Population dynamics, feeding ecology, and larval biology of the surf clam, *Donax hanleyanus*

Marko Hermann1, 2, Daniel Carstensen1, Jürgen Lauden1, Sigrid B. Schnack-Schiel1, Wolf E. Amr2, Pablo E. Penchaszadeh2

**Data collection**

In order to study the gametogenic cycle, recruitment patterns, growth, production, and mortality, monthly sampling has been carried out along the Argentine coast, in Santa Teresa (56°40’W, 36°32’S), Villa Gesell (56°58’W, 37°16’S) and Faro Querandi (57°07’W, 37°29’S). For experiments in aquaculture systems, *D. hanleyanus* has been collected from beaches south of Faro Querandi.

**Introduction**

Exposed intertidal sandy beaches are often dominated by bivalves of the family Donacidae, constituted by the genera *Donax*, *Egeria* and *Jinegari*. The surf clam *Donax hanleyanus*, also known as “berberecho”, can be found along the Atlantic coast of South America, from Rio de Janeiro (Brazil) to Punta Mogotes (northern Argentina). It has a maximum adult size of 42 mm and rarely lives for more than 4 yr.

**First results**

Monthly length-frequency distributions of *D. hanleyanus* show clearly differences in the cohort maximum as well as growth in the populations in Santa Teresa and Villa Gesell. Nutrition experiments in the hatchery showed that *D. hanleyanus* feeds prefer *Isochrysis gabagab*. Males of *D. hanleyanus* with 15 mm length spawned 14.7 billion active sperms per individual after stimulations with Sterol in the hatchery.

**Conclusions**

Monthly sampling will be continued to gain more accurate information of the population dynamics. For microgrowth analysis fluorescent stains (Alizarin, Calcine, Strontium chloride) will be used. In order to describe the larval biology, more spawning events have to be studied. First aquaculture experiments displayed that *D. hanleyanus* could be commercially cultivated and serve as a food resource in the future.
Population dynamics, feeding ecology, and larval biology of the surf clam, 
*Donax hanleyanus*

Marko Herrmann¹ ², Jürgen Laudien², Sigrid B. Schnack-Schiel², Wolf E. Arntz²


² Alfred-Wegener-Institute for Polar and Marine Research (AWI) Bremerhaven, Germany

email: Marko.Herrmann@gmx.de

Exposed intertidal sandy beaches are often dominated by bivalves of the family Donacidae (super family Tellinacea), constituted by the genera *Donax*, *Egeria* and *Iphigeni*. On a worldwide basis, Donacidae form by far the largest group inhabiting such highly dynamic environments. The surf clam *Donax hanleyanus*, also known as “berberecho”, can be found along the Atlantic coast of South America, from Rio de Janeiro (Brazil) to northern Argentina. Along the coast of the Buenos Aires Province (Argentina), *D. hanleyanus* is abundant from San Clemente to Punta Mogotes, south of Mar del Plata. The beaches represent the southernmost habitats of a *Donax* species in the south western Atlantic. *D. hanleyanus* has a maximum adult size of 4.2 mm and rarely lives for more than 4 yr. In order to study the gametogenic cycle, recruitment patterns, growth, production, and mortality, monthly sampling has been carried out in Santa Teresita, Villa Gesell and Faro Querandi. First results on growth based on cohort analysis are presented. For microgrowth analysis fluorescent stains (Alizarine, Calcein, Strontium chloride) are used. To estimate the economically optimal bivalve and food densities in aquaculture systems, nutrition experiments with the algaees *Isochrysis galbana*, *Chaetoceros sp.* and *Tetraselmis sp.* has been carried out. For the observation of the embryonic and larval development under controlled conditions, induction of spawning was necessary by thermal shocks and injection of Serotonin.