

NITROGEN COMPOUNDS IN WELL WATER AS A FACTOR OF A
HEALTH RISK TO THE MACIEJOWICE COMMUNE INHABITANTS
(MAZOWIECKIE VOIVODESHIP)
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Abstract: Well water quality monitoring was carried out in the Maciejowice Commune in the years 2005-2006. Water was sampled from 20 dug and drilled wells five times. Chemical analyses involved determination of NO_3^- , NO , NH , PO_4 , Cl^- , Ca^{2+} , Mg^{2+} , total hardness, pH and electrolytic conductivity. Health risk resulting from the presence of nitrates in water consumed by people was assessed in this paper. The obtained results indicated that 50% of examined waters did not meet the set standards. Ammonium ions and nitrates were the main ions contaminating drinking water. A negative correlation between nitrate, nitrite and ammonium ion concentration and well depth was found. People drinking water from 60% examined wells ingest excess quantities of nitrates (safety margin ADI: EDI < 1), which, in the case of long-term exposure, can be harmful, especially for infants and pregnant women. From among 20 analysed wells the water from 5 wells conformed to recommended standards. Its good quality was a result of the appropriate location of the wells within the household premises, appropriate depth and insulation and farmers' complying with the Code of Good Agricultural Practice.