Title Molecular approach to monitor the postharvest biocontrol agent *Pantoea agglomerans* CPA-2.

Author C. Nunes, V. Stepien, T. Manso, R. Torres, J. Usall and H. Jijakli.

Citation Journal of Plant Pathology Volume 90 (2, Supplement) August 2008, Book of Abstract, 9th International Congress of Plant Pathology, August 24-29, 2008 Torino,Italy,. 507 pages.

Keywords fruit; posharvest disease; biocontrol

Abstract

A monitoring technique was developed to identify and quantify the population of biocontrol agent *Pantoea agglomerans* CPA-2. To identify molecular markers the RAPD technique was applied to a collection of 13 strains of *P. agglomerans*, including CPA-2. The primer OPL-11 amplified a fragment (about 720 bp) specific to strain CPA-2 and on the basis of this fragment, two SCAR markers were amplified. A first SCAR marker of 720 bp was specifically amplified for the strain CPA-2 and a second one of 270 bp was obtained for all *P. agglomerans* strains tested, including CPA-2. To quantify the population, formulations of *P. agglomerans* CPA-2 in commercial trials were determined on fruit surfaces and in the environment using both the classical plating technique and PCR with SCAR primers. Regarding population level, the two methods, in general, gave similar results. On fruit surfaces, one day after CPA-2 application its population estimated by classical methods was 4.37×10^6 cfu wound^{-1} and at the end of the experiment the population increased to 5.8×10^5 cfu wound^{-1}. The percentages of colonies identified as *P. agglomerans* CPA-2 at these sampling times using SCAR primers were 90% and 95% respectively. Population dynamics studies of *P. agglomerans* CPA-2 showed it has a limited persistence and limited capacity for dispersion. Commercial trials demonstrated a significant reduction of decay on fruit after treatment with formulated cells of *P. agglomerans* CPA-2.