

Title            Residue contents of captan and procymidone applied on tomatoes grown in greenhouses and their reduction by duration of a pre-harvest interval and post-harvest culinary applications

Author         Mehmet F. Cengiz, Muharrem Certel, Barçın Karakaş and Hüseyin Göçmen

Citation        Food Chemistry, Volume 100, Issue 4 , 2007, Pages 1611-1619

Keywords      Pesticide residues; Tomatoes; Culinary applications; PHI; Captan; Procymidone

### **Abstract**

In this study, controlled applications of captan and procymidone were carried out on tomatoes grown in two different greenhouses at different times. The first group of samples were collected immediately after the application and the second group were collected 14 days later. Additionally, control samples were collected before application. The effects of washing, peeling and predetermined storage period, at 4 °C for 7 and 14 days, on the reduction of residue levels in the plant tissues were investigated in the two groups. A gas chromatographic method using acetone, dichloromethane and petroleum ether as extraction solvents, was used to analyse residual captan and procymidone in tomatoes, with obtained recoveries higher than 83%. Captan and procymidone were determined by gas chromatography-electron capture detection (GC-ECD), using a 5% phenylmethylpolysiloxane-coated fused-silica capillary column. Results showed that waiting for the recommended pre-harvest intervals, indicated on the prospectuses of both pesticides, lowered the residue levels to within acceptable limits. Culinary applications, such as washing and peeling and refrigeration storage, were also effective in reducing the residue levels.

**Abbreviations:** PHI, pre-harvest interval; MRL, maximum residue level; LD<sub>50</sub>, lethal dose 50; AOAC, association of official analytical chemists; ADI, acceptable daily intake; ECD, electron capture detection; FAO, Food and Agricultural Organization