

Comparison of Food Products Contaminated by DDTs in South Africa and Mozambique

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Abstract : One method for controlling malaria in endemic regions is the killing of vector mosquitoes using pesticides such as DDT in indoor residual spraying (IRS). This study was carried out to investigate the presence of and human health risk due to DDT and its metabolites (collectively, DDTs) contaminating human food sources in areas where DDT is used for IRS. Free-range chicken products (meat and eggs) were collected from homesteads in KwaZulu-Natal Province in the northeast of South Africa, and fish meat samples from Maputo Bay in neighbouring Mozambique. Samples were analysed for DDTs (o,p'-DDT, p,p'-DDT, o,p'-DDD, p,p'-DDD, o,p'-DDE and p,p'-DDE) using a gas chromatograph with electron capture detector (GC-ECD). DDTs were detected in all food types, with the predominant congener being p,p'-DDE. The presence of p,p'-DDT confirmed recent release of DDT into the environment. By using concentration levels detected in foods and national consumption levels, the risk to human health through consumption of such food products was calculated. In order of risk level, these were: chicken eggs > chicken meat > fish meat. Human risk (carcinogenic) values greater than one suggest there is an increased health risk through consumption of these foods.

Keywords : DDT, food contamination, human health risk, Mozambique, South Africa

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