Abstract

The effectiveness of two electronic nose systems to assess the quality of oysters was studied on live oysters stored at 4 and 7°C for 14 days. Electronic nose data were correlated with a trained sensory panel evaluation by Quantitive Description Analysis (QDA) and with microbial enumeration. Oysters stored at both temperatures exhibited varying degrees of microbial spoilage, with bacterial load reaching 107 CFU/g at day 7 for 7°C storage. Cyranose 320 electronic nose system was capable of generating characterized smell prints to differentiate oyster qualities of varying age (100% separation). The validation results showed that Cyranose 320 can identify the quality of oysters in terms of storage time with 93% accuracy. Comparatively, the correct classification rate for VOCChek electronic nose was only 22%. Correlation of electronic nose data with microbial counts suggested Cyranose 320 was able to predict the microbial quality of oysters. Correlation of sensory panel scores with electronic nose data revealed that electronic nose has demonstrated potential as a quality assessment tool by mapping varying degrees of oyster quality.