

Title Ethychlozate reduces acidity of loquat (*Eriobotrya japonica*) fruit
Author Fa-Xing Chen, Xing-Hui Liu and Li-Song Chen
Citation Scientia Horticulturae, Volume 124, Issue 3, 5 April 2010, Pages 331-337
Keywords Ethychlozate (Figaron); Loquat (*Eriobotrya japonica*); Malate; NAD-malate dehydrogenase; NADP-malic enzyme; Phosphoenolpyruvate carboxylase

Abstract

Ethychlozate (ethyl 5-chloro-1H-3-indazolylacetate, Figaron) was applied to 12-year-old 'Jiefangzhong' (a high-acid cultivar) loquat (*Eriobotrya japonica*) trees at 0 (control), 75, 150 and 250 mg L⁻¹ on March 19th, 90 days after flowering. To determine pulp titratable acidity (TA), organic acid concentration and acid-metabolizing enzyme activity, fruits were collected at 0, 13, 25, 42 and 49 days after treatments (DAT), when fruits were ripe. Malate was the major organic acid determining loquat pulp acidity. Ethychlozate was very effective in reducing pulp malate concentration, thus decreasing pulp acidity. The best result for reducing acidity (malate) was obtained when ethychlozate was applied at 250 mg L⁻¹. The ethychlozate-treated pulp showed lower phosphoenolpyruvate carboxylase (PEPC) and NAD-malate dehydrogenase (NAD-MDH) activities through the experimental period, but higher or similar NADP-malic enzyme (NADP-ME) from 25 to 49 DAT compared to non-sprayed control. The reduction in malate concentration in the ethychlozate-treated pulp was probably caused by decreased malate biosynthesis and increased malate degradation.