

FUNDAMENTALS OF HUSBANDRY

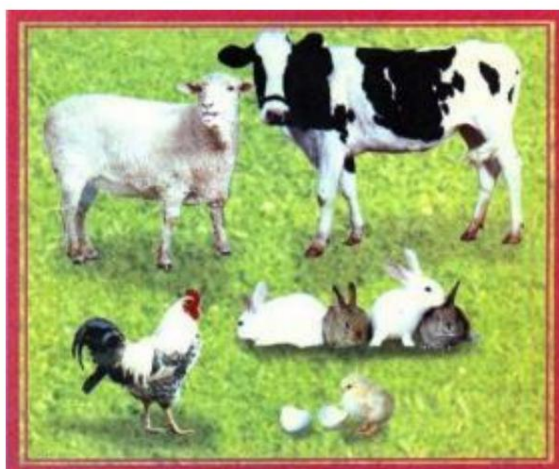
REPUBLIC OF UZBEKISTAN

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION

NAMANGAN INSTITUTE OF ENGINEERING AND CONSTRUCTION

AGRICULTURAL MECHANISATION
DEPARTMENT

From the subject "Fundamentals of
animal husbandry".



STUDY IS A METHODOLOGICAL COMPLEX

Field of knowledge:	800000 – Agriculture, Forestry, Fisheries and Veterinary
Field of study:	810000 – Agriculture
Course of Study:	60810400 – Application of innovative techniques and technologies in agriculture

Namangan-2024

FUNDAMENTALS OF HUSBANDRY

REPUBLIC OF UZBEKISTAN

MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION

NAMANGAN INSTITUTE OF ENGINEERING AND CONSTRUCTION



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This teaching-methodical set describes modern technologies **for teaching the fundamentals of animal husbandry**, methodological recommendations for their application to the educational process. These recommendations are designed taking into account the rules of educational technology consisting of didactic principles, methods and means of developing technologies for lectures, practical and laboratory training, and their important features.

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Foreign expert: Donghee Cho. South Korea. National quarantine of animals and plants association, doctor of veterinary sciences

Reviewers: Associate Professor of the NamMQI TL Department Z. Isaqova

The teaching-methodological complex of the subject was discussed at the _01_ meeting of the "KXM" department on _25_ _08_, 2024 and was recommended for discussion at the faculty council.

The educational-methodological complex of the subject was discussed and recommended for use in the educational-methodical council of the "Transport" faculty (minute _01_ dated _26_ _08_ of 2024).

Educational-methodological complex of the NamMQI Council in 2024 " _30_ " _08_ ___ - recommended for approval by decision no.

FUNDAMENTALS OF HUSBANDRY

I. SYLLABUS		
II. USED IN TEACHING THE MODULE INTERACTIVE LEARNING METHODS		
III. THEORETICAL MATERIALS		
1.	Importance, status, development prospects of livestock breeding in the national	
	economy 2. The origin of agricultural animals and their wild ancestors	
3.	Laws of growth and development of agricultural animals. 4. Fundamentals	
	of breeding of agricultural animals. Exacerbation methods	
5.	Carrying out breeding work, selection and sorting in animal husbandry	
6.	Fundamentals of feeding agricultural animals. Food classification. Food preparation.	
7.	Concept of ration and ration norm and nutritional unit. Principles of rationing.	
8.	Cattle farming. Cattle classification, biological characteristics and breeds.	
9.	Cattle milk productivity and milk production technology 10. Cattle	
	meat productivity and industrial meat production technology 11. Sheep farming. Sheep	
	classification, biological characteristics and breeds.	
12.	Sheep Productivity and Production of Sheep Products technology.	
13.	Pig farming. Biological characteristics and breeds of pigs. Pork production technology.	
14.	Morphological structure and chemical composition of meat	
15.	Meat canning technology	
16.	Importance and biological characteristics of poultry farming. In poultry breeds.	
17.	Meat and egg production technology in poultry farming	
18.	Horse breeding. Biological features and breeds of horses.	
19.	Productivity of horses and horse sports	

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IY.	PRACTICAL TRAINING MATERIALS	
1.	Study of the exterior of farm animals	
2	Body sizes and indices of agricultural animals	
3	Methods of branding and determining live weight of agricultural animals	
4	Methods of determining the age of cattle	
5	Taking into account the growth of agricultural animals	
6	Primary zootechnical account books used in animal husbandry	
7	Accounting for coarse and juicy feed on the farm	
8	Formulation of rations for dairy cows	
9	Calculation of milk yield of cows	
10	Determining the fat content of milk in farmers	
11.	Continuous milk production technology on the farm	
12	Breeding techniques in cattle breeding	
13	Determination of obesity level of agricultural animals	
14	Technology of milking of agricultural animals	
15	Determination of the chemical composition of cattle	
16	Determination of the chemical composition of food	
17	Determining the digestibility coefficient of food	
18	Determination of the quality of Karakul skin	
19	Determination of the economic efficiency of the use of mother pigs	
20	Providing veterinary and sanitary services in livestock farms	
VI SUBJECTS OF INDEPENDENT STUDY		
VII GLOSSARY.....		
VIII BIBLIOGRAPHY.....		

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REPUBLIC OF UZBEKISTAN HIGHER EDUCATION, SCIENCE AND
MINISTRY OF INNOVATION

NAMANGAN INSTITUTE OF ENGINEERING AND CONSTRUCTION

"I CONFIRM"

Rector of NamMQI

_____ Sh. Ergashev

" _____ " 2024

OF THE SUBJECT "Fundamentals of Animal Husbandry".

STUDY PROGRAM

Field of knowledge: 800000 – Agriculture, Forestry, Fisheries and Veterinary

Field of study: 810000 – Agriculture

Course of Study: 60810400 – Application of innovative techniques and technologies in agriculture

NAMANGAN - 2024

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Subject/module code <u>ChA2506</u>		Academic year 2024-2025	Semester 5	ECTS-Credits 6	
Subject/module type Choice		Language of education Uzbek		Class hours per week 4	
1	The name of the subject	Audience training (hours)		Independent study (hours)	Total load (hours)
	Basics of animal husbandry	60 (30 m/ 30 a)		120	180
2.	<p style="text-align: center;">I. The content of science</p> <p>The main goal of the science is to teach the science of "Fundamentals of Animal Husbandry" to produce livestock products and raw materials (meat, milk, eggs, honey, wool, goat hides) based on the requirements of the state standard, and not to breed them. , to improve the quality and supply of raw materials to the processing industry.</p> <p>The main task of the science is to teach students the theoretical foundations of the development of animal husbandry, its current state and prospects, the origin of livestock, domestication, the history of the development of the doctrine of the breed, the scientific basis of livestock feeding, the creation of feed rations, the use of methods of selection and sorting in animal husbandry, the technology of artificial breeding of livestock, the importance of livestock products in human life, the rapid, advanced and foreign technologies of this field, the ability to solve the problems of breeding and preparation of livestock products on the farm.</p> <p style="text-align: center;">I. The main theoretical part (lecture sessions)</p> <p style="text-align: center;">II.I. The subject includes the following topics:</p> <p>1-Topic. Introduction to Animal Husbandry Basics Importance of animal husbandry in national economy, status, development prospects. All branches of animal husbandry, the types of products obtained from them, the importance of animal products for humans, the amount of animal products production</p> <p>2-Subject. The origin of farm animals and their wild ancestors Farm animals of all types, wild ancestors and their description, domestication and domestication of wild ancestors, changes in domestication. Periods of domestication.</p>				

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3-Topic. Laws of growth and development of agricultural animals

Periods of growth and development of farm animals, factors affecting growth and development. Embryonism and infantilism.

4-Topic. Basics of breeding farm animals. Exacerbation methods.

Fundamentals of breeding agricultural animals, purebred breeding, crossbreeding and Hybridization. Inbreeding. Distribution by system and families.

5-Topic. Choosing to carry out breeding work in animal husbandry and sorting

The main purpose and task of breeding work is to carry out zootechnical calculations in livestock farms. Selection and mating of farm animals, inspection. Assessment of farm animals based on their origin and productivity.

6-Topic. Basics of feeding farm animals. Foods classification. Food preparation

Nitrogen-fixing synthetic substances in feed made from plants (green fodder, root and legume crops, coarse feed, mixed fodder, grain feed), technical production waste (bone meal, blood meal, skimmed milk) .

7-Subject. Concept of ration and ration norm as well as food unit.

Principles of rationing.

The essence of ration composition, dairy cows, breeding bulls, calves, sheep, horses principles of rations for pigs and poultry. Ration structure.

8-Topic. Cattle farming. Cattle classification, biological characteristics and breeds

Classification of cattle breeding according to the direction of production, breeds of cattle in the direction of milk, milk-meat and meat. Cattle breeds regionalized in the conditions of Uzbekistan and their description.

9-Topic. Milk yield of cattle and milk production technology Milk yield of cows and factors affecting it. Manual and machine milking of cows and their advantages. Suitability and identification of cows for machine milking. Milking technique. Determination of lactation rate. The shape of the udder and teats

10-Topic. Meat productivity of cattle and industrial meat production technology.

Definition of meat productivity of cattle. Meat quality and factors affecting its quality. Meat quality and account book. Meat production on an industrial basis

release technology

11-Topic. Sheep farming. Sheep classification, biological characteristics and breeds.

Sheep breeding, its importance, present status and future. Biological characteristics of sheep. Sheep breeds. Description of sheep breeds systematically zoned in the Republic of Uzbekistan depending on the direction of production. Sheep productivity and production technology of sheep products. Meat, milk, wool, skin productivity of sheep. Running a breeding and breeding season.

12-Subject. Pig farming. Biological characteristics and breeds of pigs.

Pig breeds. Efficiency of pig farming. Classification and description of pigs according to the direction of production. Morphological structure and chemical composition of meat. Factors affecting meat quality. Chemical composition of meat of different agricultural animals. Change of meat after slaughter.

13-Subject. Importance and biological characteristics of poultry farming. Poultry breeds.

Importance of poultry farming in the national economy, biological characteristics and productivity characteristics of poultry. Poultry meat productivity. Classification of birds. Poultry breeds.

14-Subject. Meat and egg production technology in poultry farming.

Incubation (hatching). Methods of feeding poultry. Eggs and poultry meat production processes. Making a ration.

15-Subject. Horsemanship. Biological characteristics and breeds of horses.

Horse breeds that are planned in Uzbekistan. Breeding, feeding and care of horses. Breeding foals and foals. Horse product. Productivity and sport of horses. Meat and milk productivity of horses, methods of milking cows. Fattening and fattening horses on pasture. Equestrian sports and national equestrian games.

III. Instructions and recommendations for practical training

The following topics are recommended for practical training:

1. Determining the exterior of farm animals;
2. Body sizes and indices of agricultural animals;
3. Methods of branding and determining live weight of agricultural animals;
4. Methods of determining the age of cattle;
5. Considering the growth of agricultural animals;
6. Primary zootechnical account books used in animal husbandry;
7. Consideration of coarse and juicy feeds in farms;
8. Formulation of rations for dairy cows;
9. Consideration of milk productivity of cows;

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10. Continuous milk production technology in the farm;
11. Determining the degree of obesity of agricultural animals;
12. Taking into account the meat productivity of cattle;
13. Chemical composition of food;
14. Determining the quality of black leather;
15. Providing veterinary and sanitary services in livestock farms.

IV. Independent education and independent work

Suggested topics for independent study:

1. Individual development of agricultural animals. Livestock feed demand for substances. Cattle, sheep, goats, pigs, horses are fogged in Uzbekistan and description of poultry breeds.
2. Poultry and egg production technology on an industrial basis. To products advanced farms in providing primary processing and marketing services technological processes. Description of nutrients derived from animal products. Village methods of studying the origin of farm animals.
3. Silage preparation technology. Technology of preparation of hay. Technology of making hay. Breeding methods and their description. Description of the breed of cattle created by hybridization. Description of the cattle breed created in Uzbekistan. Description of the leather sheep breed. Methods of determining food quality.
4. Methods and technology of milking cows. Requirements for determining whether cows are suitable for machine milking. Morphological structure and chemical composition of meat. Chemical composition of food.
5. Selection and selection in animal husbandry. Requirements for hatching eggs. Breeding works in poultry farming. Breeding work in cattle breeding.
6. Breeding work in sheep farming. Breeding work in pig farming. In horse racing breeding work.

The course work (project) is not provided in the science program.

3. V. Educational results / Professional competencies

The student should know:

- the role of animal husbandry in agriculture, its diversity and types of animal products;
- breeds of farm animals, breeds and crosses of poultry;
- changes in the origin, domestication, domestication of farm animals;

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	<ul style="list-style-type: none"> - technologies of preliminary processing of livestock products, factors affecting the quality and quality of livestock products; - and about the factors affecting the growth and development of agricultural animals; - the role of animal husbandry in agriculture, its diversity and types of animal products; - breeds of farm animals, breeds and crosses of poultry; - origin, domestication of farm animals; - the basics of breeding and feeding agricultural animals in livestock farming; - technique of feeding agricultural animals with scientifically based norm; - feed classification, determining the productivity of livestock and poultry and ways to increase it; - laws of individual growth and development of animals, livestock productivity; - milk and meat production technology; - breeding methods of farm animals; - methods of breeding, breeding techniques, factors influencing the growth and development of animals; - increasing the productivity of farm animals.
4	<p style="text-align: center;">VI. Educational technologies and methods</p> <ul style="list-style-type: none"> • Lectures: • Interactive case studies: • Seminars (logical thinking, quick questions and answers): • Work in groups: • Making presentations: • Projects for teamwork and protection.
5	<p style="text-align: center;">VII. Credit requirements.</p> <p>Full mastery of the theoretical and methodological concepts related to the teaching results defined in the science, ability to correctly reflect the results of analysis, independent observation of the studied processes and performance of the tasks and tasks given in the interim control forms, final control must pass a test on</p> <p>A student who misses 25% or more of the classroom hours allocated to a subject without reason will be excluded from this subject, will not be included in the final examination, and will not have mastered the appropriate credits for this subject.</p>

6 Main literature

1. Marlene Felius, Peter A. Coolmess, Bert Theunissen. On the Breeds of Cattle – Historic and Current Classifications. 2011. Tutorial
2. Steven Leeson and JO Summers. Broiler Breeder Production. Canada. 2011. Textbook
3. Rosalee Sinn, Paul Rudenberg, Barbara Carter. Raising Goats for Milk and Meat. 2008. Textbook
4. Written by Herman R. Purdy, R. John Dawes and Dr. Robert Hough, Revisions by Don Hutzell. Breeds of Cattle. Updated E Revised 2 nd Edition. 2008. Tutorial
5. Ikramov TX "Fundamentals of Animal Husbandry". /Tutorial. Teacher, Tashkent. 1996
6. T.Sh. Akmalxhanov, S.Sh. Isamukhamedov and others. "Practical from animal husbandry training" Training manual. Tashkent. 2009
7. PSSobirov, A. Qakhharov, SDDostkulov "Raising livestock" Training manual. Samarkand. 2003

Additional literature

1. Food and Agriculture Organization of the United Nations. Farmer's Hand Book on Pig Production. 2009. Textbook
2. Kevin J. Stafford. Cattle Handling. 2005. Tutorial
3. Kulikov VMRuban Yu.D. "General zootechnics" Textbook. Teacher, 1980
4. Khamrokulov P. Karibaev K. "Feeding agricultural animals". Textbook. Tashkent. 1999.
5. S. Islamkho'jaev, K. Boboev, K. Ulomov "Practical training in poultry farming". Study guide. Tashkent. "Uzbekistan" 1996
6. U. Nosirov "Cattle herding". Textbook. T, 2001.
Law and regulation on deepening reforms in agriculture 7. document collection volumes 1 and 2 "East" 1998
8. Decree of the President of the Republic of Uzbekistan "On the concept of development of farms in 2004-2006" dated October 27, 2003 No. 342.
9. 476-
Decision No. 30 October 2003.
10. Decision No. 308 of the President of the Republic of Uzbekistan "On measures to encourage the increase of livestock in personal assistants, farmers and farms", March 13, 2006.

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	<p style="text-align: center;">Internet sites</p> <p>www.gov.uz Republic of Uzbekistan government portal</p> <p>www.agronews.ru Agro news portal www.ark-inform.com/animalstat - News about animals www.proagro.com.ua/news - Agro program news www.ziyo.net – Knowledge portal 7 developed by Namangan</p>
	Institute of Engineering and Construction and approved.
8	<p>Responsible for the subject/module:</p> <p>A.Nuriddinov - Associate Professor of the Department of Science and Technology, tel</p>
9	<p>Reviewer(s): Z.</p> <p>Isokova - NamMQI, associate professor of the "Transport logistics" department, tffd</p>

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REPUBLIC OF UZBEKISTAN

MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION

NAMANGAN INSTITUTE OF ENGINEERING AND CONSTRUCTION

"I CONFIRM"

NamMQI vice-rector for educational affairs

_____ Q. Inoyatov

" _____ " 2024

"Fundamentals of Animal Husbandry"

BY SCIENCE

SYLLABUS

FOR DAY SECTION

Field of knowledge:	800000 – Agriculture, Forestry, Fisheries and Veterinary
Field of study:	810000 – Agriculture
Course of Study:	60810400 – Application of innovative techniques and technologies in agriculture

Namangan - 2024

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Module / SUBJECT SYLLABUS FACULTY OF TRANSPORTATION

60810400 – Application of innovative techniques and technologies in agriculture

Subject Name:	Basics of animal husbandry
Science type:	Selection
Science code:	<u>ChA2506</u>
Year:	4
Semester:	5
Form of education:	Daytime
Form of classes and hours allocated to the semester:	180
Lecture 30	
Practical exercises 30	
Laboratory training -	
Seminar	-
Independent education	120
Credit amount:	6
Evaluation form	Written
Science language:	Uzbek

Science Objective (FM)	
FM1	<p>The main goal of the science is to teach the science of "Fundamentals of Animal Husbandry" to produce livestock products and raw materials (meat, milk, eggs, honey, wool, goat hides) based on the requirements of the state standard, and not to breed them. , to improve the quality and supply of raw materials to the processing industry.</p>
Learning outcomes (TL)	
	<i>In terms of knowledge:</i>
TN1	<p>to students the theoretical foundations of the development of livestock breeding, its current state and perspective, the origin of livestock, domestication, the history of the development of the doctrine of the breed, the scientific basis of livestock feeding, the creation of feed rations, the use of methods of selection and selection in livestock breeding, the presentation of livestock It is to teach the technology of breeding, the importance of livestock products in human life, the rapid, advanced and foreign technologies of this field, and the ability to solve the problems of breeding and preparation of livestock products on the farm.</p>

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Basic knowledge necessary for mastering science	
1	Agricultural machines (2)12
2	Basics of farming (2)10
3	Tractors and constructions of QXM

Learning outcomes (TL)	
	<i>In terms of knowledge:</i>
TN1	the role of animal husbandry in agriculture, its diversity and types of animal products; breeds of agricultural animals, breeds and crosses of poultry; changes in the origin, domestication, and domestication of farm animals; technologies of preliminary processing of livestock products, factors affecting the quality and quality of livestock products; and must have an idea about the factors affecting the growth and development of agricultural animals ;
TN2	The role of animal husbandry in agriculture, its diversity and types of animal products; breeds of agricultural animals, breeds and crosses of poultry; origin, domestication of agricultural animals; the basics of breeding and feeding agricultural animals in livestock farming; to know and be able to use techniques of feeding agricultural animals with scientifically based norms ;
TN3	Feed classification, ways to determine and increase the productivity of livestock and poultry; he must know how to take care of domestic animals and prepare their valuable rations for them .
	<i>In terms of skills:</i>
TN4	Laws of individual growth and development of animals, livestock productivity of animals;
TN5	Milk and meat production technology; breeding methods of agricultural animals;
TN6	Breeding methods, factors influencing the growth and development of animals; will have skills to increase the productivity of agricultural animals ;

Content of sciences

Form of training: lecture (M)	
	<i>In terms of knowledge:</i>
M1	Introduction to Animal Husbandry Fundamentals
M2	Origin of farm animals and their wild ancestors
M3	Laws of growth and development of farm animals
M4	Fundamentals of breeding farm animals. Exacerbation methods.
M5	Selection and sorting of breeding work in livestock breeding
M6	Fundamentals of Farm Animal Nutrition. Foods

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	classification. Food preparation
M7	Concept of ration and ration norm and food unit. Principles of rationing.
M8	Livestock. Cattle classification, biological characteristics and breeds
M9	Cattle milk productivity and milk production technology
M10	Meat productivity of cattle and industrial meat production release technology.
M11	Sheep farming. Sheep classification, biological characteristics and breeds.
M12	Pig farming. Biological characteristics and breeds of pigs
M13	Importance and biological characteristics of poultry. Poultry breeds.
M14	Poultry meat and egg production technology.
M15	Equestrian. Biological characteristics and breeds of horses.
Form of training: practical (A)	
T1	Determining the exterior of farm animals;
T 2	Body sizes and indices of farm animals;
T 3	Methods of branding and determining live weight of agricultural animals;
T 4	Methods of determining the age of cattle;
T 5	Accounting for the growth of agricultural animals;
T6	Primary zootechnical account books used in animal husbandry;
T7	Consideration of coarse and succulent feed on farms;
T8	Formulation of rations for dairy cows;
T9	Accounting for milk productivity of cows;
T10	Technology of continuous milk production in the farm;
T11	Determining the level of obesity in farm animals;
T12	Taking into account the meat productivity of cattle;
T13	Chemical composition of food;
T14	Determining the quality of Karakol leather;
T15	Providing veterinary-sanitary services in livestock farms.

Independent Study (MT)		
1	Preparing for practical training and doing homework.	120 hours
2	Compilation of situational issues (case	30 hours
3	studies) Literature analysis on independent assignments	40 hours
4	Translation of given sources Preparation	20 hours
5	of a presentation on the topic Defense of	20 hours
6	the prepared presentation Main literature	10 hours

1. Marlene Felius, Peter A. Coolmess, Bert Theunissen. On the Breeds of

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	Cattle – Historic and Current Classifications. 2011. Tutorial
2.	Steven Leeson and JO Summers. Broiler Breeder Production. Canada. 2011. Textbook
3.	Ikramov TX "Fundamentals of Animal Husbandry". /Tutorial. Teacher, Tashkent. 2016
Additional literature	
1.	Mirziyoev SH.M. Ensuring the rule of law and human interests - a pledge of the country's development and people's well-being. Tashkent, Uzbekistan, 2017. – 48b
2.	Mirziyoev SH.M. Action strategy on five priority areas of development of Uzbekistan. - T.: Uzbekistan, 2017.
3.	S. Islamkho'jaev, K. Boboev, K. Ulomov "Practical training in poultry farming". Study guide. Tashkent. "Uzbekistan" 2016
Information sources	
1.	www.ziyonet.uz
2.	www.gov.uz - Government portal of the Republic of Uzbekistan.
3.	www. Lex.uz is a database of legal documents of the Republic of Uzbekistan.

