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ДОКУМЕНТЫ К КАНДИДАТСКОМУ ЭКЗАМЕНУ ПО АНГЛИЙСКОМУ ЯЗЫКУ ПО СПЕЦИАЛЬНОСТИ: 36.06.01- ВЕТЕРИНАРНАЯ САНИТАРИЯ, ЭКОЛОГИЯ, ЗООГИГИЕНА И ВЕТЕРИНАРНО-САНИТАРНАЯ ЭКСПЕРТИЗА.

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СОДЕРЖАНИЕ.

Список прочитанных статей на английском языке

№	Название статьи	Количество знаков	Подпись преподавателя
1.	Corresponding author: Tripathi MK, Division of Nutrition Feed Resources and Product Technology, Central Institute for Research on Goats, Makhdoom, Farah 281 Effect of nutrition on production, composition, fatty acids and nutraceutical properties of milk Tripathi, J Adv Dairy Res 2014, 2:2Tripathi, J Adv Dairy Res 2014, 2:2 DOI: 10.4172/2329-888X.1000115mktripathi@gmail.com	62037	
2.	Young W Park* Production and composition of milk are affected by multivariate factors Park, J Adv Dairy Res 2016, 4:3 DOI: 10.4172/2329-888X.1000e131	6126	
3.	Archana Mourupoju and Vigneswaran Sundaresan Milk-Hormones: narrative review Mourupoju and Sundaresan, J Adv Dairy Res 2018, 6:3 DOI: 10.4172/2329-888X.1000212	25312	
4	Sefa Salo Effects of quality and amounts of dietary protein on dairy cattle reproduction and the environment J.of Dairy and Veterinary Sciences, April 25, 2018	21008	

	Pesticide residues in milk and their relationship with pesticide contamination of feedstuffs supplied to dairy cattle in Punjab (India) Journal of Animal and Feed Sciences, 27, 2018, 18–25 https://doi.org/10.22358/jafs/82623/		
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Письменный перевод текста на 62037 печатных знаков по специальности: 36.62.01-ветеринарная санитария, экология, зоогигиена и ветеринарно-санитарная экспертиза.

Влияние питания на производство, состав, жирные кислоты и нутрицевтические свойства молока

Аннотация

Целью данной работы было определить возможности улучшения молочной продуктивности и изменения состава молока через изменения в питании. Считается, что увеличение питательной ценности молока может происходить благодаря изменениям в рационе питания животного. Кормление высококонцентрированными рационами в сочетании с диетическим жиром может быть использовано для модификации профиля жирных кислот молока, без негативного влияния на удой молока, содержание жира или белка в молоке. Их влияние взаимозаменяемо, по крайней мере, для транс-жирных кислот. Профиль транс-изомеров относительно общего транс-C18: 1 вероятно

зависит от источника диетического жира. Кормление жвачных животных масличными семенами и / или новыми жировыми добавками можно использовать для модификации липидного обмена в молочной железе, модулируя секрецию жира и профиль жирных кислот молока. При кормлении новыми источниками жирных кислот питательная ценность молока может быть повышена за счет снижения атерогенно-насыщенных жирных кислот в молоке и повышение t_{11}-C $_{18:\ 1}$ (транс-вакценовая кислота) и c_9, t_{11}-C $_{18:\ 2}$ (геометрический и позиционный изомер конъюгированной линолевой кислоты (CLA)) в молоке, которые, как считается, имеют положительное влияние на здоровье человека. Кормление кормовыми отходами содержащими жирные кислоты и аминокислоты, источниками защищающими рубец, могут помочь в увеличении выработки молока, а также в модулировании состава молока за счет увеличения доступности жирных кислот и аминокислот в кровотоке с синхронизированной экстракцией желаемого питательного вещества молочной железой для синтеза компонентов молока. Молоко можно использовать как систему доставки антиканцерогенов (CLA и полифенолов) для здоровья человека. Следовательно, пищевые манипуляции предполагают несколько возможностей для улучшения молочной продуктивности, модификации состава молока и профиля жирных кислот. Улучшение продуктивности молока вместе с ростом населения при минимальной деградации окружающей среды, таким образом, направлено на увеличение производства молока без увеличения поголовья молочного скота и уменьшение выбросов парниковых газов от разведения сельскохозяйственных жвачных животных.

Ключевые слова: конъюгированная линолевая кислота; Молочное животное; Рацион питания; профиль жирной кислоты молока.

