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Fruit Size Variability in Rosehip (Rosa canina L.) Populations from Arad County

Adina Gabriela Maris, Ciulca S.

University of Life Sciences "King Michael I" from Timisoara

Abstract: *The rosehip plants are perennial shrubs that grow solitary or in small groups in different places like: thickets, forest edges or several open areas,. Rosehips have a high potential interest for several innovative food and medicinal applications given their high concentration of bioactive compounds. The pseudocarp or false fruit of this plant, have a fleshy walls surrounding a cavity containing inside the single-seeded fruits or achenes. Fruit size is a major factors with high influence on the yield, quality and the utility of rosehip. The biologival material composed by 24-rosehip populations were collected from different sites of Arad County located in the West part of Romania. The rosehip ripe fruits were randomly picked from different sides of the canopy for three shrubs of each population. The picked fruits of each population were sampled into three gropus based on their weight: small (below 1 g), medium (1-2 g) and large (over 2 g). The contribution of the fruits groups to the harvest was determined based on percent from total fruits weight and number. The objective of this study was to establish the impact of the climatic conditions variation during 2022-2024 on the fruit size in the 24-rosehip populations from Arad County. The changes of climatic conditions had the highest iimpact on fruit size in populations Bocsig, Bacaul de Mijloc and Vladimirescu, to whom the proportion of the large fruits as a percentage of total fruits weight was considerably lower, and in populations Bocsig Gurba and Beliu, as a percentage of the total fruits number.*

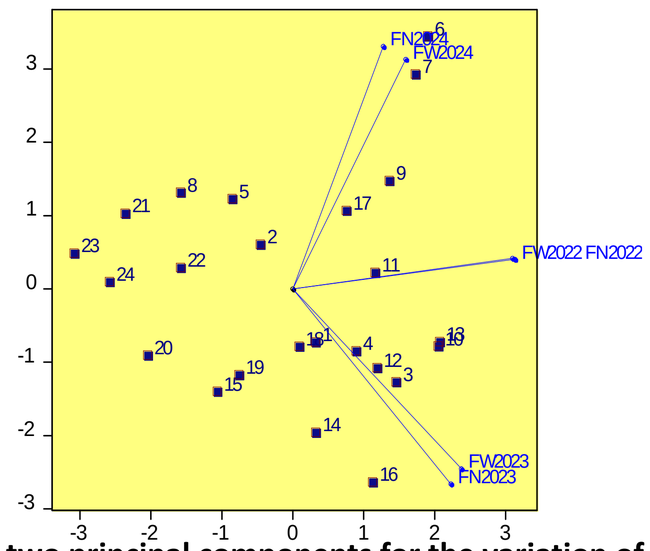
Introduction

The rosehip is mainly used as source of food or as a medicinal plant, while the roots of this plant have been long used as a rootstock for the ornamental roses. Rosehip fruits can be used as organic food products from either spontaneous flora or even from organic cultivated plantations. Their fruits have been used in the preparation of different foods such as tea, juices or syrups, dessert soups, jams marmalades, or even wines. The cultivation of *Rosa canina* generates the problem of promoting valuable genotypes/populations (productive and high quality fruits), or to fiind/devgelop genotypes with less prickles on the stems and branches. The most effective way in this case is to identify and collect from the spontaneous flora perspective genotypes and to introduce them in a particular breeding program.

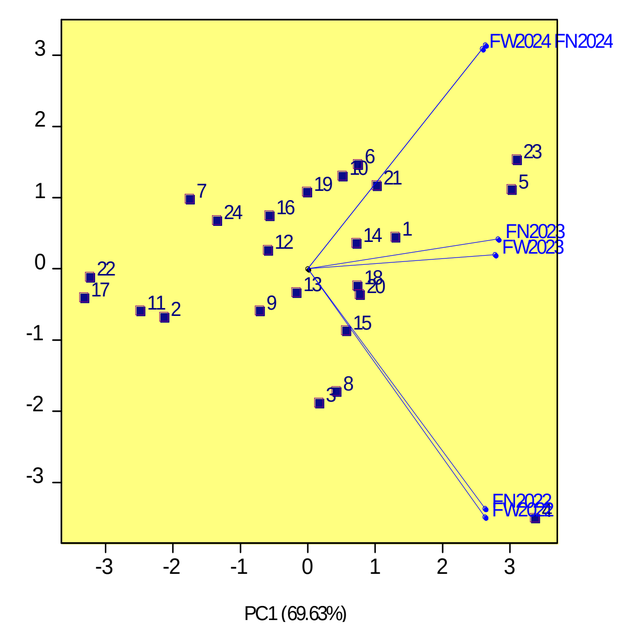
Material and Method

The biologival material composed by 24-rosehip populations were collected from different sites of Arad County located in the West part of Romania. The rosehip ripe fruits were randomly picked from different sides of the canopy for three shrubs of each population. The picked fruits of each population were sampled into three gropus based on their weight: small (below 1 g), medium (1-2 g) and large (over 2 g). The contribution of the fruits groups to the harvest was determined based on percent from total fruits weight and number.

Results and Discussions



Biplot of first two principal components for the variation of small fruits



Biplot of first two principal components for the variation of large fruits

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Conclusions

The changes of climatic conditions had the highest iimpact on fruit size in populations Bocsig, Bacaul de Mijloc and Vladimirescu, to whom the proportion of the large fruits as a percentage of total fruits weight was considerably lower, and in populations Bocsig Gurba and Beliu, as a percentage of the total fruits number.