

Stichting Wageningen Research Centre for Fisheries Research (CVO)

Dab (*Limanda limanda*) Age Reading Exchange 2019

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Summary

The goals of the 2019 dab exchange were (1) an estimation of ageing uncertainty for the dab.27.3a4 stock, (2) compare different preparation methods, and (3) examine seasonality in deposition of opaque/translucent material on the edge of the otolith across a latitudinal gradient. The second and third goals were follow-up actions proposed by the Workshop on Age Reading of Dab in 2015 (WKARDAB2).

Sixteen age readers from seven countries (Belgium, France, Iceland, Netherlands, Germany, Denmark, England) participated in the exchange. Two sets of otoliths were examined. The first set (SmartDots event 244) consisted of 64 otoliths from ICES Subarea 4 (North Sea) and Division 3a (Skagerrak and Kattegat). These were prepared in three different manners (whole, sectioned, and sectioned-and-stained), resulting in 192 images. The second set (SmartDots event 245) consisted of 68 otoliths from ICES Subarea 4 (North Sea) and Division 5a (Icelandic waters). These were prepared in two different manners (whole and sectioned-and-stained), resulting in 136 images. Age readers were also asked to determine the edge type for each otolith in the second set.

First, the data were analysed for each event and method separately, including all age readers. Then, the combined set of otoliths from Subarea 4 and Division 3a were analysed for each method separately, including only the advanced age readers who supply age data for the assessment of the dab.27.3a4 stock. Additional analyses were carried out to compare the different preparation methods, and to examine seasonality by area in the deposition of opaque/translucent material.

Age reading uncertainty was high in dab compared to most other North Sea flatfish species. The percentage agreement was 69-73% and the coefficient of variation was 13-14% for dab.27.3a4, based on the age determinations of readers who supply age data for the assessment. As observed previously, uncertainty was highest in the third quarter.

Comparison of methods showed better calibration results for sectioned-and-stained otoliths than for whole otoliths or sectioned otoliths. However, the ages of young fish (1-6) were on average estimated to be higher based on sectioned-and-stained otoliths than based on whole otoliths. Age reading certainty may improve if sectioned-and-stained otoliths are used by all readers, preferably after validation that this is the best method to estimate true age.

The edge analysis was hampered by low number of otoliths per month and area, and inconsistency between readers. Nevertheless, the analysis did show high variability in the timing of deposition of opaque/translucent material. Consequently, a fixed rule on how to interpret the edge of the otolith in the third quarter is not applicable for dab.