Along the Humboldt Current System, the anchoveta (Engraulis ringens) is distributed between 4oS and 42oS. Environmental conditions differ markedly both between spawning areas and seasonally. Hence, different reproductive tactics are expected in response to the environment. Here we used information from Daily Egg Production Method surveys to study latitudinal and interannual variability of the reproductive parameters in stocks of E. ringens from the northern (18° 20' to 26° 00'S) and southern (33° 00 to 41° 30'S) Chilean coast. The main goal was to investigate potential preferences for temperature and chlorophyll concentration in the spawning habitat and changes in the reproductive potential and egg size of anchoveta in response to the prevalent habitat conditions, mainly temperature. Temperature was not a relevant environmental variable to determine geographical position of the spawning areas in E. ringens. High chlorophyll-a concentration appears as the selected variable for spawning habitat. According to our results, the interannual changes in the body weight-fecundity relationship are related to the temperature of the environment, which affects the egg size. We postulate, therefore, that instead of searching for certain temperatures, anchoveta accommodate their offspring characteristics according to the prevalent environment (e.g., egg size, fecundity). The response of the reproductive system to temperature might be in the scale of spawning frequency, i.e., weeks.

Keywords
Spawning areas, egg production, fecundity, anchoveta.