USE OF THE DIFFERENT POLYMERS AS PACKAGING MATERIAL: INFLUENCE ON THE RESPIRATION OF CHERRY TOMATO (*Lycopersicon esculentum* var. *cerasiforme*)

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The packages used for fresh fruits and vegetables are designed to create a barrier to preserve the flavor and to be permeable to water vapor while restricting the exchange of CO$_2$ and O$_2$, thus changing the atmosphere environment of the product in the package. The knowledge of the gas concentration change within the package is an important tool to increase shelf life of vegetables. This study aimed at evaluating the use of different polymers as packaging materials to minimize respiration of cherry tomatoes. 100-g samples were packed with PE/PA/EVOH, PE/PA and PPBO/LDPE. The tests were performed at 25 °C using a modified atmosphere containing 5% O$_2$, 10% CO$_2$, 85% N$_2$, and control (atmosphere air). To determine the best packing material, concentrations of O$_2$ and CO$_2$ were analyzed for a period of 40 hours by using gas analyzer equipment. For samples packed in PE/PA/EVOH, O$_2$ concentration decreased to 1.68% and CO$_2$ levels increased to 16.40%, while the PE/PA package showed concentrations of 1.09% O$_2$ and 15.37% CO$_2$. This result indicates that these packages have low permeability to O$_2$ and high permeability to CO$_2$ and may induce the samples to anaerobic respiration. The samples packed in PPBO/LDPE showed concentrations of 3.33% and 10.33% for O$_2$ and CO$_2$ respectively. The concentrations of O$_2$ and CO$_2$ in the package of BOPP/LDPE remained at levels that reduce the respiratory rate, thus preventing anaerobic respiration, and are considered appropriate for the storage of cherry tomato under modified atmosphere.