

Behaviour of Certain Ornamental Shrub Species Planted on the Eroded Slopes of Iulius Mall Shopping Centre, Cluj-Napoca County

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SUMMARY

Vegetation is one of the main factors that reduce soil erosion by intercepting raindrops and taking over them and by the retention of large amounts of precipitation per unit foliar area (Dîrja, 2000). Our experimental field is located on the eroded slopes nearby Iulius Mall Shopping Centre, on a slope of 40%, with southern exposure, located in the area of aggressive climate of Transilvania with a K factor of 0.127. The biological material was represented by *Euonymus fortunei*, *Cornus alba*, *Ligustrum vulgare*. Plants have been observed during a life cycle in 2011 and were analyzed in terms of coverage of the soil, root depth and main clamping capacity. Clamping capacity of shrubs had higher values for *Cornus alba* (85%) and *Euonymus fortunei* (80%) compared to *Ligustrum vulgare* which had a rather low rate of clamping (60%), because the vegetation, located on the lowest part of the slope and the moist soil have been swept away by the rain. *Cornus* offered the best coverage of the slope with a rate of 87%, compared with *Euonymus fortunei* which had coverage of 60%. It is important to know the soil coverage percentage, because a better coverage will reduce soil erosion (Dîrja, 2006). After measuring the penetration depth of the primary root depth we can see that the ornamental shrub species *Cornus alba* and *Ligustrum vulgare* had a higher penetration depth (40-50 cm), compared with *Euonymus fortunei* which had a lower penetration depth of 26 cm. Roots have a mechanical role in stabilizing eroded slopes due to their density and soil-gripping nature (Norris and Greenwood, 2006). It is important to choose the proper vegetation for degraded soil because is the most economic and effective way to prevent soil erosion.

Keywords: soil erosion, coverage, clamping capacity, root depth.

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