

I. Biology

- Abalone belongs to Phylum Mollusca, Class Gastropoda, Family Haliotidae
- Lives on the underside of coralline rocks during the day but comes out to feed at night
- They are found in many islands in the
- Atlanta, Pacific and Indian Oceans
- Four species of abalone is found in the
- Philippines (*H. asinina*, *H. varia*, *H. ovina*, *H. glabra*)
- H. asinina* is the major abalone species in the Philippines
- Abalones are dioecious (separate sexes) and they are broadcast spawners
- Gonad maturation is related to photoperiod and temperature
- H. asinina* attain first sexual maturity at 35-40mm shell length or approximately 10-12 months in captivity
- Mature males have creamy-white gonad while females have dark –green gonad.



- H. asinina* female can produce 644,444-600,000 eggs in one spawning

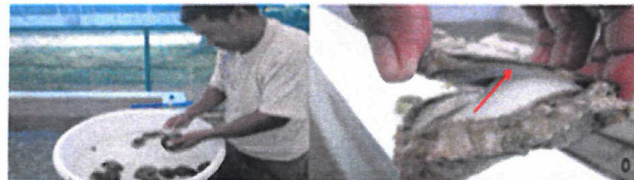
II. Hatchery Operation

A. Preparation of Spawning tanks

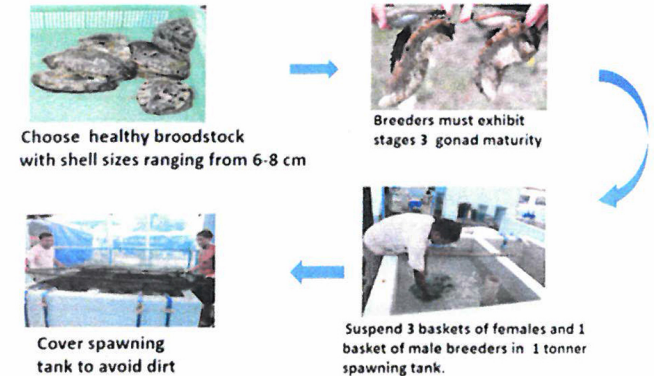


- Prepare spawning tank and fill up tanks with 1 or 5 μ bag-filtered seawater.
- Siphon dirt and excreta at least 6-7hrs before the expected spawning time which occurs usually between 1:30 and 2:30 am.
- Allow a slow inflow of filtered seawater, i.e. 3-5 liter per min to maintain the freshness of the water in the spawning tanks.

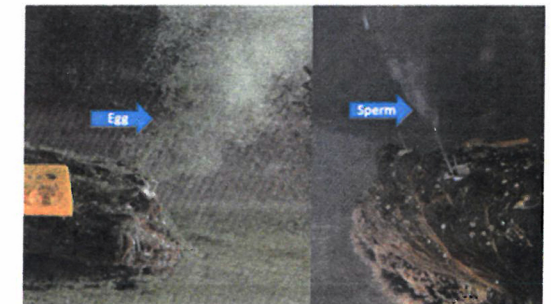
B. Selection of mature broodstock



STAGES	CRITERIA IN OBSERVATION BY NAKED EYE
0	No gonad developed
1	Pre-mature gonad covering a little portion of the hepatopancreas
2	Partially matured gonad covering about 25% of the hepatopancreas
3	Fully matured gonad covering about 50% of the hepatopancreas



C. Spawning



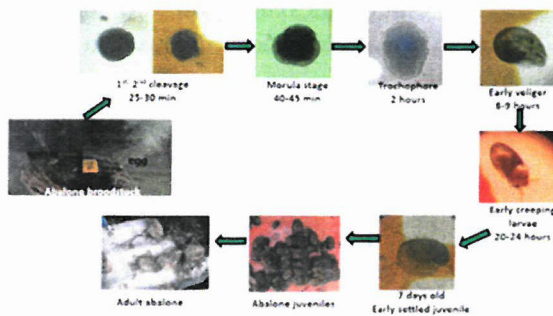
- Spawn during full moon and new moon phase usually between 1-2 o'clock in the morning.
- Males release sperm earlier and stimulate the females to release eggs.
- Spawning can be detected by a cloudy or turbid water condition and fine bubbles on the surface.

d. Egg incubation

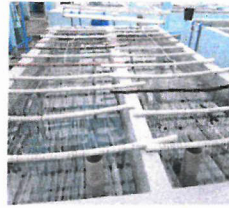


- Stocking of larvae in incubation tank/chamber
- Incubation of larvae in incubation tank/chamber
- Harvest larvae after 5 hours of incubation and stock in tanks

Life Cycle of *Haliotis asinina*



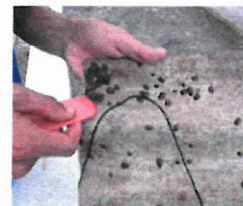
e. Stocking and Harvesting of Abalone Juveniles



- Suspend at least 80 pcs settlement plates in a clean settlement tanks with disinfected seawater.
- Introduced concentrated diatoms on settlement plates and provide moderate aeration.
- Stock larvae at density of 250,000-300,000 per 1-ton tank.
- On the 3rd day from stocking, add diatom slurry concentrate into the settlement tank to provide sufficient micro-algal food for the newly-settled postlarvae.



- Diatoms (*Navicula ramossisima*) slurry for early abalone larvae



- After 90 days, early abalone juveniles with shell length of 3-10 mm are now ready for harvest.

For more information please call or write to:

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Culture of Abalone (*Haliotis asinina*)



- Abalones are single-shelled herbivorous marine gastropods inhabiting the coastal reef zone.
- They are locally known as “lapas”, sobrasobra or kapinan because of their large foot muscle not completely covered by shell.
- In the Philippines, they are harvested for export and consumption.
- One of the sought after seafood especially in Japan and China.
- Due to continuous harvesting and destruction of abalone habitat, stocks are now declining.
- Breeding and culture of abalone in the hatchery can help through stock enhancement .