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ACTIVE PACKAGING FOR FRUITS AND VEGETABLES

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Recently, new food-packaging systems have been developed as an answer to trends in consumer preferences towards mildly preserved, fresh, tasty and convenient food products with a prolonged shelf-life. Active packaging changes the condition of the packaged food to extend shelf-life or improve food safety or sensory properties, while maintaining the quality of the packaged food [1]. Nowadays much attention has been given to biodegradable polymers, such as poly vinyl alcohol (PVA), which is biodegradable, non-toxic synthetic and presents high tensile strength and flexibility, as well as high oxygen and aroma barrier properties [2,3]. Ethylene gas, which acts as a plant hormone, is produced by fruits and vegetables during ripening and is also found in the environment. It plays an essential role in normal ripening, but excessive exposure can radically reduce the shelf-life of the product, in some cases inducing undesirable reactions such as development of bitter flavors and loss of chlorophyll (yellowing of greens). The objectives of our work were (1) to test an active packaging of PVA for tomato stored; (2) to test the effect of ethylene absorber agent to reduce decay of fresh tomato; (3) study the effect of the Degree of Hydrolysis (DH) of poly(vinyl alcohol) (PVA) on the barrier properties of water vapor permeability (WVP), solubility, and mechanical properties (puncture test). This study evaluated the effect of coating produced from PVA and glycerol as plasticizer on tomato conservation (75°F (24°C)). The coated product was analyzed for mass loss, color alterations and fungi. PVA films produced by casting have good mechanical properties and potential application for food packaging. The active packaged fruits presented higher acceptance, showed less alterations in acidity, lower weight loss rate during the storage time and an extended shelf-life, as compared to the control fruits (without PVA films). We thank CNPq for the financial support