The following criteria are recommended for monitoring the student's performance in the subject:

Assessment of students in science is approved by the order of the Minister of Higher and Secondary Special Education of the Republic of Uzbekistan dated August 9, 2018 No. 19-2018 "The system of monitoring and evaluating student knowledge in higher education institutions is correct on" will be implemented based on the REGULATION.

"A student who misses 25 percent of the classroom hours allocated to a subject and more hours without a reason will be excluded from this subject, will not be included in the final examination, and will not have mastered the appropriate credits for this subject."

Reminder! "Students who miss 25% or more of the classroom hours allocated to a subject without reason will not be expelled from this subject and will not be included in the final examination and will not have mastered the relevant credits in this subject"

Information about the science teacher

FUNDAMENTALS OF HUSBANDRY

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Organization	Namangan Engineering Construction Institute. "KXM" department
Reviewer	Z. Isokova, Doctor of Philosophy in Technical Sciences (Phd).

This syllabus is dated August 28, 2024 of the educational and methodological council of the institute
Approved by the minutes of the meeting No. 1

This syllabus was approved by the meeting No. 1 of the "KXM" department on August 26, 2024

II. INTERACTIVE LEARNING USED IN TEACHING THE MODULE METHODS

"Insert" method

The purpose of the method: This method is for students to accept the new information system and is used in order to facilitate the assimilation of knowledge, as well as this method also serves as a memory exercise for students.

Procedure for implementing the method:

ÿ the teacher explained the content of the main concepts of the subject before the training prepares input text in the form of a handout or presentation;

ÿ a text explaining the essence of a new topic is distributed to learners or presented in the form of a presentation;

ÿ Learners get to know the text individually and make their own they express their views through special signs. The following to students when working with the text it is recommended to use special characters:

Table 1

"Insert" method

Signs	Profession	Occupations classification	Professionogram
"V" is familiar information.			
"?" - I did not understand this information, comment need			
"+" this information is new to me.			
"–" is an opinion or this information do you mind			

When the time limit is over, it is unfamiliar and incomprehensible to the learners the information is analyzed and interpreted by the teacher and their essence will be fully lit. After answering the questions, the session ends.

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"Fundamentals of animal husbandry". Cattle farming. To study the subject of Cattle classification, biological characteristics and breeds" based on the insert table. It is not clear to me. I know

"V" to the best of my knowledge	the information.	It is required to define it. It is not clear to me "?"	or the information contradicts
5	2	8	2

"SWOT-analysis" method

The purpose of the method is to find ways to solve the problem by analyzing and comparing existing theoretical knowledge and practical experience, strengthening knowledge, repeating, evaluating, forming independent, critical thinking, non-standard thinking.

S – (strength)	• kuchli tomonlari
W – (weakness)	• zaif, kuchsiz tomonlari
O – (opportunity)	• imkoniyatlari
T – (threat)	• to'siqlar

Example: system of innovative technologies in livestock development

Put the SWOT analysis into this table.

Table 2

"SWOT-analysis" method

	From the system of innovative technologies in livestock development Strengths of using S	The use of innovative technologies accelerates the development of beekeeping and increases the quality of learning.
	In the development of animal husbandry Weaknesses of the use of W innovative technology system	Inadequate introduction into production
	From the system of innovative technologies in livestock development possibilities of use (internal)	Availability of opportunities to increase and develop the number of cattle in livestock farms.
	T Barriers (external)	New in livestock farms

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		insufficient information on technologies.
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Table 3

SWOT analysis of professional development

S	Strengths of professional training	Choosing the right profession. Proper organization of work at will. Becoming a competent person for society.
W	Weaknesses of professional formation	Low productivity due to wrong career choice. The reason for lack of interest in the profession is the lack of desire to master one's profession
O	Opportunities for professional development (internal)	To have in-depth knowledge, skills and qualifications related to their professional formation and to achieve high efficiency in their activities. Becoming a mature specialist in his profession. Production quality increases.
T	Barriers (external)	Modern profession - lack of conditions and lack of time to learn foreign languages and master information technologies in mastering deafness

"Summary" (Summary, Veer) method

Purpose of the method: This method is aimed at studying complex, multidisciplinary, as much as possible, problematic topics. The essence of the method is that the same information is given on different branches of the subject, and at the same time, each of them is discussed in separate aspects. For example, the problem is studied in terms of positive and negative aspects, advantages, merits and demerits, advantages and disadvantages. This interactive method provides an opportunity to successfully develop critical, analytical, clear logical thinking and to systematically express and defend students' independent ideas and thoughts in written and oral form. The "Summary" method can be used in lecture sessions in the form of individual and pair work, in practical and seminar sessions in the form of small group work for the purpose of strengthening, analyzing and comparing knowledge on the subject.

Table 4

"Summary" method

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Procedure for implementing the method:



The trainer-teacher divides the participants into small groups of 5-6 people;

After familiarizing the participants with the purpose, terms and procedure of the training, he distributes handouts to each group with the parts necessary to analyze common problems;

Each group thoroughly analyzes the problem assigned to it and makes a written statement of its opinions to be distributed according to the recommended scheme;

At the next stage, all groups will make their presentations. After that, the trainer summarizes the analysis and fills in the necessary information.

The topic ends.

"Case-study" method

"Case-study" is an English word ("case" - specific situation, event, "stadi" - to study, analyze) aimed at carrying out teaching based on the study and analysis of specific situations is a method. This method was first used in Harvard University in 1921 in order to use practical situations in the study of economic management sciences. In a case, open information or a specific event can be used as a situation for analysis. Case actions include: Who, when, where, why, how, what, what-result.

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Table 5

Stages of implementation of the "case method".

Job Stages	Form of activity and content
Stage 1: Case and his with information supply introduction	<ul style="list-style-type: none"> ÿ individual audio-visual work; ÿ familiarization with the case (text, audio or in media form); ÿ generalization of information; ÿ information analysis; ÿ identify problems
Step 2: define the clarification task and Keys study	<ul style="list-style-type: none"> ÿ individual and group work; ÿ Hierarchy of problems identify; ÿ definition of the main problem situation
Step 3: Main in Case by analyzing the problem the solution of the educational assignment search for solutions development	<ul style="list-style-type: none"> ÿ individual and group work; ÿ development of alternative solutions; ÿ the possibilities of each solution and barrier analysis; ÿ selection of alternative solutions
Stage 4: Formulation and justification of the case solution, presentation.	<ul style="list-style-type: none"> ÿ individual and group work; ÿ implementation of alternative options justification of possibilities; ÿ preparation of a creative project presentation; ÿ final conclusion and solution of the situation covering practical aspects

1st "bowl stage": You are interested in the field of animal husbandry, but your parents are against it.
Question: What do you think can be done at this point?

Stages and tasks of case execution:

- Determine the main causes of the problem in the case (individual and in small groups).
- Career choice and sequence of work in your perspective mark (work in pairs)

"Assessment" method

The purpose of the method: this method is aimed at assessing the level of knowledge of learners, monitoring, mastering indicators and checking practical skills. By means of this technique, the cognitive activity of learners is in various directions (test, practical skills, problem situation exercise, comparative analysis, identification of symptoms). diagnosed and evaluated.

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Procedure for implementing the method:

"Assessments" of students or participants in lecture classes in studying the existing level of knowledge, presenting new information, seminar, practical and in training, it is recommended to use it in an individual form for the purpose of evaluating the level of subject or information mastery, as well as self-evaluation. Also, based on the teacher's creative approach and educational goals, to the assessment additional tasks can be included.

Assessment is an English word that means "assessment".

Today, this method is also introduced into the educational system and serves to assess the level of knowledge, skills and abilities of students. Therefore, from this method can be used to effectively solve the case.

Assessment method

Table 6



Test

1. How many parts are the body of cattle will be studied.
2. A) to 1 part
C) into 2 parts
C) into 3 parts
D) into 4 parts



Comparative analysis

- Analyze the body parts of cattle?



Concept analysis

Explain the names of body parts.



Practical experience

- Classify body parts by location.

Venn Diagram Method

Purpose of the method: This method is a form of organizing teaching through graphic images is represented by the image of two intersecting circles. This method is different It allows to consider the analysis and synthesis of concepts, bases, ideas through two aspects, to identify their common and different aspects, and to compare them.

Procedure for implementing the method:

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- participants are put into pairs of two and looking at them frame specific, distinct aspects (or opposites) of the concept or framework at issue it is suggested to write in;

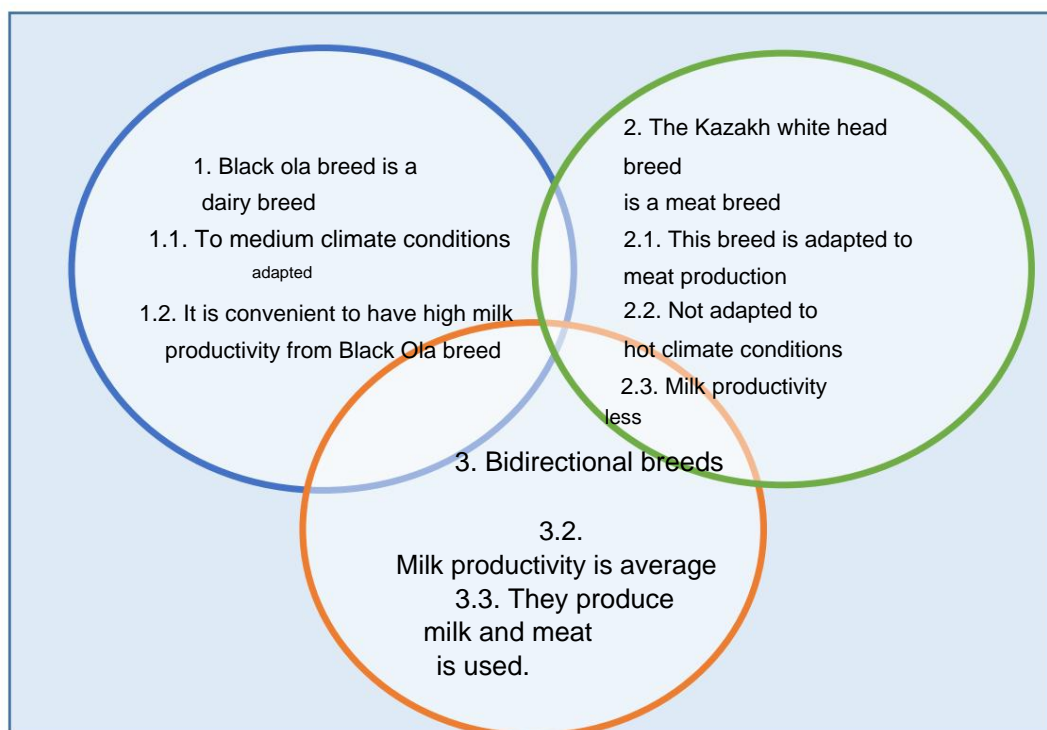
- at the next stage, the participants are divided into small groups of four people are combined and each pair introduces its analysis to the group members;

- after listening to the analysis of the pairs, they come together and discuss the problem or they search for common aspects (or differences) of concepts and generalize them and write on the intersecting part of the circles.

Diagram 1

Venn Diagram

Comparison of productivity of dairy and meat breeds



"Blist-game" method

The purpose of the method is to form the skills of speed, analysis, planning and forecasting of the acquired knowledge system. Evaluation of this method and application for strengthening purposes gives effective results.

Steps to implement the method:

1. An assignment prepared for the participants on the topic, i.e handouts are given separately and study the material carefully from them required. After that, it is explained to the participants that they should mark the correct answers in the "single mark" column on the handout. At this stage, the task is performed individually.

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2. At the next stage, the trainer-teacher divides the participants into small groups of three people, and the members of the group introduce their ideas to the group mates, argue, influence each other, convince each other of their ideas, agree on one stops and assigns them to mark their answers with numbers in the "group assessment" section. 15 minutes will be given for this task.

3. When all the small groups have finished their work, the correct sequence of actions is read out by the trainer-teacher, and the students are asked to write these answers in the "correct answer" section. will be

4. The numbers given in the "Correct answer" section are compared with the numbers given in the "individual assessment" section, and if there is a difference, "0" points are given, if they match, "1" points are asked. After that, the differences in the "single error" section are added from top to bottom and the total is calculated.

5. In the same order, the difference between the "correct answer" and the "group mark" is removed, and the points are written in the "group error" section, added from top to bottom, and the total sum is obtained.

6. Trainer-teacher individual and group mistakes on the accumulated total explains separately.

7. Depending on the grades received by the participants, their level of mastery of the subject will be determined.

Place the sequence "Professional Counseling Stages". Check yourself out!

Table 7

"Blister game" method

Place the sequence of feeding cows in "Spring and summer season". Check yourself out!

content of actions	Single price	Yak a error	Correct answer	Group assessment	Group error
Expanding the internal size of the family					
Attracting bees to collect honey					
Disinfection of cattle houses					
Cattle separation					

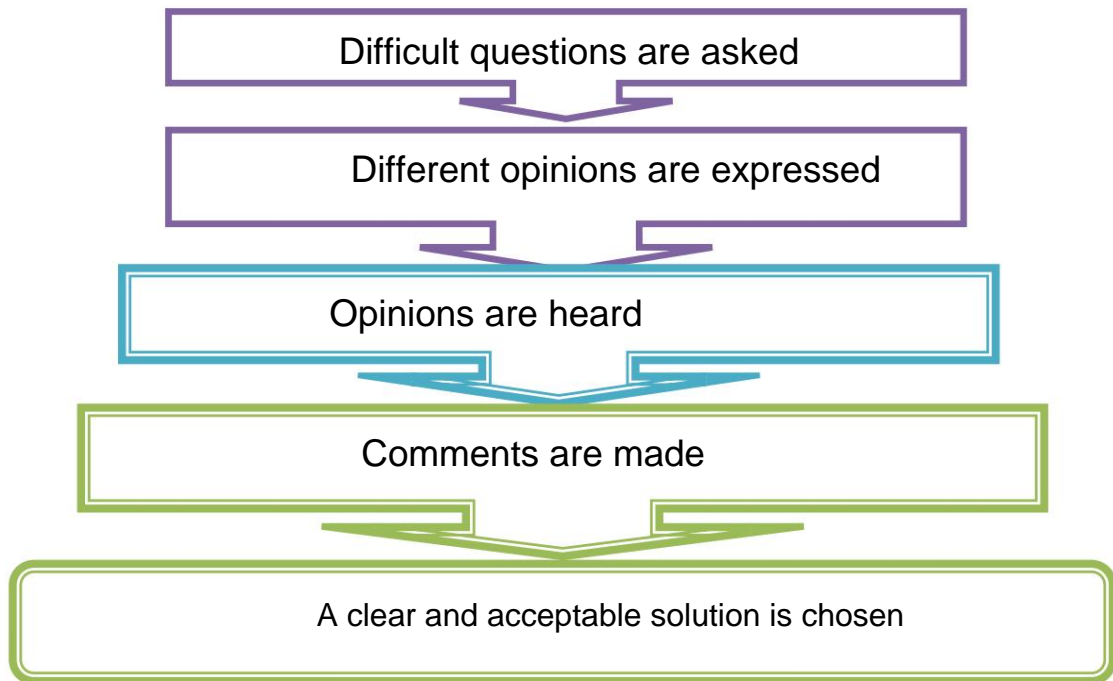
Debate" method

The "discussion" method is a method of mutual discussion with students on a topic in the form of discussion and exchange of ideas.

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DISPUTES. By dividing the study group into two groups, a debate on a topic is held in the form of an exchange of ideas.

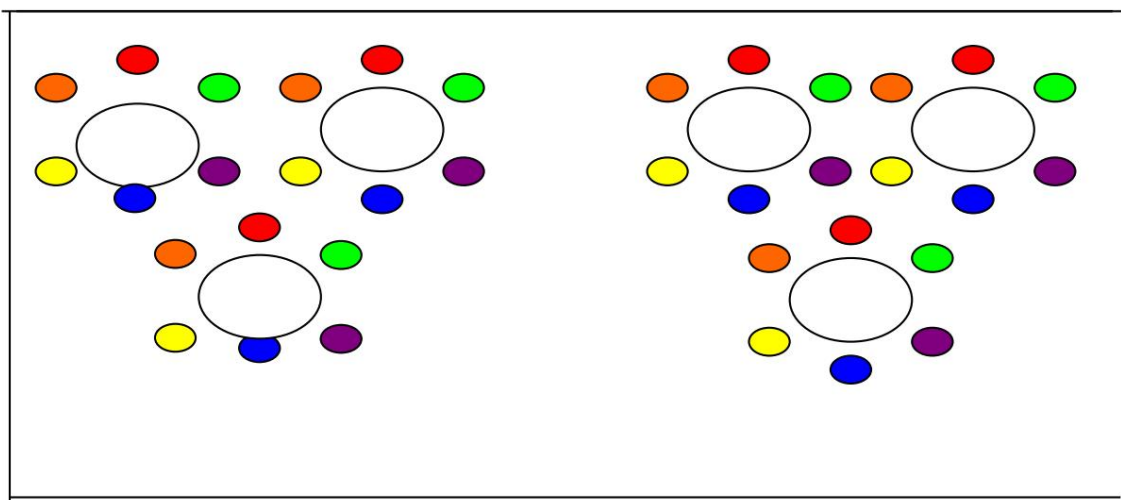
The structure of the "DEBATE-Discussion" method



This state of **"I am in cooperation"** is organized in larger groups. The members of the discussion sit around separate tables in groups of four or five, and each group makes its own decision. The activity of "Munozara" clubs is organized in this way.

Diagram 2

I am a cooperative method



Each of these situations creates a special mental preparation and sense of responsibility in the participants of the discussion.

Diagram 3

"How?" problem through the diagram
 methods and means of solving

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"

"Severe attack of ideas"
method by E.A. Aleksandrov
based on and revised by G.Ya.Bush

processed.

The method of "Severe brainstorming" is personal for each student performing certain tasks among the team to realize their potential and a well-known community among students (group) previously expressed an opposing idea Pushing is a skill-based approach. In this, the creative possibilities of the participants to generate ideas as a team are activated and conflicting ideas are put to it.

"A violent attack of thoughts" method

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"Severe brainstorming" method - *practical application*

The method of "violent attack of ideas" is in social, humanitarian and natural directions equally successful application in the process of classes organized on subjects possible

Training based on the use of this method is organized in several stages will be done. They are as follows:

Table 8

"Severe attack of ideas"

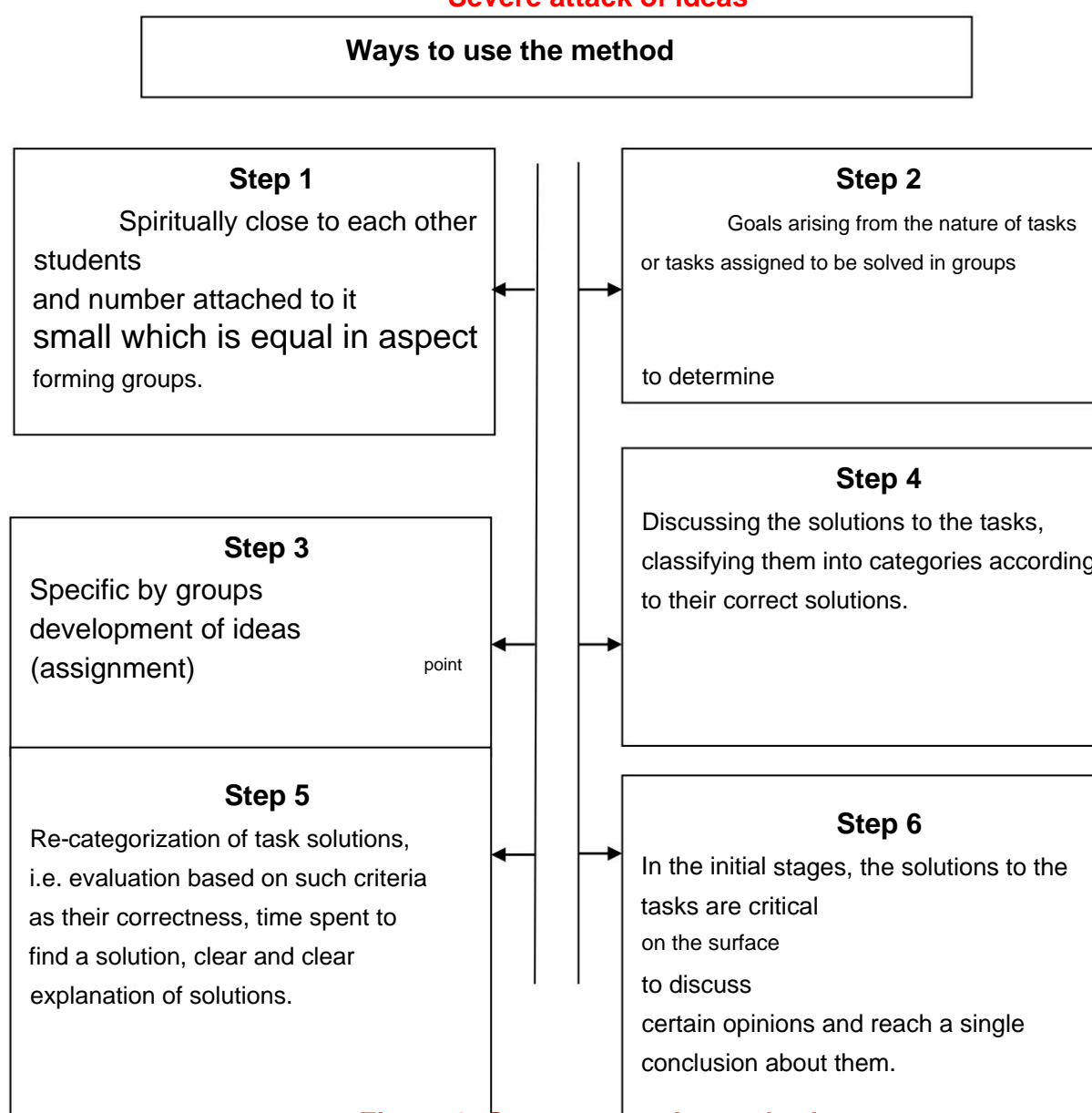


Figure 3. Steps to use the method

In the process of using the "Severe attack of thoughts" method, the following situations occur comes:

