

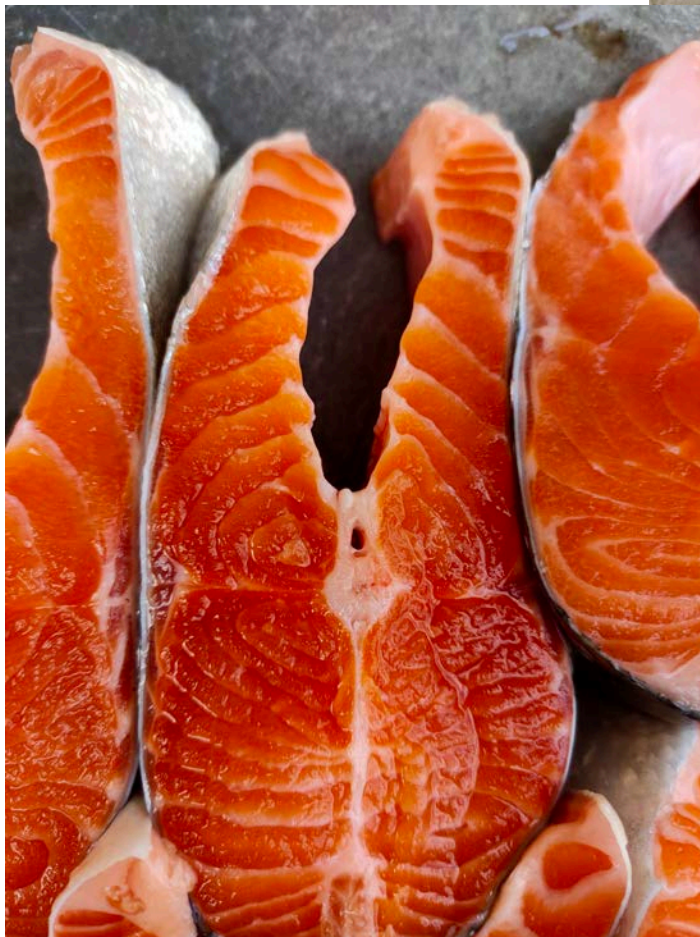
## Arde-Som Aquaculture

Arde-Som is a third-generation, family-run aquaculture business with a wide production network in the Eastern Black Sea region of Turkey. We are actively working towards adopting more professional and sustainable production practices. Our goal is to secure long-term trade partnerships with Japanese seafood importers, focusing on our current production of large astaxanthin-fed *Oncorhynchus mykiss* (rainbow trout, 300–3000g) and introduce our plans to expand production of astaxanthin-fed *Salmo labrax/trutta* (Black Sea salmon, 300–5000g).

We want to propose establishing a **niche market in Japan** where you purchase our fish and handle further processing/marketing domestically as premium products, leveraging your sophisticated processing and distribution capabilities, and the unique origin story and quality of our fish.

### Information About Our Products Rainbow Trout (*Oncorhynchus Mykiss*)

Our company has been a pioneer in the emergence and growth of the Turkish Salmon (*Oncorhynchus Mykiss*) industry in Turkey. Our Head of Board, İbrahim Biberoğlu, was one of the first in the sector to initiate the production of astaxanthin-enriched red-fleshed Rainbow



Trout in collaboration with Skretting Turkey. Since then, the sector has grown significantly. In 2024, 78.076 tonnes of Rainbow Trout was exported from Turkey to Russia, Germany, Vietnam and other destinations. With our wide production network from hatcheries to open-cage farms in the Black Sea and local dams, we can reliably supply high quality, large Rainbow Trout from 300 grams up to 3000.



### **Black Sea Salmon (*Salmo Labrax*)**

This product is truly **from the Black Sea region** – a region with a rich maritime heritage. We want to highlight that our *Black Sea Salmon (Salmo labrax)* is an **endemic species** to our waters, also known as Black Sea trout. Our farms are fed by the Black Sea's clean, cold currents producing fish with a firm texture and clean taste – much like how Hokkaido's cold waters create delicious seafood. Unlike

mass-produced Atlantic salmon and rainbow trout, our production is **niche and artisanal**, focusing on quality over quantity, making it an **exclusive product**. We believe this could be the next big thing in the Japanese seafood market.

Black Sea salmon (*Salmo labrax*), also known as Black Sea trout, offers a **high-quality nutritional profile** comparable to premium salmonids like Atlantic salmon and rainbow trout. Its fillets are rich in protein and omega-3 fatty acids, with moderate fat content, making them appealing to health-conscious consumers. Black Sea salmon fillet contains about **17–18% crude protein** by weight, comparable to Atlantic salmon (~20%) and rainbow trout (~18–19%). In feeding trials, carotenoid-supplemented Black Sea salmon fillets achieved **elevated indispensable amino acid scores**, classifying them as an “**excellent**” **protein source** for human nutrition. Black Sea salmon is relatively lean yet provides beneficial fats. Fillets average **~6% fat** content, lower than typical farmed Atlantic salmon (~12–15% fat) and similar to rainbow trout (~5–7% fat). Importantly, a large portion of this fat is **heart-healthy omega-3 fatty acids**. Omega-3s make up ~30% of the total fatty acids in Black Sea salmon, with EPA around 5.1% and DHA 1.4% of fillet fat. This translates to roughly **350–400 mg of EPA+DHA per 100 g** of fillet, meaning a modest serving (~64 g) can meet minimum daily omega-3 requirements. Such omega-3 levels rival those of Atlantic salmon, contributing to cardiovascular benefits and brain health.

