UDC: 632.38:635.25(477) DOI: https://doi.org/10.53040/ppap2026.34

MIXED VIRAL INFECTIONS OF ALLIUM PLANTS IN AGRIECOSYSTEMS OF UKRAINE

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Viral infections of *Allium* plants are an important problem of modern crop production, since these crops are widely used in agriculture and are able to accumulate viruses resulting from their vegetative propagation. Of particular danger are mixed infections formed by viruses of *Potyvirus*, *Carlavirus* and *Allexivirus* genera, which can significantly reduce yield and product quality.

During the study, serological screening of samples from different regions of Ukraine was carried out by the DAS-ELISA using commercial kits for enzyme-linked immunosorbent assay (DSMZ and Loewe Biochemica) to detect viruses from *Potyvirus*, *Carlavirus* and *Allexivirus* genera. The results were recorded using an automatic Thermo Labsystems Opsis MR microplate reader (USA) with Dynex Revelation Quicklink software at the wavelength of 405 nm. The ELISA results showed a high prevalence of representatives of *Allexivirus* genus in the tested plants. Allexiviruses were detected in 83% of plants, with the dominance of such pathogens as GVB (39% of samples) and GVC (28% of samples). ShVX has also been detected, but it was much less common (15% of samples). Screening results have unveiled the species composition of *Carlavirus* genus representatives circulating in Ukraine on onion crops: SLV (52.7% of samples) and GCLV (35.5% of samples) were the most typical pathogens, and importantly SLV was mainly detected in garlic plants. Mixed viral infections were found to be typical for *Allium* plants Allium. Viral complexes were detected in 63.6% of samples, most often in the form of combinations of GCLV+SLV (25% of samples) and OYDV+SLV (10% of samples). A combination of four viruses LYSV, OYDV, GCLV and SLV has also been detected (3.6% of samples).

The results of the study indicate the prevalence of mixed infections among *Allium* crops, which in Ukraine are often formed by representatives of different virus families. The outcomes emphasize the need for comprehensive monitoring of viral infections and the implementation of effective control measures to limit their spread.

Keywords: *Potyvirus*, *Carlavirus*, *Allexivirus*, mixed viral infections, Ukraine