



## Assessment of Pomological Diversity Between Rosehip (*Rosa canina* L.) Populations from Arad County

**Adina Gabriela Maris, Ciulca S.**

University of *Life Sciences* “King Michael I” from Timisoara

**Abstract:** The fruits of rosehip (*Rosa canina*) have been used as medicinal plants for a long time, as such in present they have an increasing interest in the production of nutraceuticals and functional foods. The fruit quality is assessed by many pomological parameters, which can vary with climate conditions, geographical region, or geographic and ecologic origin. Rosehip like many wild edible fruits have distinct combinations of genes in addition to a higher degree of genes diversity as a consequence of frequent out-crossing. The biological 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 aim of this study was to evaluate the fruits traits diversity between some rosehip populations from Arad County in order to collect information about their yield potential under different natural conditions of this region. Significant variation of fruits traits were found between the studied rosehip populations. The pomological diversity of these rosehip population from Arad County was indicated by their hierarchization them into different clusters and subclusters. Together with the genetic factors, some of the ecological conditions like altitude or nutrient content of the soil is possible to have an important influence on growth and development of rosehip fruits.

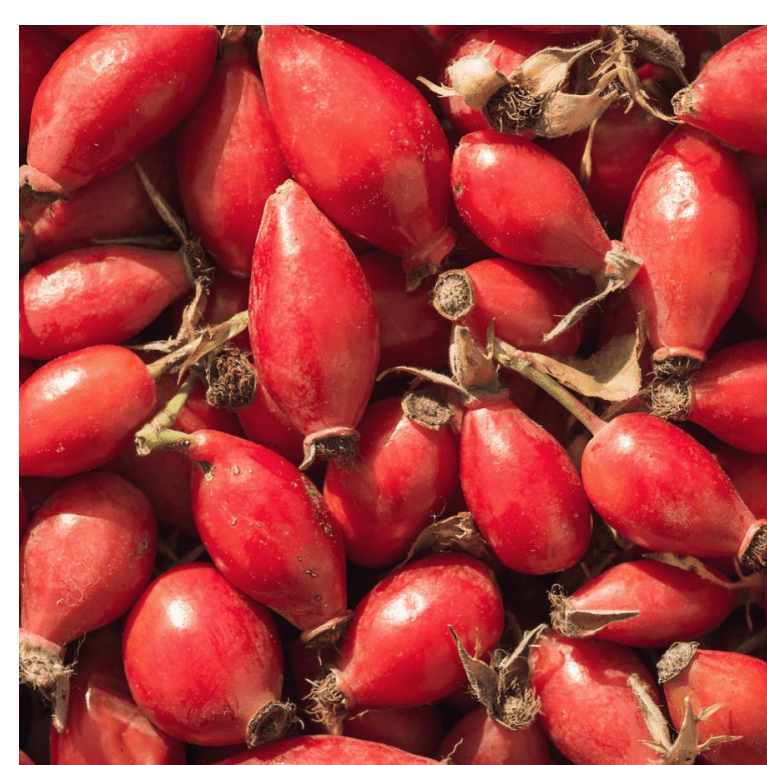


### Introduction

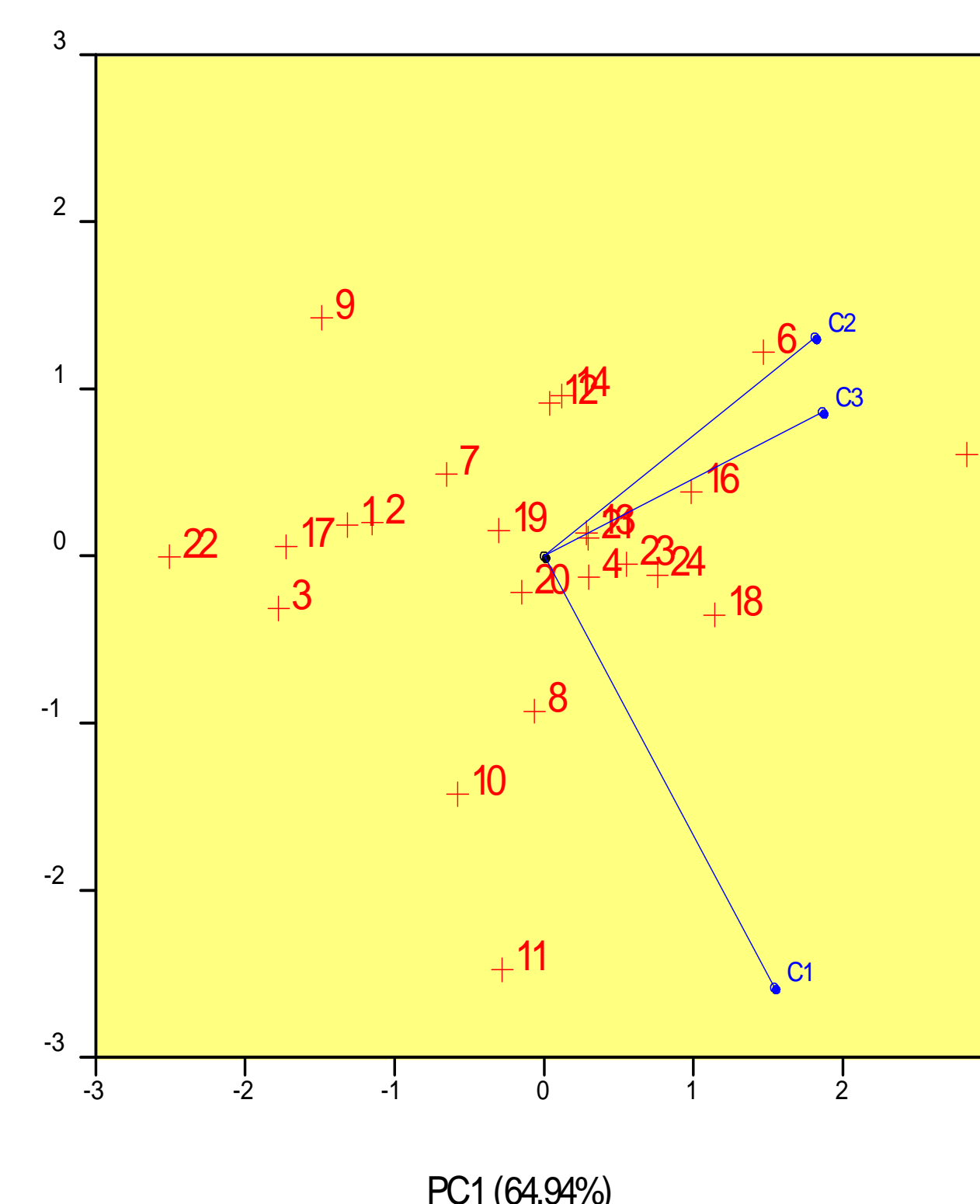
The rosehip is mainly used as source of food or as a medicinal plant, while the roots of this plant have been long used as a rootstock for the ornamental roses. Rosehip fruits can be used as organic food products from either spontaneous flora or even from organic cultivated plantations. Their fruits 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 find/develop 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

