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Reaction norms of the new grape varieties with complex resistance to environmental conditions

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A b s t r a c t: Agrobiological, some physiological and uvological properties of the new varieties bred by the Institute have been evaluated (Podarok Magaracha, Antei Magarachski and Yubileiny Magaracha). These varieties with complex resistance to pests and diseases are grown in commercial vineyards under different soil and climatic conditions in Crimea, both in the zones of open and protected viticulture. Agricultural and biological properties of the varieties have been studied, and their high fruitfulness has been shown. The proportion of fruiting shoots reaches 85 %, and the coefficient of fruitage (K_1) is 1.3. The fruiting shoot percentage, the coefficient of fruitage, the coefficient of fruitfulness (K_2) and the average cluster weight have been shown to be substantially affected by soil and climatic conditions along with agricultural methods.

The norms of reaction to the alterations of soil and climatic conditions and to agricultural methods have been established for individual indicators characterizing certain properties of the varieties. The coefficients of sensitivity of the varieties to the alterations of soil and climatic conditions and to agricultural methods have also been established. The most dramatic changes in these indicators are due to the different training systems and, to a slighter extent, to the total number of shoots per vine. The sensitivity of the varieties to the alterations of the conditions of culture have been shown to be different. Antei Magarachski has a weak degree of reaction with the coefficient of sensitivity 0.28-0.31, while Podarok Magaracha is highly sensitive to the same alterations with the coefficient of sensitivity 0.74-0.88.

In commercial culture, these cultivars can be used to establish own-rooted vineyards in phylloxera-infected zones, which makes their culture less labor consuming and reduces pesticide load on the environment.