Determination of Pesticide Residue in Vegetable Juice, Fruit Juice and Green Tea Solution in Closed Package

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ABSTRACT

Determination of pesticide residue in 25 closed-package samples of vegetable juice, fruit juice and green tea solution revealed pesticide residue in 20 samples. Pesticides that were frequently found were heptachlor and lindane. We found heptachlor 0.025-0.060 ppm in green tea and the amounts from 2 of 5 samples were over the permissible level. Lindane was also found at 0.005-0.014 ppm. Lindane is a nonpermitted pesticide. In apple juice, we found hepatachlor 0.040 ppm, lindane 0.007 ppm, aldrin 0.010 ppm which were within the allowable limit. In foreign carrot juice samples, we found heptachlor 0.030 ppm, o,p'-DDD 0.600 ppm and B-endosulphan 0.240 ppm. The amount of o,p'-DDD in foreign carrot juice was over the limit and B-endesulphan is a nonpermitted pesticide. We found that the Thai carrot juice consisted of heptachlor 0.020 ppm and G-chlordane 0.400 ppm. G-chlordan is also a nonpermitted pesticide. We found pesticide residue in grape juice that might be abamectin. We did not find any pesticide residue in orange juice. These results from our investigations should stimulate the Ministry of Public Health to be interested in controlling the use of pesticides in packaged juices and teas.

Key words: Pesticide residue, Vegetable juice, Fruit juice, Green tea solution.

INTRODUCTION

In 1985, we found organochlorine and organophosphate pesticide residues in fruits, vegetables, oil plants, animal food and eggs in more than 2000 samples of the 3000 samples from Thailand. (http://wbc.msu.ac.th/ge/0299101/tarapron/tarapron 0.5-3.R.html).

In 1982-1985, Thai Ministry of Public Health found DDT in 39% and dieldrin in 15% of 663 samples. In 1993 National Environment Board of Thailand found pesticide residues in 86% of water samples, 32% of fruits and 25% of vegetables. The amount found was 8 times higher than the limit value, this was the result of insect resistance.

In 1990, USFDA found pesticide residues in 900 samples of baby food which were beononyl-thiabendazole (fungicide), daminazide, ethylenethiourea (ETU,