

## ABSTRACT

Maulida, Ihda Nadhif. 2014. **The Effects of the Concentration of Chitosan and Long Soaking as Edible Coating on Quality of Broccoli (*Brassica oleracea* L.)**. Thesis. Department of Biology. Faculty of science and technology. Islamic State University of Maulana Malik Ibrahim Malang. Supervisor I: Dr. H. Eko Budi Minarno, M.Pd. Supervisor II: Andik Wijayanto, M.Si

**Keywords:** Broccoli (*Brassica oleracea* L.), chitosan, concentration, long soaking

Broccoli including horticultural plants which have a short shelf life. Shelf life broccoli was only able to last up to 2 days. The save 2 days can lower the quality of broccoli. To maintain the quality of the post-harvest handling of broccoli should be done so that the reduction could be scaled down. Methods that can be used to inhibit the process of metabolism in fruit is edible coating which is a method of administering a thin layer on the surface of the fruit to obstruct the discharge of gases, water vapor and avoid contact with oxygen. Natural ingredients that can be used for edible coating is chitosan. Chitosan is the one ingredient that can be used for coating the fruit, which is a polysaccharide derived from waste leather crustaceans. This research aims to find out whether there is a concentration of chitosan and the influence of the long soaking to shrink the weight, vitamin C, color, and the number of colonies of microbes on broccoli.

This research was conducted using a complete Randomized Design (RAL) factorial. The first factor is the level of chitosan consisting of: 2%, 2.5% and 3%. The second factor is the long soaking comprising: 30 and 60 minutes. The research was carried out in the laboratory of Biochemistry Department of Biology, Faculty of science and technology islamic state university of Maulana Malik Ibrahim Malang and in the chemical laboratory, Department of Biology education, Muhammadiyah University of Malang.

Coating research results with a 3% chitosan concentration and long soaking for 60 minutes was able to minimize the number of colonies of microbes and a 3% concentration of chitosan with long soaking 30 min was able to maintain the quality of broccoli with narrow angles of weights, colors and maintain the content of vitamin C of broccoli.