Low temperature storage is of primary importance in postharvest technology (Hardenburg et al., 1986). Elevated CO$_2$ may favor gram positive over gram negative bacteria, esp. coryneforms and lactic acid bacteria. Garg et al. (1993) found that elevated CO$_2$ condition and low temperature storage could be retarded the populations of mesophilic bacteria. However, in these condition could be maintain storage quality and delayed microbial growth of diced onion (Blanchard et al., 1996). The present evaluated the effects of an elevated CO$_2$ condition and low temperature on microbial growth and quality of sliced onion.