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Achieving thorough assimilation of certain theoretical knowledge by students;

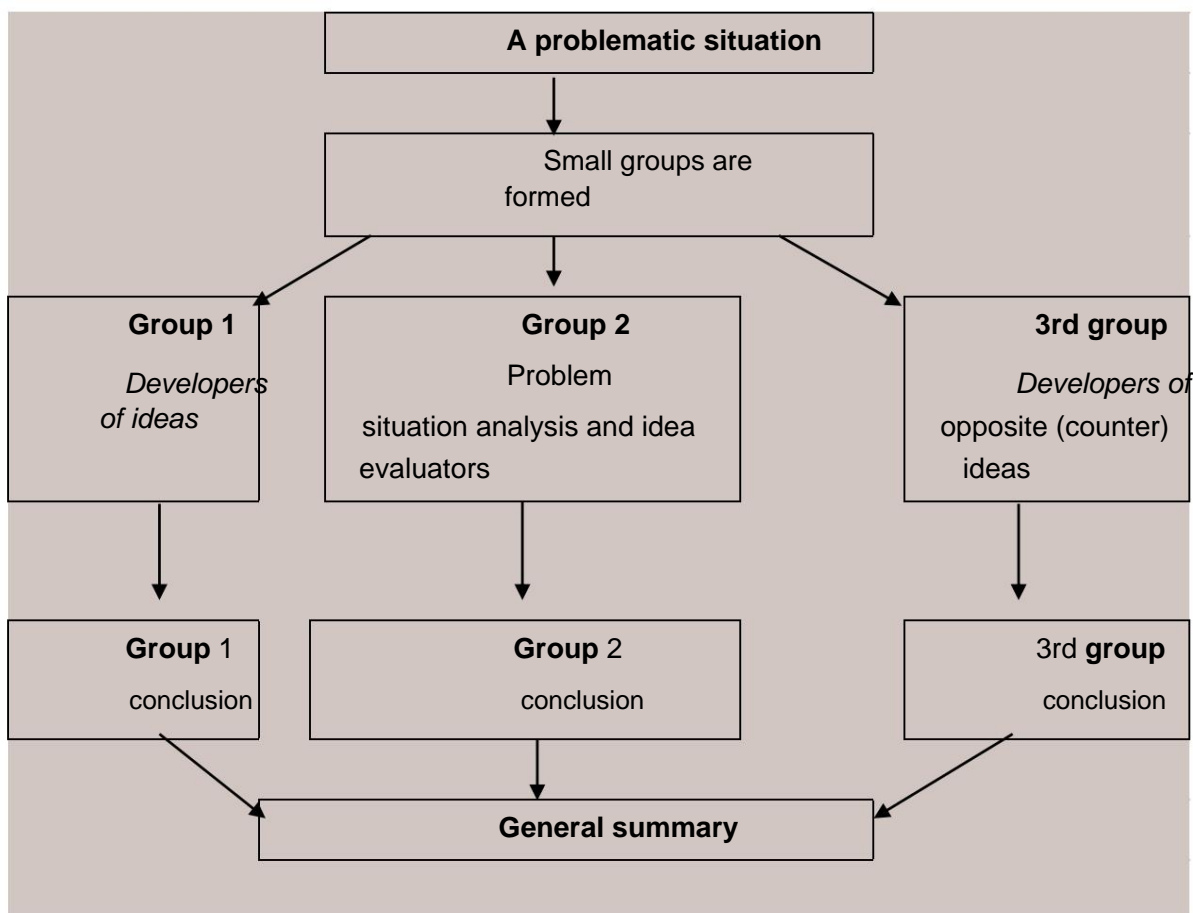
- saving time; - encourage

every student to be active; Forming the ability to think

freely in them.

Diagram 4

"Problem situation" method



The structure of the "Severe attack of ideas" method



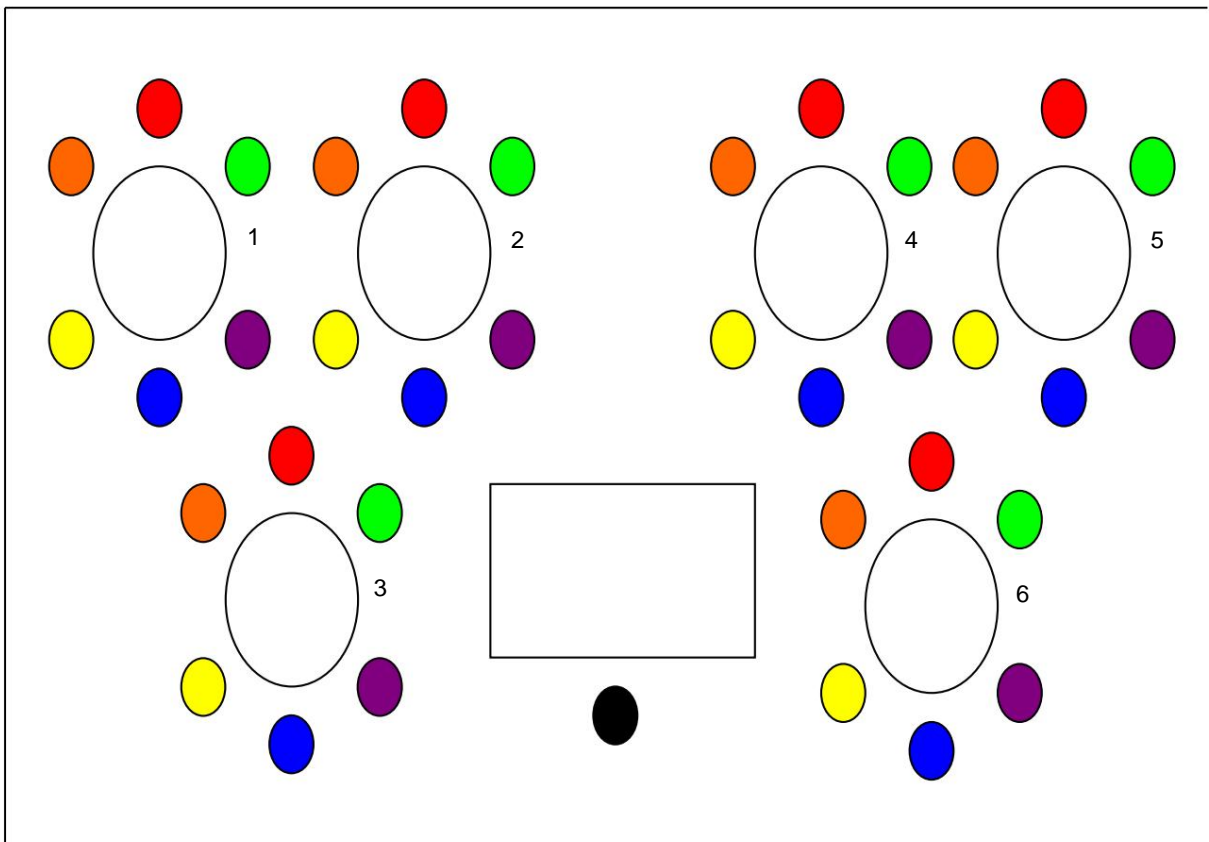
"6x6x6" method

With the help of this method, it is possible to solve a certain task or problem by involving 36 students in a certain activity at the same time, as well as to determine the capabilities of each member of the group, to learn their views. 6 people in each training organized on the basis of the "6x6x6" method

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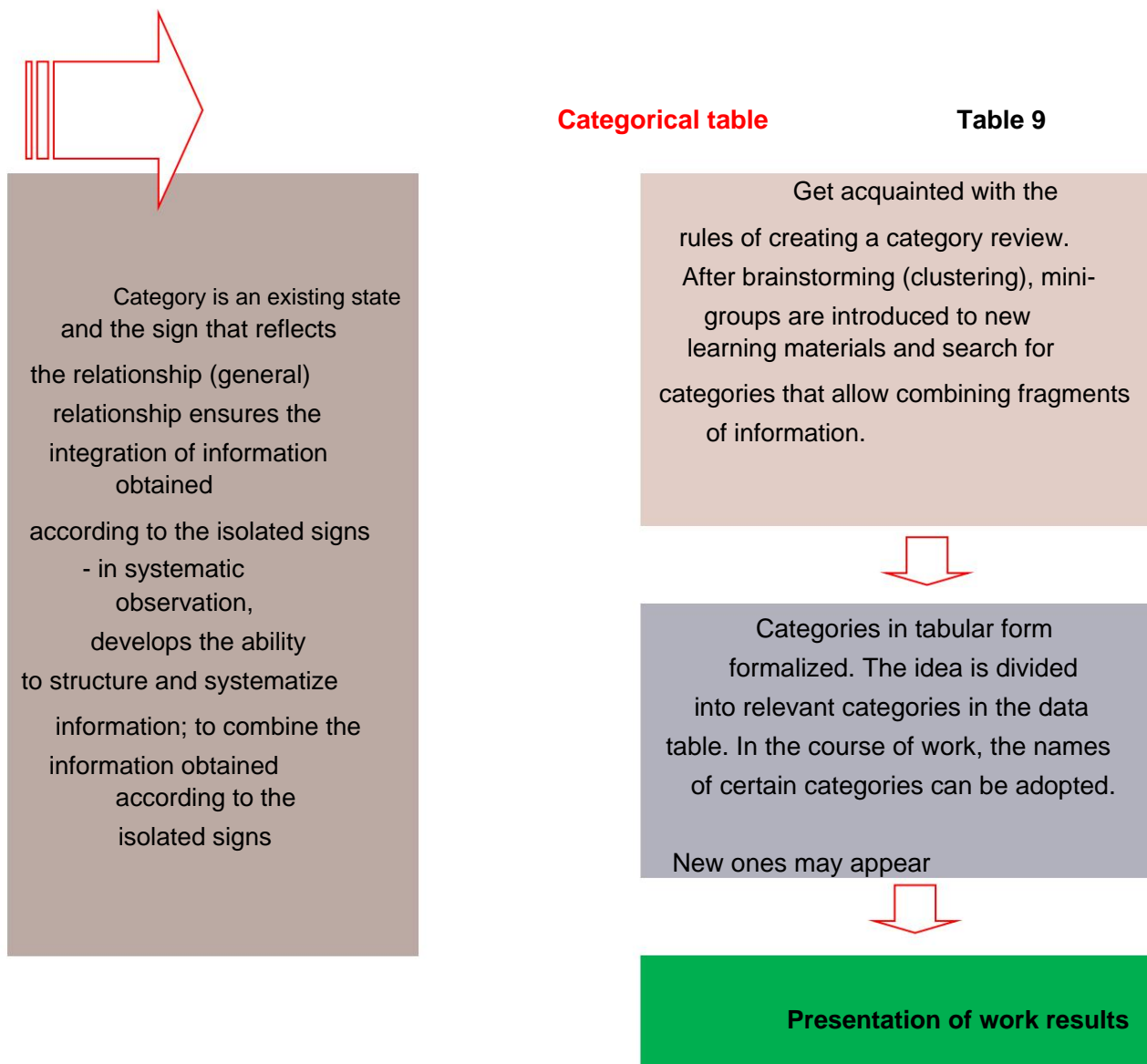
6 participating groups of the problem raised by the teacher discusses
(See Chart 4).

Diagram 5



After the allotted time, the teacher re-forms 6 groups.

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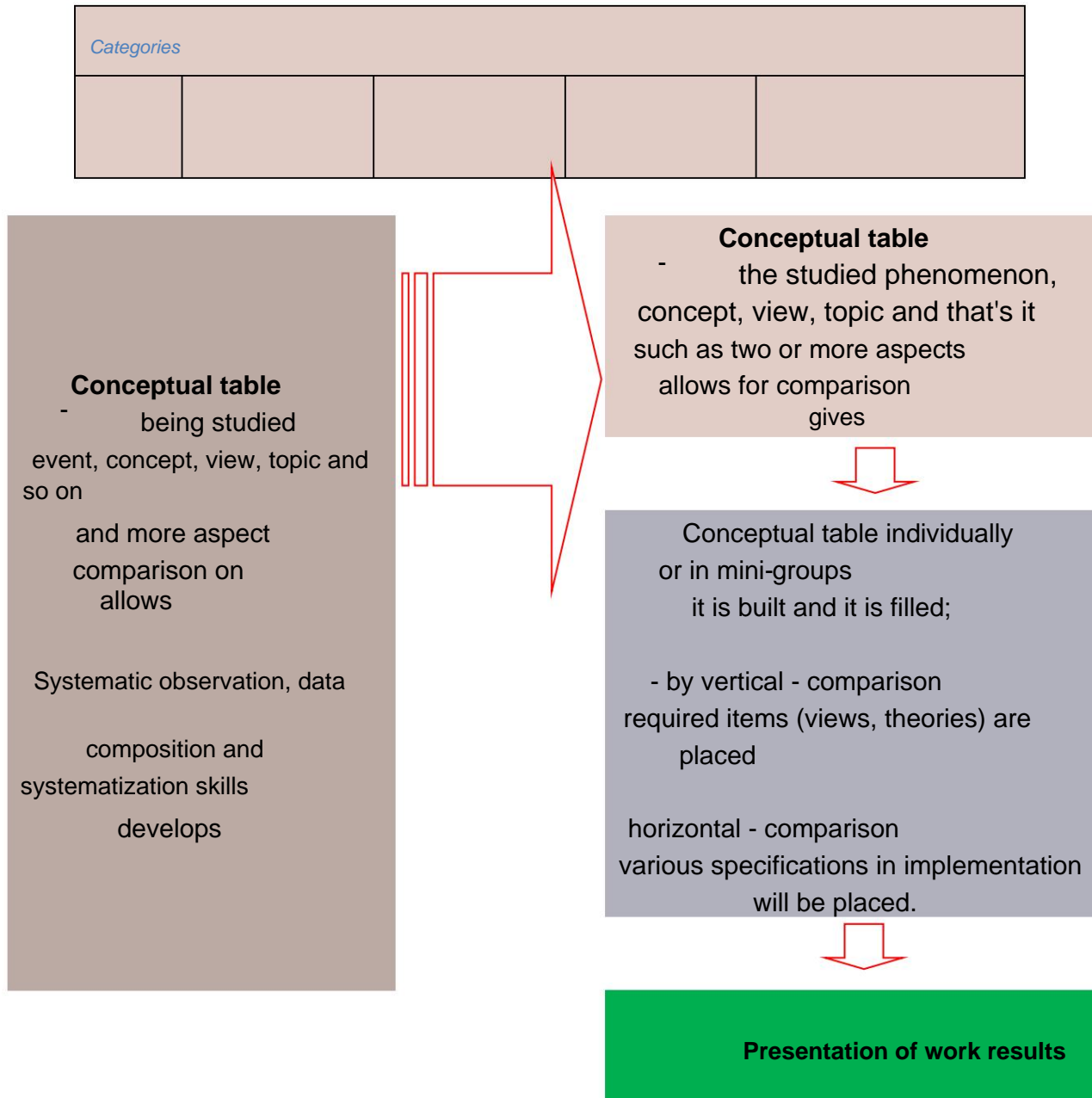
Rules for creating a category review

1. There is no single method of distribution of data by categories.
2. Categorization in one mini-group may differ from categorization in another group.
3. Learners cannot be given predefined categories: let them make their own choices.
4. Creating a category review is important not as a final product, but as a process.

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Table 10

Conceptual table



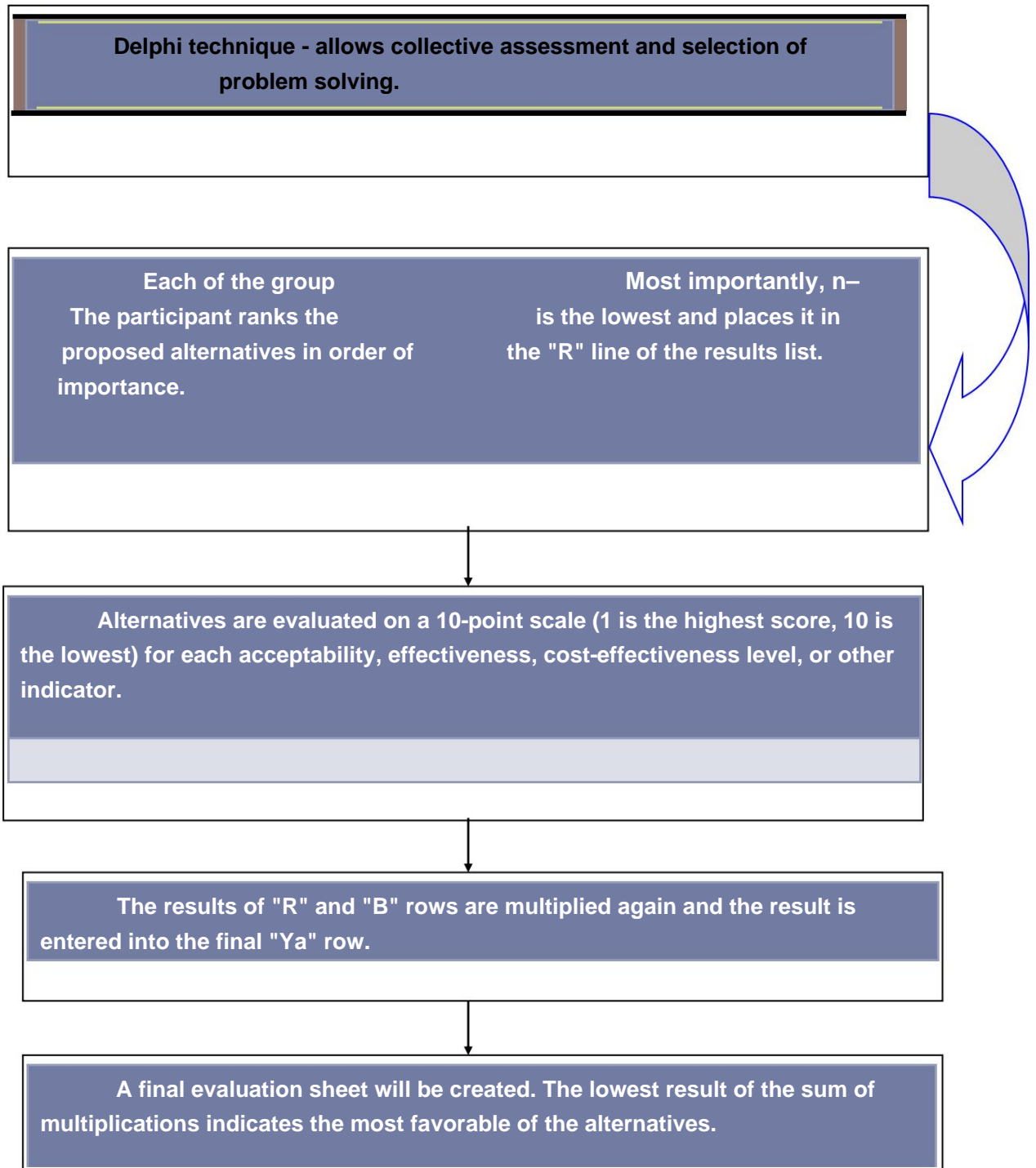
Conceptual table

<p>approaches to concepts</p>	<p>Descriptions, categories, distinguished characters and so on</p>
---	--

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Table 11

Delphi technique



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Alternative Ideas Evaluation Summary Sheet (Sample)

Alternative ideas											
I	1	2 3							N		
D BKDBKDBKDBK											
a	2	2	3	4	12						
b	1	2	4	3	6	18					
c	2 4	6	24	1	2	2					
n											
Total		30			32						

In this case: - last name of the discussion participants;

D - level assessment (from the 1st place - the most important offer, to the n-last place - less important, secondary proposition);

B - evaluation of alternatives, in points (1 - the highest score, 10 - the lowest score);

K - D * B multiplication.

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III. THEORETICAL MATERIALS

Topic 1: Introduction to the basics of animal husbandry. Animal husbandry in the national economy importance, state development prospects.

Plan

1. History of livestock development in Uzbekistan.
2. The current state of cattle breeding development and economic reforms implemented in cattle breeding.
3. Our republic is working on the development of farmers' farms escalating measures.
4. Advances in scientific technique and science of production technology of livestock products based implementation.

Key words: Personal assistant and farm. Economics of the agricultural sector: cut, eggs, wool, cattle breeds, improvement, advanced technologies, number of livestock, breeding methods, feeding technology, fodder composition, black leather.

1. Currently, the important task facing the cattle breeders of Uzbekistan is our republic in providing its people with domestically produced livestock products. Work efficiency of livestock products in economic indicators expressed, that is, the feed used in milk, meat, eggs and other various products, what is their cost and level of efficiency.

2 important measures adopted by our dear President for the development of the industry decision and the benefits granted to the Livestock sector by these decisions, saved Funds are the basis for improvement of breeding work, introduction of new technologies Creating livestock numbers and production of livestock products led to an increase.

In particular, the increase in the number of cattle over the next three years the average in the regions corresponded to 111 percent, or their average for the Republic number increased from 9 million 93.7 thousand heads in 2013 to 10 million 141.3 thousand heads in 2014.

