The aim of this study was to determine the residues of pesticides in raw and processed berries from Poland and to propose the estimation of risk assessment for two populations: of adults and children as the most critical group. The 170 samples of berry fruits and their products were collected in 2011: gooseberry (11), blackcurrant (25) and redcurrant (35), raspberry (27), strawberry (62), and the concentrated juice of blackcurrant (3), redcurrant (1), raspberry (2), and strawberry (4). The study included 160 pesticides, among which 29 were detected. Pesticide residues were noted in 44.7% samples, 14.7% samples above the maximum residue level were found. During the study, the prohibited substances for protection of crops were found such as procymidone, flusilazole, tetraconazole, and trifloxystrobin. Procymidone was found in 10 samples of raspberry and blackcurrant, while flusilazole, tetraconazole, and trifloxystrobin were detected in gooseberry. About 34.1% of the samples contained more than one residue (from 2 to 9). Based on the results of the occurrence of pesticide residues in berry fruits, long- and short-term health risk was estimated. The acute and chronic exposures were minimal and did not exceed a safe value of 100% safety value acute reference dose and acceptable daily intake.

Keywords: Pesticide residues; Berries fruits; ADI; ARfD