Введение

Молоко и молочные продукты являются важным источником пищи и

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Review Article Open Access

Effect of Nutrition on Production, Composition, Fatty acids and Nutraceutical Properties of Milk

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Abstract

The objective of this paper was to determine the opportunities of improving milk productivity and altering the milk composition through nutritional interventions. The increase in the nutraceutical value of milk is expected through dietary modifications of the animal. Feeding high concentrate diets combined with dietary fat can be used to modify the FA profile of milk, without negative effect on milk yield and milk fat or protein contents. Their effects may be complementary, at least for trans fatty acids. The profile of trans isomers relative to total trans-C18:1 seems dependent on the source of dietary fat. Feeding oilseeds and/ or novel fat supplements to ruminants can be used to modify the lipid metabolism in the mammary gland in modulating the secretion of fat and the profile of milk fatty acids. Feeding novel fatty acid sources the nutritive value of milk can be enhanced by decreased atherogenic saturated FA in milk and increased t_{11}-$C_{18:1}$ (trans vaccenic acid), and c_9,t_{11}-$C_{18:2}$ (geometric and positional isomer of conjugated linoleic acid (CLA) in milk, which are considered as positive for human health. Feeding bypass/ rumen protected sources of fatty acids and amino acids may help in meeting the need of higher milk production, and in modulating milk composition through increase availability of fatty acids and amino acids in circulation with synchronized extraction of desired nutrient by mammary gland for milk constituents synthesis. Milk may be used as delivery system of anticarcenogens (CLA and polyphenols) for human health. Therefore, nutritional manipulations have several opportunities in improving milk production, modifications of milk composition and fatty acid profile. The improved milk productivity is desired in line with increased human population with minimum environment degradation thereby nutritional manipulations are directed to enhance milk production without increasing dairy animal populations with reduced greenhouse gasses emissions from ruminant agriculture.

Keywords: Conjugated linoleic acid; Dairy animal; Diet; Milk fatty acid profile

Introduction

Milk and milk products are an important source of food and contributors of dietary energy requirements, high quality protein, minerals and vitamins, particularly in the vegetarian diets. Milk consumption is predicted to increase globally in the coming years in line with the increasing world population, a greater income potential exists for the availability of milk and milk products to meet human requirement. Present scenarios of animal production system imposing pressures on dairy animal production for enhancing milk production with available dairy animal numbers, or even on reduced population aiming for a minimal greenhouse gasses emission. The changes of dietary constituents of animals are therefore directed in enhancing milk productivity of an individual with increased availability and higher nutrient use efficiency of energy, protein and other essential nutrients. High energy supplements such as fat and oils are added to increase energy density of animal diets, while protein sources of better amino acid composition that are extracted at higher level for milk synthesis are being used in dairy animal diets. Nutritional modifications of dairy animal diets not only, aiming in enhancing milk production but also in reducing the content of high saturated fatty acids of milk. Recently more efforts are being associated with increased milk production through diet in combination of the manipulation of the milk composition. The major deriving forces for manipulating the composition of milk included the aims of improving the manufacturing and processing of milk and dairy products, altering the nutritional value of milk to conform the dietary specifications and using milk as a delivery system for nutraceuticals with known benefits to human health. The conjugated linoleic acid is known as the potential anticarcinogen in milk, which can be manipulated through dietary changes [1]. Recently ability of casein micelles has been demonstrated to deliver biologically active concentrations of polyphenols that display anticancer activities in colon cancer cells [2]. Therefore, dietary modifications of dairy animals may aim to improve bioefficacy of biologically active polyphenols in milk to deliver for human health. The dietary control of milk composition has been realized with great opportunities. The most sensitive component of milk to dietary manipulation was fat content, which could be changed over a range of 3 percentage units [3]. The principal fatty acids of the milk are uninfluenced by the composition of the diet, the digestive system and by the biosynthesis process of milk within the animal. It is shown that the lactose content could not be manipulated by dietary changes, except under extreme and unusual feeding situations. Milk protein is responsive to diet but less responsive than fat. During last several years, the greatest changes were made in milk fat and fatty acid composition. Although several factors including genetics and breed of animal, environment, stage of lactation, parity, and nutrition of animal are working together in determining the final composition of the milk [4]. The focus of present paper is on the nutrition of the dairy animal that aiming in influencing the production and composition of milk. The nutritional control for a change in milk composition is realized

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и ветеринарно-санитарная экспертиза.

ABSTRACT 1

This paper " Production and composition of milk are affected by multivariate factors" is about the fact that milk composition is closely connected with different factors.