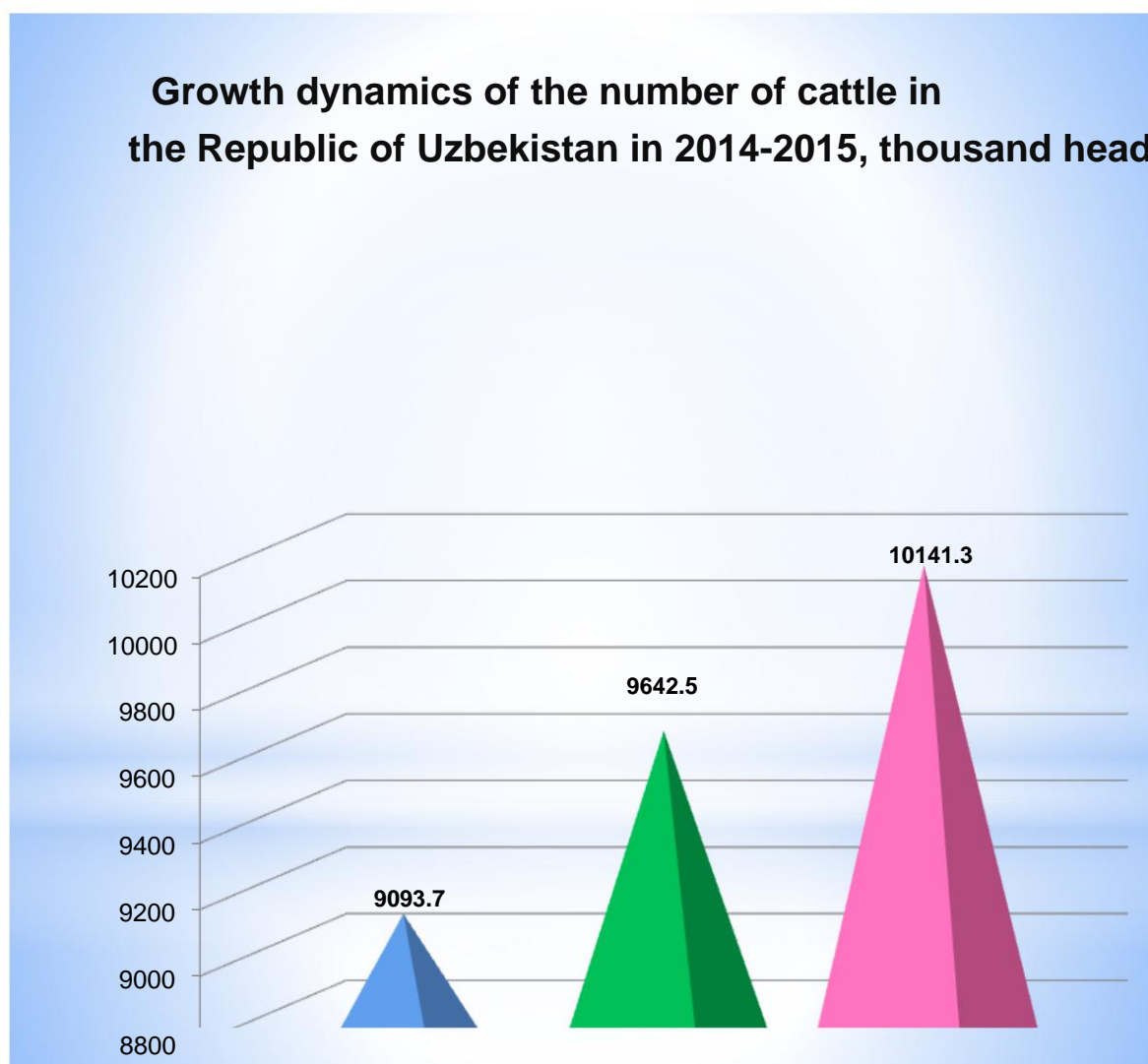
It should be noted separately that the Republic's cattle breeding is mostly owned by the population and farmers formed in farms and their number is rapidly increasing.

In particular, 94% of cattle and 95% of cows are owned by private households corresponds to the share. Strengthening breeding activities in our republic, Livestock development of farms, breeding herds of breeding cattle in them, breeding in order to form and expand the nucleus, to increase the productivity of cattle During 2012-2013, more than 28,200 breeding female bodies were imported from abroad. Ukraine, Belarus, Poland, Austria, Holland, Germany and other countries imported from countries and many breeding farms formed anew.

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Currently, the number of breeding farms in the field of cattle breeding increased by 57 in 2013 and reached 448, where more than 107 thousand 751 head of high-breed cattle are cared for, or more than 12 thousand head of breeding cattle in 2015 alone. an increase in the number of heads was achieved.

In 2015 alone, more than 7,200 bred cattle were produced in them, and farmers and sold to farmers.



According to the data of January 1, 2016, meat production in our republic in 2015 (in thousands of tons) - in all categories of farms - 8408.1; including -724.4 in population, 73.1 in agricultural enterprises, 10.6 in farms.

Milk production (in thousands of tons) - in all categories of farms - 3494.7; including in the population - 3094.1; in agricultural enterprises - 237.5; in farms - 50.8 thousand tn.

Information on milk production in the regions of our republic is as follows given in the table

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Milk production in the Republic of Uzbekistan in 2014-2015 growth dynamics of output, thousand tons

Areas	years				
	2013 year	2014 year	2015 year	In 2014 to 2015 relatively	
				+-	%
Karakalpakstan R	182.5	201.9	224.8	42.3	123.2
Andijan	540.9	598.4	655.4	114.5	121.2
Bukhara	539.3	580.1	625.0	85.7	115.9
Jizzakh	334.3	367.0	400.2	65.9	119.7
Kashkadarya	657.1	720.6	772.0	114.9	117.5
Navoi	271.8	294.1	315.7	43.9	116.1
Namangan	385	422.3	464.5	79.5	120.6
Samarkand	759.2	862.5	930.1	170.9	122.5
Surkhandarya	508.2	567.6	625.0	116.8	123.0
Syr Darya	200.4	219.8	237.3	36.9	118.4
Tashkent	569	608.1	653.3	84.3	114.8
Ferghana	588.7	650.1	696.4	107.7	118.3
Khorezm	632.2	673.8	711.4	79.2	112.5
Total	6168.6	6766.2	7310.9	1142.3	118.5

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Growth dynamics of milk production in the Republic of Uzbekistan in 2014-2015, thousand tons



6000

5800

5600

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Egg production (million eggs) - 1164.9 in farms of all categories; including in the population - 751.3; in agricultural enterprises - 406.6; farmer in farms - 7 out.

Egg production in the Republic of Uzbekistan in 2010-2012 growth dynamics of output, mln. piece

Areas	years				
	2010 year	2011 year	2012 year	In 2012 compared to 2010	
				+, -	%
Karakalpakstan R	46.0	58.3	96.8	50.8	210.4
Andijan	226.8	242.9	275.6	48.8	121.5
Bukhara	173.6	195.7	217.5	43.9	125.3
Jizzakh	107.1	118.0	130.2	23.1	121.6
Kashkadarya	192.6	220.0	248.1	55.5	128.8
Navoi	144.7	165.2	186.0	41.3	128.6
Namangan	99.6	121.8	170.4	70.8	171.1
Samarkand	577.0	683.7	729.7	152.7	126.5
Surkhandarya	156.1	171.7	190.5	34.4	122.0
Syr Darya	54.7	60.6	65.8	11.1	120.3
Tashkent	871.0	958.3	1070.7	199.7	122.9
Ferghana	179.6	196.1	214.5	34.9	119.5
Khorezm	229.6	249.3	277.7	48.1	120.9
Total	3058.4	3441.7	3873.7	815.3	126.7

Wool production (in tons) in all categories of farms 15480; including 11166 tons in the population; 4174 tons in agricultural enterprises; 140 tn in farms.

Karakol leather production (in thousands of units) in farms of all categories 803.5; including 235.7 in the population; in agricultural enterprises was 567.8. In 1998, the milk yield of one head of cow in our Republic is in all categories 1529 kg in farms; including 1604 kg in the population; 1010 kg in agricultural enterprises; in farms - 962 kg. corresponded to

Poultry egg productivity is 138 eggs in all categories of farms; that's it including 129 units in the population; 162 units in agricultural enterprises; on farms It was 116.7 units.

2. Strengthening the life of peasants, independent independent peasants (farmers). the potential to fully provide the population of Uzbekistan with food products orientation forms the basis of the policy of development of peasant (farm) holdings, which is a form of entrepreneurial activity today.

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The number of working farms in our republic has exceeded 20,000. A farmer as an independent producer (farm) with other forms of property and business management and organization operating as a legal entity with equal rights. It should be noted that there is no commonality between legal management and administrative command, because the hard-working peasant in the management of the administrative order from the top the executor is an ordinary executor. However, the farmer (farmer) is an entrepreneur today and being an economically free person, all dependent on economic activity solves issues independently and fulfills the established duties in a timely manner does.

Therefore, one of the important conditions of business activity is the future farmer the right of (farm) holdings established by the legislation of the Republic of Uzbekistan and is to know their obligations thoroughly.

At the moment, the President and our government have dekhkan (farmers) farms several decrees and decisions on development were adopted. Including:

Further strengthening of peasant farms in our republic and on state support of business (Presidential Decree N 295, 29.11.91)

"On the economic development and freedom of the agricultural sector"
"Private assistants and farmers in the provision of state food on measures to strengthen the role" (Presidential Decree N 1737, 18.03.97)

"On additional measures to implement economic reforms in agriculture" (Decision of the Cabinet of Ministers No. 88, 23.02.94).

"On measures to develop and support private entrepreneurship in animal husbandry" (Decision of the Cabinet of Ministers N 96, 24.03.96).

"On measures to improve breeding work in animal husbandry" (Ministers court decision No. 268, 12.07.95).

Law "On Breeding" (No. 16b-1 21.12.96).

Law "On Agriculture" (3.07.92).

308-PQ of the President of the Republic of Uzbekistan dated March 23, 2006 "Personal assistant, farmers and livestock breeding in farms Decision on measures to promote Livestock in our country defined a clear path of development"

842 PQ of the President of the Republic dated April 21, 2008 "Personal assistant, farmers and livestock breeding in farms and An additional measure to expand the production of livestock products "On activities" was an additional impetus to the rapid development of animal husbandry.

4. Livestock development must be based on 3 roots.

1. This issue is to create a strong fodder base in our country

Hay on the basis of the introduction of rotation, intermediate and repeated crops to increase increase crop productivity

2. Patterns of breeding work in Livestock farms of all forms of ownership Launch based on.

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3. Based on the introduction of new rapid technologies in farms of different types of ownership organization of production of products that meet the requirements of world standards.

Especially the new technologies tested in the world experience in farms implementation ensures rapid development of the field. For this, every country to deliver at least 3,000 kg of milk from a cow, producing milk will allow to double the output and our people to dairy products the demand is fully satisfied.

The main scientific research work on animal husbandry is carried out by "Plemelita" association At the Animal Husbandry Research Institute, "Karakolchilik" ITI, Samarkand KXI and It is conducted in the "Zootechnics" and "Veterinary" departments of our Tashkent State Agrarian University.

Control questions:

1. How many livestock products are currently produced in our country?
2. What kind of economic reforms are being implemented in animal husbandry?
3. Farmer farms by our president and government
What measures are taken in development?

Topic 2: The origin of agricultural animals and its wild offspring.

Plan:

1. The importance of studying the origin of cattle
2. Training and domestication of farm animals
3. Wild ancestors of agricultural animals

Base expressions: Wild ancestors. Hand training. Domestication. Evolution. Zoological classification. Chronological classification. Economic classification. Tur, Bison, Zebu, Buffalo, Gaur, Gayal, etc

1. The study of the origin of agricultural animals is of theoretical and practical importance. In the study of the origin of animals, it happened in the evolutionary process to trace the changes, from the characters in wild ancestors of practical importance using it gives opportunities to create new breeds or improve existing ones.

The following groups of animals are found according to the degree of domestication:

1. Wild animals are considered a product of nature.
2. Captive animals do not breed in captivity.
3. Pets are domesticated animals.

According to the latest information; 23 types of multicellular, 66 classes, There are 1270519 species, of which only 33 are domesticated (P. I Zelenkov, A. I Baranikov 2005).

The taming of wild animals by humans, with the hunting of humans depending on it, it is descended from dogs that were descendants of wolves and jackals 10-12 thousand years ago started from use.

Animals injured during hunting are caught and kept in captivity. Animals those who dug pits, fenced, tied with ropes. Sometimes in a hurry animal reproduction also occurred. Young wild animals are easier to catch learned

The regions of domestication of domestic animals spread their wild ancestors happened depending on the place. The main domestication regions are India, China, North-Eastern Africa, the lower reaches of the Nile River, and the Transcaucasia. The majority animals were trained and domesticated in Asia: dogs, cattle, horses, sheep These include goats, goats, pigs, deer, chickens.

A number of disciplines and methods of domestication of wild animals: Archaeological, anatomic, it is studied with the help of physiological, ethnographic.

The protein composition of wild animals and domesticated blood using a physiological method are compared with those of animals and their origin is inferred.

Ethnographic method is the image of our ancestors on rocks and other animals it is determined depending on the items. In this process, there are changes in the body, productivity, character, and body structure of animals. we will witness.

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3. During the evolutionary process, keeping animals under the protection of humans in limited areas, creating standard methods of keeping animals, protected them from predators, freed animals from unnecessary signs and characteristics, and led to the appearance of useful signs.

During domestication, the body of wild cattle became smaller, the head became shorter in proportion to the body, the skin became thinner and softer, the subcutaneous fat layer was well developed, the muscles were relaxed, the amount of fat in it increased, the bones became softer, the stomach size enlarged. In the evolutionary process, the productivity of animals has increased dramatically.

The ancestors of wild cattle gave 300-400 kg of milk, the milk yield of domestic cows increased 8-13 times.

In domesticated animals, sexual and physical maturity is either doubled or accelerated. The seasonality of sexual activity has disappeared, or cows can have calves all year round.

Domesticated animals are yuvoshes, barking, fear and some of their wild ancestors conditioned and unconditioned reflexes are lost.

The reason for the changes that occurred as a result of domestication is as follows:

Limitation of mobility. The loss of freedom of animals caused changes in the body, due to reduced muscle work, fat accumulated in it, the skeleton became loose, and the development of the heart, lungs, and other organs was reduced.

Changing the nutritional

conditions, the size and composition of the feed, to meet the requirements of the animal causes proportional development and high productivity.

The protection of animals by humans has lost their influence as a medical choice.

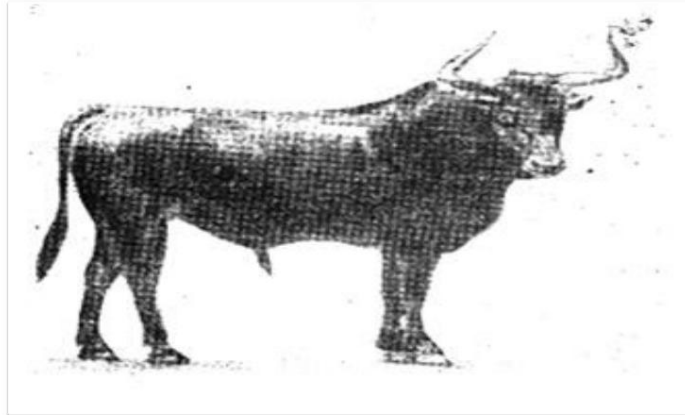
As a result of animal selection, humans took only the animals they needed.

Animals move from one geographical area to another, from one continent to another the transfer affected their evolutionary process.

Crossbreeding of animals of different species, breeds, and types was the reason for their formation.

Get up. Wild cattle, i.e. species are large, live weight is 1000 kg in bulls, height is 190-200 cm, very large, a bull can carry a horse on its horns and throw it, or 4 wolves without injuring itself. fought. Their heads are big, the length of their horns is 1.5m and their weight is more than 15kg.

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4. The closest relatives of cattle are zebu, kotos, banteng, bison and buffaloes.

Bison is the largest representative of bulls.

American Bison This wild bison is found in the forests of America and along the coast of the Pacific Ocean. It is very strong, robust, 200 cm tall, has a large head, and a large horn bent back.

Bison were very numerous when America was discovered, in 1492 they numbered 60 million head. Europeans came to America and hunted bison. By 1870, only 5.5 mln. bison were born, but their hunting continued, and by 1895 only 800 bison were born.

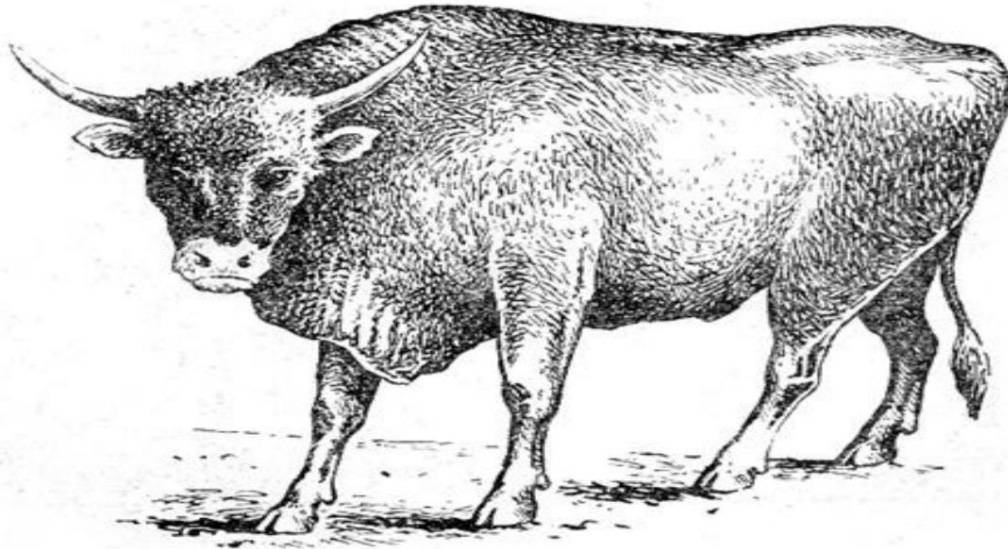
As a result of government measures, their number increased, by 1918 there were 4,000, and now 30 1,000 in the USA, 20,000 in Canada.

Banteng – Probe bull.

According to the conclusions of most scientists, banteng is the ancestor of Indian and African zebu, as well as Asian cattle. Banteng is available in wild and domesticated form. It has medium body and well developed muscles. Half height is 140 cm for cows and 160 cm for bulls. The weight of cows is 450-500 kg, milk yield is 450-500 kg, fat content is 4.5-5.0%.

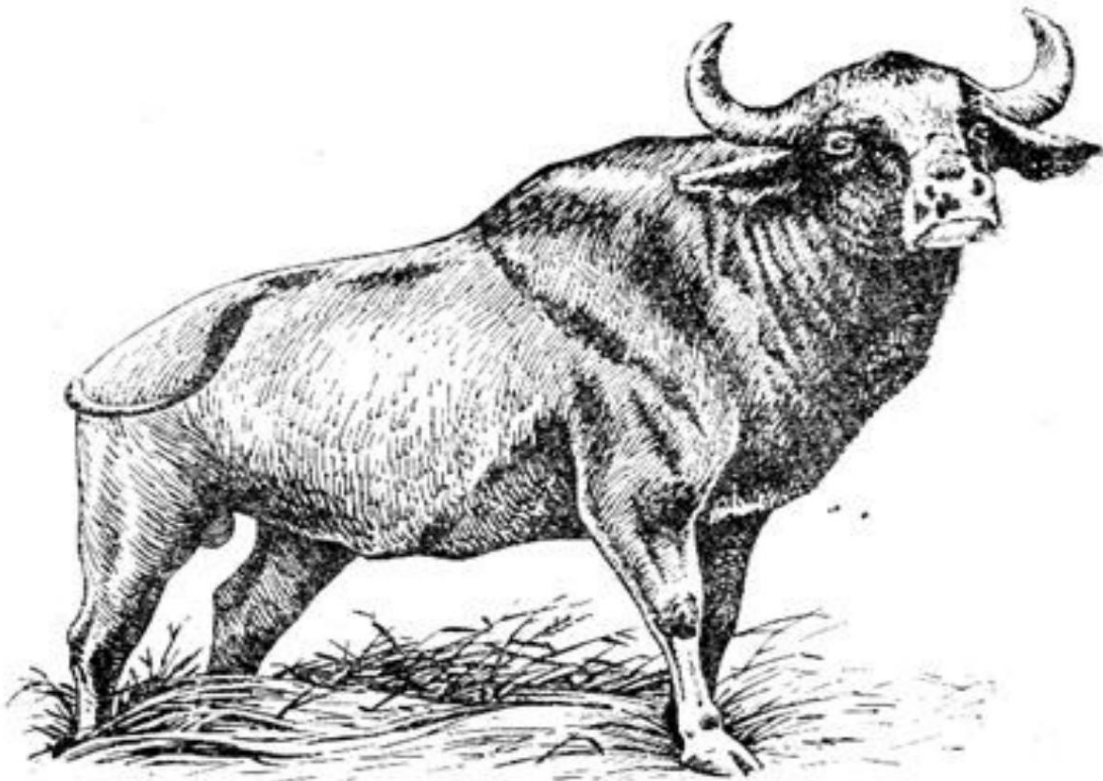
They now live on the islands of Java, Sumatra, and the Malayan Peninsula. When crossbred with cattle, pushdar gives good offspring.

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Banteng ("Probe Bull")

Gaur; they are distributed in the mountain forests of India, from the south to the Himalayas. He is a large animal, with a large head, large body, strong and strong legs. Yagrin's height is 170-180 cm, weight is around 1000 kg. Milk content 300-400, fat content 5-6%

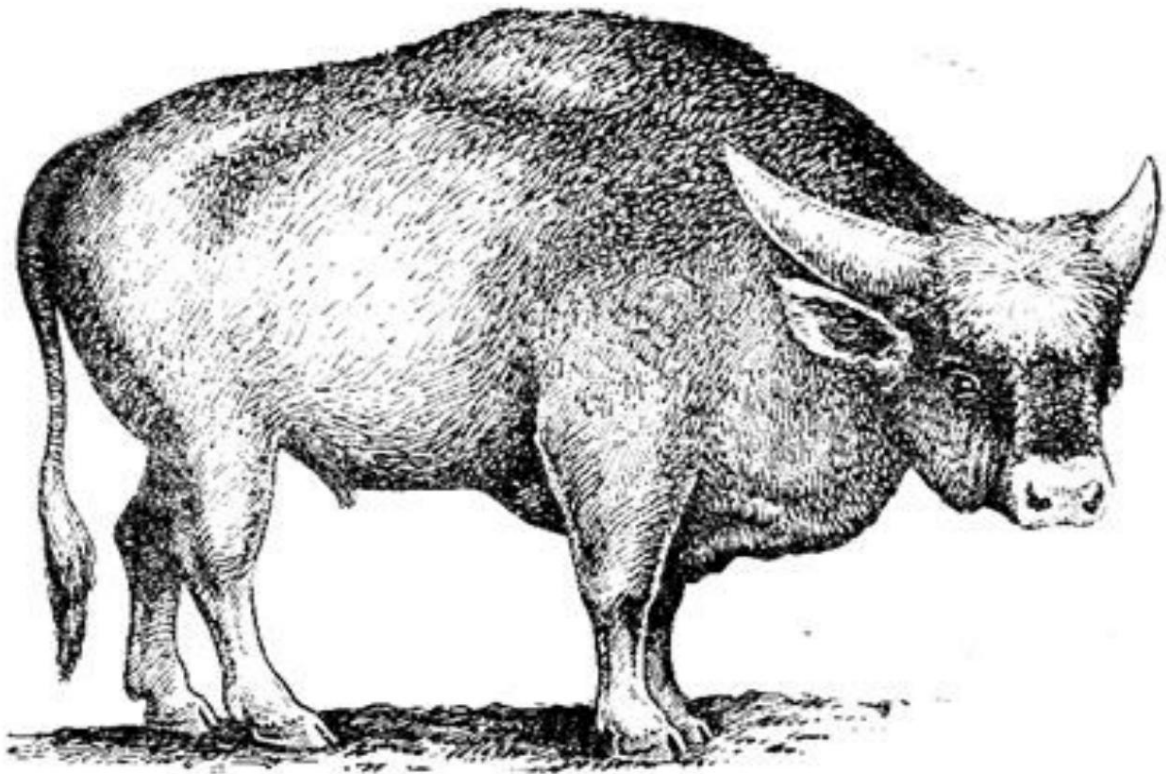


Gaur

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Gayal; Gaur is domesticated. It is large, the height of the head is 150-160 cm in bulls and 140-150 cm in cows. According to the body structure, he is a wild ancestor reminds It was once domesticated.

