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FULL ABSTRACT BOOK



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Hormonal analysis provides new insights on reproductive features in Antarctic notothenioids: a trial in *Lepidonotothen nudifrons*

Manuel Novillo^{1,2,3}, Mariano Elisio^{1,4,5}, Eugenia Moreira^{1,3,6}, Gustavo Macchi^{1,4,5}, Esteban Barrera-Oro^{1,2,3}
¹Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), CABA, Argentina, ²Museo Argentino de Ciencias Naturales Bernardino Rivadavia (MACN), CABA, Argentina, ³Instituto Antártico Argentino, San Martín, Argentina, ⁴Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP), Mar del Plata, Argentina, ⁵Instituto de Investigaciones Marinas y Costeras (IIMyC), Mar del Plata, Argentina, ⁶Laboratorio de Biología Funcional y Biotecnología (BIOLAB) - UNCPBA-CICBA - INBIOTEC-CONICET. Facultad de Agronomía, UNCPBA, Azul, Argentina

The knowledge of reproductive biology in notothenioids arises exclusively from macroscopic and histologic descriptions, without the complement of hormonal analysis. Our study provides for first time in *Lepidonotothen nudifrons* adult females, information on oocyte growth and change in testosterone and estradiol plasma levels throughout the ovarian growth. Sampling included near 100 specimens caught at Potter Cove (PC), South Shetland Islands (SSI), from November to late March of 2016-2018. Histological analysis confirmed the macroscopic characteristic of two distinct cohorts of oocytes: one leading clutch (Lc) of large orange vitellogenic oocytes, to be spawned in the upcoming reproductive season, and a second clutch of smaller whitish previtellogenic oocytes. In March, females (n=17) attained gonado-somatic index of 13-20% (16.73 ± 4.20), total fecundity of 2196-4652 oocytes/female (3209 ± 740) and Lc oocytes of 1.7-2.1 mm. The Lc oocytes growth was significantly associated with photoperiod, with no diameter variation until the summer solstice, when they began to grow linearly with an estimated rate of 0.01 mm/day. Testosterone and estradiol increased together with the oocyte growing throughout the analyzed seasons, with a higher rise rate during March. The significant plasma level increase of both sex steroids observed in March and the reproductive effort data suggest that: (1) specimens were at a late vitellogenesis stage just prior to the oocyte final maturation in March, and thus *L. nudifrons* spawning period might onset from this month at SSI; (2) PC is likely a spawning site for *L. nudifrons*, which reinforce the hypothesis that nearshore areas are spawning grounds for some notothenioids.