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(54) Titre : EMBALLAGE
(54) Title: PACKAGING

(57) Abrégé/Abstract:
A method of packaging live seafood comprising the steps of providing a sealable container, wherever said container comprises a plastic tray having an interior volume and an upper peripheral edge, placing said live seafood in said container, and replacing the atmospheric gas in said container with a gas mixture comprising only CO_2 and O_2, with an O_2 content of at least 50% by volume, and a CO_2 content of at least 20% by volume, and sealing said container with a layer of flexible film comprising a sheet of flexible sealable film sealed to the upper edge of said tray, said flexible film having an Oxygen Transmission Rate (OTR) of at least 1500.

ABSTRACT

A method of packaging live seafood comprising the steps of providing a sealable container, wherever said container comprises a plastic tray having an interior volume and an upper peripheral edge, placing said live seafood in said container, and replacing the atmospheric gas in said container with a gas mixture comprising only CO_2 and O_2, with an O_2 content of at least 50% by volume, and a CO_2 content of at least 20% by volume, and sealing said container with a layer of flexible film comprising a sheet of flexible sealable film sealed to the upper edge of said tray, said flexible film having an Oxygen Transmission Rate (OTR) of at least 1500.

Description

The present invention relates to the field of live seafood packaging. In particular, the present invention provides an improved live seafood packaging method, and package, that improves mortality rate of packaged live seafood, as compared with known live seafood packaging.

In the marketing of seafood, such as mussels and other shellfish, crustaceans and so on, it is essential to deliver a live product, to permit a restaurant or seafood market to offer the best possible seafood to the consuming public. Bringing live seafood to inland markets can be problematic, and expensive. The most obvious, and expensive, way to do so is to expedite transport of the live animals by air, preferably in an aqueous environment simulating their natural environment. This is effective, but expensive, because of the weight involved.

There have been several packaging methods proposed to keep live seafood alive during transit. In JP58129930, the product is packaged in a mixture of O_2 and CO_2, after it has been injected with alkaline solution of pH 7-12. This method, then, requires additional handling of each item, and the use of an additive thereto, and is therefore not economically feasible.

In US6238716, a packaging method using 50%-90% of a CO_2 and O_2 mix including 25%-50% O_2 is proposed. It has been found to be effective on some shellfish, but is ineffective in relatively long time frame shipping and storage.

Applicants previous patent CA 2489738 dated 2007-02-02 discloses a method for packaging live seafood, using a modified atmosphere gas mixture of CO_2 and O_2 in a package sealed with a multi-layer high barrier film. The gas mixture is preferably about 80% O_2.

While the Applicant's previous packaging method has proven quite effective, the multi-layer films used are expensive, as is the 80% O_2 gas mixture.

The object of the present invention, therefore, is to provide a package for live seafood, utilizing a lower O_2 gas mix, with an O_2 permeable film.

After extensive experimentation, the Applicant has determined that an improved mussel and other seafood species mortality rate is obtainable using a package filled with a modified atmosphere gas mixture comprising only O_2 and CO_2. The package comprises a formed leak-proof plastic tray, sealed with a food-compatible film having an Oxygen transmission rate (OTR) of at least 1500 OTR. The OTR of the film may be higher, up to 10K or higher, as long as the film is leak-proof.

OTR is measured in cm^3 of O_2 per m^2 per day/bar. It has been found that at levels in excess of about 15000 OTR that the packaging ceases to be leak-proof. Since live mussels need to be kept moist, as well as oxygenated, use of high OTR film that permits water to be lost is not within the scope of the present invention.

It will be noted, as regards high OTR film, that highly permeable film of about 10,000 OTR has been used to package fresh fish in vacuum packs. It is used in this type of fish packaging by Plastopil for its ability to adhere to the fish fillets, thereby to present the product well, and the fact that its very high permeability promotes the growth of anaerobic bacteria. This use is different from the Applicant's, in that use for fish packaging is not designed to keep the fish alive. Moreover, one would typically not expect that packaging for fresh fish, which stays fresher in low O_2 environment. However, when used for fresh fish, there is in fact no atmosphere inside the film, as the film is vacuum sealed around the fish piece.

The film of the package of the present invention is applied in a similar manner to that of CA 2489738, around the rim of a formed plastic foam tray in which the mussels have been deposited, with a quantity of water and in a modified atmosphere of O_2 and CO_2 containing at least 20% CO_2

A film of at least 1500 OTR is sealed around the edge of the tray.

The film may be, for instance be Cryovac™ film. Low to zero mortality rate is obtainable with the packaging of the present invention.

Claim

1. A method of packaging live seafood comprising the steps of providing a sealable container, wherever said container comprises a plastic tray having an interior volume and an upper peripheral edge, placing said live seafood in said container, and replacing the atmospheric gas in said container with a gas mixture comprising only CO_2 and O_2, with an O_2 content of at least 50% by volume, and a CO_2 content of at least 20% by volume, and sealing said container with a layer of flexible film comprising a sheet of flexible sealable film sealed to the upper edge of said tray, said flexible film having an Oxygen Transmission Rate (OTR) of at least 1500.