TERBUTHYLAZINE AND OTHER TRIAZINES IN ITALIAN WATER RESOURCES

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The concern on the presence of pesticides in Italian water resources historically broke out around 1980 after severe episodes of water contamination from atrazine (ATR) its metabolite desethylatrazine (DEA) and other triazine herbicides, mainly in the maize producing Regions. In 1990 the use of atrazine was banned and its substitute, terbuthylazine (TERB), and its main metabolite desethylterbuthylazine (DET) early became of primary relevance as water pollutants, as well as other triazines. The risk of contamination of surface and ground water by TERB, DET, DEA and ATR is still of relevance due to the present and past use of parent compounds, the discharges or seepages in particularly vulnerable areas, the unfavourable chemical-physical properties, the high persistence and mobility in soil vadose zones and aquifers. Thus, unsurprisingly, monitoring of ambient water indicates that TERB, DET, DEA and residual concentrations of ATR are frequently and extensively determined at levels higher than quality indicators for pesticides for the classification of water chemical status (*e.g.* 0,1 for individual pesticides, 0,5 µg/L for total pesticides etc.). On the other hand, the usual control measures managed within the drinking water supplies ensure that levels of pesticide residues (also involving TERB, DET, DEA, ATR) in finished tap water meet parametric values of the drinking water Decree. Thus, in spite of results from ambient water surveillance, monitoring of Italian drinking water indicates no substantial exceeding for pesticides, as no derogation has been required in these years. Still, a more effective protection of water supplies, particularly against TERB/DET contamination, has been recently pursued by the Health Ministry through the adoption of consistent provisions aimed at controlling and mitigating emissions in water and soil ecosystems (revision of application rates, mixtures managing, use on alternate years in vulnerable areas, adoption of safety strips and progressive revocation in use).