

ISSN 2518-1483 (Online),  
ISSN 2224-5227 (Print)

2019 • 4

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ  
ҰЛТТЫҚ ҒЫЛЫМ АКАДЕМИЯСЫНЫҢ  
**БАЯНДАМАЛАРЫ**

---

**ДОКЛАДЫ**

НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК  
РЕСПУБЛИКИ КАЗАХСТАН

**REPORTS**

OF THE NATIONAL ACADEMY OF SCIENCES  
OF THE REPUBLIC OF KAZAKHSTAN

PUBLISHED SINCE 1944



ALMATY, NAS RK

Б а с р е д а к т о р ы  
х.ғ.д., проф., ҚР ҰҒА академигі **М.Ж. Жұрынов**

Р е д а к ц и я л қ а с ы:

**Адекенов С.М.** проф., академик (Қазақстан) (бас ред. орынбасары)  
**Величкин В.И.** проф., корр.-мүшесі (Ресей)  
**Вольдемар Вуйцик** проф. (Польша)  
**Гончарук В.В.** проф., академик (Украина)  
**Гордиенко А.И.** проф., академик (Белорус)  
**Дука Г.** проф., академик (Молдова)  
**Илолов М.И.** проф., академик (Тәжікстан),  
**Леска Богуслава** проф. (Польша),  
**Локшин В.Н.** проф. чл.-корр. (Қазақстан)  
**Нараев В.Н.** проф. (Ресей)  
**Неклюдов И.М.** проф., академик (Украина)  
**Нур Изура Удзир** проф. (Малайзия)  
**Перни Стефано** проф. (Ұлыбритания)  
**Потапов В.А.** проф. (Украина)  
**Прокопович Полина** проф. (Ұлыбритания)  
**Омбаев А.М.** проф., корр.-мүшесі (Қазақстан)  
**Өтелбаев М.О.** проф., академик (Қазақстан)  
**Садыбеков М.А.** проф., корр.-мүшесі (Қазақстан)  
**Сатаев М.И.** проф., корр.-мүшесі (Қазақстан)  
**Северский И.В.** проф., академик (Қазақстан)  
**Сикорски Марек** проф., (Польша)  
**Рамазанов Т.С.** проф., академик (Қазақстан)  
**Такибаев Н.Ж.** проф., академик (Қазақстан), бас ред. орынбасары  
**Харин С.Н.** проф., академик (Қазақстан)  
**Чечин Л.М.** проф., корр.-мүшесі (Қазақстан)  
**Харун Парлар** проф. (Германия)  
**Энджун Гао** проф. (Қытай)  
**Эркебаев А.Э.** проф., академик (Қырғыстан)

«Қазақстан Республикасы Ұлттық ғылым академиясының баяндамалары»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Меншіктенуші: «Қазақстан Республикасының Ұлттық ғылым академиясы» Республикалық қоғамдық бірлестігі (Алматы қ.)  
Қазақстан республикасының Мәдениет пен ақпарат министрлігінің Ақпарат және мұрағат комитетінде 01.06.2006 ж.  
берілген №5540-Ж мерзімдік басылым тіркеуіне қойылу туралы куәлік

Мерзімділігі: жылына 6 рет.

Тиражы: 500 дана.

Редакцияның мекенжайы: 050010, Алматы қ., Шевченко көш., 28, 219 бөл., 220, тел.: 272-13-19, 272-13-18,  
<http://reports-science.kz/index.php/en/archive>

© Қазақстан Республикасының Ұлттық ғылым академиясы, 2019

Типографияның мекенжайы: «Аруна» ЖК, Алматы қ., Муратбаева көш., 75.

Главный редактор  
д.х.н., проф., академик НАН РК **М. Ж. Журинов**

Редакционная коллегия:

**Адекенов С.М.** проф., академик (Казахстан) (зам. гл. ред.)  
**Величкин В.И.** проф., чл.-корр. (Россия)  
**Вольдемар Вуйцик** проф. (Польша)  
**Гончарук В.В.** проф., академик (Украина)  
**Гордиенко А.И.** проф., академик (Беларусь)  
**Дука Г.** проф., академик (Молдова)  
**Илолов М.И.** проф., академик (Таджикистан),  
**Леска Богуслава** проф. (Польша),  
**Локшин В.Н.** проф. чл.-корр. (Казахстан)  
**Нараев В.Н.** проф. (Россия)  
**Неклюдов И.М.** проф., академик (Украина)  
**Нур Изура Удзир** проф. (Малайзия)  
**Перни Стефано** проф. (Великобритания)  
**Потапов В.А.** проф. (Украина)  
**Прокопович Полина** проф. (Великобритания)  
**Омбаев А.М.** проф., чл.-корр. (Казахстан)  
**Отелбаев М.О.** проф., академик (Казахстан)  
**Садыбеков М.А.** проф., чл.-корр. (Казахстан)  
**Сатаев М.И.** проф., чл.-корр. (Казахстан)  
**Северский И.В.** проф., академик (Казахстан)  
**Сикорски Марек** проф., (Польша)  
**Рамазанов Т.С.** проф., академик (Казахстан)  
**Такибаев Н.Ж.** проф., академик (Казахстан), зам. гл. ред.  
**Харин С.Н.** проф., академик (Казахстан)  
**Чечин Л.М.** проф., чл.-корр. (Казахстан)  
**Харун Парлар** проф. (Германия)  
**Энджун Гао** проф. (Китай)  
**Эркебаев А.Э.** проф., академик (Кыргызстан)

Доклады Национальной академии наук Республики Казахстан»

ISSN 2518-1483 (Online),

ISSN 2224-5227 (Print)

Собственник: Республиканское общественное объединение «Национальная академия наук Республики Казахстан» (г. Алматы)

Свидетельство о постановке на учет периодического печатного издания в Комитете информации и архивов Министерства культуры и информации Республики Казахстан №5540-Ж, выданное 01.06.2006 г.

Периодичность: 6 раз в год.

Тираж: 500 экземпляров

Адрес редакции: 050010, г.Алматы, ул.Шевченко, 28, ком.218-220, тел. 272-13-19, 272-13-18

<http://reports-science.kz/index.php/en/archive>

---

©Национальная академия наук Республики Казахстан, 2019 г.

Адрес типографии: ИП «Аруна», г.Алматы, ул.Муратбаева, 75

**E d i t o r i n c h i e f**doctor of chemistry, professor, academician of NAS RK **M.Zh. Zhurinov****E d i t o r i a l b o a r d:****Adekenov S.M.** prof., academician (Kazakhstan) (deputy editor in chief)**Velichkin V.I.** prof., corr. member (Russia)**Voitsik Valdemar** prof. (Poland)**Goncharuk V.V.** prof., academician (Ukraine)**Gordiyenko A.I.** prof., academician (Belarus)**Duka G.** prof., academician (Moldova)**Iolov M.I.** prof., academician (Tadjikistan),**Leska Boguslava** prof. (Poland),**Lokshin V.N.** prof., corr. member. (Kazakhstan)**Narayev V.N.** prof. (Russia)**Nekludov I.M.** prof., academician (Ukraine)**Nur Izura Udzir** prof. (Malaysia)**Perni Stephano** prof. (Great Britain)**Potapov V.A.** prof. (Ukraine)**Prokopovich Polina** prof. (Great Britain)**Ombayev A.M.** prof., corr. member. (Kazakhstan)**Otelbayv M.O.** prof., academician (Kazakhstan)**Sadybekov M.A.** prof., corr. member. (Kazakhstan)**Satayev M.I.** prof., corr. member. (Kazakhstan)**Severskiy I.V.** prof., academician (Kazakhstan)**Sikorski Marek** prof., (Poland)**Ramazanov T.S.** prof., academician (Kazakhstan)**Takibayev N.Zh.** prof., academician (Kazakhstan), deputy editor in chief**Kharin S.N.** prof., academician (Kazakhstan)**Chechin L.M.** prof., corr. member. (Kazakhstan)**Kharun Parlar** prof. (Germany)**Endzhun Gao** prof. (China)**Erkebayev A.Ye.** prof., academician (Kyrgyzstan)**Reports of the National Academy of Sciences of the Republic of Kazakhstan.****ISSN 2224-5227****ISSN 2518-1483 (Online),****ISSN 2224-5227 (Print)**

Owner: RPA "National Academy of Sciences of the Republic of Kazakhstan" (Almaty)