The milk is very fatty. Breeding with cattle gives a fertile offspring. He basically Distributed in the Indochina Peninsula.



Gayal

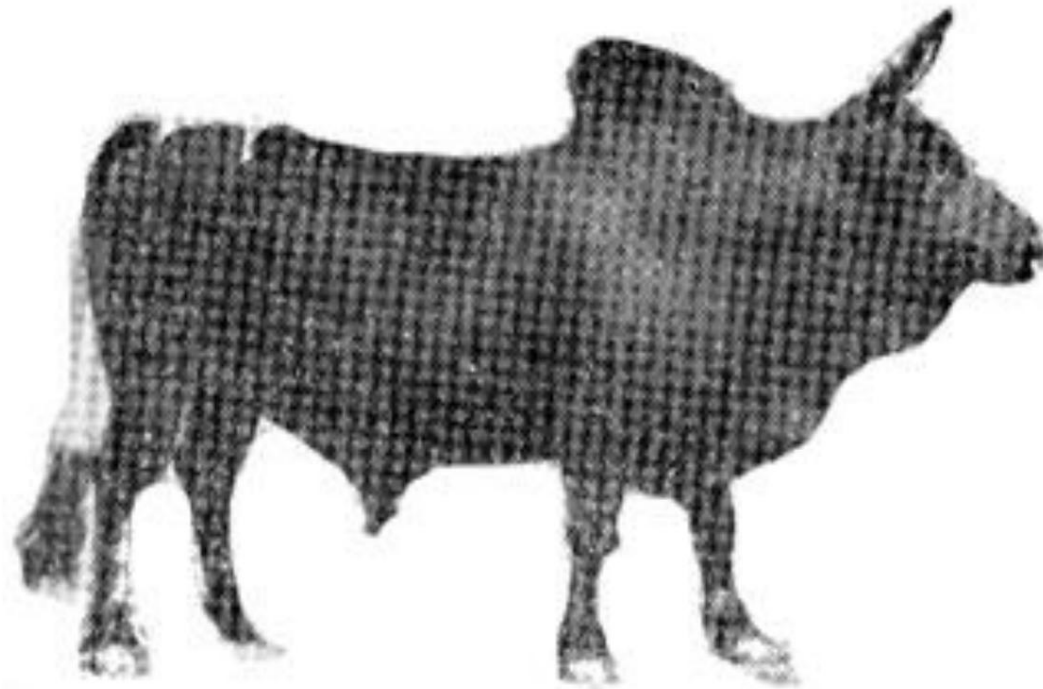
Zebu. It is a common domestic cattle in Asia and Africa. Scientists it is believed to be derived from banteng. Its body structure is characterized by a scythe in which muscle fibers are found together with fat.

Orkachi is a food and water reserve for an animal. Orkachi is 5-8 kg and makes up 2-3% of body weight. There are 300 million of them in the world In India, Africa, tropical and subtropical regions of America and the Near East occurs.

They breed well with cattle and give fertile offspring. Milk of hybrids productivity is 3000-3500 kg, fat content is 4.2-4.5.

In the USA, as a result of crossbreeding zebu with cattle, a number of breeds were created: Santa - Gertrude, Beefmaster, Braford, Brangus and others.

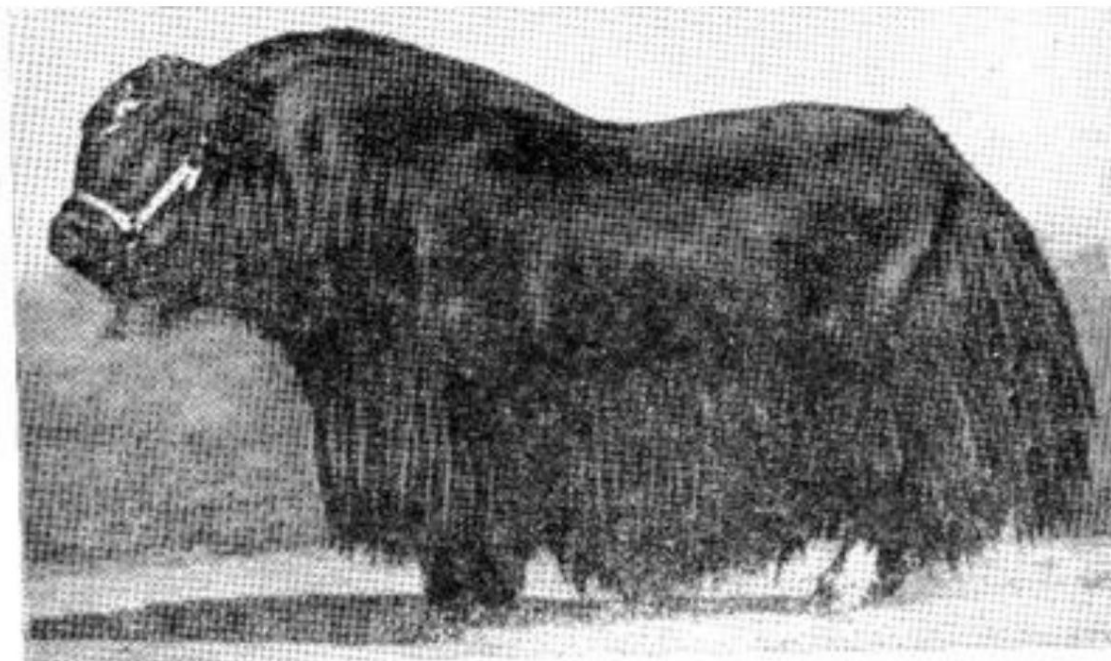
FUNDAMENTALS OF HUSBANDRY



Zebu

Kotos. The Mongolian bull is native to the mountains of Tibet. It is a large, powerful animal with a large head and a short neck. Kotos are distributed in Mongolia in some areas of the former union.

The domesticated kotos is smaller than the wild one: the height of Yagrin is 108-110 cm, and in the wild it is 200 cm. The horn is short, often blunt. The legs are strong, the hooves are hard, the color is black, brown and gray.



Q o' pelvis

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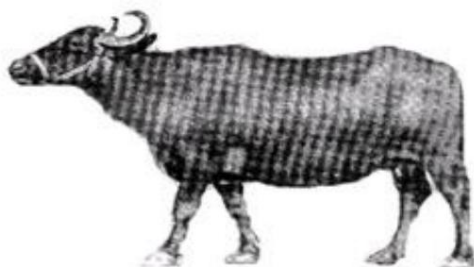
Buffaloes. Now it is found in wild and domestic form. There are 2 types of them: African and Asian buffaloes. African buffaloes include kaffir, red and lizard buffalo.

Asian buffaloes. These include the Indian wild buffalo.

African buffaloes are wild and have just begun to be tamed.

The domestic buffalo is large, strong, the body is proportionally developed, the legs are slightly thicker than those of cattle. The height of the animal is 125–130 cm. The bone is strong, the waist is straight, the belly is voluminous. Adults weigh 450–500 kg, and 25–30 kg at birth. The meat of old animals is tough, and the meat of young buffaloes is not inferior to beef. Slaughter yield is equal to 45-50%.

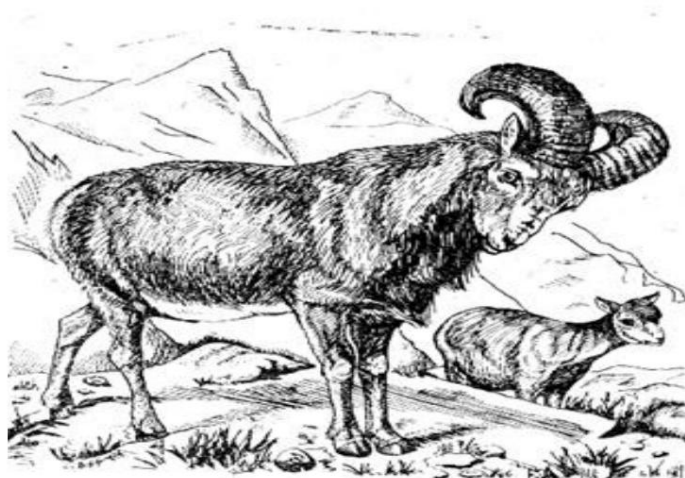
Buffaloes give an average of 600-800 milk during lactation, in good farms it reaches 1500-2000 kg, fat content is 7-8%. The lactation lasts 300 days. They are very healthy and not demanding on nutrients.



Буйвол (*Bos bubalus*)

The wild ancestors of sheep are arhar, argal and mouflon. Arhar is a wild ancestor of long-tailed sheep. They live in the present, their hooves are strong, and their horns are long. The wild ancestor of humpbacked sheep is considered mouflon. They are also available now. The branches are erect and thick.

Arhar Long-tailed Sheep



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Chickens. Domestic chickens are descended from wild chickens native to India domesticated. Bankiv chickens are small forest birds. They are they live in thickets or bamboo thickets. From these chickens, people get eggs, meat, feathers and feathers. There are decorative and belligerent chickens.

Wild Bankiv Rooster

These chickens have a small body, the weight of a rooster is 900-1250 g, and hens are 500-700 g. lived in thickets. Their food was mainly wild grass seeds, grains, insects, and they also enjoyed tree fruits. Has the ability to fly and others were flying freely from tree to tree. They put their nests on the ground, in thickets, and lay 5-12 eggs. Egg laying lasted from January to October. Egg-laying is strongly correlated with the season of the year has been



Another distinctive feature of Bankiv chickens is their cocking. Domesticated, cultured domestic roosters do not have this characteristic. When jumping, neck, back and tail feathers fall off and new ones grow instead. If shedding starts in July It ends in October. Depending on the regions where Bankiv chickens are spread, there is a difference in the crowing of the roosters, the crowing of the roosters when they walk, and the color of their feathers. large.. Most of the feather colors are silvery, brown, reddish, brown, gray, black colors are more common. In this regard, the color of the legs is also different. More yellow, white, black, bluish. Some have feathered legs. Eggs also vary in weight

Domestication of Bankiv chickens, 3250 BC, NORTH India started in the city of Mohenjo-Daro.

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Horses.

Tarpan is considered the ancestor of the domestic horse. Tarpan Europe and Asia until the 19th century lived in deserts and forests. The total height of tarpans is from 135 cm did not increase. They have a large head without a forehead line, stable mane, gray color, and a black belt on the waist and front legs like those of a zebra. Przhevalsky's wild horse of Mongolia found in dry arid deserts. The height of the horse is up to 135 cm, the head is rough, the forehead is hairless, the hair is short, the back is narrow, and the body is long. These horses are Uygurs in the desert, 12-18 biyas live under the leadership of a herd. When they are crossed with domestic horses, the offspring is pink they give



Przewalski

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Pigs.

There are two main groups of domestic pigs with European and Asian roots is divided. European Pigs are descended from the European wild boar, its a man weighs 140-180 kg.

Wild boars live in the forests and grasslands of Europe, Asia, and Africa. The gestation period is 117 days, and the female gives birth to 4-6 per litter. Europe is wild The pig has a long, narrow snout, erect ears, and a flat body.

Asian pigs are descended from the wild East Asian pig that lives in eastern and southern Asia (China, Indonesia, Japan). He is from a European pig domesticated earlier. The East Asian pig has a smaller snout than the European pig somewhat short, slightly round body.

European and Asian pigs from European and eastern Asian wild boar the main breeds originated.

The connections between European and Asian peoples led to the interbreeding of European and Asian Pigs brought, as a result, breeds were also mixed, including those of Spain, Italy, Portugal, France In the southwestern part of the ancient Mediterranean Pigs merged into the novel group, (Neopolitan and Portuguese Pigs).



European wild boar (boar

Control questions:

1. Training and domestication of farm animals?
2. Importance and methods of studying the origin of agricultural animals?
3. Wild ancestors of farm animals?
3. Domestic chickens are descended from which wild chickens?
4. Name the wild ancestors of horses?
5. How many cubs do wild boars have at each birth?
6. How many days is the strait period?

Topic 3: Laws of growth and development of agricultural animals.

Plan

1. Periodicity of growth and decrease in its speed with age and growing up.
2. Periods of growth and development.
3. Types of growth and development.
4. Factors affecting the growth and development of animals. **Key words:**

growth, developmental laws, embryonic, postembryonic, old age, maturity, sexual and physiological development, nutrition, age, gender, influence of seasons, embryonicism, infantilism, neoteny.

Animal life consists of certain periods, which are distinguished not only by morphophysiological changes, but also by living conditions. Animal life consists of embryonic and postembryonic periods. In the first period, the fetus in the mother's womb is fed with ready-made nutritious substances in the blood, and the bird embryo lives due to the food reserves contained in the egg, this condition also protects the fetus from the effects of the external environment.

After birth, he feels himself in a completely different world, needs air, water, milk, food, is exposed to the influence of an unfamiliar external environment. The demand for external environmental conditions changes.

NPChirvinsky said that insufficient nutrition does not affect the development of all parts of the skeleton in the same way, but leaves its mark on the parts of the skeleton that grow rapidly during this period. AAMaligonov (1925) recorded such scientific information in cattle, that is, such a situation occurs in all organs and tissues.

Based on these views, the lack of nutritious substances formed by the Chirvinsky-Maligonov law has a negative effect on the growth of rapidly growing organs and tissues during this period.

In ungulates, the supporting bones grow rapidly during the fetal period, lack of nutrients, illness of the mother causes the fetus to be born with short leg bones, when such animals are born, the body is long, the head is large and small. This condition is called embryolism. Lack of nutrients after birth or illness in the young animal causes underdevelopment (arrow bones), which is called infantilism. The body of such animals resembles the body of a newborn animal.

If such animals are kept like this even at the age of sexual maturity, they will not be sexually mature. Neotenia, according to AAMaligonov, it is said that sexual activity is normal, while this body stops growing.

Possibility of complete correction of complications of embryolism and infantilism later will not happen, so it is necessary to take measures to prevent them.

2. Growth and development are divided into the following periods

Embryonic period.

In different animals, the duration of this period consists of different stages (according to GASHmidt):

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Embryonic signs, or the formation of basic systems and organs in the **body** period until The oviduct after the egg is released from the ovary moves along, using the reserve nutrients and uterine fluid lives The embryo has not yet attached to the placenta. This period is 35 days for cattle, 29 days for sheep, and 22 days for pigs.

Pre-fetal digestion, circulatory systems, muscles, axis and environment the skeleton is formed, the process of ossification takes place, and mammary glands appear. Fetus mainly fed with uterine fluid. This period lasts 26 days for cattle, 17 days for sheep and pigs.

Fetal period The fetus is fully formed, substances in the mother's blood stick to the placenta lives at the expense of Weight and size increase rapidly; skeletal ossification and growth, tissue and organ complexity continue, cerebral hemispheres and movement, breathing brain centers for acquisition, movement control are developed; a coat of wool appears. It lasts 220 days for cattle, 100 days for sheep, and 80 days for pigs.

The embryo grows rapidly during the embryonic and fetal period. Throat in cattle in the first month, the fetus increases 600 times, and in the second month, it increases 43.3 times, but in 9 months, it increases only 1.4 times.

During this period, the main pattern is that the rate of growth decreases with the passage of time. Embryonic at the end of the period, the fetus is born, and the organism is forced to live in completely new conditions will be, that is, the postembryonic period begins.

Postembryonic period.

Newborn cubs 40-60; calves 25-40; lambs 3-5; Piglets weigh 1-1.5 kg, rabbits 50 g, chicks 36-40 g.

Demand of animals to the external environment and living conditions even in the postembryonic period changes and includes 5 periods (according to PDP):

Newborn (10-20 days after birth). Living conditions have **changed** dramatically. He gets used to living outside his mother's body. Begins to breathe with lungs; food digestive, urinary organs began to work differently; sources of blood formation comes into action; provides independent body temperature; connecting the body with the external environment and protective conditioned reflexes appear. The only food is mother's milk.

The milk period (3-4 months in cattle) lasts until the end of milk feeding, that's it during the period, mainly with milk, and at the end of it, it begins to consume plant foods, the gastrointestinal system and microorganisms develop in it. Muscles, bones, tissue and members develop rapidly. At the end of the period, they switch to eating whole plant foods.

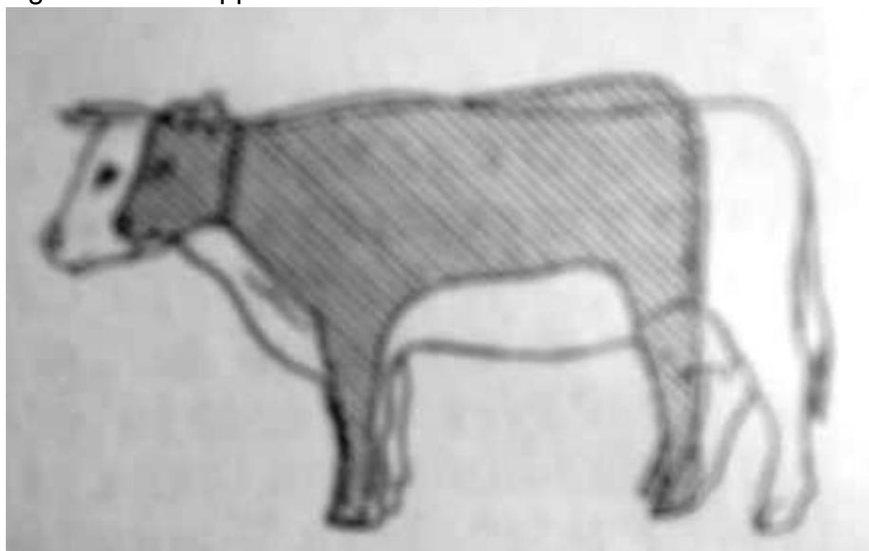
Puberty - Endocrine glands become active, the body develops rapidly, and puberty occurs. Animals will have the ability to reproduce; gonads reaches the end of its growth; they have regular sexual activity; secondary sex the organs are fully formed and the specific characteristics of the animal are formed. of the organism the overall growth rate decreases.

The period of adulthood depends on the norms of flourishing, preservation and use of all the activities of the organism and high productivity. Metabolism and sex operates. In fast-maturing animals, compared to late-maturing animals will pass earlier.

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Aging-Decreases of metabolism and sexual activity in animals, too characterized by a decrease in productivity.

The organism relaxes and brings it closer to death, which is earlier in fast-maturing animals, and in late maturing animals it happens later.



Ratio of body parts of newborn calf and cow.

3. Types of growth and development are as follows.

Rhythmic growth- In this, animal body parts develop proportionally to each other, this increase is observed in cattle at the age of 12-15 months, and in sheep at the age of 10-12 months.

Correlative growth-Such growth of all body parts of the organism relative to each other means that it has grown less or more, for example, when an animal is born, its legs are compared to its body will be long.

Uneven growth.-This is a regularity of tissue and organs in the body at the same time their lack of formation depends on their growth and development at different speeds and durations.

Length during the initial ontogeny of all farm animals, later diversity occurs in its growth (arrow and surrounding skeleton), as a result of which the type of animal is determined:

A) In ungulates, the supporting bones (leg bones) grow rapidly in the second half of the ungulate, and the arrow bones grow rapidly after birth. This process is the effect of evolutionary progress and ensures that newborn animals can run, that is, to reach their mother and allows you to get rid of predators. After birth, the body in the period of growth the ratio changes with speed.

Newborn animals have long legs, a slightly raised back, a narrow body and it is shallow, and the head and neck are short. Adult animals have shorter legs and a long, wide and deep body;

B) The ability of predatory (carnivorous) animals to protect their young, rabbits because they have the opportunity to keep their young in their nests, the axis bones grow rapidly in the mother's womb, and the supporting bones after birth. That's why these animals at birth, the legs are short, the body is long, wide and deep, after birth, their leg bones grow quickly.

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C) In guinea pigs, the axis and support bones are the same in the mother's womb and after birth grows at different rates.

Nutrient requirements of the organism at different stages of development.

Postembryonic growth and development occur at different rates at different ages. During the first 3-5 months, along with rapid growth, there are changes in the quality of the body, learning to drink mother's milk from the conditions in the womb, blood circulation, breathing, and the activity of the digestive organs. .

During this period, the young organism digests plant nutrients, the metabolism between nutrient digestion and blood circulation is restructured, and protein, mineral and water metabolism accelerates. During this period, organs and tissues grow rapidly and provide high daily growth.

Rapid growth in dairy cattle lasts up to 1.5-2 years. Getting older with additional weight, the composition changes, and the demand for quality feed increases.

A young organism produces more protein substances in its body, which participates in metabolism. As we age, this changes, and more fat appears in the body.

Calves produce 250-300 g of protein per 100 kg of live weight in the first month of life, 75-100 g at 6 months, and only 25-50 g at 12 months. At the same time, the use of protein in feed decreases to 25% at 1 year of age instead of 70% at one month.

The formation of protein and fat in a young organism is largely dependent on nutrition and storage. Lack of protein in the diet reduces growth and negatively affects the development of organs and tissues, and its excess causes inefficient use of dietary nitrogen.

In a growing animal, the total energy value of the ration is reflected in the daily growth rate. Intensive feeding has a positive effect on the development of young animals due to the rapid growth of muscles and bones. When there is not enough food, the development of the organism slows down, the daily growth rate decreases, the proportion of bone in the composition of nimita increases, and muscle and fat tissue decreases.

The higher the daily gain, the higher the fat production in the body. 70-75 g of fat is accumulated per 100 g of protein when the daily weight gain of dairy female calves up to 6 months is 750-850 g. At the age of 6-12 months, the ratio of protein to fat is similar, the daily weight gain is 650-750 g, and after one year, the average weight gain is only 550-600 g. Walking intensively fed young cattle reduces fat accumulation in their bodies. The high demand for calcium and phosphorus in young animals is related to the rapid growth of bone and muscle tissue in them.

Normal growth and development of young animals up to 12 months of age 80 per 100 kg of live weight mg of carotene, and then 50-60 mg.