The purpose of this paper is to show that the milk content varies within the species, diet, breed, season, locality, individual animals within breed, stage of lactation, parity, environmental conditions, feeding and management conditions.

The first paragraph starts with the comparative discussion of cows and goats milk. It was mentioned that the basic composition of goat milk is similar to that of cow milk. Cow milk has lower protein, fat and ash, and higher lactose than goat milk does. The marked difference exists in the proportion of energy derived from lactose, fat and protein.

Then the authors say that the nutrient content of the ration has an important effect on milk composition, digestion and metabolism of dairy animals. In modern nutritional science, it has been shown that dietary nutrients either directly or indirectly can alter gene expression. Thus, nutrients of the diet can influence the expression of protein and metabolic status of entire organism. And it is also has the influence on the quality of milk.

Finally, the use of *sericea lespedeza* for natural parasite control agent in dairy ruminants by either feeding fresh legume or dried (hay, leaf meal, pellets) forms has shown to have significant effect on changing the milk quality of ruminant dairy species.

I think that the paper is interesting because of the marked difference existing in the proportion of energy derived from lactose, fat and protein.

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Production and Composition of Milk are affected by Multivariate Factors

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Description

Compositions of milk of mammalian species are affected by a variety of factors. Yield and composition of milk varies with species, diet, breed, season, locality, individual animals within breed, stage of lactation, parity, environmental conditions, feeding and management conditions, etc. [1-5]. The basic composition of goat milk is similar to that of cow milk. On the average, caprine milk contains 12.2% total solids, which is consisted of 3.5% protein, 3.8% fat, 4.1% lactose and 0.8% ash. Cow milk has lower protein, fat and ash, and higher lactose than goat milk does. In the milk production curve of ruminant species, it has been known that the total solids, fat, and protein contents of the milk are high in early lactation, fall rapidly and reach a minimum during the 2nd to 3rd months of lactation, and then increase towards the end of lactation This phenomenon results in an inverse relationship between the amount of milk yield and concentration levels of these components in the milk [1,2,4]. There are no significant differences in levels of total solids and caloric values among cow, goat and human milks [2,4]. The marked difference exists in the proportion of energy derived from lactose, fat and protein. Fat, protein and lactose in cow and goat milks account for approximately 50, 25, 25% of the energy, while those in human milk contribute 55, 7, and 38% of the milk energy [4,6]. The most prominent difference in basic composition between cow (or goat) milk and human milk occurs in protein and ash contents [4]. Cow and goat milk have 3 to 4 times higher levels of the two components than in human milk, which is attributed to species specific and virtually related to growth rates of the new-born of respective species [4].

Nutrient content of the diet has an important effect on lactation performance, milk composition, digestion and metabolism of dairy animals. Hence, it is essential to determine requirements of each nutrient in the diet of lactating animals, especially in crude protein levels. In modern nutritional science, it has been shown that dietary nutrients either directly or indirectly can alter gene expression. Thus, nutrients of the diet can influence the expression of protein and signaling and metabolic status of cells, tissues, organs, as well as the entire organism [7]. The field of nutrition in monogastric animals has been revolutionized by the concept that food components can affect biological functions of body cells by interacting with transcriptome [8]. This premise also has the potential in application for the field of ruminant nutrition, including dairy cows for the aspect of efficiency and quality of milk production.

With the advent of artificial insemination and the introduction of cross breeding, dairy cow and small ruminant species such as goats and sheep have made significant improvement in milk production through cross breeding with high producing breeds within a same species. Expansion of dairy production in developing and underdeveloped countries has been constrained due to inadequate nutrition, disease, lack of support services and inadequate information on how to improve animal breeding, marketing and processing. Non-bovine species such as buffalo, goat, sheep and mare have made significant contributions to the economy and wellbeing of many developing countries as source of meat, milk, fiber, hide and other animal products. However, the contributions of these species have been below their expected potentials in some countries due to prevalent livestock diseases, poor management system and poor genetic performance.

In global perspective, the sustainability of dairy production requires improvement in feed efficiency and reduction in loss of nutrients in the environment. When high quality forage diets are fed to ruminants, majority of dietary proteins are rapidly degraded. This situation releases 56 to 65% of dietary protein nitrogen (N) in the rumen by microbial fermentation and degradation [9]. Significant losses of the degraded dietary N into urine (25-35%) as urea occur after ammonia is absorbed through rumen wall [10]. This urea N is the main source of loss of volatile N to the environment [11]. Therefore, losses of dietary N can be prevented by reduction of protein degradation in the rumen. It has been found that condensed tannins (CT) in the forages can reduce ruminal protein degradation and can increase intestinal protein flow if moderate doses are included in the diet such as 20 to 40 $g \cdot kg^{-1}$ CT in dry matter (DM) [12]. Since these condensed tannins are prevalent in many plants, they can be utilized in the ruminant diets.