The certificate of registration of a periodic printed publication in the Committee of Information and Archives of the Ministry of Culture and Information of the Republic of Kazakhstan N 5540-Ж, issued 01.06.2006

Periodicity: 6 times a year

Circulation: 500 copies

Editorial address: 28, Shevchenko str., of 219-220, Almaty, 050010, tel. 272-13-19, 272-13-18,

<http://reports-science.kz/index.php/en/archive>

---

**REPORTS OF THE NATIONAL ACADEMY OF SCIENCES  
OF THE REPUBLIC OF KAZAKHSTAN**

ISSN 2224-5227

<https://doi.org/10.32014/2019.2518-1483.110>

Volume 4, Number 326 (2019), 27 – 30

UDC 636.22/.28:612.118

**D.M. Bekenov<sup>1</sup>, A.A. Spanov<sup>1</sup>, A.E. Chindaliyev<sup>1</sup>,  
A.D. Baimukanov<sup>2</sup>, D.T. Sultanbai<sup>1</sup>, G.K. Zhaksylykova<sup>1</sup>, A.S. Kalimoldinova<sup>1</sup>**

<sup>1</sup> Bayserke-Agro Educational Scientific and Production Center LLP, Almaty region, Kazakhstan;

<sup>2</sup> Russian State Agrarian University - Moscow Agricultural Academy named after K.A. Timiryazev, Moscow,  
Russian Federation;

[unpcbayerke-agro@mail.ru](mailto:unpcbayerke-agro@mail.ru), [abzal16@mail.ru](mailto:abzal16@mail.ru), [achindaliyev@rambler.ru](mailto:achindaliyev@rambler.ru), [aidartaidar98@mail.ru](mailto:aidartaidar98@mail.ru),  
[darinasultan@lenta.ru](mailto:darinasultan@lenta.ru), [gulnurzh@ro.ru](mailto:gulnurzh@ro.ru), [kalimoldinova\\_assel@mail.ru](mailto:kalimoldinova_assel@mail.ru)

## **COMPARATIVE STUDY OF FRUITFULNESS OF COW INSEMINATION OF A MILKING HERD AT VARIOUS LEVELS OF PRODUCTIVITY IN THE CONDITIONS OF BAYSERKE-AGRO LLP**

**Abstract.** A comparative analysis of the fruitfulness of cow artificial insemination of milking herd at various levels of productivity was carried out in the conditions of Bayserke-Agro LLP. A study of reproduction performance of the milking herd was conducted based on the results of work performed from January 2018 to March 2019. The comparative data include cows artificially inseminated both according to the natural estrous cycle and according to the hormonal stimulation scheme of the estrus according to the Ovsynch program. It was established that the variability of the insemination index is directly dependent on the level of cow productivity, while the variability of this indicator in terms of lactation numbers has not been established. The service period and the insemination index in high productive groups significantly exceed the optimal indicators, and in groups with milk yields of 6–9 thousand kg, relatively high reproductive qualities are observed, corresponding to zootechnic norms.

**Keywords:** artificial insemination, insemination index, service period, estrous cycle, first-calf heifers.

**Introduction.** The determining factor in the dairy productivity of the herd, along with genetic potential, feeding and housing conditions, is the reproduction rate. It is known that one of the main factors determining the insemination index of cows, in addition to a balanced diet, is a certain level of productivity as well. The relationship between productivity and insemination index was revealed [1], as the milking capacity index increases above 1000, there is a significant decrease in the proportion of fecundated cows to 27.8% ( $P < 0.05$ ) while increasing the milking capacity index to 800 does not have a significant effect [2]. According to research by several authors, indicators of the reproductive function of cattle have a low coefficient of heritability, in the range of 0.1 - 0.15. Consequently, they are largely influenced by environmental factors, though their genetic causation is also in no doubt [3]. Insemination at the age of 20.0 - 21.9 months is further characterized by reduced reproductive traits as an increased seed consumption for one fruitful insemination, extended service period and low fertility rate. Whereas the insemination of mating heifers under the age of 13.9 months are distinguished by a high fertility rate and, accordingly, low seed consumption per fruitful insemination, that indicates a high reproductive trait. At the same time, the periods of productive use of animals of this group are comparably low. [4, 5].

