AN ENHANCED RECRUITMENT OF BLUE WHITING IN THE PORCUPINE BANK (NE ATLANTIC) DURING 2020 IN RESPONSE TO FAVOURABLE ENVIRONMENTAL CONDITIONS

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Abstract: A Spanish bottom trawl research survey was conducted between 2001 and 2020 in the Porcupine Bank to retrieve recruitment data. The survey was routinely carried out in September with the objective of assessing the fisheries in the area. The 2020 data showed the largest abundance of age-0 blue whiting (*Micromesistius poutassou*), with almost twice as much than in the highest previous record (2004). Thus, this study focused on determining the environmental drivers that could explain that anomalously high abundance through their impact on the blue whiting eggs and larvae survival. For this purpose, satellite SST and chlorophyll were analyzed during the spawning season (March-April), along with reanalysis wind, salinity, and ocean currents data. Our results showed particularly low wind conditions during March and April 2020, which triggered the onset of a stable Taylor Column circulation above the Porcupine Bank, helping not only the accumulation of phytoplankton biomass, which promoted secondary productivity, but also larval retention. This was corroborated by a quantile regression fit applied on the blue whiting recruitment data (September), which showed significant positive (negative) correlations with the chlorophyll concentration (wind mixing index) during the spawning season.

Key words: Blue whiting, recruitment, 0-group, Taylor column, wind mixing index, chlorophyll

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