UNIVERSITY OF LIFE SCIENCES ”KING MIHAI I” FROM TIMISOARA
”YOUNG PEOPLE AND MULTIDISCIPLINARY RESEARCH IN APPLIED LIFE SCIENCES”

05-06 November 2026



Site-Specific Planning of Artificial Forest Regeneration in Production Unit VI Slăvuța, Southern Romania

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Abstract: Artificial forest regeneration requires a site-specific assessment of terrain, soil, climate, species suitability and the operational resources needed to establish viable young stands. This paper synthesizes a forest-regeneration design developed for Production Unit VI (U.P. VI) Slăvuța, Hurezani Forest District, Southern Romania.

• Introduction

Artificial regeneration is an essential silvicultural instrument where natural regeneration is absent, insufficient or incompatible with the target stand composition. The decision to plant should follow a diagnosis of regeneration constraints, rather than the assumption that every opening requires an identical technical solution.

• Material and method

The planting design was examined at two spatial scales: the full production unit and four site units proposed for artificial regeneration. For each intervention unit, the documented area and land category were recorded.

• Results and discussions

The documented geology includes Pliocene materials, with sand, marl and sandstone alternating with loam and clay. The original land-category classification is a planning diagnosis, not a measured estimate of ecological degradation.

Conclusions

The proposed composition comprises equal shares of white and black poplar, planted at 4 × 2 m spacing. The theoretical density of 1,250 seedlings ha−1 yields approximately 1,238 seedlings across the four site units, consistent with the total quantity reported in the source tables.

The contrast between higher and lower floodplain sites supports the need for field-level verification of soil moisture, flooding regime and regeneration constraints before implementation. Site-specific diagnosis should determine whether planting, supplementary planting or natural regeneration is the most appropriate intervention.