Seasonal effects on the nutritive value of the natural food of three omnivorous fish (

The chemical composition of the stomach contents and the digestibility of organic matter, proteins and energy of three planktivorous fish species (Oreochromis niloticus, Sarotherodon galilaeus and Citharinus citharus) were studied in Batamani Pond (Mali, West Africa) during the dry and wet seasons. The diet contents of O. niloticus and S. galilaeus presented high levels of organic matter and proteins during the wet season (ashfree dry weight (AFDW): 753 mg·g−1 dw and 703 mg·g−1 dw, protein contents: 479 mg·g−1 AFDW and 449 mg·g−1 AFDW, respectively). In the dry season, the chemical composition of the food was characterized by high proportions of inorganic material (73% and 68% for O. niloticus and S. galilaeus, respectively). The chemical composition of the food of C. citharus was characterized by low seasonal variation. The levels of AFDW (396–461 mg·g−1 dw) and proteins (65–86 mg·g−1 AFDW) in its diet were generally low, reflecting a high proportion of mineral content. During the wet season, the digestibility of AFDW (52% and 58%), total amino acids (68% and 76%) and energy (63% and 56%) increased significantly for O. niloticus and S. galilaeus, respectively. Nutrient and energy digestibility for C. citharus showed no significant seasonal variations (AFDW: 36–45%; total amino acids: 57–64%; energy: 31–39%). The marked seasonal character of the pond, in terms of both hydrology and trophic conditions, had a low impact on the availability and quality of nutritive resources for the two tilapia species O. niloticus and S. galilaeus, while C. citharus appears to have the capacity to adapt its regime to the available food quality, whatever the season.

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