

Original Article

Influence Pedogenetical Cover on the Production Capacity of Forest Resorts Trascău Mountains

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Abstract

Trascau Mountains are an extension to the northeast of the Metalliferous Mountains. Petrographic structure is very complex, represented by basalt, crystalline, sandstone, limestone, crystalline limestone, gneiss, dacites, etc.. However determined the formation of a varied terrain (ridges, knolls volcanic steep keys, caves) and hence a very varied soils cover. Were inventoried and analyzed a total of four soil types found in wooded area in the Mountains Trascau. Soils were represented by: rendzina, districambosols, eutricambosols and albic luvisols. Due to the extremely varied microrelief of territory, most soils are skeletal, edaphic small and medium-volume, some shallow. Forrest sites in this area belongs to mixed mountain level FM₂ and premountain-mountain beech level FM₁+FD₄, with at most middle production capacity, fact given in the first way by relief conditions, but also the meted soils, soils that are skeletal.

Keywords: forest resort, soil, Trascau Mountain, pedological cover.

1.Introduction

Trascau Mountains are an extension to the northeast of the Metalliferous Mountains and is bounded on the north and northeast of the Aries Valley, west of Abrud Ampoiului Valley to the south, on southeast, Mures Valley and Aiudului East Valley. Trascau Mountains are part of the Apuseni Mountains group. It covers an area of approximately 700 km², with a very complex petrographic structure represented by basalt, crystalline, sandstone, limestone, crystalline limestone, gneiss, dacites etc. However determined the formation of a varied terrain (ridges, knolls volcanic steep keys, caves) and hence a very varied soils cover. of meters to hundred of meters.

Increased slope of the land and reduced water retention capacity in soils, mainly shallow basins favoring certain phenomena torrentiality, with increased danger of erosion by the migration of soil and rock slope [2, 6, 7]. For this reason, most bazinet serve to protect water and soil. Morphological unit, has Trascău Mountains in the north and west slightly corrugated plates, which appear isolated heights with steep almost vertical slopes. Crossing the mountain valleys they are heavily steeped in its hard rock gorges and valleys forming numerous and depressions formed, except Depression Trascău are peripheral.

2. Material and Method

To achieve the study were inventoried and analyzed a total of four soil types found in wooded area Trascău Mountains. Analyses were

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made by the methodology used routinely in pedology laboratories [4].

In conjunction with the climatic, geomorphologic, especially vegetation and soil, we had identified several types of stations. Bonitation stations can be performed either directly with the intrinsic elements of the stations (average annual temperature, mean annual precipitation, winds, global potential trophicity, exchangeable bases, acidity, alkalinity, moisture accessible, edaphic volume, long-term bio) and indirectly by using vegetation indications forest [3]. The method that had been used was that given the indications of forest vegetation and soil types.

3. Results and Discussion

Results of physical and chemical analysis of soils studied are:

Rendzines. The sample was harvested from the upper third of the mountain. Soil is shallow, skeletal a smooth texture (clayey), very well stocked in humus. *Horizon Am* 30 cm thick, dark brown, because high humus content (20.4). Skeleton content is high exactly 13.06%, texture clay loam, slightly acid reaction. Degree of base saturation is high value ($V\% = 94.87$). *Transitional horizon A/R*, 15 cm thick and dark brown-gray, 71% content of skeleton, has a high content of humus (17.8%) and pH is a neutral reaction (pH 6.76). Has a clay texture, base saturation level is 95.65. *R horizon* is represented by limestones and screes.

Eutricambosols. *Ao horizon* has a thickness of 12 cm reddish brown. It has a sandy-clayish texture, skeleton content 11%, high degree of base saturation, slightly acid reaction (pH 5.9). *Horizon A / B*, located between 12-40 cm, has a reddish brown color, lack of structure, texture throughout the thickness Lutoasa meeting is partially disaggregated fragments of rock (crystalline, sandstone, micaceous). Has a slightly acid reaction (pH 6.50), very low content of humus (pH = 0.91), high degree of base saturation (V is 82.02). *Bv horizon*, located between 40-85 cm, reddish brown, open, poorly structured, sandy loam texture, weak-acid reaction (pH 5.66), very low in humus complex containing adsorbent has high value and degree of saturation bases to increase upper horizons. *A horizon R* appears to 85cm, represented by micaceous, sandstone, crystalline.

