

The background of the cover is a complex, abstract technical illustration. It features a large gear-like structure with various concentric circles, lines, and arrows. A prominent feature is a central orange and yellow gradient that resembles a sun or a light source, surrounded by a gear. Below this, there are several blue and dark blue rectangular blocks arranged in a semi-circular pattern. The overall aesthetic is clean, modern, and technical.

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75.	Озода Бахрановна Ахмедова, Баходир Жунайдуллаевич Турсунов Нозим Низом угли Худойбердиев Анализ физико-химических свойств нефтешламов Бухарского НПЗ и рациональные способы их утилизации	495
76.	Мансур Маликжанович Адашев Перспективы развития автомобильного транспорта в Узбекистане	508
77.	И.И.Фатоев, Ш.Ш.Тошев Полимер композицион материаллар тизими ва хоссаларига термик ишлов бириш технологиясининг таъсири	512
78.	Мухаммадқодир Мукумжон угли Ёкубов Равшан Баходиржон угли Мухитдинов, Никита Игоревич Леженкин Процесс сушки. Конвективная и кондуктивная сушка	527
79.	Ithom Ismatovich Rahmatov, Gulnoza To'ymurod qizi Yodgorova Yurqa plyonkalarini olinish usullari epitaksial plyonkalar va uning fizikasi	532
80.	Илхом Исматович Рахматов, Шахзод Ниёз угли Изомов Температурно-радиационный режим территории Узбекистана для построения солнечных теплиц	541
81.	Zakiya Teshayevna Safarova, Oliyabegim Solijon kizi Farmonova Biotechnology to increase poultry productivity	548
82.	Мухаммадқодир Мукумжон угли Ёкубов Равшан Баходиржон угли Мухитдинов, Никита Игоревич Леженкин Строение и принцип работы вращающейся печи	553
83.	Гулчера Шадманова Математическое моделирование размещение овощных культур по полям хозяйства	558
84.	Махаматрасул Эргашов, Иродахон Аъзамжан кизи Салимжонова Гулжахон Турдимурод кизи Каримова Методика расчета наладочных натяжений ветвей ремня заданного передаточного механизма	566

#### PEDAGOGICAL SCIENCES / PEDAGOGIKA FANLARI

85.	Тулкин Турдимович Адиллов, Мадраим Хасанович Сариккулов Анвар Курбонович Матқобилов, Шохруҳ Дилшод ўғли Мўрибоев Роль воспитания в формирование личности	572
86.	Ш.Кувондиқова Шахсининг ўзини англаши ўз-ўзини бошқаришини ривожлантиришининг асоси сифатида	581
87.	Jamol Saidov Biologiya darslarida tayanch kompetensiyalarni shakllantirish usullari	587
88.	Davronbek Abdug'ani o'g'li Abdimalov Jo'rabek - Rossiya imperiyasi mustamlakachilik siyosatiga qarshi kurash olib borgan vatanpar	591
89.	Gulbahor Abdusalomova Teaching German as foreign language after English and its advantages	596
90.	Jahongir Mehrojiddin o'g'li Yursinboyev Aleksandr Makedonskiy Yunon xudolarining erkasi	601
91.	Jayron Altibayevna Ashirova, Farangiz Nosirjon qizi Abduqahhorova Boshlang'ich ta'lim yo'nalishidagi talabalarda pedagogik mahoratni shakllantirish	607
92.	Asror Farhod o'g'li Abdulakimov O'zbekistonda akademik xonandalik yo'nalishini rivojlanishi va shakllanishi	613

## Biotechnology to increase poultry productivity

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**Abstract:** The article presents the data of biotechnology for improving the bioproductivity of chickens, egg production of the Brama breed, diet and the use of algae in their feeding. Making the best diet for chickens.

**Keywords:** proteins, mineral salts, fats, calcium, phosphorus, magnesium, Malay chickens, Brama, chlorella, duckweed, fish oil.

For a long time, man has been using the animal and plant world to meet his needs, conducting various experiments, scientific research along the way. Various plant varieties and animal breeds were bred, including chicken breeds. The Brama breed was first introduced by breeders from Asia. They crossed Colchian and Malay chickens. This species was recorded in 1874.

An adult chicken weighs about 3.5 kg, and a rooster about 4.5 kg. The meat is very tasty and tender, belongs to the dietary subspecies. However, you should know that the taste of their meat directly depends on the diet [1-6].

