KAJIAN KEUPAYAAN MEMANTUL (TARGET STRENGTH) GELOMBANG AKUSTIK OLEH SOTONG

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Laporan projek ini merupakan sebahagian daripada keperluan untuk mendapatkan Ijazah Bacelor Sains Perikanan (Marin)

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SAYA TIDAK TAHU APA YANG MUNGKIN SAYA SUMBANGKAN KEPADA DUNIA, TETAPI KEPADA DIRI SAYA SENDIRI SAYA KELIHATAN SEBAGAI CUMA SEORANG BUDAK YANG BERMAIN DI PANTAI DAN MERAYAU - RAYAU MENCARI BATU KELIKIR YANG LEBIH LICIN ATAU CANGKERANG YANG LEBIH CANTIK DARI BIASA, SEDANGKAN KEBENARAN LAUTAN LUAS TERDAMPAR TANPA PENGETAHUAN SAYA.

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ABSTRAK

Kajian nilai keupayaan memantul (TS) oleh sotong torak (*Loligo edulis*) telah dijalankan dalam tangki kajian (4.0 m x 2.5 m x 1.0 m) dengan menggunakan Sistem Biosonic DT6000 pada frekuensi 200 kHz. Sotong yang digunakan dalam kajian ini terdiri dari 14 ekor sotong mati yang berbagai saiz (DML). Sotong ini diletakkan di dalam alur pancaran transduser (on-axis) iaitu pada kedudukan mendatar (horizontal) dan menegak (vertikal) dengan sudut insiden yang berbeza terhadap paksi transduser. Hasil kajian menunjukkan perhubungan diantara nilai keupayaan memantul (TS) dan panjang dorsal mantle (DML) adalah berkadar terus. Kajian ini juga menunjukkan bahawa nilai TS adalah berbeza mengikut sudut insiden (posisi badan) terhadap paksi transduser. Secara saintifiknya terdapat perbezaan bererti antara nilai keupayaan memantul (TS) dengan bertambahnya panjang dorsal mantle (DML) serta sudut insiden (posisi badan) terhadap paksi transduser. Nilai purata TS yang diperolehi daripada kajian untuk beberapa saiz (DML) sotong adalah -44.8 dB bagi 17 sm DML, -41.5 dB bagi 25 sm DML,-36.07 dB bagi 33 sm DML dan -35.6 dB bagi 37 sm DML. Secara keseluruhannya, sekiranya terdapat perubahan pada panjang dorsal mantle (DML) dan sudut insiden (posisi badan), nilai TS juga turut berubah.

ABSTRACT

The study of target strength,TS of a Swordtip of squid (Loligo edulis) for different sizes (DML) and different angle of incident were conducted in a rectangular research tank (4.0 m X 2.5 m X 1.0 M) using Biosonic system DT6000 split beam echo sounder at 200 kHz frequency. For the present measurement, the subject specimens were 14 dead squids at different sizes (DML). The squids were placed af horizontal and vertical on the transducer beam (on-axis) with different angle of incident. From the result it shows that, there is a correlation between DML versus TS and angle of incident versus TS of the squid. TS values were also varies according to dorsal mantle length (DML) and angle of incident(body position). From the statistical test, there is a significant different between target strength (TS) with increasing dorsal mantle length (DML) of squid. Second. There is also significant different in target strength (TS) and angle of incident (body position) of the main beam striking squid samples and lastly the estimated mean target strength (TS) for different sizes of squid were - 44.8 dB for 17 sm DML, - 41.5 dB for 25 sm DML, - 36.07 dB for 33 sm DML and - 35,6 dB for 37 sm DML.