World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-4, November 2021
ISSN: 2749-3644

PECULIARITIES OF CHANGES IN NUTRIENT DIGESTION IN THE GASTROINTESTINAL TRACT ACCORDING TO THE TYPE OF DIET OF COWS

L.A. Khujanova
Assistant of Samarkand Institute of Veterinary Medicine,
B. Djambilov
Assistant of Samarkand Institute of Veterinary Medicine,
Sh. O. Omonkulov
Student of Samarkand Institute of Veterinary Medicine

Article history:

Received: September 3rd 2021
Accepted: October 4th 2021
Published: November 28th 2021

Abstract:

Dairy cows' adaption processes are aided by the flow of digestive processes in their huge abdomens. This article discusses the digestion of large amounts of fiber in cows fed silage, as well as the digestion of large amounts of dry matter and protein in cows fed haylage.

Keywords: Nitrogen-free extracts, fiber, dry matter, protein, total nitrogen, ammonia, protein nitrogen, propion, hydrogen ions.

RELEVANCE OF THE TOPIC:

Several factors have an impact on the manufacturing of high-quality dairy products, either directly or indirectly. The organization of feeding based on digestibility has a direct impact on the health of the cows, which in turn has a direct impact on the quality of the dairy products generated from them. When dealing with the issue of imported animals adapting, it's critical to keep an eye on their digestive systems at all times. According to several veterinary judges, the number of cows removed from the herd in a single year might range from 7.2 % to 30.4 % of the total number of cows.

MATERIALS AND METHODS RESEARCH.

The study took place on the "Chortut" cow farm in the Samarkand region. The control and experimental groups were divided into 15 heads of analog cows from the German selection, 2nd generation, with a live weight of 620-650 kg. The experimental group 2 was fed haylage and the control group 1 was provided silage.

During the period of consideration of physiological experiments V.P. Degtyarev [1; p.163–165] was sampled from the large abdominal fluid using a feeding probe;

The following was detected in the large abdominal fluid:

concentration of hydrogen ions (pH) – using potentiometry; bacteria counts using a microscope

number of infusorium, Goryaeev using the method of direct microscopy in the counting type of Avchukhova A.A. [p.2.63-66] ;

total amount of nitrogen, according to Keldall;

amount of ammonia nitrogen; according to Russell.

volatile fatty acids - by the method of steam distillation in the Markgamm apparatus);

dry matter - by calculation;

organic matter - by separating the amount of ash from the dry matter in the samples;

total nitrogen - by the Keldall method;

nitrogen-free extract substances - by separating protein, fat, fiber from organic matter;

Ruminants have the ability to consume and digest large amounts of high-fiber plant nutrients, and their stomachs have a more complex structure (characterized by the ability of the pancreas to perform the specific functions of the large, round, and folded abdomen). D. Sineshchekov [p.3- 340]. N.V. Kurilov [p.4- 340].

In our experiments, the main focus was on the course of digestive processes in the large abdomen of dairy cows fed with different types of feed rations. Table 1 shows the changes in the composition of nutrients in the ration of dairy cows fed with different types of feed rations in the large intestine.

Table 1
Cows fed different types of feed rations have greater abdominal fluid metabolism

Indicators	Groups	
	1	2
pH- indicator	5,99±0,01	6,89±0,02*
Total nitrogen, mg/%	85,5±0,9	97,7±1,1**
Protein nitrogen, mg%	58,17±2,32	68,24±1.85*

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-4, November 2021
ISSN: 2749-3644

Ammonia, мг%	17,34±0,79	18,2±0,63
Bacteria in 1 ml of large abdominal fluid, bln	45,88±1,75	52,38±1,81*
Infusoria in 1 ml of large abdominal fluid, bln	464,41±10,8	597,63±9,82***
EFAR, mol / 100ml	9.18±0,21	10,3±0,3**
Essential fatty acid ratio, %		
Vinegar	44,89±0,86	58,43±0,83**
Propion	19,35±1,05	21,54±0.79
Oil	16,77±0,77	14,77±0,45*
Other fatty acids	20,94±1,23	6,71,0,82**

*-P<0,05; **-P<0,01; ***-P<0,001; The difference in performance compared to group 1 cows is reliable.

From the data in Table 1, it became clear that the highest rates of total and ammoniac nitrogen concentrations in the large abdominal fluid were observed in group 2 cows fed a haylage-type ration. The differences in productivity between Group 1 and Group 2 cows are reliable.(P<0,01).

Group 2 cows on a silage-type diet also had significantly higher levels of volatile fatty acid concentrations in the large abdominal fluid (P<0,01). The reason for these differences is primarily due to the fact that senaage contains more easily digestible and digestible carbohydrates than silage, as the carbohydrates in silage are broken down to organic acids in the silage storage trenches. The fact that group 2 cows have slightly higher levels of hydrogen ions (pH) in the large abdominal fluid than group 1 cows also indicates the reliability of the data obtained (P<0,05). Levels of hydrogen ions (pH) in the large abdominal fluid had a strong effect on nitrogen metabolism in it 2 hours after feeding.

