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Comparative study of proximate and fungal compositions of two commercial fish Species in different storage materials

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A comparative analysis of the proximate and mycological characteristics of fresh (wet), freshly smoked and stored smoke-dried fish species: *Pseudotolithus senegalensis* and *Cynoglossus senegalensis* in Woven Basket (WB), Fish Hanger (FH), Aluminium Foil (AF) and Plastic Container (PC) were carried. The stored batches were analyzed at two weeks interval of eight weeks storage period. The crude ash for both fresh (wet) and freshly smoked (FS) samples in the fish were highest in *P. senegalensis* ($5.74 \pm 0.006\%$; $12.70 \pm 0.00\%$), while the lowest was found in *C. senegalensis* ($3.51 \pm 0.003\%$; $12.57 \pm 0.089\%$). The highest and the lowest crude fat contents were found in fresh and freshly smoked *C. senegalensis* ($21.80 \pm 0.006\%$; $4.26 \pm 0.021\%$), respectively. The highest crude protein content was recorded in *P. senegalensis* ($37.52 \pm 0.006\%$) fresh and *C. senegalensis* (FS) ($69.35 \pm 0.289\%$), while the lowest value was obtained in *C. senegalensis* ($34.61 \pm 0.003\%$) fresh and *P. senegalensis* (FS) ($42.44 \pm 0.073\%$). During the storage period, the highest and lowest crude ash contents were recorded in *P. senegalensis* ($19.04 \pm 0.04\%$) (PC) and *C. senegalensis* ($10.80 \pm 0.00\%$) (AF), respectively. The moisture content ranged from $3.01 \pm 0.00\%$ in *P. senegalensis* (FH) to $9.49 \pm 0.01\%$ in *C. senegalensis* (AF). The fat content varied between $5.29 \pm 0.05\%$ in *C. senegalensis* stored in PC to $13.63 \pm 0.01\%$ in *P. senegalensis* stored in WB. The crude protein was highest in *C. senegalensis* stored in FH ($61.59 \pm 0.01\%$) and lowest in *P. senegalensis* stored in FH ($30.20 \pm 0.01\%$) in the fish species. The mean total fungal count was highest in *P. senegalensis* ($130.67 \times 10^2 \pm 0.88 \text{sfu/g}$) and $129.33 \times 10^2 \pm 0.67 \text{sfu/g}$) stored in PC when compared with other materials during the storage period. The following fungi species: *Aspergillus* spp., *Penicillium* spp., *Eurotium* spp., *Acremonium* spp., *Pleurostomophora* spp. and *Rhizopus* spp. were identified. WB and FH served as the best packaging materials with the least fungi loads and high protein content. Therefore, their adoption by fish processors during storage is recommended.

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