A peptide elicitor PIP-1 induces defense-related secondary metabolites such as phytoalexin capsidiol in tobacco cells. In this study, we identified one of other metabolites induced by PIP-1 as acetosyringone. Unlike capsidiol accumulation that requires long-term stimulation with PIP-1, acetosyringone was induced by short-term stimulation with PIP-1. The importance of NADPH oxidase in the acetosyringone induction was also demonstrated.