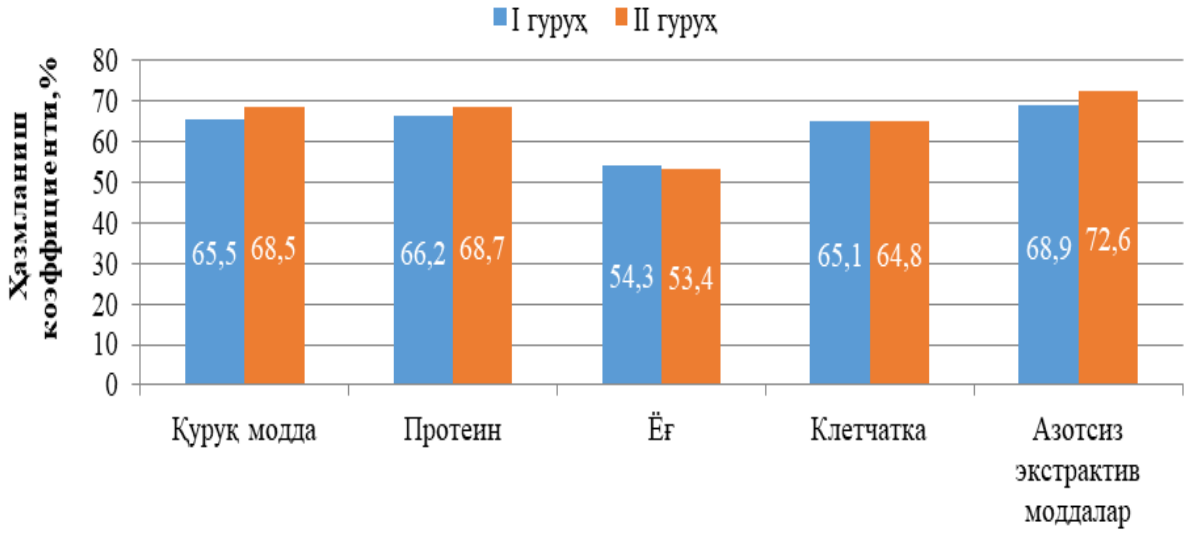

Fig 1. Nutrients that enter the gastrointestinal tract with the diet of dairy cows

Group 2 cows fed silage-type rations outperformed group 1 cows fed both haylage-fed rations in terms of both protein intake and digestion. The figures were 68.7 ± 0.5% vesus. 66.2 ± 0.5%, or the difference between the groups was convincing (P<0,01). In the compared groups, it was observed that dairy cows consumed more fat in their diet, which was predominant in Group 1 cows. Fats containing organic acids, which result from the fermentation of carbohydrates in a mass of silage maize, are very easily extracted Fats containing organic acids, which result from the fermentation of carbohydrates in a mass of silage maize, are very easily extracted by Solidbread; p.250–254;

No significant differences were found in the digestion of fat in the gastrointestinal tract of cows fed the diets of the compared diets. Although Group 2 cows receiving a haylage-type diet consumed 21.2% more fibre than Group 1 cows, there was no significant difference in the fibre digestibility ratio between the groups compared. However, the fact that Group 2 cows consumed more fibre than Group 1 cows had no negative effect on the dry matter and protein intake of this group of cows and their digestibility.

World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-4, November 2021
ISSN: 2749-3644

CONCLUSION.

The high content of easily degradable and digestible carbohydrates in haylage compared to haylage led to higher digestibility of protein by 2.5%, dry matter by 3%, and nitrogen-free extractives by 3.7% in cows fed this type of feed.

REFERENCES

1. Degtyarev V.P., Kozlov A.S. Dynamics of transformation of nitrogen-containing substances of feed in the rumen of calves depending on their age. // Proceedings of NKRIAHCP, – 1974 – T.3. – p.163–169.
2. Avchukhova A.A. The nutritional adequacy of milk under different processing regimes. / Dairy industry –2008.–№ 7. – p.63-66.
3. Sineshchekov A.D. Methods for the complex study of digestion and metabolic processes in ruminants // The biology of nutrition in farm animals. M.,Колос. – 1967. –p. 340
4. Kurilov N.V., Sevastyanova N.P. Physiology and biochemistry of digestion in ruminants.// M.Kolos. – 1971. – p.346.
5. Tverdokhleb G.V., Ramanauskas R.I. Chemistry and physics of milk and dairy products. – M.: DeLiprint. – 2006. – 360.
6. Kalashnikov A.P., Fisinin V.I., Shcheglov V.V., Kleymenov N.I. Norms and rations of feeding of farm animals . //M,: Agropromizdat,-2003.-p.456