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Assessment of the Japanese sardine stock in the northwestern Pacific for Japanese management system

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Stock assessment for the Japanese sardine (*Sardinops melanostictus*) in the northwestern Pacific was conducted based on VPA and biomass surveys independent of commercial fisheries data. The stock biomass estimate for January 2004 was approximately 130 thousand tons. The egg abundance estimates of the Pacific stock have been lower than 10^{14} egg/season since 2001/2002 spawning season (October–September). The spawning success (RPS: number of recruits/spawning biomass) has been 22 inds./kg in average and fluctuated between 5 and 61 inds./kg during the recent 10 years. From the historical perspective, the current stock status would not be in the conditions for rapid stock rebuilding. However, juvenile density in the Kuroshio–Oyashio transition region was higher in 2005 than in 2001–2004. The acceptable biological catch (ABC), that is the biological criterion for the TAC, is set to rebuild the spawning biomass at least to the level at which the recruits are expected to be comparable with those of 1996 year-class. Some hypothetical scenarios for controlling the catch amount were explored, in order to avoid intensive fishing efforts on dominant recruits.

Keywords: Stock assessment, Acceptable biological catch, Japanese sardine, *Sardinops melanostictus*, Spawning success