The energy requirement of growing organisms depends on their age, sex, breed and daily weight gain.

It is necessary to ensure that the total energy content of cattle is normal during the 14-16 months of age. Feeding affects the good development of sexual activity in young animals and ensures their early sexual maturity. In this regard, fat tissue is less accumulated in bulls compared to bodies.

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The main periods of development that determine milk productivity.

In addition to feeding, the milk yield of cows depends on heredity. It is formed during growth, is related to the development of organs and systems, and to one degree or another is reflected in the production of milk. In general, a dairy cow should have well-developed cardiovascular, respiratory, digestive organs, udder, bones, large and active endocrine glands.

At present, live weight standards that ensure milk productivity have been determined for most breeds: Black-Ola breed - 600-700 kg, Red desert breed - 550-600 kg, Swiss breed 650-750 kg.

Intensive breeding of dairy cows reduces their costs, accelerates the restoration of the herd, ensures a constant increase in milk productivity. In farms where the technology of intensive milk production is introduced, high milk yield is required from the first calving of cows, which requires intensive growth of the body and heifers.

For this purpose, it is recommended to grow heifers intensively at first, 2.0-2.5 months before calving.

In all breeding farms that produce 5,000-6,000 kg of milk, breeding young cattle intended for herd replenishment are kept at a high level of nutrition. For this, it is necessary that the body weight of the Black-Ola breed is 380-400 kg at the age of 18 months.

The degree of growth of bodies is organized based on breed characteristics. It is higher for fast-breeding breeds, and lower for medium-breeding breeds. Carcasses obtained from intensively bred first calving cows and weaned at 350 kg live weight do not lag behind their mothers in terms of milk yield after becoming a cow.

When growing bodies, it depends on the speed of their growth in periods. Cows raised under low feeding conditions can produce about 3000 kg of milk. Other factors also play a decisive role when the cow is rapidly fattened (4-4.5 thousand kg).

Researches of the following years distinguish two periods in the life of animals, which have a strong influence on the growth, development and formation of milk production. The first is the period from birth to 6 months, the second is from 12 months to birth. In the first period, the gastrointestinal, enzyme and hormone systems are formed, and sexual maturity is reached. In the first period, the bones of the animal grow rapidly. A decrease in the ratio of feeding, including milk feeds, for 6 months has a negative effect on growth and development. Further strengthening of nutrition cannot completely restore what was lost, as the organism moves to a new period of development. This situation reduces their productivity by 10-14%.

The 2nd year of life (2nd period) is defined by the rapid development of mammary glands in the body. This process accelerates even more during their strait period. That is why it is better that the average daily weight gain of black-and-white breeds is 600-700 g in the second period, and 650-750 g in the estrous period.

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As a result of many years of research, a system of rapid growth of carcasses and heifers has been created that ensures high milk production. It includes: intensive rearing of female calves up to 6 months of age, feeding them 350-400 liters of skimmed milk or milk replacers; training calves to eat large volumes of feed earlier; reduce the proportion of feed in the diet to 25-30% by the age of one year; using silage and haylage as the main feed.

In high-yielding breeding farms, carcasses and heifers must be fed at a high level of nutrition. Breeding with a high level of nutrition also plays a special role in raising productive cows. Active movement of female bodies for 3-5 km per day causes rapid metabolism in them, and during lactation provides 500-800 kg more milk. Massaging the udder of heifers in the second period of estrus also has a positive effect on the formation of milk productivity.

Periodicity of growth. Growth legitimately has periodic booms and busts. For example, in calves and rabbits, one period of rapid growth and decline is 12 days. During the period of rapid growth, the animal uses the nutrients it consumes more effectively, and on the contrary, during the period of decline, therefore, this opportunity can be used wisely in production.

In the process of growth and development, the animal organism imposes various demands on the way of life, this is the law of life, which is reflected in its growth and selection. Failure to fulfill these requirements in one or another period has a negative effect on the animal's development and body proportions.

The growth and development of animals can be influenced by feeding and housing conditions during the young period, because during this period their bodies are very sensitive to the effects of the external environment.

Purposeful breeding is understood as the formation of useful traits by creating the necessary feeding and keeping conditions for animals in a certain period.

4. Factors affecting the growth and development of animals.

The growth and development of animals is affected by a number of factors other than heredity:

The influence of the mother's organism, that is, it acts as an "external environment" for the fetus. Large, strong mothers give their fetuses a good supply of nutrients, resulting in larger fetuses.

Endocrine glands, they are under the influence of the nervous system. Thyroid hormone increases metabolism in the body and has a positive effect on the growth and development of the animal. Removal of gonads causes a number of changes in the body, they become soft and quickly gain weight. The pituitary gland produces growth hormone, in addition, this hormone ensures sexual and milk secretion.

Pancreatic hormone (insulin) participates in carbohydrate metabolism and ontogenesis has a big impact.

Nutritional effects. NPChirvinskiy (2009) noted the negative impact of the lack of nutrients on the growth of the skeleton and internal organs of animals during the period of pregnancy and after birth.

The length of the sheep's intestines was 44-51 times longer than the length of the body when the sheep were fed only roughage, and only 33-38 times longer when they were fed well, that is, when they were fed with fodder added to the diet.

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Effect of storage conditions. Sunlight for animal growth and development; temperature, humidity and the composition of gases in the air; electrification of the atmosphere, pressure and other zoohygienic factors affect it.

In winter, keeping young animals in dry, cold, low-temperature buildings along with adequate feeding ensures that animals with well-developed organs, respiration and blood circulation, digestion and organs are grown, and their blood contains more hemoglobin. . Violation of zoohygienic requirements has a negative effect on the growth and development of animals.

Exercising the animal's body and some of its parts has a positive effect on growth and development (exercise, massage, walking), constant exercise or walking of animals strengthens their bones and muscles, strengthens the activity of the respiratory and circulatory systems. , growth and development are improved by increased metabolism. Massaging the udder of heifers from 3-4 months of age until parturition can increase milk yield by 15% after parturition.

Calculation of the growth of farm animals.

The growth of the animals is always monitored by periodically weighing and measuring them. In order for the data to be accurate, the animals are fed and watered in the morning.

Cattle and horses at birth, 1, 2, 3, 6, 9, 12, 18 and 24 months, once a year after reaching adulthood; Pigs are weighed at birth, 1, 2, 4, 6, 9, 12, 18 and 24 months and Sheep are weighed at birth, 1, 4, 12 and 24 months. Daily growth, absolute and relative growth is determined based on the received data.

Daily growth is the rate of growth (weight or size), the weight gained during a given period. It is determined using the following formula

$$K = \frac{Wt - Wo}{t}$$

here;

K-Daily growth.

Wo live weight at the beginning of the month
Wt live weight at the end of the month.

Absolute growth is the rate of growth (weight or size), the weight gained during a given period. It is determined using the following formula.

$$M = Wt - Wo,$$

The relative growth rate can be determined by the following formula

$$N = \frac{Wt - Wo}{Wow} \times 100 \quad ;\% \text{ is expressed as a percentage. This indicator is after birth}$$

it is high in the first months, and then its intensity decreases.

Fast maturity.

It is said that animals that are determined by heredity and formed under the influence of the external environment develop normally, grow organs and tissues in a certain period, and reach the state of sexual maturity and use in the farm.

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This condition often depends on the constitution of the animal, which is thin-empty (meat cattle, Sheep and Pigs) are quick-maturing, rough-dense type animals are late-maturing.

Life expectancy of animals and their use in the farm.

These indicators are the animal's type, breed, sex, rapid maturity, constitution, their depending on the conditions of cultivation and use. This is also the purpose of use (meat, work, etc.) and also differ depending on storage conditions.

All the time, the biological life span of the animal is used in the farm does not correspond to the duration, the biological life span is always longer.

Growth and life expectancy of animals, years

Animal type	Growth period duration	In the farm use duration	Duration of life	
			average	the most
Karamo l	4-5	8-12	20-25	up to 36 years
Horse	5-7	18-20	35-40	Until 67 years
Pig qa	2-3	4-5	11-15	up to 22 years
Sheep	2-4	5-8	10-15	up to 21 years
Rabbit	under 1 year	2-5		up to 12 years
Chicken	1-1.5	1-3	7 8-10	up to 20 years

Breeding animals to restore the herd in order to get more offspring, get products animals are used in the farm for a longer period of time.

Control questions

1. Tell the periods of growth and development?
2. Explain the types of growth and development?
3. Tell me the methods of calculating the growth of farm animals?
4. State the factors of rapid maturity?
5. Tell me the terms of use of cattle?

Topic 4: Basics of raising agricultural animals. Exacerbation methods.**Plan:**

1. Basics of breeding agricultural animals
2. Breeding pure breeds.
3. Breeding, types of breeding.
4. Hybridization. Types of hybridization.

Mating, homogeneous, heterogeneous, single, group, single group, purebred, crossbreed, hybridization, inbreeding.

Breeding methods take into account the type and line of animals in the case of mating, sorting procedures (systems) are understood.

The complexity and diversity of breeding tasks require the use of various breeding methods: in some cases, the blood of the improved breed is gradually absorbed into the blood of the improved breed, in other cases, animals belonging to the same breed are mated to each other, in the third case and animals belonging to different breeds and species are mated. Accordingly, there are 3 main methods of animal breeding, which **include 1. Purebred breeding, 2. Crossbreeding, 3. Crossbreeding.**

Purebred breeding is the mating of animals of the same breed. In breeding, animals of different breeds are paired. In crossbreeding, animals belonging to different species are crossed, for example, Black cattle zebu and one-humped camel with two-humped camel. These methods of exacerbation also differ from each other in terms of their biological essence. If in the breeding of purebreds, animals of the same type of constitution and genetic markers of productivity are obtained, then in crossbreeding and especially in hybridization, heterozygous animals are created, which differ greatly in variability compared to the initial forms.

Breeding purebreds. Inbreeding is widely used in the improvement of previously created breeds. The main purpose of such breeding is to preserve and improve the valuable qualities of the breed. This method of breeding is common in breeding farms and ordinary farms.

If purebred animals are bred, their hooves will increase, and the offspring will be the same. When animals are properly selected and sorted, unproductive qualities are not allowed to appear and useful qualities are helped to develop.

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A pure bred calf

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This method is not suitable for mass improvement of low-yielding breeds like zebu cattle in Uzbekistan, as it requires a lot of time. When cattle are mated, it is impossible to expect offspring that are very different from each other.

There are the following methods of purebred breeding:

Linebreeding to a famous progenitor (ancestor) or linebreeding. is a group of animals that are distinguished by their genetic characteristics.

Breeding of closely related animals (inbreeding). Inbreeding is breeding closely related animals. Animals that are closely related to each other are very similar in their biological characteristics. There are the following levels of kinship breeding: 1. Close kinship breeding. 2. Inbreeding with close relatives.

Crossing of cows of one line with bulls of another line (topcrossing).

Crossing cows with related bulls (topincrossing).

Outcrossing animals that are not related to each other.

Blood renewal is defined as the replacement of a bull used in a herd of cows with another bull of a similar breed and productivity, but not a relative. This method is mainly used in the period of genetic disorders.

3. Comparison

Comparison. Types of connections. In this case, if different breeds belonging to the same species are crossed, this is interbreeding. Depending on the purpose observed from the comparison, this method is divided into 5 basic types.

Inbreeding, that is, breeding for the purpose of improving the breed.

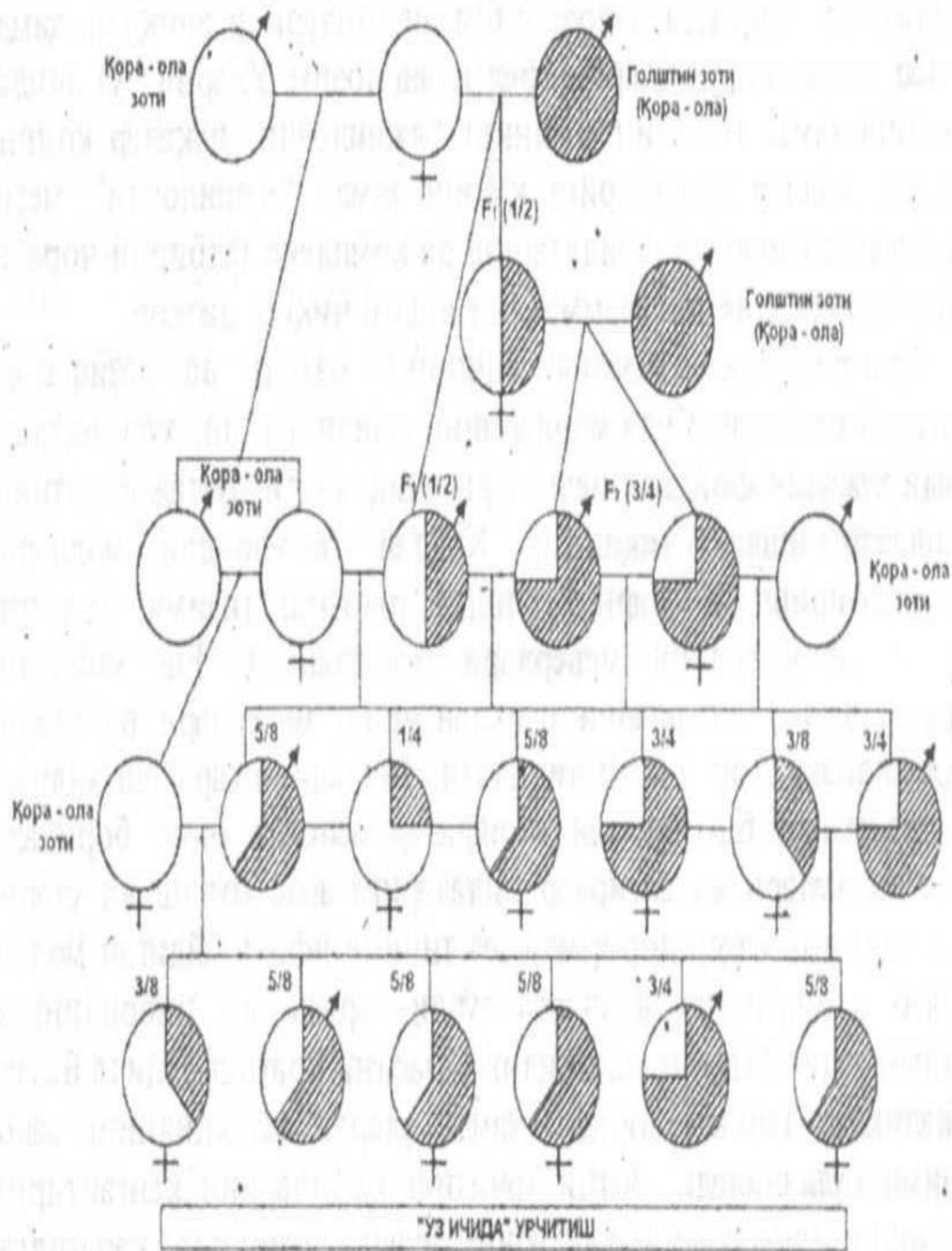
Crossbreeding with a bloodstock.

Crossbreeding for the purpose of producing a new breed, that is, by the factory method.

Industrial breeding.

Interbreeding.

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47-расм. Қора-ола молларнинг янги зот гуруҳини яратиш да урчителиш шакли

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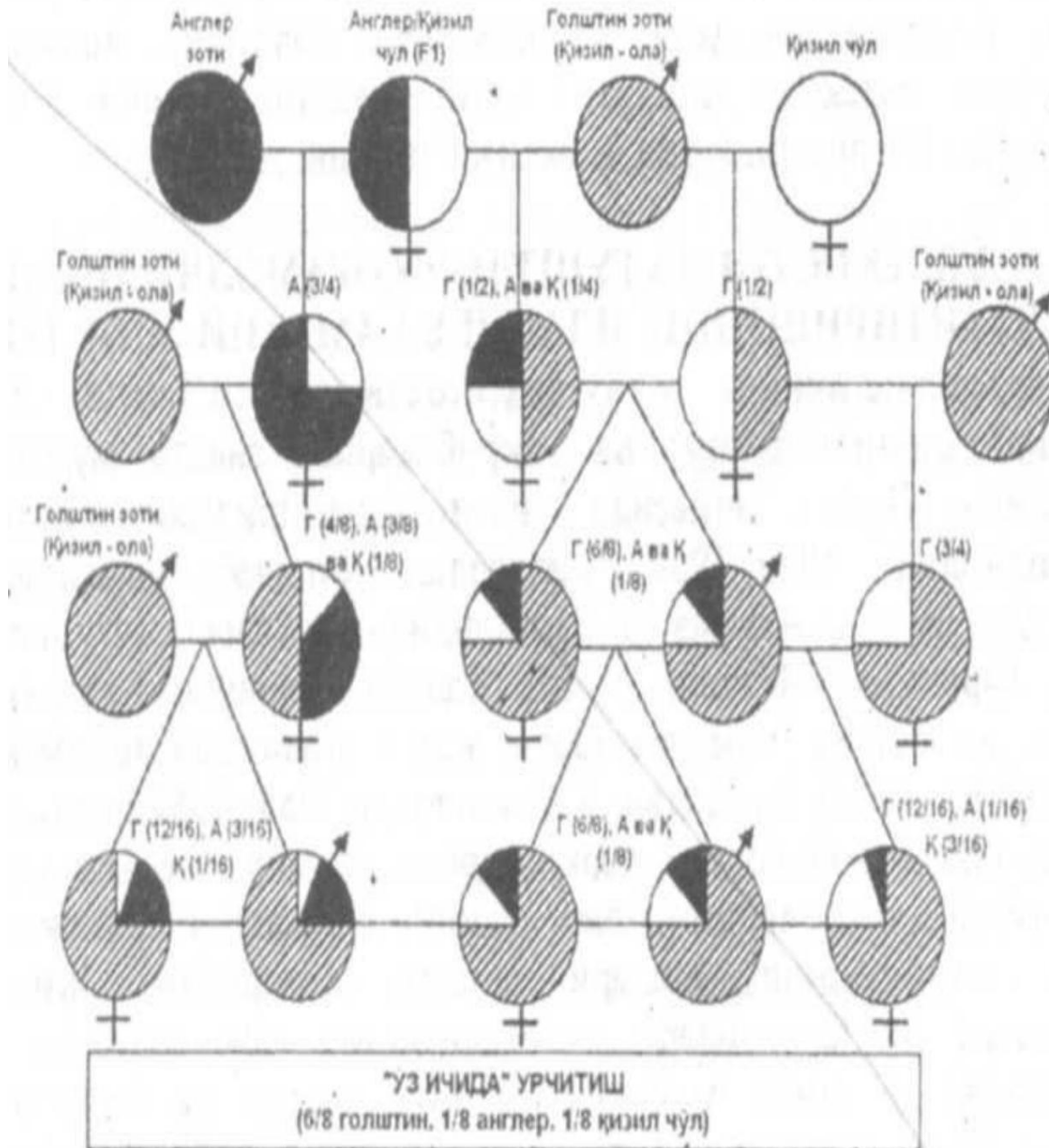
Blood transfusion method.

This method is a method of cross-breeding for the purpose of improving the breed. In this case, a mother (cow) belonging to the improved jaidari breed is crossed with a father (bull) belonging to a cultural improvement breed. As a result, in the first generation, a half-blood hybrid is obtained. Its female is re-crossed with a male (bull) of the improving breed. Such breeding is continued for 4-5 generations. Soft-wool sheep farming is developed on the basis of coarse-wool sheep breeds through cross-breeding for the purpose of blood absorption. Karakol Sheep Breeding of Kazakhstan was established as a result of crossbreeding Karakol rams imported from Uzbekistan with Sovly Koy.

Blood

transfusion The method of crossbreeding with blood transfusion is used in order to preserve the direction and valuable characteristics of the breed, to correct some of its shortcomings or to give it a different quality. Deficient breeds are crossed only once with improving males, and the hybrid obtained in one generation is recrossed with an animal belonging to the main breed, and then an attempt is made to maintain the quality passed from the other breed by means of selection. He used hybrid male and female animals. This method is used in breeding farms.

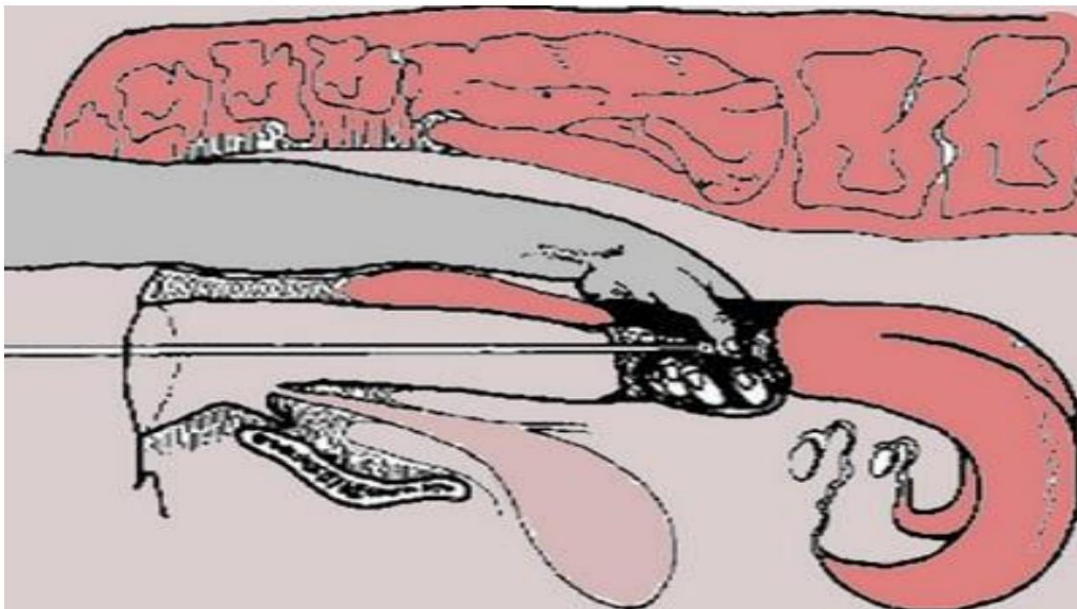
FUNDAMENTALS OF HUSBANDRY



48-расм. Қизил молларнинг сермахсул типини яратиш шакли

The crossbreeding method is used in the breeding of breeds that have preserved the valuable qualities of the original breeds in order to produce new breeds. If 2 breeds are used to produce a new breed, it is called simple crossbreeding, and if more than 2 (3 - 5) breeds are used, it is called complex crossbreeding.

