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KASHTAN MEVASINING ICHKI PO‘STIDAN MELANIN OLIISH BIOTEXNOLOGIYASI

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Melaninlar azot o'z ichiga olgan va azotsiz polifenollarning fermentativ oksidlanishi paytida organizmlarda hosil bo'lgan quyuq rangli yuqori molekulyar tartibsiz polimerlardir. Ular radioprotektiv va antioksidant xususiyatlarga ega, radionuklidlar va og'ir metallar uchun sorbent bo'lib, tirik organizmlarni ultrabinafsha nurlanishidan samarali himoya qilishga ega. Melaninlar tibbiyot, farmakologiya, qishloq xo'jaligi va boshqa sohalarda qo'llaniladi [1].

Melaninlarni olish uchun aminokislota tirozin va uning hosilalari oksidlanishi natijasida kimyoviy sintez texnologiyasi, hayvon va o'simlik xom ashyolaridan ekstraksiya yo'li bilan hamda mikroorganizmlar yordamida mikrob sintezi qo'llaniladi [1].

Melanin ishlab chiqarish uchun xom ashyo bo'lgan biologik materiallaridan ajratib olish kimyoviy usullari xilma-xil bo'lganligi sababli, ularni yig'masini ajratish va individual holda tozalashning yagona standart olish usuli mavjud emas [1].

Melanin suvda kam eriydi, lekin suvli eritmaning pH qiymati 5,5 dan 2,5 - 2,0 gacha o'zgarganda, u jigarrang yoriqlar shaklida cho'kadi. Yangi olingan melanin faqat ishqoriy muhitda, shuningdek, 80% aseton va 50% etanolda yaxshi eriydi. Boshqa organik erituvchilarda yoki benzol, ksilen, xloroform, neft efiri umuman erimaydi yoki etil asetatda 11% gacha, dietil efirda 2,5% gacha melanin ozgina eriydi. Ochiq havoda yoki yuqori haroratda quritilgan melanin deyarli butunlay eruvchanligini yo'qotadi va vakuumda quritilganda natriy gidrokarbonat va gidroksidi eritmalarida erish qobiliyatini saqlab qoladi. Tozalash jarayonida u parchalanib, qoramtir ko'mirga o'xshash massa hosil qiladi [2].

Melanin sintez qiluvchi *Bacillus thurigiensis* shtammidan ozuqaviy muhit tayyorlash orqali olinadi, kiye fermentatsiya eritmalarida melanin kontsentratsiyasi 4-8 g/l ni tashkil etdi [3].

Ustunli xromatografiya usulida (6×70 sm) melaninning yuqoridan pastga 0,028 sm/s oqim tezligida elyut yuviladi.

Biotexnologik yo'l bilan noan'anaviy xom ashyo turidan yuqori antioksidant faollikka va ega bo'lgan suvda eriydigan melaninni olish. xom ashyo sifatida kashtan mevasi mag'zining maydalangan po'stidan foydalanildi. Kashtan mevasi mag'zining maydalangan po'stini va suvning massa 1:20 nisbatida suvda uch bosqichli ekstraksiya qilishni va har bir ekstraksiya bosqichi uchun 12 soat davomida ekstraksiya qilish orqali suvda eriydigan melaninni olish usuli amalga oshirildi. Uch bosqichda olingan ekstraktlarni birlashtirilib filtrlanadi (ekstrakt hajmi 15 l tashkil qildi). Olingan ekstrakt 3 litr hajm qolishiga qadar bug'latiladi. Suvli ekstrakt 0,5 N NaOH eritmasi bilan pH muhiti 12 gacha yetkanga qadar qo'shildi. Hosil bo'lgan tiniq aralashmaga pH 1,5 ga qadar nordonlashtiriladi. Hosil bo'lgan cho'kma melaninni aralashmasi massa nisbatida 1:2 etilasetat bilan ekstraksiya uch bosqichda amalga oshirildi. Suvli qism yani aralashmadan organik ekstrakt qismi ajratib olindi. Suvli qismda cho'kma hosil qilgan melanin filtrlash yo'li bilan ajratib olindi.

Melanin cho'kmasi melanin to'liq erishiga qadar 12% li ammiak eritmasida eritiladi, qoldiq ammiak va suv rotorli bug'latkichda bug'latilganidan keyin melanin eritmasi liofil shkafda quritildi.

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ENRICHED FEED: NON-TRADITIONAL USE OF RAW MATERIALS FOR POULTRY

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It is known that up to 70% of feed costs in the poultry industry are accounted for by cereal crops, including wheat, barley and corn. These cereals are essential in the sphere of feeding the population and occupy the main position among food crops. The search for new types of grain fodder to partially replace traditional and use them to maintain and increase the productivity of poultry is urgent.

One way to solve this problem is to use non-traditional types of feed in the diet of poultry as sources of protein (sorghum, triticale) and mineral (limestone, bentonite, palygorskite) nutrition.

The aim of the study is to study the chemical composition of the above non-traditional feeds and determine the optimal level of their partial replacement of traditional grain and mineral supplements in the diet of farm birds.

Results of the study. The results of the study of the chemical composition and use of grain of some non-traditional feeds (sorghum, triticale) in the feeding of laying hens showed that these feeds were not inferior to the main grain cereals (wheat, corn, barley) both in the level of nutrients and efficiency of influence on bird productivity. Thus, the crude protein content of sorghum ranges from 11.7-12.2%, crude fiber and fat - 1.5-5.8 and 4.3-4.4%, respectively. Sorghum is almost on a par with triticale in terms of the content of most essential amino acids, and surpasses maize in terms of some of them. However, the limiting factor in the use of sorghum in laying hens is its tannin content. Depending on the tannin content, the rate of use of sorghum in the diet of birds is determined. If the components of the basic diet do not contain tannin, it is possible to include 15-20% sorghum in the feed for young birds and 30-35% for adult birds. Brown sorghum varieties have a high tannin content, so you should limit the possibility of using them in feeds to 5-20%. Another complete substitute for the main grain feed in the diet of birds is the wheat-rye hybrid triticale, which has a number of advantages compared with wheat and rye. Triticale contains more protein (15-18%), its high energy content (285 kcal/100 g) allows it to replace up to 60% of wheat in the diet.

The results of chemical studies showed that the content of protein, fat and fiber in triticale grown in Uzbekistan is 13.2; 2.2; 2.9%, respectively. The content of amino acids (lysine, cystine, etc.) of triticale is significantly superior to sorghum and other traditional grain crops.

The first experiment to partially replace traditional grain sorghum was conducted on chickens-Locks of the Loman Brown cross, of which five groups of 50 birds each were formed according to the principle of peer groups.

The data obtained for 8 months. productivity of laying hens showed that the tested levels of sorghum at partial replacement of cereals (corn, wheat, barley) by 5, 10, 15 and 20% had unequal effects on the productive qualities of the experimental birds (Table).