

Project Title : Minimization of Pesticide Residues on Processed Products and the Environment

Start /End Date : 2003-2005

Supporting Body : GDAR

Leader : Ümmühan KAYA

Co-researchers : Ahmet Uğur DURU, Hakan ÖRNEK

Summary : The project is aimed to contribute to the development of a scientific base for minimization of pesticide residues in food, with a special emphasis to products for infants and small children. In certain cases the dietary intake of pesticides is underestimated by the model for human exposure, due to the fact that the effects of various processes are not considered.

Food processing studies are essential for the purpose of refining dietary intake estimates of pesticides. This information is necessary for reaching a conclusion on the acceptability of proposed MRLs and Good Agricultural Practices (GAPs) from a point of view of babies and children safety.

Apple is one of the major foods for preparing baby food. The babies can consume it in different products such as apple pure and apple juice. Pesticide behavior changes during processing procedures. The European Commission adopted a temporary MRL of 0.01 mg/kg for individual pesticide residues in foods for infants and small children. The existing international MRLs are, as a rule, too high for infants and small children. In view of this, the problem of baby food production in compliance with the EC safety requirements is of key priority. The pesticide residue levels in the processed apple used as a baby food should be acceptable after treatment of the apple with pesticides.

This study was carried out on Starking variety of apple in a farmer garden in Denizli-Civril. National Instruction Manual was taken into account on pesticide treatments. The pests were controlled according to Forecasting System. For determining of the effects of processing procedures on the pesticides (chlorpyrifos-ethyl, cypermethrin, myclobutanil and phosalone), samples were randomly collected 3 days after last application and the recommended preharvest days for each pesticide. The fate of chlorpyrifos-ethyl, cypermethrin, myclobutanil and phosalone on apple taken two harvest time were investigated during processing procedures such as washing, peeling, cooking and juice extraction. The processing factors and transfer factors were found for each pesticides.