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This method by Academician MFIvanov white pig breed of the Ukrainian steppe and soft woolen ascania is perfectly developed on sheep breeds.

When breeding a new breed, it is first necessary to determine what qualities will be found in it, and then initial breeds with the necessary qualities are selected for breeding.

The process of breeding new breeds is divided into two stages: *Breeding animals according to the purpose.*

Reinforcement of signs according to the purpose.

4. Industrial breeding method

Industrial breeding method is used to produce productive goods; they should produce more, as opposed to goods intended for reproduction.

In this method of crossbreeding, heterosis means growth energy of animals and hybrids of the first generation with high viability are obtained. This method is often used in the breeding of animal meat in pig and poultry farming.

5. The purpose of exchange breeding is the same as that of industrial breeding. In this case, the question of using heterosis is raised, but on an industrial basis slightly different from crossbreeding; in which the offspring from the female of the first generation hybrids used to get Interbreeding is simple - two-breed and complex - three-breed can be

In a two-breed serial cross, the first generation of the hybrid female and the mother breed the male, and the female of the second generation is mated with the male of the parent breed. Such the queue is continued in the next generations. Three in a three-breed cross the male of the breed takes his turn.

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Herd restoration means the process of increasing the number and improving the quality of the animals that were removed from the herd and sent for meat.

This process leads to an increase in product production, a decrease in its price, and an increase in profitability. Tasks in the field of expanding livestock herd breeding include timely insemination of herd-filling animals, elimination of infertility in female animals, preservation of newborn offspring. It also consists in removing the unfit from the herd and improving the production of livestock products.

Control questions: 1.

1. What is the main essence of breeding agricultural animals?
2. What methods of exaggeration do you know?
3. How to breed purebreds?
4. What types of breeding do you know?
5. What should be paid attention to when restoring the herd?

Topic 5: Carrying out breeding work, selection and sorting

Plan:

1. The role of breeding work in increasing animal productivity and improving the breed.
2. Selection, selection of the constitution and exterior of farm animals its importance in increasing productivity.
3. To carry out large-scale breeding work.

Key words: Plan, breeding, farm, farmer, peasant, personal auxiliary farm, breeding enterprises, ordinary farms, types of breeding work, planning, validation, terms, farm definition, sorting, pairing, homogeneous, heterogeneous, individual

select separately.

choose

The development of cattle breeding in our republic depends primarily on breeding. Because they produce products without improving the means of production (the main herd) output and its efficiency cannot be increased.

I. The main goal of the breeding work is to increase the productivity of livestock, improve the breed, grow fast-maturing, high-quality, high-quality cattle.

consists of Introduction of science-based breeding activities is an important factor in increasing livestock production.

The result of breeding works is the implementation of the following activities depends on: High class in improving cattle breeds in farms and breeding farms is the productive use of the seeds of fertile male animals.

In the selection and sorting work, the origin of the goods (productivity of the parents) is paid special attention to the constitution, the level of development and the productivity of the offspring. pay attention

Timely and quality inspection of farms.

Auditing

Inspection is a comprehensive evaluation of cattle

Separation of the best quality and healthiest children for offspring.

The best quality, productive, healthy female from the herd for breeding selection of goods.

To carry out breeding work based on the approved strict plan.

Feed and care for the animals allocated for breeding with quality food on the basis of ration carrying out their work at a high level is one of them

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Pick and sort

Proper organization of selection and sorting work. Livestock productivity is very important in increasing.

Selection separates animals with the desired characteristics and characteristics for future breeding means to get

Animals that do not meet the requirements are used in the production of products or slaughtered.

Selection is of two types.

Natural selection determines the viability of one or another species under the influence of natural conditions.

Artificial selection is carried out by humans to increase the productivity and reproduction of animals aimed at improving the characteristics.

Shape: Unconscious Choice.

Conscious-methodical selection.

The symbols in the selection of goods do not have the same value. They are divided into two groups.

The first quality signs are the color of the skin and wool, the color of the animal, the shape of the legs, lack of horns, etc.

The second number of indicators is the amount of milk, the amount of fat and protein in milk, live weight, etc. In the improvement of cattle breeds, selection works are carried out mainly on the basis of numerical signs. It is advisable to have few signs when choosing goods. A positive result can be achieved in a short period of time.

There are two types of selection methods, aggregate selection and individual selection.

In gross selection, animals are selected based on their personal characteristics, phenotype (development, exterior constitution, productivity). Although the breeding qualities of animals are not consistently transmitted from generation to generation, gross selection is a very important method of improving them. The most important feature that is taken into account when selecting animals is productivity, that is, a high-quality multiproduct unit.

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Also, in the gross selection, more attention should be paid to the constitution and exterior of the animals than the productivity. Apart from these, the development of the animal, the normal condition of the reproductive organs, and sometimes the character or temperament of the animal are taken into account. Because knowing these characteristics is necessary in animal care.

In **individual (individual)** selection, in addition to selection by phenotype, genotypic characteristics of animals, i.e., the ability to pass all valuable qualities from generation to generation, are also taken into account.

Knowing the origin of animals and the quality of their offspring allows us to draw conclusions about their genotypic characteristics. In order to evaluate the origin of animals, their genealogy book is compiled in a certain form and information about the productivity of their offspring is written.

Sorting (mating) is an important activity of breeding work. Mating is based on a set plan, bulls and cows are mated in order to get a new generation that embodies the high characteristics and characteristics of their parents. When the mating is chosen correctly, the breeding characteristics of cattle are strengthened and further developed. The effectiveness of mating depends on the genetic and quality indicators of the animals involved in it. It is known from animal husbandry practice that the high genetic characteristics of the bull are highly effective when the female cattle in the herd are compatible with the genetic indicators.

Sorting (pairing) is of two types: **a)**

homogeneous,

b) heterogeneous.

Homogeneous selection is used to preserve the type of animals in a particular herd. In this case, a quality cow similar to the quality of the bull is selected. When the parents are selected in this way, their characteristics are preserved and propagated in the offspring.

Heterogeneous mating, that is, the method of changing a sign of one of the parents is certain used for the purpose of obtaining offspring that differ from the animal.

In order to obtain quality offspring, the following rules are followed when mating parents.

The best quality female animal is mated with the best quality male animal.

The quality of the bull should be higher than the quality of the cow.

Closely related animals (male and female animals of 3 generations crossbreed or pairing children with their parents) is not allowed.

*Male and female animals with certain defects can be mated
it's not*

Auditing is an annual measure of livestock assessment, grouping, planning of breeding plans, determination of sorting results, and creation of mating types in breeding plants, farms, farms and breeding farms. When conducting it, the cattle's breed, origin, productivity, growth and development, exterior and constitution, the quality of the offspring, their fertility and hokoza signs are comprehensively evaluated.

That is why, first of all, it is necessary to revive the activities of the state breeding association and self-service enterprises, to organize their work with farmer breeding farms.

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Based on the requirements of the law on "breeding rights" for breeding plants organization of conditions and state support for preferential activity.

Reorganization of work of breeders and selection centers based on the state budget.

Material and moral motivation of persons engaged in breeding work on a national scale.

Organization of breeding exhibitions and auctions.

Restoration of artificial insemination in cattle breeding.

Organization of proper breeding of young breeding stock.

Organizing the importation of breeding animals and their seeds from abroad. All

the measures mentioned above are aimed at improving the breed of livestock and increasing their productivity in order to fully satisfy the demand of the population for food products and raw materials of the industry.

Control questions.

Describe the role of breeding in livestock development.

What is the essence of the law on breeding work?

What is the purpose of organizing selection and selection work?

What activities does the organization of large-scale breeding work include?

In what year was the law "On breeding" issued?

Topic 6: Fundamentals of feeding agricultural animals. Foods classification. Food preparation.

Plan:

1. Concept of food.
2. Factors affecting the composition and nutritional value of food.
3. Food classification

Key words: Food. classification, plant, microbe, tissue, tissue, product, substance, metabolism, protein, protein n, klechatka, nitrogen, productivity, toxic, fertilizer, vegetation, animal t.

As **nutrients**, they belong to plant, animal, microbial origin and are assimilated. Nutrients that can be taken are harmful to animal health and productivity refers to non-acting products, including mineral substances.

As a result of digestion of food in the body, nutrients are extracted from the animal maintenance of life, formation of tissues, organs, metabolism and production spent on production.

If the food contains harmful and toxic substances, they are completely neutralized can be used only if it does not affect the animal organism.

Regardless of the composition and nutritional content of foods, their appetite, methods of preparation and storage, as well as ease of preparation before feeding includes technological features.

Food quality is established by state standards. Food quality (class, variety) is determined by its nature, nutrients, mechanical impurities, harmful, toxic substances and other indicators.

Factors affecting the composition and nutritional value of food.

A number of factors affect the composition and nutritional value of nutrients, including climatic conditions, soil, plant maturation stage (vegetation phase), fertilizers, type and variety of plants, agrotechnics, preparation methods, and storage conditions. .

Climatic conditions. Useful temperature, humidity, seasons, vegetation in different regions. The duration of the period, sunlight passes through the process of photosynthesis with soil solutions provides productivity, as well as accumulation of organic and mineral substances.

High humidity in mountainous and sub-mountainous areas means high moisture content of food. Short growing season in the northern regions is nutritious as a result of insufficient accumulation of substances, their nutritional value is low.

Soil. In fertile soils, plant productivity and nutrition are high, because the necessary solutions for the formation of nutrients are available in the soil.

The lack of this or that element in the soil is the reason for the lack of this element in food. Therefore, a soil biogeochemical map was created in our country based on this necessary fertilizers are applied.

Fertilizer. The yield and composition of grass crops with the use of local and mineral fertilizers can be affected, especially this situation has a positive effect on the mineral content of food.

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Nitrogen fertilizers increase yield and crude protein ratio in plants. Nitrogenous excessive use of fertilizers leads to an increase in non-nitrogen substances in plants cause.

When applying nitrogen fertilizers, it is necessary to achieve its normality, otherwise in nutrients the increase of nitrates has a negative effect on the animal organism.

Excessive use of nitrogen fertilizers in grain crops increases sugar content reduces.

The mineral content of nutrients depends on the sum of elements in the soil. Various fertilizers application affects the ratio of trace elements in pasture grass, potassium and an increase in phosphorus causes a decrease in calcium and magnesium.

Fertilizers should be applied according to which mineral substance is lacking in the soil eliminates the deficiency.

A sufficient amount of nitrogen in the soil is the reason for the increase of carotene in blue foods will be

The type and variety of plants is reflected in their productivity and nutrition. Rich in protein and calcium compared to legumes.

Different varieties differ in the composition of corn kernels.

21-24% in sugar beet, 16-18% in sugar beet, only 10-14% in food beet will be dry matter.

Agrotechnics has a significant effect on the amount of nutrients and plant productivity shows. Necessary agrotechnical measures in the necessary periods of plant vegetation transferring (watering, loosening, fertilizing) more nutrients in plants ensures accumulation.

Chemical plant protection products are toxic to animals in food it can.

An excess of pesticides in food can poison animals possible

Vegetation stages of plants greatly affect their composition and nutrition.

In the early stages of plant vegetation, water, protein and AEM will be more, kletchatka will be less, the dry matter of such food is easily digestible will be In the later stages of vegetation, the growth of klechatka is food makes it rough and difficult to digest. It is desirable to mow spiked plants - earing, legumes at the beginning of budding and flowering, this postponement of the periods forward or backward the yield, or the satiety of the nutrients leads to a decrease.

The effect of the vegetation period on the protein digestibility of blue forages, %

Vegetation phases	Corn grass		Alfalfa
		stew	
Budding	-	-	78.0
Flowering	64.8	-	75.4
Milk ripening period	65.0	61.1	-
Milk-wax period	66.7	60.7	-
Wax Age	68.2	63.0	-

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1).3 kg of unslaked or 9 kg of slaked lime is used for 100 kg of straw.

From the solution, 200-250 kg of lime solution is added to 100 kg of straw, if possible, it is polished. To improve the taste of the prepared feed, 2 kg of table salt is added to 100 kg of straw. 20 kg (4-6 kg of straw) for adult cattle, 10 kg (2-3 kg of chopped straw) for young cattle, 3 kg (0.6-0.8 kg of dry straw) for sheep.

Food classification.

Nutrients differ in source, composition and nutritional value.

According to their energy content, they are divided into bulk foods (less than 0.6 oz. units per 1 kg of food) and concentrated foods (more than 0.6 oz. units per 1 kg of food).

Depending on the source of production,

plant,
animal, mineral,

microbe food is divided into chemically synthesized foods.

Plant foods Plant

foods include all types of blue foods and their preservation (hay, silage, silage, grass clippings and chopped hay); farming (straw, straw, straw); roots and tubers and vegetable waste; food policy; grain and oilseeds; flour, oil, canning, beer, alcohol, sugar industry waste.

Animal world is food

Dairy and dairy products, meat and fish industry for animal feed wastes, poultry and hatchery, cocooning and leather industry wastes.

Various industries

Various industries produce mineral feed for livestock, nutritional yeast, vitamin preparations, nitrogen compounds, antibiotics, enzymes, hormones and therapeutic drugs.

Compound

feed Compound feed industry produces full-value compound feed for poultry and pigs based on plant, animal, microbial, chemical industry products. In addition, the compound feed industry produces food additives and protein-vitamin or protein-vitamin-mineral supplements.

Farm animals are fed using different types of food is increased. They are divided into the following groups according to their origin and composition.

Juicy foods.

Rough foods.

Cereals.

Industrial waste (starch, flour, alcohol, oil industry).

Food waste.

Foods from the animal world.

Protein and other additives.

Vitamin and drug supplements.

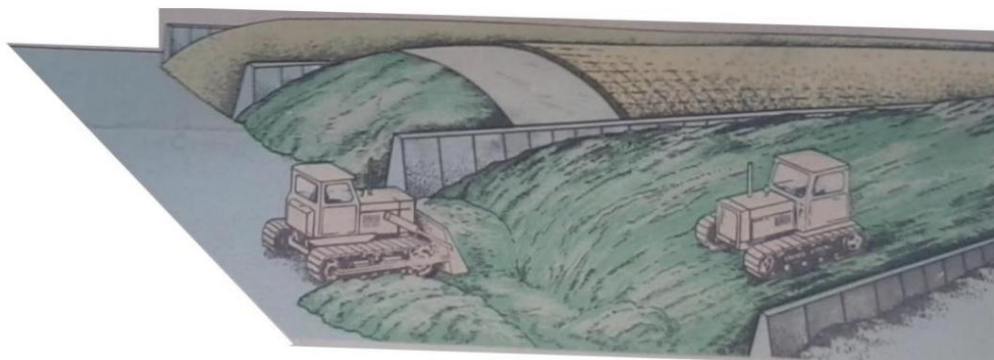
FUNDAMENTALS OF HUSBANDRY

Mineral nutrients.

Mixed feeds.

Juicy food - contains a lot of water and is eaten by animals and is well digested, because the nutrients are dissolved in the cells will be Juicy foods include blue foods, silage, hay, roots and tubers, and including hay and field crops.

Silage preparation process



Forages are legumes and legumes in pastures or irrigated fields is cultivated. From spring to late autumn, sometimes year when they organize a conveyor can be used throughout. Blueberries are especially rich in protein, minerals and vitamins will be

The quality of blue feeds

Blue is a source of nutrients	Collection era	Dry substance i raw protein ratio, % less didn't happen	Raw material in 1 kg, less don't be	
			Interchangeable energy, Mdj	Energetic feed unit
Planted one and many annual spikelets	Spike before	15	10.3	1.03
Planted one and many annual legumes (except clover)	Flowering beginning, in the lower branches 2-3 pods formed	17	10.1	1.01
Alfalfa	From budding it was not late	17	9.6	0.96
Cereal crops	Spike before	11	10.1	1.01
Corn	Crops of stalks	9	10.3	1.03

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	before being			
Sunflower	Before flowering 10	Before	10.0	1.00
Rapeseed	flowering 16	Before flowering	10.4	1.04
Natural meadows	10	Harvesting	10.0	1.00
Root leaf	Silage is	12	10.4	1.04

a food obtained from the preservation of corn, sunflower and oats during the period and is eaten by ruminants and other animals. In suppression mass moisture is 65-70%.

**Hay is pressed into trenches when the humidity is 45-55%
prepared food.**



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Carrots and beets are among the root fruits, and they are distinguished by their high content of water and carbohydrates stands Red carrots have a lot of carotene.

Potatoes and Jerusalem artichokes are among the fruits, they are rich in starch.

Hashaki juice includes watermelon and pumpkin, which contain 90-95% water and are easy to digest contains fissile carbohydrates. It has a positive effect on milk production of cows.

Roughage includes hay, straw, stubble, and dried stalks. Hay is very nutritious, retaining only 15% moisture in its composition. Hay is made from grain and leguminous plants. Depending on the extraction, it is divided into those obtained from natural and cultivated herbs.

Straw is the waste after threshing the grain of cobs.

It has a low nutritional value and is mainly consumed by ruminants and horses. Straw rice is a waste obtained after threshing, has low nutritional value, is often used as bedding, and can be used in a small proportion in the diet of ruminants.

Cereal foods. These foods are small in size and high in nutrition. Depending on the chemical composition of grains, they are divided into carbohydrate-rich grain, protein-rich leguminous grain, and protein and fat-rich oilseeds. Therefore, depending on the biological and physiological characteristics of each agricultural animal and poultry, it is advisable to use one or another grain.

After extracting oil from the seeds of oilseeds, their kunjara and shrots are used.

The quality and nutritional value of grains depends on many factors.

When evaluating grains, naturalness, smell, gloss, taste, moisture, cleanliness, sourness, contamination with pests is taken into account.

Cereals with spikes. It is used as food for all animals. Its composition and nutritional value are presented in the table.

The average protein content of spiked grains is 10-14%. Protein is 85-90% proteins and the rest consists of nitrogen-free asparagine and free amino acids.

Among grains, corn contains protein, especially lysine, tryptophan, and glycine amino acids such as

Fat in these grains is 2-5%, they consist of minol and oleic fatty acids occurs in the form of triglycerides.

Grains with husks (oats, barley) have more fiber.

Grains with spikes contain 1.5-5% ash, more potassium and phosphate salts, and less calcium.

Carotene is especially low in spiked grains (5 mg per kg), mainly in yellow corn.

Legumes. This group includes all legumes. We mainly use soybeans for this purpose.

All legumes are high in protein, with the exception of soybeans (22.2-34.5) in fat. will be poor, fat in soybeans is 17.4%.

Legume protein is more difficult to digest than grain protein and produces more gas in the digestive system.

Cholesterol and lecithin are more common in legume oil.

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Micronutrients (cobalt, iodine, molybdenum, zinc) are present in these grains compared to spiked grains. more, manganese is less common.

Industrial waste. Waste in most industries with the main product they are used as feed for various farm animals.

Wastes from flour, alcohol and oil factories are valuable feed for livestock. Waste from sugar, beer and starch production is good feed for cattle and pigs. Wastes from bread, fruit and vegetable processing, wine, confectionery enterprises are also used in animal husbandry.

The waste of the flour industry is bran, which depends on the grain from which it is obtained. Wheat and rye bran are highly valued as food. Depending on the type of flour, bran is up to 28%. Bran is rich in phosphorus and B group vitamins.

Bran can be fed to all farm animals.

Flour industry dust is also used as food.

Oil industry waste. This industry produces protein-rich kunjara, meal and phosphatide-protein feeds for livestock. The hulls and husks of seeds and grains are rated lower in terms of nutrition.

In our country, the main vegetable oil is obtained from cotton seeds and a small amount from soybeans.

Kunjara, shrot (depending on the technology) and shelukha are obtained from CHigit. Kunjara and shot it is rich in protein, and shelukha is rich in fiber.

Kunjara contains 4-10% fat, meal contains 1-3% fat. Kunjara and shrots obtained from different raw materials differ in composition and nutritional value.

Soybean meal is notable for its nutritional value (1.35 oz. unit) and high protein (40.0%), while cotton meal has 1.11 and 38.3%. Soybean meal can be fed to all farm animals and poultry, while cottonseed meal is more commonly fed to ruminants and limited to pigs and poultry.

Kunjara and pellets are a source of protein - non-replaceable amino acids.

Soybean meal is especially rich in lysine, which is of particular importance in poultry nutrition.

Kunjara and shrots are high in potassium and phosphorus, low in calcium, and contain vitamins of group B and e. Kunjara and pellets are mainly used in the mixed feed industry.

In 1 kg of soybean meal: Proteins 42%, energy nutrient unit 1.21-1.36

Cotton meal gossypol 0.03-0.05%.

Gossypol can be 0.03-0.3% in sorghum, and 0.02-0.5% in whey. For this reason, it is possible to give kunjara and shrot to young animals less, and add 20% to the nutrition of cows, and 10% when young cattle are fattened.

Phosphatide feed. It is formed when oil is extracted from oily grains. Sunflower and soybean phosphatides contain 39-42% fat and 56-58% phospholipids. Phosphorus is 2.1-2.2% in phospholipids.

When extracting oil from wheat, shelukha is a waste, its nutritional value is 0.13 nutritional units per 1 kg, 27 g digestible protein and 50% fiber.

Widely used in cattle and sheep fattening.

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Starch industry waste. Starch is mainly obtained from potatoes, sometimes from wheat, rice and corn. When the starch is removed from the potato, it produces a pulp, which can be fed to animals in wet, silage and dry form.

1 kg of potatoes contains 0.11 nutritional units, 1 g of digestible protein, 0.2 g of calcium and 0.5 g of phosphorus. Such waste is a good feed for cattle, 15-20 kg can be fed to cows and 30-40 kg to cows.

Alcohol industry waste. These include various bards, grapes and fruit tuppahs. In the bar, alcohol is produced from various grains, potatoes, and sugar beets.

Barda contains 88-95% moisture and can be fed to cattle, horses and sheep. Cows can drink 20-25 liters, cattle 70-80, sheep 8-10, horses 10-15 liters.

Beer industry waste. In the production of beer, beer wort and yeast are obtained. Beer barley has a moisture content of 75-80% and has a higher protein content than barley.

0.21 oz per 1 kg beer keg. unit, contains 42 g of digestible protein, 0.9 g of calcium and 1.8 g of phosphorus. After renewing the beer barrel, it is possible to feed 10-15 kg to dairy cows, 8-12 kg to young cattle, 4-5 kg to cattle under 1 year old and 4-5 kg to adult pigs. Especially this food can be widely used in cattle fattening.

Sugar industry waste. These include beet pulp (jom) and molasses (patoka).

Tuppa is fed to cattle fresh or ensiled. Tuppa consists of 93% water, and dry matter consists mainly of easily digestible carbohydrates. 0.08 oz in 1 kg of fresh tuppa. unit, there are 6-8 g of digestible protein.

