

## Experiment 11: Preservation of fruits with N,O-carboxymethyl chitosan

*Duration:* 20 minutes without waiting period.

*Equipment:* Beaker (100 ml), magnetic stirrer with heating plate, stirring rod, 2 watch glasses (14 cm), paper cloths, refrigerator.

*Reagents and materials:* N,O-carboxymethylchitosan, demineralized water, plums.

*Procedure:* Under slight heating 1 g of N,O-carboxymethyl chitosan is dissolved in 50 ml of demineralized water. After cooling the plums are dipped into the solution and then allowed to dry on a paper cloth. Then treated and untreated plums are put each onto a watch glass in the refrigerator and are observed for a longer period.

*Observation:* The treated plums are covered with a slightly gleaming and transparent film, which does not feel waxy. After one week the fruits untreated show the first changes. With continuing time they look always more wrinkly and after two weeks the first moulding is observable. In opposite the treated fruits do not show any changing.

*Faults and precautions:* Untreated fruits should be used for the experiment. Without storage in the refrigerator, the preservation time reduces. Alternatives: Beside plums other fruits as apples, pears, cherries and peaches may be treated.

*Waste disposal:* Residues of N,O-carboxymethyl chitosan solution are poured down the sink.

