

Annotation

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Monitoring of Nitrate Pollution of Vegetables in the Markets of Uman

Generation and accumulation of nitrates becomes an ecological factor which determines not only the regime of manuring of vegetables, metabolism and productiveness but also quality of crop, water and air. Using a huge amount of chemical and organic fertilizers to increase the level of crop yield generates a necessity to perform strict control of agribusiness products.

Analyses were conducted during 2014–2016. Samples of vegetables per 0.5 kg were taken in the marketplaces of Uman, overall weight of raw products for analysis was not less than 4 kg. As a result of analyses, conclusions of 1095 inspections were processed. Analyses of nitrate amount under the conditions of the laboratory of veterinary sanitary inspection was performed by the method of direct potentiometry with nitrate-ion selective electrode.

Analyzing the results of tests, it is possible to admit that watermelons, turnips and cucumbers contain the largest amount of nitrates, according to the MPC level. Among the marketplaces, that we have selected, the largest content of nitrates was detected in the cucumbers from the market “Mini-market” that can be explained by possible unregulated trading in the market. It is worth to mention that nitrates content was above normal in the markets “Vechirniy” and “Kolgospyi”, in 9.6 % and 5.3 % of the analyzed samples, accordingly.

Agricultural firm “Zayachkivka”, Zayachkivka, Khrystynivka district, is the supplier of the most organic vegetables. In the companies of Uman and Monastyryshche districts the situation is much worse, dangerous excess of nitrate pollution limit in spring cabbages (in 3.9 times), cucumbers (in 4 times), tomatoes (in 2.3 times), onions (in 1.1 times) is observed.

Besides, nitrate content in spring greens such as parsley, dill was analyzed. It was found out that the permanent excess of nitrates according to the MPC in these greens, grown under the conditions of elevated humidity and insufficient lighting, was observed.

Among the selected marketplaces the largest content of nitrates was contained by the vegetables, taken for analysis from the market “Mini-market”, that can be explained by possible unregulated trading in the market, and the agricultural firm “Zayachkivka”, Zayachkivka, Khrystynivka district, is the supplier of the most organic vegetables. The result of analysis of vegetable samples brings to the conclusion that the nitrates are absorbed more intensively by greens and by vegetables in the early stages of development.

Key words: *monitoring, nitrates, product quality, vegetables, maximum permissible concentration.*