

What is Aquaculture

Aquaculture is fish farming. It is the art and science of controlled rearing of fish in ponds, farms and in some instances natural water bodies from hatchlings to matured size. Unlike fish that grow in the wild water bodies, without human interference, in aquaculture, activities such as feeding, fertilization, stocking, reproduction and harvesting are controlled.

Aquaculture has been defined by the Japanese Resource Council, Science and Technology Agency as follow:

Aquaculture is an industrial process of raising aquatic organisms up to final commercial production within properly partitioned aquatic areas, controlling the environmental factors and administering the life history of the organism positively and it has to be considered as an independent industry from the fisheries hitherto.

Aquaculture is organised production of a crop in the aquatic medium. The crop may be that of an animal or a plant. Naturally, the organism cultured has to be ordained by nature as aquatic.

Examples are:

Finfish: Tilapia, carp, trout, milkfish, bait minnow, yellow tail, mullet, cat fish.

Shellfish: Shrimps, prawns, oysters, mussels, pearl oyster for cultured pearls (eg. Japanese pearl oyster, *Pinctada fucata*).

Plants: Water chestnut (*Trapa natans*). Red alga of Japan, "Norie" (*Porphyra*). Red alga of Philippines & U.S.A. (*Eucheuma*) Brown alga of Japan, "Wakame" (*Undaria*).

1. Food supply

Definition of food in the aquatic culture environment: Food in the aquatic culture system refers to the organisms which serve as food for cultured fish.

Examples of food: Major are the plankton, made up of 1) Phytoplankton (floating microscopic, unicellular plants). 2) Zooplankton (floating, microscopic unicellular animals).

3) **Others are:** multi-cellular plants like floating and submerged plants and multi-cellular animals like insect larvae, insects and crustaceans.

Supply

This is basically by the introduction of lime and fertilizer into the rearing pond and/tanks.

This boosts the growth of the unicellular green plants (green algae) upon which the endemic unicellular animals and other phytophagous feeders feed.

For the culture of a desired food organism, the culture medium should be inoculated with the desired organism.

2. Selection of culture species.

Criteria for selection

1. Ability to accept artificial feed
2. Ability to breed in captivity
3. High growth rate
4. Should be marketable
5. Must be hardy

3. Introduction of exotic species and implications.

Definition of exotic species. They are species that are not indigenous to the local environment.

Some examples of exotic species that were introduced into the Nigerian culture environment are: The Chinese carp, *Cyprinus carpio*, mirror carp, koi carp, Indian carps like Mrigal (*Cirrhinus mrigala*), *Catla catla* and rohu (*Labeo rohita*).

Conditions under which exotic species can be introduced

1. Must be able to occupy a niche in the environment without upsetting the environment.
2. It must be able to coexist favourably with other endemic species.
3. Must be able to reproduce in the new environment
4. Must be able to adapt to the physical and chemical parameters of the new culture system.
5. Must not be a vector to any parasite
6. Must have been quarantined before introduction..