

Abstract:

Application of the lysophosphatidylethanolamine (LPE) improved the yield of red pepper (*Capsicum annuum*) fruit, probably by enhancing the rate of color development. The effective concentration for this purpose was 100-200 $\mu\text{l/L}$, which resulted in a yield increase of ripened fruit over 30%. LPE application did not adversely affect fruit quality. No phytotoxicity was observed when LPE was applied on red peppers. Application of LPE at 100 ppm before first frost resulted in about 50% increase in the yield of red fruit. These results suggest that LPE can be used as a safe and effective agent to enhance the yield of ripened (marketable) red pepper fruit late in the season. In a second experiment, the influence of LPE on red color development was compared with ethephon. Both materials increased the yield of ripened red fruit. LPE caused neither defoliation nor leaf yellowing, while ethephon resulted in severe defoliation and leaf yellowing. A suspension concentrate (SC) formulation of LPE was more effective than wettable powder (WP) formulation for acceleration of red pepper color development. LPE application enhanced fruit ethylene evolution. In response to WP, SC, or ethephon, fruit ethylene evolution was increased 8-to-9 fold relative to control. These results suggest that LPE can stimulate the fruit ripening by enhancing ethylene evolution.