«At this stage of the dairy cattle husbandry development, which is based on the formation of dairy-commercial farms with highly productive dairy cattle based on imported animals or the use of foreign gene pool, there are problems of temporary infertility of animals after calving. The causes of obstetric and gynecological diseases are driven, first of all, by a weakening of the general resistance of the organism and a metabolic disorder. The main factor predisposing to the disease is the unbalance of the diet in terms of acid-base equivalents, minerals, and vitamins, as well as housing conditions and the level of productivity. A metabolic disorder, in turn, causes endocrine insufficiency and hormonal disorders, which leads to a disturbance in the neurohumoral regulation of sexual functions and favorable conditions are created for the development of pathogenic microflora in the genitals causing inflammation processes.» [6].

It has been established that the milk productivity of Holstein cows increases until the fifth lactation [7]. Therefore, the high lifetime productivity of cows is a consequence of the good development and functioning of all organs and systems of vital activity of the organism, including reproductive organs. In reproduction of high productive dairy cattle, it is necessary to maximize the reproductive capacity of high productive breeding stock, including first-calf heifers, that will shorten the service period.

**Materials and methods of research.** The research work was conducted in the dairy complex of Bayserke-Agro LLP. The main breed is Holstein cattle of Canadian breeding. In accordance with the technology, the milking herd is allocated by productivity and feeding is based on the average group productivity. Artificial insemination of cows is carried out once in 12-14 hours from the start of estrus with ordinary seed, and heifers of the mating contingent are divided by sex (homosexual). The milking herd is equipped with motion sensors, thanks to which it is possible to accurately determine the time of estrus onset. The study of pregnancy was performed on the 45-50th day after insemination with ultrasound. The number of groups of animals is 8, of which 3 groups with an average productivity from 38 to 41 kg (high-yielding, lim. 34-79 kg), 4 groups - from 23 to 27 kg (medium-yielding, lim. 21-33 kg) and 1 group is low-productive with average productivity of 14-16 kg per day. Every 14-16 days, the cows regroup according to the average milk yield data for the last 5-7 days of lactation.

Artificial insemination of heifers is carried out starting from 12 months of age upon reaching a live weight of 360 kg.

**The aim of the research.** Comparative analysis of fruitfulness of cow insemination of milking herd at various levels of productivity.

**Research results.** A comparative analysis of reproduction indicators of the milking herd was carried out based on the results of work performed from January 2018 to March 2019. The comparative data include cows artificially inseminated both according to the natural estrous cycle and according to the hormonal stimulation scheme of the estrus upon the Ovsynch program. The stimulation scheme was used for anovulatory estrous cycle, in the absence of natural estrus for more than 55 days from the time of calving, with pronounced signs of ovarian dysfunction (ovarian hypofunction) caused by lactation predominant.

As can be seen from the table, the highest rates of semen consumption per fruitful insemination were observed in the group with a productivity level of more than 11 thousand kg of milk for 305 days of lactation, which averaged 2.96 doses. Consequently, the duration of the inter-calving period was longer than the generally accepted norm by more than 100 days, which is associated with obtaining offspring from these cows one time in 16 months. Groups with average productivity of less than 8,600 kg of milk per lactation had the lowest indices of insemination, which amounted to 2.2 and the duration of the service period corresponded to zootechnic norms. It is also worth noting that the percentage of fruitful insemination in groups with a yield of more than 10 thousand kg are comparatively low and averaged from 32 to 36% in spring and summer and from 34 to 38% in autumn and winter. In groups with indicators of milk yield from 7 to 9 thousand kg per lactation, the average fertility rates during the study for pregnancy ranged from 38 to 47%, and in cows with milk yield of 6 thousand kg per lactation - not less than 54% at single insemination.

Table 1 - Comparative results of artificial insemination of cows

Number of animals	Average productivity for 305 days, kg	Seed consumption per 1 fruitful insemination, doses	Period, days	
			Service period	Inter-calving period
86	11396±160.8	2.96±0.81	198±13.51	481±13.63
92	10522±150.1	2.72±0.46	192±12.8	475±12.1
98	9053±178.5	2.4±0.38	127±11.9	427±12.32
102	8620±125.3	2.2±0.36	98±10.1	379±9.81
58	7002±195	2±0.21	91±10.75	375±10.51
26	6105±203.4	1.85±0.18	80±9.35	364±8.83

Also, comparative analysis of the results of artificial insemination according to the number of lactation, listed in Table 2, was carried out.

