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EFFECTIVENESS OF CARBECOL IN PREVENTING AND COMBATING POWDERY MILDEW ON VINE

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In the Republic of Moldova the perennial plantations occupy an area of about 288.9 thousand ha, including orchards - 138.9 thousand ha and vines - 150.0 thousand ha. The intensive chemicalization of the republic's agriculture in the last 30-50 years has led to an increasing volume of used agrochemicals. This did not contribute to crop growth, but only to environmental pollution and to occurence of new species/breeds of resistant pests. The implementation of different schemes for combining biorational pesticides in integrated protection allows to reduce the number of treatments with 2-3 times while lowering energy costs with 30% - 40%. This refers especially to the protection of multiannual crops and vegetables where the frequency and volume of pesticide application is quite high. The powdery mildew (oidium) of the vine (*Uncinula necator*) ranks second place after the damage caused to the vine crop. The pathogen attacks all the aerial organs of the plant: leaves, grass shoots, bunches and berries. Crop losses due to this disease can range from 10% to 80%.

The aim of the research was to evaluate the biological efficacy of Carbecol based on potassium bicarbonate (2KHCO3) in preventing and combating powdery mildew (*Uncinula necator*) in vines. Given the low level of toxicity and risk to the environment, this group of preparations is of particular interest as biorational fungicides. The researches were carried out during the years 2020–2021 within the institutional project no. 20.80009.5107.19: "Strengthening the capacities for forecasting and combating harmful organisms and phytosanitary risk analysis in integrated plant protection", in the central area of the Republic of Moldova, experimental group of the Institute of Genetics, Physiology and Plant Protection. The experiments were performed on Cardinal vine variety and consisted in 5 treatments applied with a portable sprinkler while the climatic conditions were favorable for the appearance and development of studied pathogen.

The experimental scheme included four variants: control, standard and two variants of Carbecol in different doses (4.0; 6.0 kg/ha). As a standard was the fungicide Kumulus DF (6.0 kg/ha), used in production. Each variant consisted of three repetitions, and each repetition with 10 hubs with the same crown parameters.

As a result of the statistical processing the highest biological efficacy was recorded at the chemical standard Kumulus, - 85.7%. In the Carbecol variant - 4.0 kg/ha, the biological efficacy constituted 72.8%, while in the Carbecol variant - 6.0 kg/ha, - 78.7%. Analyzing the obtained results, we can conclude that the biorational product Carbecol has demonstrated essential efficacy and can be used in the prevention and control of powdery mildew on vines, within the ecological system of plant protection.

Keywords: *Uncinula necator*, pathogen, carbecol, fungicide, biological efficacy.