Parasites have been one of the major villains causing substantial losses in production efficiency of small ruminant dairy species. Due to the widespread prevalence of resistance of gastrointestinal nematodes (GIN) to commercial synthetic anthelmintics, the use of these drugs alone has been no longer effective and sustainable method for long-term anthelmintic parasite control in small ruminants such as goats, sheep, llamas and alpacas [13,14]. The plant sericea lespedeza (*Lespedeza cuneata*) is known to be a warm-season low-input perennial legume which is well-adapted to the southern regions of the US. This legume has a potential as a natural, non-synthetic alternative to anthelmintics for parasite control in small ruminant, because of its high concentration of a unique type of condensed tannin [14]. The use of sericea lespedeza for natural parasite control agent in dairy and meat animals by either feeding fresh legume or dried (hay, leaf meal, pellets) forms has shown to have highly significant anthelmintic effect against both GIN and coccidia in goats and sheep, by exhibiting a great reduction of these parasites in small ruminant dairy species.

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ABSTRACT 2

The paper " Milk-hormones: narrative review" is about the importance of hormones. This theme is much discussed about decades.

The purpose of this paper is to observe the hormone problem as biomarkers within some complicated cases. It was mentioned that dairy milk promotes excess estrogen because of it containing estrogen from female cows.

At the beginning of the article the authors discuss the generals about milk hormones. Soy milk is suggested as additional source of nutrients and minerals.

Then follows the description of hormones such as, prolactin, prostaglandin, estrogen, steroid hormones, progesterone etc.

Further, the paper gives the main idea of each of these hormones. Furthermore
There is no notable distinction in the prolactin of the cow's milk. These hormones helps in improving the efficiency of feed conversionand they also promote the animal growth. Steroid hormones include Androgens, Estrogens, Progesterone and other related compounds.These hormones are originated from the blood flow, pass within themammary gland and secreted into the milk. Recent advances in the techniques of microencapsulation for the flavouring of milk with vitamin C which provide higher shelf life and also stable vitamin C which can be a good asset to fortify with foods.
Hence, flavoured milk is selected based on the stability in the ambient conditions and also one of the good vehicles for supplying the vitamin C and other milk constituents of milk.
Finally this review is mainly focused on the hormones in dairy products or foods and its biological effects in both humans and animals. With the information provided we can conclude that dairy products should be taken into concern for producers, consumers and public health ascendant entities. We also summarized about the biosynthesis and metabolism of certain hormones.
I think that this article is interesting within the problem of hormones influence on milk production and its content.

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Review Article Open Access

Milk-Hormones: Narrative Review

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Abstract

Milk is the major source of nourishment for newborn mammals prior to the other types of food. The composition of the cow's milk widely varies between the different breeds and also during the different stages of lactation. Milk from animals contains fat, carbohydrates, vitamins, proteins, minerals and water. Water is the main constituent of milk which dilutes the milk and allowing its secretion from the body. Milk is the secretion of Mammary glands; hence it consists of constituents from the blood plasma, accordingly hormones that are transported in blood may be detectable in milk. The importance of hormones was discussed about decades back but still there are more concerns to look at the hormones as biomarkers in some serious problems and during pregnancy. In recent research, it has been found that further property of hormones in dairy items has conceivable effect on human wellbeing including the part of a few estrogens and insulin-like development factor which leads to bosom, prostate and endometrial tumors. Dairy animals' normally contains various steroid and protein (peptide) hormones in minute quantities. The most critical hormones found in milk and other dairy items which are identified by diagnostic techniques comprises of prolactin, steroids including estrogens, progesterone, corticoids, and androgens. Additionally, the presence of different hormones, for example, insulin-like development factor-1 (IGF-1) and neighborhood hormones including prostaglandins (PGs), in dairy items has been accounted for. It has been expected that a large portion of the hormones are moved into milk by dissemination. In this review we concentrated on several aspects of presence of hormones in dairy foods with especial emphasize on cow's milk as a major source of consuming milk for humans.