30-40 kg of beetroot to dairy cows (the ration is equalized), feed cattle are given 40-50 kg.

SHinni consists of 20% water, 9% protein, 60% AEM and 10% ash. 0.87 oz in 1 kg of molasses. unit, 40 g of digestible protein, 2.9 g of calcium, 0.2 g of phosphorus and 530 g of sugar are stored.

Food waste. As an additional source of food for livestock, they are obtained from common feeding stations and living areas. 35-40 kg of food waste per person per year in cities. They can be vegetable, fruit, fish and meat waste, as well as food scraps.

Their collection is carried out on the basis of veterinary legislation and fed to animals.

In order to increase their nutritional value and neutralize them, heat treatment is given, if possible it is even more effective if such processing is carried out under pressure.

Food waste is an inexpensive feed for pigs.

After recycling, 87-90% of food waste is digested by the animal body. Approximately 50% of a pig's diet may consist of food waste.

Foods from the animal world.

Feeding these foods to some farm animals and poultry is part of their diet fills and provides the most necessary nutrients, minerals and vitamins.

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These products include milk and its processing products - skimmed milk, buttermilk and whey. They can be fed naturally to animals. They can be easily dried into a powder, then dissolved in water when needed and given to animals or added to mixed feeds.

Dried fish waste in the feed industry is fishmeal, meat and meat waste of enterprises is used as meat - bone, blood meal and technical oil.

Feathers and feather meal, silkworm cocoons are also used as protein supplements in the mixed feed industry.

Animal foods contain more fiber and carbohydrates than plant foods, but milk contains less carbohydrates.

Foods obtained from the animal world, in particular, do not take the necessary place for life is a source of amino acids such as lysine, methionine, tryptophan.

Milk and its processing products. After the birth of mammals, their main food is milk, which contains all the nutrients the young organism needs for life. At first oral, and later during the lactation period, natural milk is the main source of life. 95% of its fat, and 98% of protein and carbohydrates are digested and absorbed by the animal's body. Due to this milk, calves double their live weight in the first month of life, and piglets increase 5-7 times.

Cow's milk serves as supplementary food for all farm animals.

From the end of the first month to the beginning of the 2nd month, young farm animals can be fed with skimmed milk, cotton and whey, by-products obtained as a result of milk processing.

Fish meal. This product is produced as a result of drying and processing waste from the fish industry, as well as non-edible fish species. 1 kg of fish meal contains 0.9-1.5 nutritional units, 480-630 g of digestible protein, 20-80 g of calcium and 15-60 g of phosphorus.

Fish meal is an excellent protein-mineral-vitamin food, and its organic substances are Pigs 85-90% is absorbed by

Mixed feeds with fishmeal Pigs when given to pigs and chickens growth, increases laying hens by 20-25%.

Meat and bone meal. Meat that is not suitable for eating in meat processing plants is obtained from slaughter waste, bones, internal organs, and from animals that have died from non-infectious diseases in slaughterhouses. 1 kg of meat and bone meal contains 0.92 nutritional units, 350 g of digestible protein.

If the flour contains up to 10% bone, it is meat flour, and if it is more than that, it is meat flour. called bone meal.

Meat and bone meal is a source of lysine and is low in methionine and tryptophan. It contains a lot of B group vitamins. They are part of the diet of pigs and poultry.

Blood flour. Animal blood is prepared by adding no more (no more than 5%) bone than the water from which the blood was washed. Good blood flour is dark brown in consistency. 0.92 oz in 1 kg of blood meal. unit, there are 650 g of digestible protein. Mainly it is added to mixed feeds of pigs and poultry.

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Fatty animal fat. It consists of beef, pork, and sheep fat, obtained from unfit meat in meat factories. Such oils are fat milk substitutes (ZSM) to chickens and broiler chicks in production and poultry factories it is added to increase the satiety of the ration.

Pat him. Poultry processing plant waste wing and tail feathers acids processed at high temperature under pressure. Grade I has 70% protein, 3% fat, 12% ash, or 0.8 oz per kg. unit and 500 g of digestible protein there is. Such flour is added to mixed feeds.

Silkworm dome. Dried waste from the silk industry. 1 kg contains 0.84 nutritional units, 407 g of digestible protein, 2.7 g of calcium, 7.4 g of phosphorus. Because it has a high fat content (20%). cannot be stored for a long time. Mainly a mixed bait for pond fishing is added.

CHarm industry waste. CHarm is waste from recycling, it to him can be turned and fed to animals.

Charm flour contains 85-90% crude protein, 2-3% fat and 1.5-2.9% ash.

CHarm residues are used in the preparation of mixed fodder.

Protein and other additives.

Protein-free nitrogenous compounds.

Part of the protein deficiency in the diet of ruminants is protein-free nitrogen can be replaced by compounds. Nitrogenous compounds ration energy and mineral It is added when equalized with substances, especially if carbohydrates are sufficient in the diet should be, because it ensures the activity of microbes in the foreguts.

Artificial amino acids. Some agriculture based on livestock demand artificial to meet the amino acid requirements of animals and poultry amino acids are produced. Lysine and methionine preparations are used in animal husbandry.

Artificial amino acids are mostly used in poultry farming.

Yeasts. They contain the full value necessary for the animal organism proteins, carbohydrates, minerals, vitamins, enzymes and estrogenic substances, which have a positive effect on growth and development, reproduction. Yeast proteins have their composition and with properties similar to animal proteins. They contain less methionine and cystine and more lysine (6.0-7.8% of protein).

They are very nutritious, 1 kg of yeast contains 1.15-1.22 nutritional units.

Next, hydrocarbon yeasts produced by the oil industry increased, they contains B12

Dry yeasts are added 3-10% to the composition of mixed feed for pigs, poultry, young cattle.

Enzyme preparations. Enzyme preparations are mainly isolated from broiler chickens and milk If there is a lack of protein, minerals, vitamins in the diet of piglets, then food used if enzymes have sufficient activity.

Enzyme preparations for the ration of farm animals addition rates (in grams per 1 food unit).

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Enzymes	1-6 calves	monthly lamb	Calves older than 6 months		
			silage	beetroot tuppah	at the bar
Amilorizine P10X	-	0.2	-	-	-
Glucavamarin PX	-	3.0	5.0	2.0	3.0
Pectavamarin P10X	-	-	0.1	0.1	-
Amylosubtilin 23X	0.5	-	-	-	-
Pectavamarin 23X	-	-	0.3	0.3	0.3

Vitamin and mineral supplements.

Vitamins ensure health and high productivity in the life of animals has a special place. They are mainly found in foods, but always animals does not satisfy the requirement, therefore, its missing part in the diet is vitamin filled with drugs.

Polyvitamin preparations are used in animal husbandry.

Aevit is an oily solution, 1 ml contains 10 thousand IU of vitamin A and 100 mg of vitamin e.

Tryptovitamin is an oily solution of vitamins A, D3 and E. It has 10 thousand XB in 1 ml contains vitamin A, 200,000 IU of vitamin D3 and 10 mg of vitamin E.

Atsnitin is a tablet containing ascorbic (0.05 g), nicotinic (0.01 g) acids, stores thiamine chloride (0.001 g) and glucose (up to 0.5 g).

Tetravit is a tablet containing thiamine chloride (0.003 g), riboflavin (0.003 g), nicotine (0.02 g) and ascorbic (0.15 g) acids are present.

Undevit - in tablet form, containing retinol acetate (3300 IU), thiamine chloride (0.002 g), riboflavin (0.002 g), pyridoxine hydrochloride (0.003 g), cyanocobalamin (2 μ g), nicotinamide (0.02 g), vitamin R (0.01 g), vitamin e (0.01 g), ascorbic (0.075 g) and folic (0.5 mg) acids and pantothenic calcium (0.003 g).

These vitamin preparations are for various farm animals and poultry It is part of prepared mixed feeds. Farmer, farmer and personal assistant and in farms by adding it to the main foods (poultry, pigs, young animals). is given.

Food antibiotics. Antibiotics are of plant, animal, microbial origin and limit the development of specific groups of microorganisms or kill them. Current more than 2,000 antibiotic substances are identified per day, only 50 of them are medicines and used in veterinary practice. Even less so when feeding animals antibiotics are used.

Antibiotics feed microorganisms in the gastrointestinal tract of young animals stops their development and protects them from various diseases, because young animals are still the defense system is not fully formed.

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Antibiotics not only affect the microbes, but also the metabolic process also has a positive effect.

In animal husbandry, non-accumulating in animal products, medicine and Antibiotics not used in veterinary medicine are used.

So far, mainly grisin and bacitracin are used.

Grisin is a pale yellow or brown hygroscopic powder, soluble in water, it is cormogrisin-5, it is used in the form of cormogrizin-10 and cormogrizin-40.

Bacitracin is a water-soluble antibiotic mixture. Animals bacillixin-10, bacillixin-20, bacillixin-30, bacillixin-60, bacillixin-90 and Bacillixin-120 is used in the liver.

Mineral nutrients.

The food that animals eat determines their mineral requirements satisfies a part. Foods grown in non-saline soils do not contain enough sodium chloride to make salt, so all farm animals and poultry salt should be given regularly.

Table salt. Pigs and poultry are fed with mixed fodder.

The content of mixed fodder to satisfy the demand of table salt of horses and ruminants In addition to salt, they must always have a lick of salt in their manger.

Salt processed straw, straw and other roughage for ruminants and horses can be added to hay. The ruminant's demand for table salt increases when a lot of silage is fed, as the acid in the silage is neutralized with saliva.

large amounts of sodium bicarbonate are used.

Cows that produce more than 18 kg of milk per day are given a moderate amount of table salt (5 g per feed unit), but this salt may not meet their requirements, so they there must always be a lick of salt in the manger.

Calves should be provided with salt from the first day of life.

Now, table salt is enriched with trace elements by the industry in the form of briquettes are being released, their use will bring great results.

Table salt with iodization, that is, 2 mg per 1 kg of table salt, when there is insufficient iodine in the water iodine is added.

In a year, 26 kg of salt is used for 1 cow, 11 kg for 1 head of cattle, 3.7 kg for sheep and goats, 11 kg for pigs, and 18 kg for horses.

Fodder wolfberry and limestone are fed to compensate for the lack of calcium in the animal's diet. On average, chalk contains 37% calcium, 0.5% potassium, 0.18% phosphorus, 0.3% sodium, 5% silicon, and limestone contains 32-33% calcium, 0.5% iron, 2-3% magnesium, 3-4% silicon, 0.2% sulfur.

In order to supplement the diet of farm animals and poultry with calcium Shells and eggshells of freshwater and marine molluscs can be eaten.

Calcium mineral substance by industry - together with phosphorus or other elements is produced.

Bone meal. Bone is a widely used mineral substance, mainly sausage In workshops or enterprises, the bones are dried and made into flour after the meat is minced crushed, its particles should not be larger than 0.4 mm.

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Food phosphates. Calcium in the diet of farm animals and poultry used when phosphorus elements are lacking.

Phosphorites cannot be crushed and fed directly to animals, because it contains a lot of fluorine (3.5-4%), which causes poisoning and tooth decay in cattle and pigs.

Phosphorites are defluorinated in chemical plants, the fluorine content of such products should not exceed 0.2%.

Mainly, phosphates are included in the composition of mixed feeds in the amount of 2-3%.

Microelement salts. In some regions, the food and water given to animals lacks one or another microelement, in such cases, the missing microelement is added to the food, water or lick of salt, of course, in this process, the demand of each species of animal and poultry for these microelements is taken as a basis.

Mixed feeds.

It consists of a mixture of the same ground food products, which are prepared to ensure the complete nutrition of farm animals and poultry. The composition of scientifically based mixed feed is developed according to the type, age, sex, and physiological condition of each animal and poultry.

In mixed feeds, some nutrients increase the total value by filling each other's deficiency. With the correct selection of the ratio of nutrients, mixed feed can be reasonably balanced with energy, protein, amino acid, minerals and vitamins, and it should fully meet the standard requirements.

Food storage. Improper shape, size, and non-covering of hay have a negative impact on the quality of hay. Violation of standards in silage or silage will lead to deterioration of food quality. Freezing beets causes their nutrients to break down.

When storing food, it is necessary to pay attention to moisture standards, it should be 15-17% in hay, 12-14% in grains and bran, 10-12% in corn and meal, 9-12% in grass clippings.

Pathway for growth of food spoilage microbes and fungi
It should not be put.

By preparing food for feeding, it is possible to achieve better eating, digestibility and quality.

Treating roughage (straw, straw, dry stalks) with lime or ammonia solution greatly improves their digestibility and assimilation.

The smaller the grains are, the worse they are digested; and grass shavings should be crushed as much as possible. Feeding pigs grains in the form of flour increases their digestibility by 2 times compared to feeding them whole and in the form of groats.

Control questions;

1. What is your understanding of food?
2. Factors affecting the composition and nutritional value of food?
3. Tell the classification of food?
4. Explain the composition of food?

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7-Subject; About ration and ration norm and food unit concept. Principles of rationing.

Plan

1. Livestock feeding
2. Concept of ration and ration norm
3. Formulation of rations for various farm animals

Key words: Ratio, rate, feed, vitamin, Nutritional unit, livestock, feeding, building, acceleration, dairy cow, growth, calf, cuttings, silage, hay, bran, kunjara, bone meal, calcium, ash, feed storage areas.

Proper feeding of livestock and poultry is important in accelerating their growth and development and dramatically increasing their productivity.

Feeding animals with valuable and nutritious foods, according to their chemical composition, is called proper feeding of animals. Physiologically complete value is defined as the physiological state of animals (threat, milking period, weaning, feeding based on a specific purpose and hooves) and taking into account their age, weight, sex, productivity level. It is understood to fully satisfy the need for the quantity of food. If cattle are fed improperly with low-quality feed, their productivity decreases, their health deteriorates, and young cattle stop growing and developing. Complete valuable nutrition increases animal productivity, accelerates growth and development, improves fertility and ensures healthy and large offspring.

A product that ensures the normal life activity of animals and in a certain amount The amount of nutrients needed to give is called the nutritional norm.

The feed rate depends on the age of the animals, the level of obesity, live weight, per day determined by productivity and quality.

Nutritional norm, food unit, digestible protein, calcium and phosphorus salts, table salt and vitamins are represented by carotene.

The ration is the amount of daily fodder given to cattle and is made based on the nutritional norm and taking into account the physiology and physiological condition of the cattle.

The diet is biologically valuable, digestible, and inexpensive and should be made from forage available on the farm as much as possible.



Understanding of ration and ration norm.

Each household must have a food balance and monthly food expenditure plans and they rations for animals are prepared based on this.

Vfdcevbq rations developed by scientific research institutes (institutions) are used in the preparation of rations, taking into account the extent to which the specific conditions of the farm are supplied with food, and the herd's direction of productivity. If the rations correspond to the type based on the combination of different nutrients and specific gravity and meet the conditions of the zone, they are called typical rations. Any type of ration is evaluated according to its nutritional balance with the main nutrients according to the animal's needs.

Also, the ration is made depending on the type, age, breed, physiological state of animals (thickness, thinness, etc.), direction of production and biological characteristics. In addition, the natural economic and production characteristics of each farm should be taken into account. The ration is prepared for all types of cattle and poultry and its composition is changed from time to time. The ration is designed for one day, 10 days, 1 month and one season. Special attention is paid to more and efficient use of fodder grown on farms. such as phosphorus, carotene (the amount of important elements is paid attention to separately).

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Daily feed rate of non-breeding cattle (based on 100 kg of live weight)

Kind of animals	Ozits unit (kg)	Digestible protein (g)	Calcium (g)	Phosphorus (g)	Carotene (mg)
Cows	1	70	5	2.5	20
Pigs 1.3 Sheep and		100	10	7.0	20
1.5 goats		110	5	5.0	16
Biyas	1.1	75	5	5.0	16

Types of fodder given to cattle are nutritional units (i.e. 1 kg of animal) is determined on the basis of the amount of energy it gives to the body).

Therefore, the fodder given to cattle should be aimed at increasing their growth, development, reproduction and productivity.

The fact that the animals are fed with full value rations can be judged by their clinical condition (appearance, fatness level, body hair cover, condition of hooves and legs). It is necessary to stand up, when a limitation of the norm is felt, it is necessary to immediately make necessary corrections to the diet.

Formulation of rations for various farm animals

Detailed feed norms for cattle are determined depending on the sex of the cattle, direction of productivity, age, live weight, physiological state and productivity of the animal. "In different regions of our republic, taking into account the climatic conditions, geographical environment and which direction of cattle breeding is more productive for the farm, Cattle breeds that are zoned for a certain region are bred. These breeds are divided into 3 groups based on their adult live weight:

1 group - 400-450 kg,

2nd group - 500-550 kg,

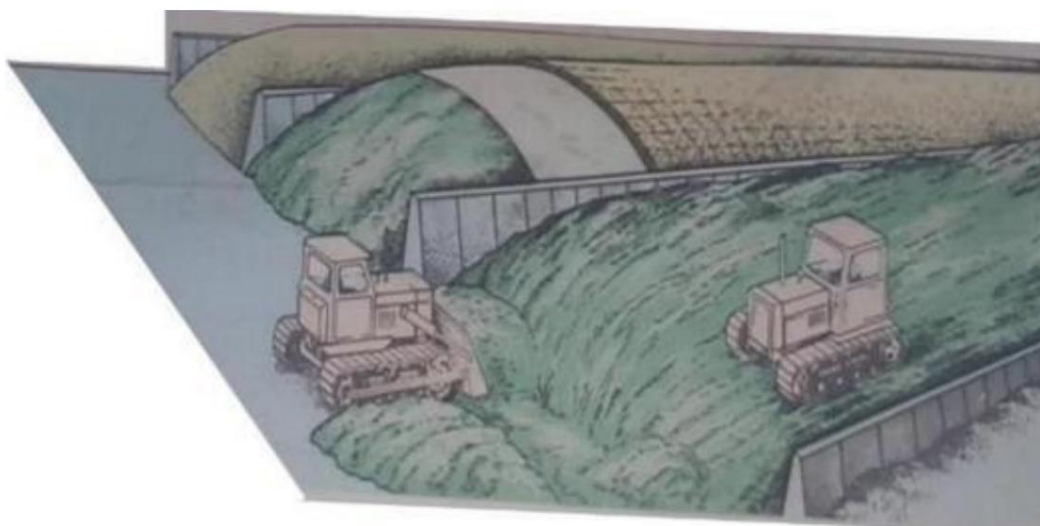
3rd group - 600-650 kg live weight cow breeds. With a good knowledge of the biological characteristics of the breed and the growth and development conditions of the calves obtained from them, breeding plans are drawn up for calves taken from cows of different groups. Cows reach their maximum weight at the age of 6-7.

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Дағал озукатарни ғарамлаб саклаш



Roughage is stored in the feed storage areas.



Silage and hay storage trenches are pictured

Juicy feeds in feed storage areas in special trenches with heavy machinery pressed and kept covered with special covers.

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Feeding of weaned cows and heifers. After 5-6 months of age, the transplanted bodies are transferred to the heifer group by means of a document, and separate groups are formed from them according to their live weight. Special attention should be paid to feeding these heifers during the last three months of gestation. The feed norm for feeding heifers is intended for animals in factory conditions, and should provide full support for the growth of the young animal and the normal development of the fetus. When feeding heifers and young cows of 2nd and 3rd calving period in the weaning period, 1.02 units of feed and other nutrients are added to the ration of adult cows. For example, for a 500 kg live weight, weaned heifer with a projected post-calving milk yield of 5000 kg, this cow will require 9.9 units of feed per day. (Table 35). If this cow is 1-2 lactates or a heifer, it should be given 11.0-11.5 feed units per day instead of 9.9.



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Feeding dairy cows. The year by year increase in the demand of our people for quality products requires the further development of dairy farming. It is known that as the milk production of cows increases, they become more demanding on the quality of the feed ration and full of expensive feed. The feeding rate of dairy cows is determined depending on the age of the cow, the level of obesity, daily milk yield, milk fat, and the live weight of the cow. It is known that lactating cows secrete a lot of energy with their milk when they are just calving. Therefore, during the first 100 days of lactation, they are very demanding of energy. Milking of cows should be completed within the first 100 days after calving: During this period, cows can give 40-45% of the milk they give during the whole lactation, and in some cases 50%. In addition, with the beginning of a new strait period, physiological changes occur in the body, increasing the satiety of the consumed ration; Part of it accumulates in the body and is used for the development of the embryo . *Suitable feed and feed for breeding bulls.* In the diet of breeding bulls, it is necessary to use a variety of high-quality spiky and leguminous grass hay or hay prepared by rapid airing, high-quality silage, silage, root crops and mixed fodder or concentrate. It is recommended to give breeding bulls 0.8-1.2 kg of hay, 0.8-1.0 silage or silage, 1-1.5 kg of root crops per 100 kg of live weight.

In summer rations, it is recommended to give 2.5 kg of blue grass and 0.4-0.5 kg of hay for 100 kg live weight of the bull. 100 kg of concentrate feed in winter and summer. it is necessary to give 0.2-0.5 kg per weight. If possible, it is better to use special mixed feeds in the diet of bulls. If there is no mixed fodder, it is better to give it a mixture of grains of grain and leguminous plants, bran and meal. Concentrate It is advisable to use more spiked grains in the feed groats in the summer months, and protein-rich leguminous grain and meal in the winter. In the ration of bulls, cotton meal should be used as an option (up to 1-1.5 kg per day). If possible, it is better to use gassipolized pellets. In order to increase the protein content of the diet, it is possible to give up to 2 kg of grass meal made from blue clover per head. Carrots are used as a source of carotene in the winter season. 4-6 kg of carrots can be given per head per day.

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The use of carrots in the diet of bulls improves the process of digestion and metabolism. These, in turn, have a positive effect on seed quality. In order to improve the sugar-protein ratio in the body, 5-8 kg of horseradish or 3-5 kg of sugar beet can be given to 1 bull in one day. It is recommended not to give feedstuffs such as beet root, beer wort and durda to the bulls. Concentrated food is given 3 times, 70% of liquid food is given in the afternoon, and the rest is given in the morning and evening. In the summer season, green grass and sorghum feed are given 4-5 times. Every time you distribute feed, you should not give more than 5-6 kg. Bulls that do not have automatic water feeders are given clean drinking water 3 times a week, and 4-5 times in the summer.

Control questions:

1. Concept of diet.?
2. What is your understanding of food standards?
3. Explain the difference between food norm and ration?
4. What is your understanding of the food unit?
5. Tell the nutrition unit of alfalfa?