C

e) less than 60 °C

126 The "all in - all out" principle implies, after emptying the animal house:

a) performing only dry cleaning then leaving the house fallow
b) performing only wet cleaning then ensuring the house downtime
c) dry and wet cleaning then ensuring the fallow
d) cleaning and disinfection then ensuring the fallow
e) ensuring the fallow then performing all the disinfection stages

127 The microbial decontamination represents:

a) the set of means and methods for combating insects
b) the means and methods to exterminate the rodents
c) the means and methods for eliminating the microorganisms
d) the means and methods for destroying the insects and the rodents
e) the means and methods for adulterations' detection

128 In intensive animal husbandry system, the general prophylactic disinfection is carried out:

a) at least 3 times/year
b) after each production cycle
c) once a year
d) before performing the insect control
e) before carrying out the rodent control

129 The compulsory order in which the sanitary veterinary actions are performed is:

a) disinfection, insect control, rodent control
b) insect control, disinfection, rodent control
c) rodent control, insect control, disinfection
d) disinfection, rodent control, insect control
e) there is no rule regarding the order in which disinfection, rat and insect control to be performed

130 In the disinfection's hydromechanical cleaning stage (wet cleaning stage), to efficiently remove the stains or filth, the water jet must form with the vertical walls an angle of:

a) 25 degrees
b) 45 degrees
c) 90 degrees
d) 50 degrees
e) 60 degrees

131 The thermal fog, comprises in drops with diameters ranging 0.1 to 10 μm, is applied by using the:

a) ULV fogger
b) thermal fogger
c) hand operated sprayer
d) buckets with disinfectants' powder
e) automatic scrubbers

132 The dimensions of a shoe disinfection bath are the following:

a) 1.5 meters length and at least 5 cm wall height
b) 0.7 meters length and at least 5 cm wall height
c) the width of the entire access corridor and 1 cm wall height
d) 50 cm length and 5 cm wall height
e) 50 cm length and 50 cm width, being square-shaped

133 Equiball is:

a) a trough for horses
b) a corner feeder

c) a device releasing the fodder when is pushed by the animals
d) a screw conveyor
e) a scrape conveyor

134 Simple troughs for cattle feeding have:
a) six sides access
b) three sides access to fodder
c) access to the paddocks
d) two sides access to fodder
e) one side access to fodder

135 Choose a feeding device for cattle on pasture:
a) circular hay rack
b) feeding belt
c) scraper conveyor
d) haystack
e) small feed tanks

136 Until the weaning, the feeding of the calves can be done by using:
a) troughs
b) buckets with nipple
c) hay racks
d) fence mangers
e) roller conveyors

137 For the veals / beef calves in intensive system, the finishing time is at the age of:
a) 12-15 months
b) 8-12 months
c) 15-20 months
d) 3-6 months
e) 3 years

138 Fodder processing room, pumping station, mixing tanks are facilities for the following pig feeding system:
a) wet and dry feeding system
b) dry feeding system
c) organic feeding system
d) grazing
e) liquid feeding system

139 For hens in battery cages the access to fodder is done beneath a limiter (adjusting plate) placed in the trough until the age of:
a) 5 days
b) 40 days
c) 10 weeks
d) 40 weeks
e) 18-20 weeks

140 Choosing the animals and groups formation are:
a) animal stockmanship actions before transport
b) veterinary activities for preparing animals for transport
c) administrative and organizational actions before transport

d) administrative procedures during the transport
e) monitoring actions during the transport

141 Which is the validity period of the tickets confirming the ownership of animals for cattle and horses?

a) 60 days
b) 5 years
c) 15 days
d) 3 months
e) 1 year

142 For animal in household units, the ticket confirming the ownership of animals is signed and issued by:

a) the farm manager
b) the mayor office
c) territorial sanitary veterinary agencies
d) the national sanitary veterinary authority
e) the environment ministry

143 Which is the validity period of the veterinary health certificates for live animal transportation?

a) no more than 10 days from the day they were issued
b) until the animals reach their final destination
c) no more than 30 days from the day they were issued
d) no more than 48 hours from the moment they were issued
e) no more than 1 year

144 Which transporter authorization is valid for all journeys (shorter or longer than 8 hours):

a) type 1
b) type 2
c) type 3
d) none
e) type 300

145 Which statement is NOT correct for vehicles used for long journeys:

a) must have an adequate ventilation system capable of operating for at least 4 hours, independently of the vehicle engine
b) must have a temperature monitoring and recording system
c) must have a Navigation System (GPS)
d) must have water tanks' total capacity at least equal to 18 % of vehicle load
e) must have a warning system to alert the driver if the temperatures inside de vehicle are outside the limits

146 Which document must have the animals' transporters for long journeys (taking more than 8 hours), an extensive document with 5 sections:

a) journey log
b) certificate of approval of means of transport
c) certificate of competence for drivers and attendants
d) transporter authorization
e) veterinary health certificate

147 In which animals the loading/unloading ramps must have slopes not steeper than an angle of 26 degrees 34 minutes (50%):

a) calves
b) horses
c) pigs

d) sheep
e) porpoises

148 In animal transportation, when loading into vehicles is done during the night, appropriate lighting shall be provided with an intensity (measured at 1 m height) of at least:

a) 2000 lux
b) 10 lux
c) 50 lux
d) 500 lux
e) 1120 lux

149 For ruminants during transportation, the milking is done at least at:

a) 6 hours
b) 12 hours
c) the ruminants are not milked during the transportation
d) 24 hours
e) 8 hours

150 To prevent animal slipping, stationary or mobile ramps used for animal loading into railway cars have rectangular foot battens at each:

a) 4.5 cm
b) 25 cm
c) 2.5 cm
d) 1.5 cm
e) 3 cm

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