Districambosols. *Ao horizon*, 0-17 cm range has a dark gray color, texture sandy-clayish, composed of aggregates less stable structure, the main mass of roots penetrate up to 20 cm deep. To the horizon appear concretions of iron rust color that prints horizon. Is a strong acid reaction (pH 5.0), low saturated bases ($V = 51.90$) [1]. *Bv horizon*, between 17-60 cm, yellowish-brown. It has a sandy loam texture, skeleton about 43%, strongly acidic reaction (pH 5.14) and low humus content ($H = 2.11$). *R horizon*, is represented by siliceous sandstones at a depth greater than 60 cm.

Albic Luvisols. Extremely difficult hummification acid led to illuvial clay from upper horizons. *Ao horizon* contained between 0-8 cm, gray color and texture- sandy-clayish feedback, veryacidic (pH 4.0), excessive skeletal (43% of) and a weak structure [1]. It ranges from 8-25 cm horizon, sandy-clayish texture, granular structure, high base saturation of 7.8%, skeletal (68.4%). *Bt horizon*, with a 25 cm thick, brown, prismatic structure, acid reaction (pH 4.5). *R horizon* is at a depth of 50 cm.

Forest Resort h pedology as been studied in detail, the correlation between its green vegetation and its environmental development. Of forest resorts are identified, "mountain-premontan Floor of beech FM_1+FD_4 " and "mountain Floor mixtures FM_2 ". *Mixing mountain Pi rendzinic small edaphic*, FM_2 *Pi T* $I-III$ H $I-II$ Ue_{2-1} , is associated rendzinic and the soil type is associated with rendzinic forest soils faget. *Mixing mountain Pm edaphic medium brown with Asperula-Dentistry* FM_2 *Pm T* $III-II$ H $II-III$ Ue_{3-2} is associated eutricambosols ground. In this mountain resort and vegetate beech-beech lariceto flora of Mull.

Mountain-premontan of beech Pm edaphic medium brown, with Asperula-Dentistry, FM_1+FD_4 *Pm T* III H III Ue_2 which is associated districambosols soil, woody vegetation is represented by beech. Forest type is associated with skeletal soils beech mountain flora of Mull.

Mountain-premountain of beech Pm rendzinic edaphic middle ground FM_1+FD_4 *Pi T* II H II Ue_2 , is associated rendzinic and mountain beech crop.

Mountain-beech premontan of Pi rendzinic edaphic small FM_1+FD_4 *Pi T* $III-IV$ H I Ue_{2-1} , soil is associated rendzinic.

4. Conclusions

The Trascău Mountains due to the complexity petrographic structure, soils are widespread: Rendzines, occurring on limestone eutricambosol (39%), districambosol (12%) and Albic luvisol (5%). Highly variable due to the microrelief of territory, it appears that most soils are skeletal with edaphic small and medium volume, some shallow.

Referring to woody productivity, we can observe that they are middle and low productivity ones, fact that is determined by soil's edaphic volume, moisture scheme, trophicity of soil and its acidity. In the majority of forest sites that had been analyzed, the volume is small or medium, moisture scheme being oscillatory with high estival deficiency, low trophicity and a large amount of skeleton. Districambosols which develop on micaceous sandstone, crystalline. Eutricambosols, developed by 60 cm thick, the siliceous sandstone. Albic Luvisols developed on a 50 cm thickness.

and detritus on top of the mountain, with a profile developed on a 35 cm thick.

The largest proportion of land area has rendzinic Trascău Mountains (44%), followed by

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