Bram's chickens begin laying at about 9 months of age. During the year, a chicken can lay up to 120 eggs of excellent quality weighing 60 g.

We have conducted a number of experiments to increase the productivity of breeds of bram chickens, biomass and egg production. The coop contained 7 chickens and 1 rooster. These are chicks hatched in the month of May 2021. It was recommended to feed five times a day (Table 1). For the first month we fed the chickens 3 times a day, the composition of the food was rich in starch and proteins (Table 2).

1-Table

Feeding chickens of the Brama breed (recommended feed composition)

Feeding	Feeding time	Feed composition
first	5:30	Grain mixture-wheat and millet 1:1-1/3 daily norm
second	10:00	Wet mash (crushed barley, wheat flour, meat and bone meal, chalk, tricalcium phosphate, table salt). In summer, greens are added, juicy feeds are added in winter
third	12:00	In summer, chopped greens, carrots and beets in winter.
fourth	15:00	Wet mash
fifth	19:00	Grain mixture-wheat and millet 1:1-2/3 daily norm

2-Table

## Chicken cropping

Feeding	Feeding time	Feed composition
first	08:00	Steeply boiled grated egg, boiled rice crushed 1:1
second	13:00	Puree of potatoes and boiled rice 1:1
third	17:00	Compound feed for chickens

The mandatory diet included crushed rice, hard-boiled eggs and cottage cheese, 3 capsules of rib fat were added to maintain immunity. Antibiotics and vitamins were added to the water without fail. In the second month, chlorella (algae) was added to the water. for the second and third months, the diet was changed in the following order, the first feed was 8-30 algae duckweed-boiled crushed rice (Duckweed small - Lat. Lemna minor is a perennial aquatic plant, a species of the genus Duckweed. The dry matter of duckweed contains up to 38% protein, up to 5% fat, 17-23% fiber, 6% calcium, 3% phosphorus, 2% magnesium.). The duckweed aquatic plant is propagated in the laboratory at our department under the supervision of Professor S.B.Buriev. The second feed is 13-00 ready-made chicken feed, the third feed is 17-00 wet mash (boiled rice crushed-wheat shulukha-chlorella suspension). Such food was adhered to for 4 months, from the fourth month they began to add chopped greens to the diet, such as parsley, dill, also in the morning they gave chopped alfalfa branches (a cone of growth and leaves) [7-9].

Since the fifth month, the diet of the feed has changed. On the morning of 08-00, grated vegetables and fruits were blown with wheat husks, 500 grams of mixed dry chicken feed were added to 2 kg of vegetables. In the evening, at 17-00, porridge of boiled peel from various vegetables and fruits was added to 5 kg of porridge 500 g of mixed grain composition of wheat, arzana and crushed corn, 200 g of chlorella suspension was added. They often gave crushed alfalfa in the interval, more often in the evening before 17-00 [10-14].

We achieved the following results, egg production began at 6 months, the weight became larger, food consumption became active after the addition of chlorella and alfalfa. The biomass and mass of internal organs decreased at 9 and 10 months, egg production accelerated (once a day and 23 hours) (Table 3).

3-table

## Biomass at 9 and 10 months

Name of organs	9 months (weight in g)	10 months (weight in g)
total weight (cleaned of feathers and innards)	2000-2300	2300-2500
muscular stomach	50	54
a heart	20	28
liver	43	49-50
egg	50-55	55-60
testicles	13-15	16-20

According to our experiments, an increase in egg production and an improvement in weight gain was determined after the abundant addition of Chlorella and Duckweed algae to the food and water of chickens, also with frequent addition of chlorella to porridge from vegetable peel and bread, egg production improved, even one chicken began to lay an egg weighing 86 g with two yolks. Now the chickens are laying every day [15-17]. A chicken laying an egg with two yolks is laid every other day.



Egg weight 86 g, length 9 cm and circumference 15 cm.

From the 9th month, they started adding mint, whole corn, alfalfa and algae to the diet of chickens, the results are good [18].

Resolution of the President of the Republic of Uzbekistan № PP-4708 of May 7, 2020 year «On measures to improve the quality of education and development of research in mathematics» tasks for the development of mathematical solutions are defined. In this regard, a number of scientific works on the integration of mathematics and biological sciences are currently underway. In particular, [19-27] scientific researches have studied mathematical models of biological processes, found analytical and numerical solutions. [28-30] presented mathematical models of various biological processes and analyzed them.

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