Florida pompano (*Trachinotus carolinus*)

Florida pompano (*Trachinotus carolinus*) is one of the most expensive marine warm water food fish native to the western Atlantic Ocean, ranging from Massachusetts to Brazil, including the Gulf of Mexico. This species contains several characteristics that make it a viable candidate for commercial aquaculture, such as high market prices, tolerance to a wide range of salinities (0-50 g/L), established captive larval and broodstock protocols, rapid growth rate, and acceptance of pelleted feeds that are high in plant-based proteins and low in animal protein sources (Rossi Jr and Davis 2012). Florida pompano is a relatively new species in aquaculture, with global production estimated at between 2,000-2,500 tonnes per year (FAO, 2021). Most of the production comes from the United States, specifically from Florida.

The production cycle of Florida pompano begins with the selection of healthy broodstock raised in controlled environments like broodstock tanks or ponds. Broodstock typically reach sexual maturity at 1 to 2 years of age. Spawning can occur naturally or be induced through hormonal treatments. The resulting larvae are reared in specialized larval rearing tanks with controlled water quality parameters, including salinity and temperature. As the larvae grow, they are transitioned to larger tanks or raceways and fed a diet of live prey such as rotifers, and *Artemia* or specialized manufactured larval feeds. When they reach a size of 2 to 4 inches in length, they are transferred to grow-out systems that may include recirculating aquaculture systems (RAS), floating cages, or earthen ponds. Stocking densities in RAS can reach 40 kg/m³, while in net pen systems, densities typically range from 5 to 15 kg/m³ (Crocker & Boyd, 2014).

Florida pompano are carnivorous and require high-protein diets. Feeds for fingerlings generally contain 50% protein and 12% lipid, while grow-out feeds may have 40% protein and 18% lipid (Li et al., 2017). The species is resilient to varying environmental conditions, tolerating dissolved oxygen levels as low as 4 mg/L and salinities from 0 to 50 ppt. However, cold temperatures below 20°C can cause stress, limiting their potential for outdoor farming in cooler climates (Weirich et al., 2021). Optimal temperatures for growth are between 25°C and 30°C, with juveniles capable of thriving at temperatures as high as 34°C.

Market demand for Florida pompano is high due to its premium market status and excellent taste. Harvest sizes vary based on market demand, with fish typically weighing between 450 and 900 grams, although individuals can grow as large as 2 kilograms. Prices for Florida pompano can reach as high as USD $15 to $20 per pound, reflecting its high demand and premium market status (Florida Department of Agriculture and Consumer Services, 2021).

Florida pompano farming is still a relatively new industry, but it is gaining traction, particularly in RAS and net pen systems. Careful management of water quality and feeding practices is critical to successful production. As demand continues to grow for this high-value species, it remains an attractive option for aquaculture operations.

References:

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