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NAYMANSOY DARYOSIDA UCHROVCHI *SCHIZOTHORAX EURYSTOMUS* KESSLER, 1872 TURINING UZUNLIK–VAZN MUNOSABATLARI

Annotatsiya

Sirdaryoning irmog‘i bo‘lgan Naymansoy**,** So‘x daryosining davomidir. Ushbu suv havzasida yashovchi *Schizothorax eurystomus* Kessler, 1872 turining uzunlik–vazn munosabatlari (LWR) birinchi marotaba o‘rganildi. Mazkur tadqiqot natijalari baliqlarning biologik xususiyatlarini aniqlash hamda baliq zaxiralari haqidagi bilimlarni kengaytirishda muhim ahamiyatga ega. Baliq namunalari 2025-yil iyul oyida to‘plandi. Olingan tahlillar natijasida LWR tenglamasidagi b koeffitsienti ≈ 2,8 ga teng bo‘lib, bu yuqori aniqlanish koeffitsienti (r^2) bilan allometrik o‘sishni ko‘rsatdi. Ushbu parametrlar baliq populyatsiyalarining nisbiy holatini baholash, shuningdek**,** baliqchilik va zaxira boshqaruvi uchun muhim ahamiyat kasb etadi.

Kalit so‘zlar: *Schizothorax eurystomus*, uzunlik–vazn munosabatlari, So‘x daryosi, Naymansoy.

ДЛИНО-ВЕСОВЫЕ ОТНОШЕНИЯ ВИДА *SCHIZOTHORAX EURYSTOMUS* KESSLER, 1872, ОБИТАЮЩЕГО В РЕКЕ НАЙМАНСАЙ

Аннотация

Наймансай, являющийся притоком Сырдарьи, представляет собой продолжение реки Сох. Впервые были изучены зависимости длины и массы (LWR) у *Schizothorax eurystomus* Kessler, 1872, обитающего в этом водоёме. Полученные результаты имеют важное значение для выявления биологических особенностей рыб и расширения знаний о рыбных ресурсах. Образцы были собраны в июле 2025 года. Согласно результатам анализа, коэффициент *b* в уравнении LWR составил приблизительно 2,8, что при высоком коэффициенте детерминации (r^2) указывает на аллометрический рост. Эти параметры важны для оценки состояния популяций рыб, а также для управления рыбными запасами.

Ключевые слова: *Schizothorax eurystomus*, соотношение длины и массы, река Сох, Наймансай.

LENGTH–WEIGHT RELATIONSHIPS OF *SCHIZOTHORAX EURYSTOMUS* KESSLER, 1872 FROM THE NAYMANSAY RIVER

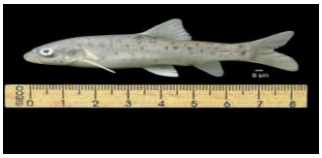
Annotation

Naymansoy, a tributary of the Syr Darya River, is a continuation of the Sokh River. The length–weight relationship (LWR) of *Schizothorax eurystomus* Kessler, 1872 inhabiting this water body was studied for the first time. The results are important for understanding the biological characteristics of the species and expanding knowledge of fish stock assessment. Fish samples were collected in July 2025. The analysis showed that the *b* coefficient in the LWR equation was approximately 2.8, indicating allometric growth with a high determination coefficient (r^2). These parameters are significant for evaluating the relative condition of fish populations and for effective fisheries and stock management.

Keywords: *Schizothorax eurystomus*, length–weight relationship, Sokh River, Naymansoy.

Kirish. Baliqlarning o‘sish parametrlarini baholash ekologik tadqiqotlarda muhim ahamiyat kasb etadi, chunki bu populyatsiyalarning holatini hamda biologik va atrof-muhit omillarining ta’sir darajasini aniqlashga yordam beradi [1]. Shu bilan birga, uzunlik - og‘irlik munosabatlari (LWR) baliq zaxiralarining tuzilishini baholash, somatik o‘sishning izometrik yoki allometrik xususiyatlarini aniqlash hamda baliqlarning umumiy fiziologik holatini tahlil etishda qo‘llaniladi [2,3,4]. Uzunlik–og‘irlik munosabatlarini o‘rganish orqali baliq og‘irligining tana o‘lchamlariga bog‘liq o‘zgarishlari haqida aniq ma’lumotlar olinadi. Bu esa individ va populyatsiyalar fiziologik holatini solishtirish, o‘sish sur’atlarini hisoblash, yetishmayotgan uzunlik yoki og‘irlik qiymatlarini aniqlash, birinchi marta jinsiy yetilishdagi tana uzunligini baholash, shuningdek, ekotizimlardagi oziqa zanjiri modellarini ishlab chiqish uchun zarur ilmiy asosni yaratadi [2,5,6].

