New treatment extends shelf life of bananas

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Around the world, bananas are one of the most popular tropical fruits. Despite their popularity, bananas have a relatively short shelf life that creates challenges for both producers and consumers. A new study revealed that a postharvest treatment with a natural phospholipid can extend bananas' shelf life, thus enhancing the fruit's marketability. Scientists Zienab F.R. Ahmed from South Valley University in Egypt and Jiwan P. Palta from the University of Wisconsin-Madison published their research in *HortScience*.

According to the study, bananas are harvested when they are in the "mature green" stage of ripening and treated with ethylene to stimulate ripening before distribution and sale. The fruits generally ripen within 4 to 5 days after ethylene treatment and are then sold primarily at the yellow stage of ripening. After turning yellow, bananas become unsuitable for sale within 1 to 3 days, so finding ways to extend banana's shelf life just 1 to 2 days could enhance their market value.

"Previous studies conducted in our laboratory have demonstrated that both pre- and postharvest application of lysophosphatidylethanolamine (LPE) can retard aging and improve shelf life of various fruits," Palta and Ahmed said. "In this study we investigated the possibility of improving shelf life of banana fruit by a postharvest dip in LPE." In the experiments, bananas at "ripeness stage" of 2.5 (about 75% green) were dipped in solution of 500 ppm LPE for 30 minutes and observed for a period of 5 days at room temperature. Each treatment was applied to 50 uniform bananas. Bananas from the same bunch (used as a control) were not treated.

"Five days after dip treatment, the fruit treated with LPE were firmer and thicker as compared with the untreated control," the authors noted. "Starch breakdown was also delayed in the LPE-treated fruits. LPE treatment slowed the development of brown spots on the peel tissue."

The authors said these results suggest that LPE "may improve shelf life by maintaining membrane integrity, reducing respiration, and slowing the breakdown of starch and cell walls during ripening and senescence of banana fruit tissue." Results of the experiments indicated that a postharvest dip treatment with LPE may improve shelf life of banana fruit by 1 to 2 days.

More information: The complete study and abstract are available on the ASHS *HortScience* electronic journal web site: hortsci.ashspublications.org/c … t/50/7/1035.abstract

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