To relieve pressure on wild stocks, Turkey's Central Fisheries Research Institute (SUMAE) initiated the first Black Sea salmon cultivation in **1998**. After **24 years of selective breeding**,



a *seventh-generation (F7) domesticated broodstock* was achieved by 2022. The **multi-generation breeding program** focused on traits like growth rate, late maturation, and adaptability, ensuring that farmed Black Sea salmon thrive without replenishment from wild gene pools. Through careful selection and use of local ecotypes, the Black Sea salmon culture line has achieved **remarkable adaptation to the region's environments**. The fish exhibit strong growth and feed conversion ratios around 1.0–1.3, on par with other salmonids. The success of these F5–F7 generation fish in culture demonstrates **long-term viability**, with no need to harvest wild juveniles – a fully sustainable culture cycle.

Farming an endemic species like Black Sea salmon carries ecological advantages. Being **native**, escaped fish pose little invasive risk and can integrate with local ecosystems if they enter rivers, unlike non-native species. Furthermore, this species evolved in the Black Sea watershed, so its cultivation in sea cages has minimal ecological surprise; the fish handle seasonal temperature changes and local pathogens similarly to wild counterparts. This resilience reduces disease outbreaks and the need for intensive chemical interventions.

We have collaborated with the Central Fisheries Research Institute for decades and have supported their Research & Development projects on the restoration of natural historic Black Sea Salmon populations, the protection of the Black Sea ecosystem and the optimization of the species for aquaculture production. We are also in talks with the institute and Skretting Turkey to launch mass production of feed optimized for the welfare, growth-efficiency, flesh coloration and sustainable production of the species.

## Supply Capacity



Our production practices are in line with Turkish regulations, however we do not currently hold any international certificates. But we have started working on acquiring ASC and GLOBALG.A.P. Certifications. We do not currently run a processing facility but we work with several EU-approved facilities, and are in talks for acquiring a plot in one of multiple locations. We have experience in certified organic trout farming in the past. We are

considering returning to fully organic and sustainable farming especially as we expand our Black Sea Salmon production. We want to underline that we are willing to adopt production practices that meet all of your requirements. Our currently active facilities in the Black Sea and local dams where large fish can be grown have a maximum annual capacity of **3,985 tonnes** in total, with an added **4000 tonnes** in the planning phase. Our land-based hatcheries where eggs, fry and portion sized fish can be produced have a total annual capacity of **565 tonnes**, with an added **1500 tonnes** in the planning phase.

Product	Company	Location	Medium	Status	Max. Annual Capacity (Tonnes)
Eggs, Fry & Trout	Arde-Som	Çamlıhemşin	River Culture	Active	300
	Arde-Som	Fındıklı	River Culture	Active	25
	Ayder-Som	Aşağıdurak	River Culture	Active	100
	Arde-Som	Tunca	River Culture	Active	40
	Ayder Yem	Ardahan	River Culture	Planned	1500
	Ala-Som	Çamlıhemşin	River Culture	Active	20
	Ala-Som	Çamlıhemşin	River Culture	Active	80
Salmon Size	Arde-Som	Borçka	Dam/Lake	Active	500
	Arde-Som	Sinop	Black Sea	Planned	4000
	Arde-Som	Deriner	Dam/Lake	Active	500
	Arde-Som	Yomra	Black Sea	Active	895
	Ayder-Som	Borçka	Dam/Lake	Active	500
	Ayder-Som	Deriner	Dam/Lake	Active	500
	Ayder Yem	Borçka	Dam/Lake	Active	500
	Yavuz Sak	Deriner	Dam/Lake	Active	500



Our operation (one of the leading producers) currently stocks **40,000 Black Sea salmon juveniles**, each about **0.2 kg** at present. These fish will be transferred to sea cages and are on track to reach an average market weight of **~2.5 kg by June 2026**. This cohort will yield roughly **100 metric tons** of harvest.

Additionally, we have **350,000 fry** in the nursery pipeline (recently hatched and smoltifying), which are scheduled for on-growing. By **June 2027**, these fish are projected to attain **~2.7 kg** mean weight, contributing an estimated **945 tons** of product. Together, these two production cycles position us to supply over **1,000 tons of Black Sea salmon** to the market by 2027. We are scaling up production infrastructure to meet growing demand. With the proven success of hatchery broodstock and support from research institutions, our company plans to **expand capacity to ~2,000 tonnes annually in the coming years**.

## Marketing Potential

With our samples, we want to showcase the culinary versatility and commercialization potential of our product.

**1. “Çiroz” Marinated Trout: A Mediterranean-Japanese fusion gourmet delicacy** – in our preparation, the trout is first salted and cured, then boiled, then lightly seasoned with balsamic vinegar and soy sauce, slow-baked, and finally marinated in olive oil with dill and pickled cucumbers. This artisanal preparation results in firm, satisfying bites with a strong umami flavor and delicate herbal notes. The product could be retailed in glass jars or tin cans, targeting high-end consumers with its artisanal and cultural marketing points and premium packaging.

**2. Salted & Dried Trout: A Regional Tradition** – This is our recreation of the traditional preparation by regional Laz fishermen of excess catch, reminiscent of Japanese *himono*. The trout is salted and cured, then slow-dried over low heat, resulting in a high-protein snack with a concentrated flavor and chewy texture. The product could be retailed in small vacuum-sealed packs, in bento packages and as filling in ready-to-eat onigiri balls targeting health-conscious and on-the-go consumers, as well as a premium addition for ramen and hot pot preparations.

In five years, we hope to see Black Sea Salmon widely appreciated in Japan, perhaps even with co-branded products in stores – a true success story of Turkey-Japan partnership. *What would you like to see from us as a partner if we are to enter the Japanese market successfully together?*

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