Introduction

The cows which produce milk are-may be pregnant, fed and raised organically, etc. or maybe not. Considering these things alone, it cannot be predict that cow's milk is Hormone-Free milk, because cow's milk contains about 60 different hormones naturally without integrating anything to it (Figure 1). Though everyone has different hormone situations, there are no proper studies regarding the need to take integrated hormones from another mammal.

Dairy products additionally include hormones which could result in mood swings due to the presence of Estrogen.Testosterone and Estrogen are the intercourse hormones, and after they get out of balance in line with our bodies desires, we go through mood swings as an end result.

Dairy milk promotes excess estrogen within the frame because of it containing estrogen from female cows. On the same time, milk obviously includes androgenic residences, so it increases testosterone in the body and can purpose bulking quickly.

Despite the fact that eating milk increases your estrogen level slightly, most healthful people do not enjoy the ill effects from eating slight quantities of dairy products. Milk is a terrific source of calcium, nutrition D and protein.

Soy milk additionally affords protein and is often fortified with nutrients and minerals. Before appreciably changing the milk intake, communicate for a physician to make sure it's far safe for oneself.

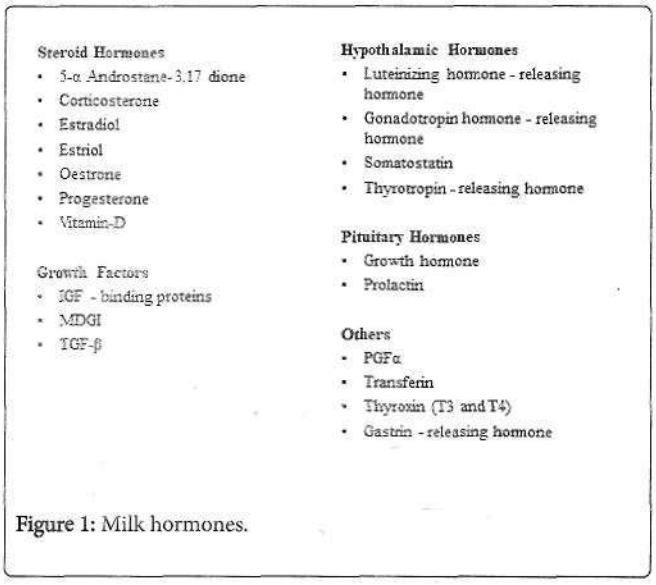

Figure 1: Milk hormones.

Prolactin (PRL)

Prolactin (PRL) is a polypeptide hormone which is also called as luteotropic hormone or luteotropin. PRL is a protein which enables mammals, usually female are in milk secretion [1] from the breast after estrogen and progesterone priming. After the placental expulsion during the time of child birth, there is sudden and unexpected

СПИСОК ПРОЧИТАННЫХ СТАТЕЙ НА АНГЛИЙСКОМ ЯЗЫКЕ ПО СПЕЦИАЛЬНОСТИ: 36.06.01-ВЕТЕРИНАРИЯ И ЗООТЕХНИЯ. ВЕТЕРИНАРНАЯ САНИТАРИЯ, ЭКЛОЛОГИЯ ЗООГИГИЕНА И ВЕТЕРИНАРНО-САНИТАРНАЯ ЭКСПЕРТИЗА.

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Influences of nutrition and metabolism on fertility of dairy cows

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Abstract

During early postpartum, high-producing dairy cows undergo a period of extensive tissue catabolism because of negative nutrient balance. Homeorrhetic controls assure that nutrients are partitioned to favor lactation at the same time that homeostasis secures survival. However, unrestrained metabolic disturbances often lead to diseases which, in turn, dramatically decrease both productive and reproductive performance. Negative nutrient balance has been associated with compromised immune and reproductive functions in dairy cows. Low circulating concentrations of glucose and insulin associated with elevated concentrations of non-esterified fatty acids and ketone bodies postpartum have disruptive and detrimental effects on the oocyte, granulosa and immune cells. Negative nutrient balance is associated with changes in the pattern of ovarian follicle growth which can indirectly affect oocyte quality. Some of this disruption seems to be the result of endocrine and biochemical changes that alter the micro-environment of the growing and maturing oocyte. In addition, cows under negative nutrient balance have extended periods of anovulation. Postpartum anestrus, as well as infertility, is magnified by losses of body condition during the early postpartum period. The underlying mechanism for resumption of ovulatory cycles seems to be associated with metabolic signals and regulatory hormones primarily insulin and insulin-like growth factor (IGF)-1, which link nutritional status with gonadotropin secretion, recoupling of the growth hormone-IGF system, and follicle maturation and ovulation. Feeding diets that promote increases in plasma glucose and insulin may improve the metabolic and endocrine status of cows in early lactation. Furthermore, fertility in postpartum cows is also determined by uterine health. Reductions in circulating concentrations of Ca and antioxidant vitamins around parturition are also linked with impaired immune competence and result in greater risk of uterine diseases that impair reproduction. Specific nutrients and dietary ingredients have been implicated to affect reproduction in cattle. Excess intake of dietary protein has been suggested as detrimental to fertility, although feeding excess of dietary protein can no longer be justified. Addition of moderate amounts of supplemental fat to the diet improves caloric intake, modulates prostaglandin F2α secretion by the uterus, affects ovarian dynamics, enhances luteal function and embryo quality, and has moderate positive effects on fertility. More specifically, some fatty acids might impact fertilization rate and embryo quality in dairy cows. On the contrary, some dietary ingredients, such as gossypol, when ingested in large quantities decrease fertility of dairy cows because of its negative effects on embryo quality and pregnancy maintenance.

