

EXPANSION AND DIVERSITY OF THE BROOMRAPE RACES IN THE REPUBLIC OF MOLDOVA

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The recent increase in the world production of *Helianthus annuus* L. and the rapid evolution of its parasite - the broomrape (*Orobancha cumana* Wallr.) led to changes in the genetic structure of *O. cumana*. So far, eight races of broomrape (A, B, C, D, E, F, G and H) have been described, which have unfavorable consequences for sunflower cultivation. In the Republic of Moldova, the broomrape was first mentioned in 1863, only about 20 years after the introduction of sunflower in culture. Moreover, in the 1960s, a new biotype, was called the Moldovan race, or C race (Sharova, 1969). In the early 2000s, the results obtained on racial status allowed the reporting of race A-F. It should be noted that race A was predominant, being identified in about 30%. B race was highlighted in 22% of the locations, C race - 18%, D race - 15%, E race - 12%. Compared to the races \leq E, the presence of the race F was identified only in 3% of the localities (Petcovici et al., 2009). Thus, the proposed goal was to assess the racial status of *O. cumana* in the Republic of Moldova, in dynamics during the last 10 years (2010-2020). For this purpose, a series of expeditions were carried out in the country in which more than 130 sunflower fields were evaluated, and it was found that the infection is widespread. Subsequently, in 2014, the investigations covered almost the entire surface of the country (158 fields in 95 localities) (Duca et al., 2017). Broomrape was found in 63% of the southern localities, 47% of the central localities and only in 10% of the analyzed fields in the northern regions. At the same time, *O. cumana* seeds were collected from more than 60 populations, which were used to establish the strains of the parasite using differentiating host plants. As a result, the entire complex of known physiological races was detected. Thus, the less virulent races than E, were predominant, being identified in 37% of the investigated localities, the presence of the F race was noticed in 14% of the localities, especially from the south of the republic, and the G race in 27%. Research has shown that nine of the populations surveyed also infected resistant breeders resistant to the race G, which indicates the identification of the race H for the first time in the Republic of Moldova (22%). The appearance of this biotype of the parasite in our country was confirmed following a new assessment of the racial status of the broomrape, conducted in 2019, on agricultural fields in 15 localities in the Republic of Moldova. The results of this study reported the presence of races E-H, the new *O. cumana* race spread entirely throughout the country, the race H becoming the dominant physiological races of the parasite (56.2%) (Duca et al., 2022). The results obtained in the present study demonstrate an accelerated evolution of this sunflower parasite on the agricultural fields of the Republic of Moldova. Following the expeditions made in 2014, the presence of the race H of broomrape was reported, which was later shown to have spread over the entire surface of the country.

Acknowledgments: This study was funded by the project of the State Program 20.80009.5107.01: Genetico-molecular and biotechnological studies of the sunflower in the context of sustainable management of agricultural ecosystems.

Keywords: *O. cumana*, races, sunflower, broomrape