Table 2 - Variability of the insemination index of cows by lactations

Age group	n	Insemination index	Age, months
Of the first calving	72	2.4±0.42	23.6±0.26
Of the second calving	83	2.38±0.38	40.1±1.12
Of the third calving and more	45	2.3±0.35	64.7±9.5

For reliable data acquisition, only cows with milk yield from 8.5 thousand to 9.0 thousand kg were taken into account for 305 days of lactation, i.e. with average milk yield in the amount of 200 animals. Of these, first-calf heifers in the amount of 72 animals, cows of the second calving - 83 heads and the third and more calves - 45 heads.

The table shows that the age of registered cows at the time of fruitful insemination averaged 23.6 months for cows of the first calving, 40.1 months for cows of the second calving, and 62.7 months for cows of the third and more calvings. The insemination indices were identical and in the range of 2.3-2.4, the yield of offspring at the end of the year for these cows was 86% per 100 females.

In such a way, on the basis of the obtained data, it was established that the variability of the insemination index is directly dependent on the productivity level of the cows, while the variability of this indicator in terms of lactation numbers has not been established. The service period and the insemination index in high productive groups (more than 10 thousand kg of milk for 305 days of lactation) significantly exceed the optimal indicators, while in the groups with yields of 6–9 thousand kg, relatively high reproductive traits are observed, corresponding to zootechnic norms.

**Foundation for research and source of funding.** The program of target financing of the Ministry of Agriculture of the Republic of Kazakhstan for 2018 - 2020. URN: BR06249249-OT-18 Development of a comprehensive system to increase productivity and improve the breeding qualities of farm animals, as an example of Bayserke-Agro LLP.

ӨОЖ 636.22/.28:612.118

Д.М.Бекенов<sup>1</sup>, А.А. Спанов<sup>1</sup>, А.Е. Чиндалиев<sup>1</sup>, А.Д. Баймұқанов<sup>2</sup>,  
Д.Т. Султанбай<sup>1</sup>, Г.К. Жаксылыкова<sup>1</sup>, А.С. Калимолдинова<sup>1</sup>

“Байсерке-Агро” оқу ғылыми-өндірістік орталығы” ЖШС, Алматы облысы, Қазақстан Республикасы;  
<sup>2</sup>Жоғары білім беру саласындағы федералдық мемлекеттік бюджеттік білім беру саласының мемлекеттік орталығы - К.А. Тимирязев атындағы Мәскеу аграрлық академиясы, Мәскеу қ., Ресей Федерациясы

**“БАЙСЕРКЕ-АГРО” ЖШС ЖАҒДАЙЫНДА ӘР ТҮРЛІ ӨНІМДІЛІК ДЕҢГЕЙІНДЕГІ  
САУЫН ТАБЫНЫНДАҒЫ СИЫРЛАРДЫ ҰРЫҚТАНДЫРУДЫҢ  
ЖЕМІСТІЛІГІН САЛЫСТЫРМАЛЫ ТАЛДАУ»**

**Аннотация.** “Байсерке-Агро” ЖШС жағдайында сауын табынындағы сиырларды қолдан ұрықтандырудың өнімділігін әртүрлі деңгейлерінде салыстырмалы талдау жүргізілді. Сүт алқабының репродуктивті өнімділігін салыстырмалы талдау 2018 жылдың қаңтарынан 2019 жылдың наурызына дейін жүргізілген жұмыстардың нәтижелері бойынша жүргізілді. Салыстырмалы деректерге табиғи сексуалды циклге сәйкес жасанды түрде ұрықтандыру және «Овсинх» бағдарламасына сәйкес жыныстық цикл гормоналды ынталандыру схемасына сәйкес сиырлар жатады. Ұрықтандыру индексінің өзгергіштігі сиырлардың өнімділік деңгейіне тікелей тәуелді екені анықталды, бұл ретте осы көрсеткіштің сауын мөлшері бойынша өзгергіштігі анықталмаған. Жоғары өнімді топтарда ұрықтандыру кезеңі мен индексі сервисі оңтайлы көрсеткіштерден едәуір асып түседі, ал 6-9 мың кг сауындары бар топтарда зоотехникалық нормаларға сәйкес келетін салыстырмалы түрде жоғары репродуктивті сапалар белгіленді.