Keywords: dairy cow, embryo, metabolism, reproduction.

Introduction

Reproductive efficiency of the lactating herd is a major component of profitability in dairy farms. Reproduction determines when primiparous cows become multiparous leading to increments in milk yield, alters the average milk yield per day of calving, affects the number of replacement animals available and the risk of culling, and influences the rate of genetic progress. Unfortunately, improving fertility is not trivial. The establishment and maintenance of a pregnancy to term are affected by several genetic, physiological and environmental factors that can be manipulated in order to sustain high fertility. Although causality is not always established, it is well described that poor nutritional status and metabolic health negatively influence reproduction in dairy cows. The energetic status of a cow modulates the secretion of hormones that play key roles in growth of ovarian follicles, ovulation, corpus luteum (CL) formation, and oocyte competence. Furthermore, extensive lipolysis and products from fat metabolism may be detrimental to oocyte competence and subsequent embryo development. In addition, impaired metabolic health often leads to immunosuppression and the occurrence of diseases that further reduce fertility.

Prevalence of diseases postpartum and impact on fertility of dairy cows

The transition from the nonlactating pregnant state to nonpregnant lactating requires the high-producing dairy cow to drastically adjust its metabolism so that nutrients can be partitioned to support milk synthesis, a process referred to as homeorrhesis. A sharp increase in nutrient requirements generally occurs when feed intake is depressed in early lactation, which causes extensive mobilization of body tissues, particularly body fat, but also amino acids, minerals and vitamins. Despite tight homeostatic controls and homeorrhetic adjustments to cope with the changes in metabolism

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ТЕРМИНОЛОГИЧЕСКИЙ СЛОВАРЬ-МИНИМУМ ПО АНГЛИЙСКОМУ ЯЗЫКУ НА 573 СЛОВА ПО СПЕЦИАЛЬНОСТИ 36.06.01-ВЕТЕРИНАРНАЯ САНИТАРИЯ, ЭКОЛОГИЯ, ЗООГИГИЕНА И ВЕТЕРИНАРНО-САНИТАРНАЯ ЭКСПЕРТИЗА.

№	English	Russian
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1	Abdomen	Брюшная полость
2	Abscess	Абсцесс
3	Absorption	Поглощение
4	Accelerant	Катализатор, ускоритель процесса
5	Advent	Проявление, появление
6	Albumen	Белок
7	Aminoacetic acid	Аминоуксусная кислота
8	Androgen	Андроген
9	Alteration	Альтерация
10	Anatoxin	Анатоксин
11	Anaerobiosis	Анаэробиоз
12	Aqueous phase	Водная фаза
13	Arbovirus	Арбовирус
14	Autoclave	Автоклав
15	Aviary	Птичий
16	Azygos	Непарный орган
17	Alfacrone	Альфакрон (пестицид)
18	Abomasum	Сычуг
19	Abrade	Истираться, изнашиваться
20	Allergenicity	Аллергичность
21	Aliquation	Расслаивание (жидкостей)
22	Airtight	Воздухонепроницаемый, герметичный
23	Akin	Родственный, похожий,сходный
24	Acceptance	Принятие, одобрение
25	Acarus	Клещ
26	Agar medium	Агаровая среда
27	Alachlor	Алахлор (гербицид)
28	Aerosol generator	Аэрозольный генератор
29	Aerosol chamber	Аэрозольная камера