CAVIAR THE GOLD IN YOUR SPOONA
review on caviar

Sagarika Mandal[1] Dr. Saheli Ghosal[1] Indrajit karmakar[1] Krishnendu Biswas[2] Anapurba kanjilal[1*]

*Corresponding Author Email Id: kaprofessional07@gmail.com [1]Department of Food and Nutrition, School of Allied Health Sciences, SwamiVivekananda University, Barrackpore, West Bengal, Kolkata 700121

Abstract

Caviar is the unhatched roe of certain species of sturgeon and is used as an appetiser around the world. Caviar is famous for a number of reasons, most notably its exorbitant cost and its salty, nutty, and luscious flavour.Over the past 30 years, natural sturgeon populations have declined dramatically, and a rising demand for caviar has prompted the development of sturgeon farming for the production of caviar.Caviar passes through a lengthy procedure from fish to plate. Beluga, Sterlet, Kaluga hybrid, Ossetra, Siberian sturgeon, and Sevruga are the most popular forms of caviar produced by sturgeon species indigenous to the Caspian Sea.Premium caviar is extremely perishable.Typically sold in vacuum-sealed containers, premium caviar lasts 2-4 weeks unopened.caviar has always been a "meal of the privileged," and appropriately so. Pearl-sized pearls erupt in the mouth and taste fishy. Yet, caviar was previously a luxury. Historically, Russian fishermen ate caviar. Caviar on top of hot, cooked potatoes was a staple. Russian fishermen call caviar "roe".It has abundant usage in the culinary world. Including health benefits selenium is abundant in caviar and acts in tandem alongside vitamin E to prevent free radical damage to cells.Caviar's omega-3 fatty acids improve mood and cognition, making it a populartreatment for depression and bipolar illness.

Keywords:- Caviar, sturgeon species, roe, health benefits, depression, culinary uses

Introduction

Caviar has already been considered a luxury food for ages. The Persian term "khav-yar," translated literally as "cake of strength" as well as "cake of power," is where the English word "caviar" gets its start.Caviar, made from fish eggs retrieved by the Persians from the Kura River, was thought to have curative properties. The practice of salting fish roe as human food can be traced back to ancient China, when it was commonly used to preserve carp eggs for later use (Jiang, L. (2017)).Caviar is harvested from specific species of sturgeon. The United States had an abundance of sturgeon mostly in the 19th century, which meant that caviar was not hard to get by.Supply of migratory sturgeon has decreased as a result of both demand and overfishing. Sturgeon can be found in great numbers within the Caspian Sea, the North Atlantic Ocean off the coast of North America, and the largest streams and lakes of Europe (Mashroofeh et al. 2015). The majority of caviar is produced in Russia and Iran.The rights and protections for caviar among the elite of both Europe and Russia with in middle of the 1800s contributed to the spread of its appeal across the globe.The finest and most coveted caviar comes from "imperial" and Golden Caviar, which is produced from the egg of the Starlet sturgeon (Palatnikov et aL. 2010). Across Europe and well beyond, caviar gained a reputation for excellence as a gourmet delicacy.In the current market, a kilogramme of caviar can easily be sold for $35,000 (Newman et al. 2019). While caviar was originally only available to the wealthy, improved agricultural technologies have made it even more affordable these days (Roberts et al. 2019).

From Row To Ruin

After the fall of the Soviet Union, wealthy people in Europe and North America developed a taste for Caspian Sea caviar, leading to the development of a cartel and a significant increase in price (*van Uhm,. 2018*).Unfortunately, their numbers drastically dropped due to unchecked commercialization (overfishing, disease, and illegal poaching). To prevent future misuse, in 1998 Convention on International Trade in Endangered Species of Wild Fauna and Flora imposed export limitations upon 25 sturgeon varieties.

Industrialization And Indulgence

In the art world of 1920s Paris, caviar was a symbol of excess and celebration. Immigrants from Petrosia and Russia contributed to its rise to prominence in high-end eateries and social events. **The Modern Era**

Formerly enjoyed only by the privileged, Caspian Sea caviar has seen its sturgeon population drastically reduced due to overfishing and pollution.Exotic caviar trading was banned in 2006 until 2007 when CITES lifted the prohibition due to increased surveillance plus conservation efforts.Most caviar needs to come from farms for sustainability reasons. Despite the growing popularity of caviar, efforts continue to be made to protect migratory sturgeon habitats and promote environmentally friendly production practices (*Parisi et al. 2014).*

Slavic hunters in Russia caught their first sturgeon in the eighth century, therefore caviar boasts deep roots in the country. Fishing for sturgeon, including both rivers or on large-scale farms, quickly is now an important element of the Russian economy (*Ruban et al. 2011*).Unfortunately, disagreements and indeed the eventual demise of the sector were the results of

scarce resources and worldwide competitiveness. The American entrepreneur Henry Schact became wealthy by shipping sturgeon eggs to the dwindling European market. While Russia did import additional caviar than it exported around the beginning of the twentieth century, domestic production quickly recovered.