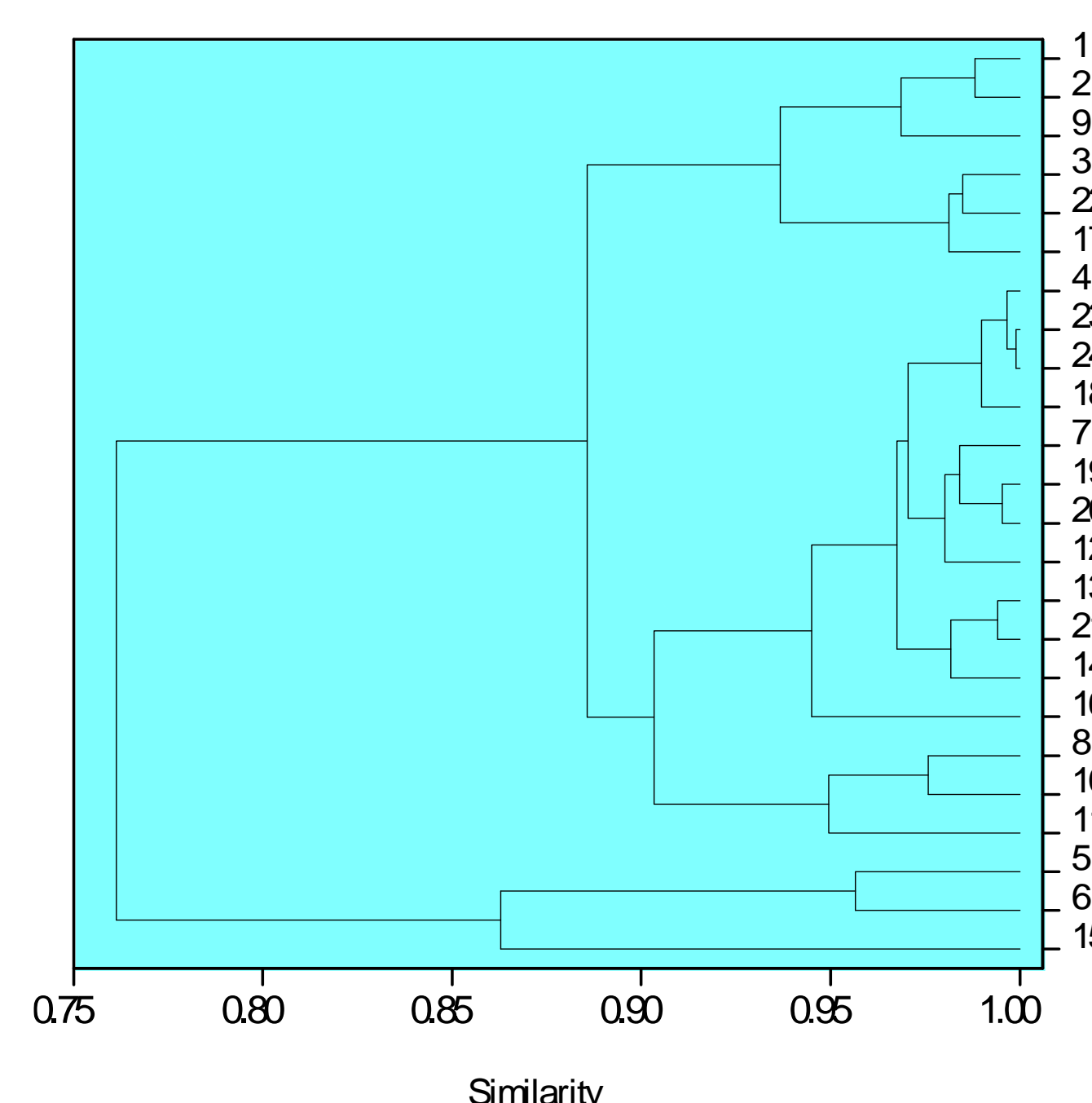
The biological material composed by 24-rosehip populations were collected from different sites of Arad County located in the West part of Romania. The rosehip ripe fruits were randomly picked from different sides of the canopy for three shrubs of each population. The harvested fruits were randomly sampled and 50 fruits per shrub/replicate were selected for analysis. The obtained data was processed using univariate and multivariate statistical methods.



### Results and Discussions



Biplot of first two principal components for the fruits traits



UPGMA clustering of rosehip populations regarding fruits traits

### Conclusions

The pomological diversity of these rosehip population from Arad County was indicated by their hierarchization them into different clusters and subclusters. Together with the genetic factors, some of the ecological conditions like altitude or nutrient content of the soil is possible to have an important influence on growth and development of rosehip fruits.