

Edible coating makes fish filets longerlasting, healthier

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Oregon State University's Jingyun Duan (left) and Yanyun Zhao show off a liquid coating into which they've dipped lingcod fillets to make them longer-lasting and possibly healthier. Photo by Lynn Ketchum.

Consumers may be able to eat longer-lasting, potentially healthier fish fillets if research at Oregon State University makes its way to the supermarket.

That's because OSU scientists have extended the shelf life of lingcod fillets and possibly made them more nutritious by dipping them into an edible, protective <u>coating</u> enriched with <u>fish</u> oil.

"With this coating, you can easily keep the fillets in the display case for two to three more days," said OSU food science professor Yanyun Zhao, the lead researcher in the study.



The liquid coating contained chitosan, which comes from crustacean shells and can be made into film for food wrapping to keep out bacteria and fungi and prolong storage life. What's unusual about the OSU study is that <u>fish oil</u> was added to the chitosan coating, which wasn't visible once it dried. After the coating was applied, some fillets were refrigerated for three weeks while others were frozen for three months.

The study, which has been accepted for publication in the journal *Food Chemistry* and has been published on its Web site, found that the coating tripled the omega-3 <u>fatty acids</u> in the refrigerated and frozen fish when compared against the uncoated fish.

Omega-3 fatty acids are essential nutrients, and research suggests that increasing them may have a number of health benefits. The U.S. Food and Drug Administration says specific ones may reduce the risk of coronary heart disease. But questions still remain about how these fatty acids might prevent or treat certain diseases.

<u>Omega-3 fatty acids</u> are found in oily fish like salmon, mackerel and sardines, but lean fish such as cod, grouper, catfish and swordfish have lower amounts. Lingcod was chosen for the study because it's a popular fish on the West Coast and doesn't have much fat.

In addition to increasing the omega-3 levels in the lingcod, the OSU study also found that the coating reduced lipid oxidation, which causes rancidity, in the refrigerated and frozen samples when compared with the uncoated fillets. The coating also kept the fish moister than the uncoated samples as the frozen ones were thawing. Additionally, the coating delayed the growth of microorganisms in the fresh fillets, and it prevented their growth in the frozen ones. The coating did not affect the color of the fillets.

Source: Oregon State University (<u>news</u> : <u>web</u>)



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