Title	Evaluating the freshness of raw oysters during storage using the SPME and TBA methods
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Abstract

Louisiana produces approximately 10 million pounds of raw oysters annually. Oyster is a high-value seafood product and preferably eaten raw. The freshness of raw oyster during storage is critical to consumer acceptance. Developing analytical methods to monitor the freshness of raw oyster is, therefore, important for quality control purposes. The volatile compounds produced in oyster flesh during lipid oxidation can be used to indicate its freshness during storage. Our objectives were (1) to identify volatile compounds produced in raw oyster flesh during lipid oxidation and (2) to investigate changes of volatile compounds and TBA values during storage. Fresh raw oyster samples were homogenized, stored at 0°C, and drawn every other day up to 11 d for the SPME and standard TBA tests. For the SPME test, 10 g of oysters was placed in a flask and 4-methyl-2-pentanone was spiked as an internal standard. The flask was incubated at 60 °C in a temperature-controlled water bath. The headspace volatile compounds were absorbed by SPME-PDMS fiber for 30 min. The GCMS was used to identify and quantify the volatile compounds. The concentration of hexadiene, hexanol, and 2,5-hexanedione increased during storage. These 3 compounds are considered as off-flavor compounds that are the products of lipid oxidation and are closely related to the oyster freshness. During 11 d storage, the TBA results indicated that the oyster freshness gradually decreased, while the SPME results indicated that the quality of oysters was deteriorating rapidly, thus not appropriate for consumption. The SPME method was more effective and sensitive in determining the freshness of oyster during storage. The quantitative protocol for the analysis of oyster freshness developed in this project can be used for quality control purposes. Information from this study is useful to the oyster industry for market expansion and management of high quality raw oysters.

Freezing fresh fruits and vegetables on the premises is time consuming and may be too expensive to consider. Fresh fruit must be properly prepared for freezing or it will not store well. All freezer products not properly wrapped will develop freezer burn, which is a loss of moisture that affects both the texture and the flavour of the food. A common sign of freezer burn is a white or grey dry spot developing on the surface of the frozen product. Meat is particularly susceptible to freezer burn. Rotating stock is extremely important with frozen foods. Such rotation is difficult in standard ches Regardless of the storage method, it is very important to prevent contamination and segregation of aggregate particles. Possible sources of contamination include: Allowing adjacent aggregate stockpiles to overlap, causing cross-contamination.Â Given that cement is sensitive to moisture and must remain dry until used, the silos must be watertight. If kept dry, cement will retain its quality for a very long time. However, if it is stored in the presence of damp air or moisture, it will lose some of its quality and set more slowly and with less strength than dry cement.Â You can expect to produce quality products only when using quality raw materials. The way in which you handle and store those materials has a direct effect on product quality. MOST raw materials require cool, dry conditions for storage, and should be used in strict rotation according to age. The stock room and methods of storage should be designed to facilitate the observance of hygiene. The handling methods will naturally, of course, have to suit the type of building, situation of the stock room, and the quantity of raw materials being handled. The smaller establishments will probably be able to cope with the intake and distribution of raw materials by the use of pallets and fork lift devices. These will also assist in the rotation of stocks and in moving goods for