Schizothorax eurystomus (Kessler, 1872) turi Xitoyning baland tog‘li hududlarida uchraydi [7] va xalq orasida “Keng og‘izli baliq” nomi bilan tanilgan. Mazkur tur Markaziy Osiyo hududida ham keng tarqalgan bo‘lib [8,9], Farg‘ona vodiysi tog‘li qismlaridan oqib o‘tuvchi Sirdaryo daryosi irmoqlarining deyarli barchasida uchraydi [10]. Ushbu tur sovuq suvli oqbaliqlar guruhiga mansub bo‘lib, Cypriniformes turkumi, Cyprinidae oilasi va Schizothoracinae kenja oilasiga kiradi [11]. *S. eurystomus* tanasi cho‘ziq, biroz yon tomondan siqilgan bo‘lib, boshi uchsimon shaklga ega. Turning tashqi morfologik xususiyatlari 1-rasmda keltirilgan.



1-rasm. *Schizothorax eurystomus*, Naymansoy. 2025y.

Schizothorax eurystomus ning uzunlik–og‘irlik munosabatlari ilgari ayrim tadqiqotlarda qayd etilgan [12,13]. Mazkur tadqiqotda esa Sirdaryo daryosining ikkinchi tartibli irmog‘i - So‘x daryosining tarmog‘i hisoblangan Naymansoy suv havzasida yashovchi *S. eurystomus* turining uzunlik–og‘irlik munosabatlari birinchi marotaba batafsil tahlil qilindi. Ushbu natijalar turning biologik o‘sish xususiyatlarini va populyatsiya holatini chuqurroq tushunishga imkon beradi.

Materiallar va metodlar. Ushbu tadqiqot Farg‘ona davlat universiteti tomonidan Farg‘ona viloyatidagi O‘zbekiston tumanidan oqib o‘tuvchi Naymansoy daryosida 2024 yil iyuldan 2025 yil oktyabr oyigacha olib borilgan dala ekspeditsiyalari davomida to‘plangan ma’lumotlarga asoslanadi. Baliqlar uzunligi 3 metr va to‘r ko‘zchalari diametri 1 sm bo‘lgan to‘rlar yordamida tutib olindi. Tutib olingan barcha baliq namunalari laboratoriyaga olib kelindi. U yerda har bir baliqning og‘irligi 0,1 g aniqlik bilan, uzunligi esa (standart, va umumiy uzunlik), millimetr aniqligida o‘lchandi. Baliqlarning uzunlik–og‘irlik munosabatlari (LWR) parametrlari $W=a\cdot L^b$ ko‘rinishidagi tenglama asosida baholandi. Ushbu usulda namunalar soni kam bo‘lgan yoki o‘lcham oralig‘i tor bo‘lgan turlar uchun qo‘llanildi. Bu usulda b = 3 deb qabul qilindi [2], mavjud L–W juftlik uchun a qiymati hisoblab chiqildi. Agar faqat bitta L–W juftlik mavjud bo‘lsa, o‘sha qiymat bevosita ishlatildi [14].Mazkur usulda LWR faqat FishBase ma‘lumotlar bazasida keltirilgan maksimal uzunlikning kamida 50% ini tashkil etgan namunalar uchun hisoblandi [15].

Muhokama va natijalar. Ushbu tadqiqotda Farg‘ona vodiysining O‘zbekiston tumanidan oqib o‘tuvchi Naymansoy suv havzasidan tutilgan *Schizothorax eurystomus* balig‘i uchun uzunlik–og‘irlik munosabatlari (LWR) keltirilgan. 1-jadvalda tur uchun tavsifiy statistika, individlar soni, umumiy uzunlik va og‘irlikning minimal hamda maksimal qiymatlari hamda kordinatalari berilgan,

1-jadvalda **Naymansoy daryosida** *uchrovchi S.eurystomus*ning **statistik ko‘rsatkichlari**

