

An investigation of the pesticide residue in agricultural products in Shiga Prefecture

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Abstract

We have summarized the results of investigations on pesticide residues in agricultural products in Shiga Prefecture from 1994 to 2003. Though the detection rate for the number of samples depended on the year, it was around 20%. The rate of detection was higher for fruits than vegetables, and was also higher for imported than domestic products. In domestic agricultural products, pesticides detected frequently were methamidophos, acephate, cypermethrin and fenvalerate, and were chlorpyrifos and methamidophos in imported agricultural products. The detection rates of chlorfenapyr and pyrethroid pesticides were high, but have decreased in the investigation latter half. Fenvalerate was dominant in most agricultural products. The frequency of cypermethrin was very high in vegetables such as 'komatsuna', garland chrysanthemum, spinach and welsh onion. The frequency of one pesticide detection was 82%, followed by 15% with two pesticides, 2% with three pesticides, and 1% with four pesticides based on the detected numbers of pesticides in one sample. The percentage of pesticides for which a maximum residue limit (MRL) had been set under the Food Sanitation Law was 69.5% among all pesticides detected. The corresponding MRLs were not established for the remaining residues in the detected sample. Over these 10 years, the MRL was exceeded in 3 cases.

Key words: pesticide, residue, agricultural product, detection rate

1. Introduction

The Ministry of Health, Labour and Welfare established a safe promotion action plan in 2000, for the prevention of food poisoning and safety of food additives, genetically modified foods, bovine spongiform encephalopathy, and endocrine disrupters. Under this plan, they have also promote the safety of pesticides which remain in foods, and newly set and reviewed the maximum residue limit (MRL), investigated the actual amount of pesticide residue, and offered information to the public. However, amounts of pesticide residues exceeding the MRL were detected in imported fresh and frozen vegetables, and the illegal use of non-registered pesticides also arose, indicating the importance

of promoting safer and more environmentally friendly agriculture. Then, a list of pesticides was drawn up under the revised Food Sanitation Law. The food containing beyond the certain concentration of the pesticides, which were not described in the new MRL list, would not be allowed to distribute under the coming regulation. Though the enforcement will begin around May, 2006, there are many problems such as the introduction of equipments, methods of analysis, and personnel for the huge number of analytical targets. In this study, we reported the actual levels of pesticide residue in agricultural products in Shiga Prefecture, in order to investigate the trend of pesticide residue in agricultural products, and to get basic data for future improvement of analysis.