Different types

There are a total of 27 species of sturgeons .The main caviar producing species of sturgeon are

:Beluga caviar, Osetra caviar(Russian caviar), Sevruga caviar, Kaluga caviar, Sterlet caviar, American sturgeon caviar (White sturgeon), Siberian sturgeon caviar, Persian caviar(Iranian caviar), Shovelnose sturgeon caviar.

The Beluga sturgeon, a 15-foot, 3,000-pound creature, produces the best caviar. Russia, Azerbaijan, Kazakhstan, and Turkmenistan border their native Caspian Sea. Rich, pearly grey to deep purple caviar has no fishy odour (*Antognazza et al. 2021*).

The diamond and Danube sturgeons are members of the Acipenser family. Chefs and culinary experts praise Osetra (*Zhongming et al. 2020*), a mild and buttery sturgeon caviar, and FAO data shows that Iran's caviar output steadily climbed during the 1980s to 200-300 metric tonnes,95% of which was exported.

Sevruga Sturgeons (Acipenser Stellatus) are rare and endangered. Sevruga caviar is still pricey, although only Beluga and Ossetra are more expensive. Size and colour classify Sevruga caviar (*Jayamanne et al. 2018*). Larger, lighter grains make caviar better. Sterlet (Acipenser Ruthenus) caviar is often mislabeled and sold as Sevruga (Acipenser Stellatus) due to it being so rare. Despite being illegal, mislabeling is common.

The Amur basin's kaluga (Huso dauricus) may be a big, predatory sturgeon. Kalugas capsize trade ships and drown sailors, but there is no proof that they attack humans (*Jiang et al. 2018*).Kaluga Sturgeon spawn in deeper Amur River gravel or pebbles (*Safronov et al. 2021*). Spawning is best in May and July. Adults reproduce repeatedly. Men and females have separate 3-4-year spawning cycles. One tablespoon of caviar contains 30 milligrammes of potassium, 1085 milligrammes of omega-3 fatty acids, 37 international units of vitamin D, 3.5 micrograms of vitamin B12, and various levels of calcium, phosphorus, selenium, iron, and magnesium.

The sterlet (Acipenser ruthenus), the most famous sturgeon, is small and widespread. Sterlets live 22–25 years (*Du et al. 2020*). Women develop sexually between 4 and 12 years old, whereas children develop between 3 and 7. Spawning occurs between mid-April and early June. Females can lay 15,000–44,000 eggs at 12–17 degrees Celsius (54–63 degrees Fahrenheit). Sevruga eggs can be 1.2–2 mm, while sterlet eggs are 1 mm. Sterlet caviar is buttery in taste and useful in culinary terms.

Acipenser transmontanus, the white sturgeon, is an Osteichthyes Acipenseridae (*Fiske et al. 2019*).A. transmontanus grows from 2.1 to 6.1 m (7.3 to 20 ft) (6.9 ft). The oldest known species was 104 and 816 kg (1,799 pounds). Male spawning cycles last one to two years, females two to four. Males compete to hatch a female's eggs. Males procreate once a year to two, females each two to four. These fish breed communally.It fertilises a female's eggs. Incubation takes 3– 13 days. 14–16 °C (57–61 °F) is good; 8–2 (46–36 °F) is fatal.

Siberian sturgeon are of average 65 kg, however river systems vary. Siberian sturgeon live to 60 and develop sexually later (males at 11–24 years, females at 20–28 years) (*Falahatkar, B. 2018*). CITES considers the Siberian Sturgeon (Acipenser Baerii) endangered. Population fell 50% to 80% in 60 years. Males achieve sexual maturity at 9–19, females at 11–22, depending on water temperature. Both sexes reproduce every 2–3 years.

Caviar from American Hackleback sturgeon, known for its robust, nutty flavour, has grown in popularity among gourmets. With only a creamy flavour and a smooth consistency that explodes in mouth (*Lo et al. 2011*). Hackleback caviar features smaller roe than Sevruga caviar, ranging in colour from dark grey to jet black, and a smooth and glossy envelope. The Hackleback sturgeon's characteristic shovel-like snout and rows of bony scutes along its flanks allow it to dig into river mud in quest of crustaceans. Due to its short maturities and absence of far-reaching migrations during spawning, it is among the few wild fish species open to marine fisheries in the United States.

