Embryo biometry of three broadcast spawning euphausiid species applied to identify cross-shelf and seasonal spawning patterns along the Oregon coast

Jaime Gómez Gutiérrez, W.T. Peterson & C.B. Miller

Morphology and biometry of eggs spawned by females of Euphausia pacifica, Thysanoessa spinifera and Thysanoessa inspinata were compared with eggs collected along the Oregon coast to identify the eggs in preserved samples to species level to infer species spawning areas and intensity of spawning events in the field. The average chorion diameter (CD) and embryo diameter (ED) were significantly larger for E. pacifica than for T. spinifera. Euphausia pacifica eggs usually have a significantly greater perivitelline space, and the chorion is firm, transparent, smooth, elastic and completely spherical, while T. spinifera embryos are not completely spherical and typically are soft and sticky with particles attached. Eggs of the twitching stage embryo of T. spinifera have an elliptical shape, while those of E. pacifica are spherical to very slightly elliptical even after hatching as nauplii. The CD and ED of T. inspinata eggs were smaller than those of the other two species and they were transparent and spherical with a non-sticky chorion.

Biweekly timeseries of eggs (identified to species), of nauplii + metanauplii and of ripe females collected along the Newport hydrographic line (448400N) during 1970–1972 showed that E. pacifica and T. spinifera spawn mainly 40 km from the coast from March to October, but E. pacifica also spawns regularly at oceanic locations. A meta-analysis of the egg CD and ED values of 38 euphausiid species around the world indicates that these variables alone cannot be used to identify eggs to species, excepting specific regions where one or two broadcast spawners dominate the euphausiid assemblage.

Palabras clave: Thysanoessa spinifera, Euphausia pacifica, Oregon, embryo biometry, Spawning areas

Para obtener copia del documento contacta con el autor (jagomezg@ipn.mx) o con el personal de la biblioteca (bibliocicimar@ipn.mx).