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Milkfish and shrimp fry grounds and seasons

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MILKFISH AND SHRIMP FRY GROUNDS AND SEASONS

MILKFISH FRY

Milkfish fry occur from India to Tahiti and from southern Japan to Malaysia. They have not been reported outside this range, probably due to non-use of the appropriate gear at the right place and time. At present, only the Philippines, Indonesia, and Taiwan collect milkfish fry for a commercial culture, while several countries collect fry and fingerlings for experimental culture (e.g., Sri Lanka, Kiribati, Fiji, India).

Milkfish fry grounds in the Philippines have been well surveyed. Fry grounds are located throughout the country although they are more prevalent on the western and southern coasts of islands than on eastern and northern shores. The milkfish fry grounds are usually flat sandy beaches, river mouths, and tidal creeks and mangrove swamps.

Milkfish fry are available throughout the year at one location or another, but individual fry grounds experience marked peaks and slack periods at certain times of the year. The season begins earliest in Mindanao (Cotabato-Zamboanga) where it peaks in May. After a decline in catch through August, a smaller peak occurs in September to November. In the Visayas (Cebu, Panay, Negros), the season begins in March-April, peaking in May, and lasts till November-December, with a second peak in October in some fry grounds and none in others. In northern Luzon (Ilocos, Cagayan, Pangasinan), the season starts in April and lasts till October with a peak in May-June.

The difference in the length of the milkfish fry season seems to be due to the latitudinal position of the fry grounds (Table 1).

The Philippines covers from 5 to 21°N latitudes. Fry appear early (January-February) in the south, and later (March-April) in the north. They disappear earlier in the north (August-October) than in the south (December-January). Moreover, in the south at latitudes about 5-11°N, there are two peaks, of which the former is higher; in the north 12-21°N, there is only one peak. In western Panay (Antique Province), the two towns of Pandan and Hamtik, 130 km apart on the same coast have different fry seasons. In Pandan, milkfish fry start to appear at the end of March and disappear early in December, with a peak in May. In Hamtik, fry appear in the middle of March and disappear in the middle of December with peaks in May and October:

Table 1. Milkfish fry collection season at various localities from north to south in the Philippines (After Kumagai 1984).

Latitude N	Localities	Collection season	Peak
17.5°	Santa Ana	April to October	June
	Badoc	April to October	(July) August
15.0°	San Fernando	April to July	May
	Lingayen	(March) April to July	June
12.5°	Batangas	(March) April to July	May
	Naujan	April to August	May
	Tabaco	April to November	May
10.0°	Culasi	April to November	June
	Hamtic	March to November	May & October
	Cadiz	March to November	May & October
7.5°	Narra	March to December	May & October
	Sipalay	March to December	May & October
	Naawan	(February) March to December	May & November
7.5°	Malita	February to December	April & October
	Zamboanga	(January) February to December	(March) April & October (November)
	Glan	Throughout the year	(March) April & November

SHRIMP FRY

Shrimp fry are often collected together with milkfish fry from shore waters as well as from inland waters where the latter can hardly be caught. Shrimp fry are present all year round with two peak seasons a year: June-July and October-November. However, there are differences among species:

Species

<i>P. monodon</i>	July-August; November-December
<i>P. semisulcatus</i>	February-March; November-December
<i>P. merguensis/P. indicus</i>	June-July; October-November
<i>P. japonicus</i>	March-April; September-November

Seasonal occurrence seems to depend primarily on the prevailing monsoon and secondarily on the geographic location (Table 2). Shrimp fry seem to be carried by wind-generated currents. In addition, the collecting activity depends on the demand, e.g., shrimp culturists do not buy shrimp fry immediately prior to the dry season because growth of shrimps in ponds is slow at high salinities.

In the past 10 years, several shrimp hatcheries have sprung up in the Philippines to supply the great demand for *P. monodon* and *P. merguensis-P. indicus* fry. The demand for wild fry nevertheless remains undiminished due to the expansion of shrimp culture operations supplying the export market.

Table 2. Local and seasonal occurrences of *P. monodon* fry, based on interviews with fry collectors in the Philippines (Motoh 1981).

Place	Collection period	Peak season
LUZON		
Dalahican	Southwest monsoon	August
Atimonan	Northwest monsoon	February
Calauag	Year round	Northeast monsoon (February to June except March and April)
VISAYAS		
Batan	Year round	November to February
Barotac Nuevo	June to October	August
Villa, Tigbauan	May to December	October to November
Bolanon, Danao	March to September	May to June
Tabao, Caingin	Northwest (December to February) & Southwest (June to November)	August-October
Aguisan	Year round	November
Bocana, Tabla	July to December	August to September November
Sipalay	March to June, October to December	June, November
Malabugas	April to December	May to June
Polo	March to June, October- December	June, November
MINDANAO		
Dapitan	Year round	September to October
Dipolog	Year round	September to November
Ozamis	Northeast & Southwest monsoon	July, November to December
Zamboanga	September-November	-
Tagum	Northeast & Southeast monsoon	April to May, October to November
Matina, Aplaya	Northeast monsoon	April to May

Source : Bagarinao TU, Solis NB, Villaver WR, Villaluz AC. 1986. Important Fish and Shrimp Fry in Philippine Coastal Waters: Identification, Collection, and Handling. Extension Manual No. 10, SEAFDEC Aquaculture Department, Tigbauan, Iloilo.