

## Strategy of Establishing a Rosehip Plantation Using Varieties of *Rosa Canina* from Spontaneous Flora of Transylvania

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**Abstract.** This study presents the methodology to achieve a plantation of wild rose, using four varieties of *Rosa Canina* from wild flora of Transylvania. Also has been considered: how to harvest the plant material, market demand for vegetable raw material costs to establish, maintain the culture and life of a culture. Vegetative material consists of four varieties of *Rosa Canina*, seen as valuable for their high content in vitamin C, fruit size and productivity. These varieties were selected based on macroscopic, biophysical and biochemical studies. The results obtained can be achieved in a breeding ground to be studied, characteristics of the four biotypes considered valuable. These characteristics can be improved by scientific methods of selection and be homologated the plants which provide the best efficiency. Planting material created and certified must then be extended by a specific technology to a larger culture.

**Keywords:** culture, homologated the plants, plant material, rosehip varieties, selection

**Introduction.** *Rosa canina* or wild rose due to the content of rosehip rich in vitamins, minerals and other nutrients is use in food and pharmaceutical industry, which recommended it to be grown in a plantation (Uggla and Martinsson, 2004). In our country plantations of rosehip are realised with hybrid not from varieties of wild flora.

**Aims and objectives.** This study presents the methodology to achieve a plantation of wild rose, using four varieties of *Rosa Canina* from wild flora of Transylvania. The research aims the following criteria: value in phytotherapeutic and food terms, the territory spread, obtaining planting material, establishment and maintenance of this small plantation, estimated productivity of each variety selected.

**Materials and methods.** Method of achieving the plantation will respect the variant described by Barry *et al.* (2008), De Vries (2003) and Uggla and Martinsson (2004). It consists in selecting the rooted branches (obtained by separating the existing shrubs from wild flora) followed by their planting in the breeding ground and replanting in the field until next autumn. Implementation of the project of establishing a wild rose hips plantation will be made in two phases. First phase: obtaining saplings and growth them in Lita nursery from Săvădisla. The second stage: saplings will be transplanted in the field, on area of 0.5 ha in the same location. Vegetative material consists of four varieties of *Rosa Canina*, seen as valuable for their high content in vitamin C, fruit size and productivity. These varieties were selected based on macroscopic, biophysical and biochemical studies. The four biotypes selected for future implementation of a plantation are: RC1-Var. *Transitoria* f. *ramosissima* (Bistrița-Năsăud, Agieșel), RC2-Var. *Transitoria* f. *montivaga* (Bistrița-Năsăud, Salva); RC5-Var. *Assiensis* (Cluj, Mănăştur) and RC8 - Var. *Lutetiana* f. *psilogyna* (Arad, Gașa). They are very hardy because they have a large tolerance of temperature, humidity and soil. As well, selected biotypes can grow up in any type of soil, but sandy soil is preferred. Also these biotypes are suitable for ecological cultivation.

**Results and Discussion.** *Rosa canina* can be propagated by seeds, plantations in this case takes more time, vegetative propagation is generally used. The cuttings can be collected

from the mother plants (biotypes analyzed) in period November - March. After that they are rooted in peat and perlite in plastic tunnels at 20-22°C and high humidity. The rooting can be enhanced by treating the cuttings with indolebutyric acid (IBA). The results obtained can be achieved in a breeding ground to be studied, characteristics of the four biotypes considered valuable. This propagation method was described in studies done by Barry et al. (2008) and Werlemark (2009). Area of land has been chosen for further plantation will be up to 0.5 ha. Basic work aimed at refining soil depth and destroys weeds. The field should be preparing for plantation by: herbicide, achieve plowing to a depth of 25-30 cm and fertilized with stable manure (or 250-300 kg NPK fertilizer/ha). The study made by Barry et al. (2008) indicates that during the early establishment years of a rose hip plantation, wild roses grow best with the use of mulch, fertilizer, and tillage between the rows. The plantation should be fenced because of the early stage of growth shoots can be damaged by rabbits or other animals. The planting of the cuttings in the field is performed in autumn, land irrigation is not necessary because these biotypes are resistant to drought. The distances among the plants are between 1.5-3.5 m dependent whether the plants should be harvested manually or mechanically. For enhance the yield and quality of fruit it is necessary to pruned the plants each year. The bushes resist in culture and have a good production time of 10-12 years (Joublan and Rios, 2005), but if cuts are made correctly in each year plantation will certainly last the minimum 14 years. The first yield can be obtained 3-4 years after planting; when the plants have become old they can be rejuvenated by heavy pruning 10-15 cm above the ground. Fruit production for selected biotypes from spontaneous flora was between 2.7 kg/plant for RC1-Var. *Transitoria* f. *ramosissima* and 3.5 kg/plant RC8- Var. f, but in culture conditions could increase their productivity. The yield can vary with species, cultivation procedures and harvesting method. From the hybrid PiRo 3 were harvested manually up to 8 kg/plant. In Sweden, mechanical harvest of *R. dumalis* and *R. rubiginosa* has yielded 3 tones/ha (Uggla and Martinsson, 2004).

**Conclusion.** Entering in the culture of these biotypes, found in the wild flora of Transylvania, will open new perspectives in research, environmental practice in the application of important elements of sustainable development. Use the four biotypes selected in the establishment of a small plantation is desirable considering the fact that in our country there are few plantations of *Rosa canina*. The selected biotypes are precious in terms of productivity and chemical composition and can also be organically grown. Also harvesting techniques (RC5 - Var. *Assiensis* is a hip without thorns) and processing methods is one of the areas of concern regarding this species.

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