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**APPROBATION OF METHOD MEASURING A PESTICIDES
RESIDUAL CONTENT IN TOMATOES**

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Actuality. Agrarians of Ukraine grow more than 150 varieties of tomatoes, which differ in productivity, maturity, type, shape, coloring of the fruit and resistance to various diseases. Almost two hundred plant protection products are used to grow this crop. After application of plant protection products in the composition of different parts of the plant, the active substances accumulate and protect the plant from the negative factor. The consumption of tomatoes in food is accompanied by the entry into the human body of a variety of dangerous xenobiotics. In order to protect the health of consumers in developed countries, the content of pesticide residues in crop and processing products is standardized and carefully monitored. In Ukraine, the pesticide residue levels are set by state sanitary rules and regulations. Proper laboratory control of crop products provides an opportunity to produce safe and quality products. There is a need for appropriate research in Ukraine to protect national producers and ensure their competitiveness in foreign markets.

The purpose of the research. The testing a laboratory control method that will allow the analysis of pesticide residues in tomato fruit, tomato paste and tomato juice.

The materials and methods for investigation. Samples of crop production were used in the work: fruits of tomatoes of different varieties, tomato paste and tomato juice

The solvents for "chromatography": acetone, methanol, acetonitrile, deionized water, formic acid, acetic acid, trifluoroacetic acid, hydrochloric acid, sulfuric acid, sodium hydroxide, magnesium sulfate, sodium chloride, calcium chloride, sodium citrate.

Sorbents (activated carbon, Al_2O_3 , nSiO_2 , cartridges filled with mixtures of primary and secondary amines manufactured by Supelco, cartridges filled with coal graphitized by Supelco).

Xenobiotic content analysis was performed by high-performance chromatography with mass-selective detector using Dionex Summit MSD-3200Q TRAP chromatograph, gas mass spectrometry using GC / MS A.01.10.3 / Agilent Technologies, high-performance liquid chromatography and chromatography detectors (HPLC / FLD and HPLC / DAD / FLD) using Dionex Ultimate 3000 chromatographs.

The results and discussion. The method of measuring the content of pesticide residues in samples of crop production consists of three main stages: obtaining vegetable extracts, obtaining working solutions, carrying out instrumental control of the content of xenobiotics. Approbation of method was studied, the values which characterizing the suitability of the developed and tested method measuring a pesticides residual content in tomatoes have been established. It is established that the working range of measurement of pesticide residues is from 0.01 mg/kg to 1.0 mg/kg, the error of the test results within the working range does not exceed 10%. Percentage of xenobiotics extracted from samples was established in studies of tomatoes samples artificially enriched with pesticides. The percentage of extraction is in the range of 80% to 110%, the coefficient of variation does not exceed 5%. The stability of the technique is established for 6 months in a series of in-laboratory studies of reference samples. The technique was tested in the analysis of 53 samples of tomato fruits, 5 samples of tomato paste and 10 samples of tomato juice.

Conclusions. According to the results of chromatographic control by chromatograms of 47 tomato fruits samples, no xenobiotics were detected, one sample of tomatoes and five samples of tomato paste with trace amounts of target

pesticides were detected (azoxystrobin, deltamethrin, dimethomorph, metalaxyl-M, pyraclostrobin) according to the Ukraine and the EU hygiene standards.