**Түйін сөздер:** жасанды ұрықтандыру, ұрықтандыру индексі, сервис-кезең, жыныстық цикл, алғашқы тұқым.

Д.М. Бекенов<sup>1</sup>, А.А. Спанов<sup>1</sup>, А.Е. Чиндалиев<sup>1</sup>, А.Д. Баймуқанов<sup>2</sup>,  
Д.Т. Султанбай<sup>1</sup>, Г.К. Жаксылыкова<sup>1</sup>, А.С. Калимолдинова<sup>1</sup>

<sup>1</sup>ТОО «Учебный научно-производственный центр «Байсерке-Агро», Алматинская область, республика Казахстан

<sup>2</sup>Российский государственный аграрный университет – Московская сельскохозяйственная академия  
им. К.А. Тимирязева, Москва, Россия

### СРАВНИТЕЛЬНЫЙ АНАЛИЗ ПЛОДОТВОРНОСТИ ОСЕМЕНЕНИЯ КОРОВ ДОЙНОГО СТАДА ПРИ РАЗЛИЧНЫХ УРОВНЯХ ПРОДУКТИВНОСТИ В УСЛОВИЯХ ТОО «БАЙСЕРКЕ-АГРО»

**Аннотация.** Проведен сравнительный анализ плодотворности искусственного осеменения коров дойного стада при различных уровнях продуктивности. в условиях ТОО «Байсерке-Агро». Сравнительный анализ показателей воспроизводства дойного стада был проведен по результатам работ, выполненных за период с января 2018 по март 2019 года. В сравнительные данные включены коровы как искусственно осемененные по естественному половому циклу, так и по схеме гормональной стимуляции половой охоты по программе «Овсинх». Была установлена, что изменчивость индекса осеменения находится в прямой зависимости от уровня продуктивности коров, при этом изменчивость данного показателя по количеству лактации не установлена. Сервис период и индекс осеменения у высокопродуктивных групп значительно превышают оптимальные показатели, а у групп с надоями 6-9 тыс. кг отмечены относительно высокие репродуктивные качества, соответствующие зоотехническим нормам.

**Ключевые слова:** искусственное осеменение, индекс осеменения, сервис-период, половой цикл, перотелки.

#### Information about authors:

Bekenov Dauren Maratovich - Master of Natural Sciences and Biotechnology, Director of ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: unpcbayserke-agro@mail.ru, <https://orcid.org/0000-0003-2244-0878>;

Spanov Abzal Abushakipovich - Senior Researcher, ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: abzal16@mail.ru, <https://orcid.org/0000-0001-9303-3722>;

Chindaliyev Askhat Erbosynovich - Master in Agriculture, Senior Researcher, ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: achindaliyev@rambler.ru, <https://orcid.org/0000-0002-2468-3809>;

Baimukanov Aidar Dastanbekouly - student of the Faculty of Zootechnics and Biology of the Russian State Agrarian University - Moscow Agricultural Academy named after K.A. Timiryazev, Moscow, Russian Federation. E-mail: aidartaidar98@mail.ru, <https://orcid.org/0000-0001-9669-864X>;

Sultanbai Darina Tavalidievna - Senior Researcher, ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: darinasultan@lenta.ru, <https://orcid.org/0000-0001-9502-7481>;

Zhaksylykova Gulnur Kenesbekovna - Senior Researcher, ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: gulnurzh@ro.ru, <https://orcid.org/0000-0001-9020-5656>;

Kalimoldinova Asel Sanatkyzy - Researcher, ESPC Bayserke-Agro LLP, Talgar District, Almaty Region, E-mail: kalimoldinova\_assel@mail.ru; <https://orcid.org/0000-0002-6698-3981>

#### REFERENCES

[1] Fedoseeva N. (2007) Relationship between the inter-calving period and the dairy productivity of cows. Dairy and beef cattle. № 3. p. 22-23. (in Russ.).

[2] Valitov H.Z., Golovin A.S. (2014) The relationship of the milking capacity index with the reproductive functions of dairy cows. News of the Samara State Agricultural Academy. №1. P. 60-63. (in Russ.).

[3] Lyubimov A.I., Batanov S.D., Martynova E.N. (2007) Improvement of dairy cattle and the formation of the desired type, adapted to breeding in the conditions of the Western Preduralie. Manual. Izhevsk. Izhevsk State Agricultural Academy, 237 p. (in Russ.).

