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BIOMETRIC CHARACTERISTICS OF THE FRUITS OF CORNELIAN CHERRY (CORNUS MAS L .) CULTIVAR 'VYTIVKA SVITLANY' IN CONDITIONS OF CLIMATE CHANGE

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Biometric descriptors of fruits are important for selection work, monitoring the process of acclimatization of newly introduced plants, as well as for analyzing the reaction of fruit plant cultivars to climatic changes in the studied region [2, 3, 4, 5]. The fruits of cornelian cherry (Cornus mas L.) have long been used for food and for medicinal purposes [1, 3, 5]. M.M. Gryshko National Botanical Garden, National Academy of Sciences of Ukraine (NBG) has the largest collection of cultivars and

forms of C. mas in Ukraine. We investigated the variability of the fruits of the new earliest cultivar 'Vytivka Svitlany', bred in the NBG [4], during four years – 2019, 2021, 2022 and 2023 (Table, Figure). Fruits were the smallest in size and weight in 2022, and in 2021 and 2023, the largest. Over the past two years, the coefficient of variation of the fruit size, especially its length, has increased, but the coefficient of variation did not exceed 10%, therefore, the variability of the size of the fruits of the cultivar 'Vytivka Svitlany' is insignificant. This indicator of fruit mass in 2019 and 2021 was insignificant, and in 2022–2023 it was average. We assume that the obtained data reflect the influence of the weather conditions of the specified years on the size and weight of the fruits. In Kyiv, according to B. Sreznevsky of the Central Geophysical Observatory, all years were the warmest for 139–140 years or were among the ten warmest. In terms of annual precipitation, 2019 and 2021 were the driest (80 and 86% of the climatic norm, respectively). In 2022 and 2023, they amounted to 91 and 109% of the climatic norm, respectively. Precipitation was very unevenly distributed over time. Colder than usual in April and May 2022 and less than normal precipitation in May and June may have caused the development of small fruits in size and weight and a higher coefficient of variation than in previous years.

Table. Dynamics of biometric indicators of fruits of the cultivar 'Vytivka Svitlany'.

Years	Mean + SD	Min	Max	CV, %
Length, mm				
2019	21.2±0.84	18.90	22.94	3.95
2021	22.4±0.89	20.58	24.04	3.95
2022	18.8±1.13	16.8	22.5	6.0
2023	23.0±1.53	19.78	25.89	6.6
Diameter, mm				
2019	14.3±0.84	12.91	15.85	5.2
2021	15.7±0.78	14.40	17.32	5.0
2022	13.7±1.16	11.08	15.76	8.5
2023	14.7±1.13	12.18	17.01	7.7

Weight, g

2019 3.02±0.29 2.,63 3.87 9.7

2021 3.62±0.40 3.0 4.6 10.9

2022 2.44±0.34 2.13 3.78 13.8

2023 3.58±0.55 2.80 4.98 15.5

Note. SD – standard deviation; min – minimal value; max – maximal value; CV – coefficient of variation.

May 2023 was the driest for the entire time of observations, but two monthly precipitation rates in April and July probably contributed to the development of large fruits, but with a significant coefficient of variation. So, the new cultivar 'Vytivka Svitlany' is quite tolerant to high temperatures and suffers more from a lack of moisture, especially during the period of development and fruit ripening, which is due to the shallow root system of the plants.

Figure. The diagram of the range of variation in the size and weight of the fruits of the cultivar 'Vytivka Svitlany': L, D, W – length, diameter, weight of the fruits, respectively; 19, 21, 22, 23 – years 2019, 2021, 2022 and 2023, respectively.

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