Processing of Caviar

It's well-known that caviar is good for you. It's a great source of protein, healthy fats, and the mineral selenium. Caviar has enough vitamin B12 for an adult in just one teaspoon (Sandra Young et al. 2018) Overharvesting in the wild has led to an increase in interest in caviar that is grown and harvested commercially. Aquaculture is used in many parts of the world to cultivate sturgeon for the production of caviar.(Tavakoli et al. 2021).Most brands of caviar require a three-month ageing period. Caviar's delicate aroma and complex flavour can only be achieved through careful ageing. Extended periods of storage are sometimes employed (Baker et al. 2014).Caviar is a delicate delicacy that must be kept in the fridge. Two to four weeks of refrigeration is required for fresh caviar. When caviar is pasteurised, its storage life is prolonged and it can be kept for up to a year without refrigeration (Farag et al. 2021).It's common knowledge that pasteurisation lowers quality in terms of both texture and flavour, but it does increase food safety. In addition to salting, caviar can also be preserved by freezing or drying to extend its storage life (Asl et al. 2021).

Storage of caviar

The freshness of premium caviar declines rapidly after being opened. Unopened, superior caviar typically has a shelf life of two to four weeks when stored in a vacuum (Kelly et al. 2007).There is a three-day lifespan after opening. Harmful bacteria thrive in the air, therefore it's essential to chill it before serving. Caviar has a short shelf life of only two hours when not refrigerated and only one hour when served at temperatures of 90 degrees Fahrenheit or above (Applebaum et al. 2012)It needs to be stored in a cool place, between -1 and +4 degrees Celsius (26 and 39 Fahrenheit). Caviar should be stored over a basin of crushed ice in its original container (Saffron et al). Remove the caviar from the fridge no less than ten to fifteen minutes prior to serving. Keep unopened jars of fresh caviar (not pasteurised) in the fridge for up to four weeks (Lund et al. 2013).

Health benefits of caviar

The omega-3 fatty acids, selenium, vitamins B12 and D, and numerous other minerals and vitamins are abundant in it. Caviar also has other health benefits, such as being packed with antioxidants plus antidepressants and helping to regulate

metabolism and virility(*McMillan et al. 2018*).Omega-3 fatty acids in 1 g of caviar daily boost health. These acids promote artery health and lower the risk of stroke, heart disease, and clotting. Caviar contains selenium and vitamin E, which protect cells from free radicals.Health benefits from this essential trace mineral include a boosted immunity and better memory. Vitamins and minerals can be found in abundance in caviars (*Sicuro, B. 2019)*. In addition to aiding in red blood cell production, vitamin B12 also ensures that fats do their jobs.This foodstuff contains vitamin C, vitamin A, zinc, calcium, magnesium, and iron. Studies reveal caviars help erectile dysfunction. Caviars' antioxidants help cure skin damage and prevent neurological illnesses like Parkinson's. Caviars' high pantothenol content converts into coenzyme A and 4-phosphopantetheine, which boost metabolism. Caviars heal stress due to their cholinergic content.

Costing

Caviar is one of the world's most costly gourmet foods. Supply, demand, and scarcity explain caviar's high price (*Atkins, J., & Atkins, B. 2018)*. Unlike chickens, sturgeons develop and lay eggs over 20 years.In most cases, the following five elements contribute to the final cost of a tin of caviar: availability, Roe production time (maturation), Harvesting and manufacturing(process) , How good the salted roe is and (grading) the dynamics of supply and demand (sourcing & popularity).

Importance of caviar in culinary terms

Using caviar in the kitchen could open up a lot of possibilities. Caviar can be used as a garnish for meat, fish, and potatoes in addition to being presented as an appetiser with bread or miniature toasts (*Hudgins, S. 2018)*. Hard-boiled eggs, scallions, cream cheese and crème fraîche, and lemon wedges are typical accompaniments when served as an appetiser.

Conclusion

Specified, precise labelling, proven supply, reliability in the region of origin, quality management and identification of the species, price stability, and widespread consumer acceptance of the many caviar products may be the most crucial economic factors driving the market's expansion.Recent decades have seen dramatic declines in sturgeon numbers due to causes like the overhunting the native sturgeon habitats for caviar production, significant river fragmentation, and the degradation of habitat. Because of the importance of protecting these rare and alien species, the International Union for the Conservation of Nature (IUCN) added all sturgeon species used for commercial purposes around the world to Annex II of the CITES regulations in 1997.As the IUCN reassessed the Acipenseriformes in 2009 in Wuhan, they discovered that nearly all species' plights had worsened, with 44% of them classified as even more vulnerable than in the 1996 analysis and an approximated 85% of sturgeon species in danger.

Future Scope

Because of its significant health advantages in areas such as cardiovascular disease, colorectal cancer, chronic inflammation, intellectual disability, and immunomodulation, fish caviar has gained widespread recognition as a high-value food commodity worthy of further study (Faraget al. 2021).

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