Tur	Geografik kordinata	daryo	Yil	N	Umumiy uzunlik(sm)		Massa (g)		FishBase Lmax
Schizothorax eurystomus	40.47495° 70.91899°	Naymansoy	2024 2025	42	min	max	min	Max	35,5
					38,65	55,99	0,60	1,84	

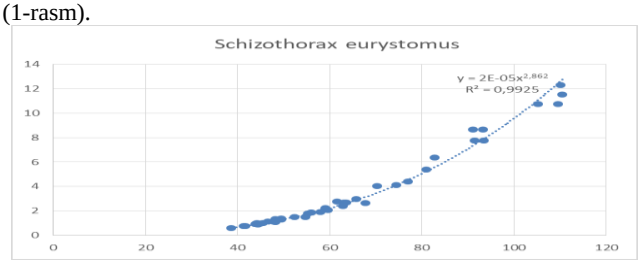
Izoh. (**n** — individlar soni; — FishBase ma’lumotlar bazasida ko‘rsatilganidan **katta maksimal uzunlik;**

2-jadvalda *S.eurystomus***ning uzunlik–og‘irlik munosabati (lwr).**

Tur	daryo	N	Total length (sm)		Total weight (g)		a	B	GT	R^2
Schizothorax eurystomus	Naymansoy	42	min	Max	min	max	0,007	2,862	-A	0,99
			38,65	55,99	0,60	1,84				

Izoh. a — kesishish nuqtasi (*intercept*); **b** — nishablik koeffitsienti (*slope*); **r²** — aniqlanish koeffitsienti); **GT** — o‘sish tipi); **A–**manfiy allometrik o‘sish;

2-jadvalda esa LWR parametrlariga oid **regressiya koeffitsientlari (a va b), b** va **a** uchun **95% ishonch oralig‘i,** aniqlanish **koeffitsienti (R^2), o‘sish tipi** keltirilgan. Tadqiq qilingan turlning **b** qiymati 2,862 ga, uzunlik va og‘irlik o‘rtasidagi **R^2** qiymati 0,99 **ga teng** bo‘ldi (1-rasm).



2-rasm. Naymansoy daryosida uchrovchi *Schizothorax eurystomus* namunalarining og‘irlik va umumiy uzunlik (TL) o‘rtasidagi chiziqli regressiya.

Mazkur tadqiqot Naymansoy daryosida uchrovchi *S.eurystomus* ning birinchi marta LWR ma‘lumotlarini beradi. Uzunlik–og‘irlik munosabatida b qiymati odatda 2.5–3.5 [2] yoki 2–4 [16] diapazonida bo‘ladi, va tadqiq etilgan tur ushbu kutilgan oraliqda joylashgan. Taqdim etilgan *S.eurystomus* turiga oid LWR ma’lumotlariga ko‘ra baliqlar b qiymati 2,862 ga, teng bo‘ldi, b qiymatining 3 dan kichik bo‘lishi manfiy allometriya ni bildiradi, ya‘ni baliqlar uzunlik jihatidan tezroq o‘sgan, ammo og‘irlik shunga mutanosib tarzda ortmagan. Bu holat bir qator ekologik va fiziologik omillar bilan izohlanadi, jumladan, Naymansoy daryosining oqim tezligi yuqori bo‘lishi yoki trofik bazaning (oziqa turlari) cheklanganligi tufayli baliqlar nisbatan ingichka tana tuzilishiga ega bo‘lgan. Gonadlar yetilishining turli bosqichlari baliq og‘irligiga kuchli ta‘sir ko‘rsatgan bo’lishi, sovuq va tog‘li hududlardagi suv harorati esa past bo‘lganligi baliqlarning o‘sish sur‘atlarini susaytirgan bo‘lishi mumkin.

Xulosa. Tadqiqot natijalari *Schizothorax eurystomus* turining morfometrik va ekologik xususiyatlarini yoritib, Naymansoy daryosining gidroekologik sharoitlariga moslashuvchanligini ko‘rsatadi. Olingan LWR ma’lumotlari (a va b koeffitsientlari) turning o‘sish modeli, konditsiyasi va yashash joyining trofik holatini aks ettiradi. Mazkur natijalar[2,17,13] taklif etilgan global baholash mezonlariga mos keladi hamda O‘rta Osiyo ichki suvlaridagi mahaliy *Schizothorax* turining o‘sish biologiyasini yanada chuqur o‘rganish uchun muhim asos yaratishi mumkin.

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