[4] Bydantseva E.N., Kavardakova O.Yu. (2012) Dependence of productive longevity of cows on genetic factors. Dairy and beef cattle. Number 3. P. 17 - 19. (in Russ.).

[5] Bydantseva E.N., Kavardakova O.Yu. (2010) The effect of the first calving age on productive longevity of cows. Innovative development of AIC - scientific support, dedicated to the 80th anniversary of the Acad. D.N. Pryanishnikov Perm State Agricultural Academy. Proceedings of international scientific-practical conf. Perm. Pp. 72 - 74. (in Russ.).

[6] Baimukanov D.A., Seidaliyev N.B., Alentayev A.S., Abugaliyev S.K., Semenov V.G., Dalibayev E.K., Zhamalov B.S., Muka Sh.B. (2019) Improving the reproductive ability of the dairy cattle. Reports of the National Academy of Sciences of the Republic of Kazakhstan. Volume 2, Number 324 (2019), 20 – 31. <https://doi.org/10.32014/2019.2518-1483.33>. ISSN 2518-1483 (Online), ISSN 2224-5227 (Print).

[7] Baimukanov D.A., Abugaliyev S.K., Seidaliyev N.B., Semenov V.G., Chindaliyev A.E., Dalibayev E.K., Zhamalov B.S., Muka Sh.B. (2019) Productivity and estimated breeding value of the dairy cattle gene pool in the Republic of Kazakhstan. Bulletin of National Academy of Sciences of the Republic of Kazakhstan. Volume 1, Number 377 (2019), 39 – 53 <https://doi.org/10.32014/2019.2518-1467.5>. ISSN 2518-1467 (Online), ISSN 1991-3494 (Print)



**Publication Ethics and Publication Malpractice  
in the journals of the National Academy of Sciences of the Republic of Kazakhstan**

For information on Ethics in publishing and Ethical guidelines for journal publication see <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/journal-authors/ethics>.

Submission of an article to the National Academy of Sciences of the Republic of Kazakhstan implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see <http://www.elsevier.com/postingpolicy>), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. In particular, translations into English of papers already published in another language are not accepted.

No other forms of scientific misconduct are allowed, such as plagiarism, falsification, fraudulent data, incorrect interpretation of other works, incorrect citations, etc. The National Academy of Sciences of the Republic of Kazakhstan follows the Code of Conduct of the Committee on Publication Ethics (COPE), and follows the COPE Flowcharts for Resolving Cases of Suspected Misconduct ([http://publicationethics.org/files/u2/New\\_Code.pdf](http://publicationethics.org/files/u2/New_Code.pdf)). To verify originality, your article may be checked by the originality detection service Cross Check <http://www.elsevier.com/editors/plagdetect>.

The authors are obliged to participate in peer review process and be ready to provide corrections, clarifications, retractions and apologies when needed. All authors of a paper should have significantly contributed to the research.

The reviewers should provide objective judgments and should point out relevant published works which are not yet cited. Reviewed articles should be treated confidentially. The reviewers will be chosen in such a way that there is no conflict of interests with respect to the research, the authors and/or the research funders.

The editors have complete responsibility and authority to reject or accept a paper, and they will only accept a paper when reasonably certain. They will preserve anonymity of reviewers and promote publication of corrections, clarifications, retractions and apologies when needed. The acceptance of a paper automatically implies the copyright transfer to the National Academy of sciences of the Republic of Kazakhstan.

The Editorial Board of the National Academy of sciences of the Republic of Kazakhstan will monitor and safeguard publishing ethics.

Правила оформления статьи для публикации в журнале смотреть на сайте:

[www.nauka-nanrk.kz](http://www.nauka-nanrk.kz)

**ISSN 2518-1483 (Online), ISSN 2224-5227 (Print)**

<http://reports-science.kz/index.php/en/archive>

Редакторы *М. С. Ахметова, Т.А. Апендиев, Д.С. Аленов*  
Верстка на компьютере *А.М. Кульгинбаевой*

Подписано в печать 12.08.2019.  
Формат 60x881/8. Бумага офсетная. Печать – ризограф.  
11 п.л. Тираж 500. Заказ 4.