

**EFFECT OF MODIFIED ATMOSPHERE PACKAGING ON CHLOROPHYLL A,  
CHLOROPHYLL B AND TOTAL CHLOROPHYLL DURING STORAGE**

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[Sajadrarani@yahoo.com](mailto:Sajadrarani@yahoo.com)**ABSTRACT**

Modified atmosphere packaging is a technique for increasing the shelf-life of fresh and precooked material. In this maintenance procedures, atmosphere that surrounding food material in package, change to other compounds. Aim of Map is increasing the shelf life in order to prevent undesirable change in taste, health, nutritional value and sensory qualities of food material [2]. Spinach is one of the leafy vegetables that can use in fresh, cooked and precooked forms. Spinach leaves are rich in bioactive material such as vitamin A, vitamin C and minerals. Sensory and nutritional properties of spinach reduced during the post harvest [1]. In this research native varieties of Spinach were planted in a farm, Spinach leaves were harvested before flowering and packed in polyethylene-polyamide packages with MAP machine. For this research 5 treatments were studied. N<sub>2</sub> level were kept constant at 80%. O<sub>2</sub> and CO<sub>2</sub> were variable in 5%, 10%, 15% and 20%. Packages were refrigerated for 20 days at 4°C. Total chlorophyll, chlorophyll a and chlorophyll b were determined according to the method that described with Witham et al (1971) and expressed as mg·g<sup>-1</sup>. All the chemical analyses were carried out in triplicate for each sample. The data were analyzed statistically with SAS. Chlorophyll content was 1.8±0.04 at the beginning of the experiment and it was 1.342 to 1.947 during storage. Although total Chlorophyll decreased after 20 days for all treatments, but there were no significant differences during the storage time. There were no significant differences for chlorophyll a and b during storage too. The result indicates that changing the level of gas in the package do not have significant effect on chlorophyll during storage.

**Key words:** *Spinach, Modified atmosphere packaging, Storage, Chlorophyll*

**References:**

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