

ASSESSMENT OF BEECH FOREST NATURAL SEED REGENERATION ON CLEARCUTS OF WET BEECH SITES OF UKRAINIAN CARPATHIANS

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Carpathian beech stands are not only significant potential of forest resources, but also play an important environmental role, that important for ecosystem conservation. Therefore, increasing productivity of beech stands is one of the important objectives of regional forest management. An important role in the establishment of forest stands plays their natural regeneration.

The natural forest regeneration by seed is spontaneous in nature. However, this spontaneity is subject to certain laws which knowledge is extremely important for foresters in practice and subject to economic regulation on the part of forestry. That's why the complex scientific and technical measures for rational forest management there is a need for further research of natural beech stands regeneration by seed.

Assessment of natural forest regeneration in cut areas is a prerequisite for prescribing management activities to be carried out at the site. Depending on the quantity, quality, incidence and composition of natural forest regeneration methods for reforestation can be natural, artificial or combined.

Research of interrelation between the amount of natural regeneration of beech of different height and age were conducted. The critical value of the correlation coefficient at 5% level of significance is 0.36. The coefficient between the number of natural regeneration of beech height of 0.50 m (small) 0,51-1,50 m (middle) and more than 1.50 m (high) and age of cut area respectively 0.89, 0.54 and 0.40. Since the calculated coefficients modulo is more than the critical coefficient, it can be evident of the interrelation between the study variables.

The largest number of small size natural beech regeneration observed in 1-year old cut area – 9.1 thousand per hectare, while large size amount of a 2.8 thousand per hectare and middle size 1.2 thousand per hectare. This is because

during felling most small beech regeneration survive, especially when cutting done in winter with snow. In the age of 3-year and 4-year age small beech regeneration is present in small quantities (0.1–0.6 thousand per hectare). Highest amount of average size natural beech regeneration observed for three years old cut (4.6 thousand per hectare) and high size – at the 4-year age of cut (3.8 thousand per hectare).

Past harvesting beech regeneration in cut areas is insignificant and situated near forest with beech seeds spread due to animal. The availability of healthy beech regeneration in cut areas ranging from 89.1 to 100% of the total. The amount of damaged (1.0 thousand per hectare – 6.8%) and dead (0.6 thousand per hectare – 0.6%) beech regeneration observed in 1-years cut that connected with the abrupt change of environment after cutting.

Higher density of natural regeneration of beech seedlings is observed on 1-year cut (88.4%). With increasing age of cut area and density of natural regeneration is decreasing on 45.2% (5 year old).

Studying interrelation between age of cut area and density of natural beech regeneration, it was determined that the correlation coefficient is – 0.70. The critical value of this ratio at 5% significance level 0.36, can be concluded argued that correlation is significant.

Good natural seed regeneration of beech forest on observed on 1-year cut on “wet pure beech sites” – 16.6 thousand per hectare and on 1-year cut 18.6 and 2-year cut 10.6 – of wet oak–beech forest. Poor beech regeneration observed for 5-year old cut on wet beech hornbeam forest type 0.4 thousand per hectare and wet oak and hornbeam beech forest site – 1.2 thousand per hectare.