

VEGETATIVE RECLAMATION OF DAMPED COAL WASTE HEAPS IN NOVOVOLYN MINING AREA

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During field studies in the Novovolyn mining area (Lviv-Volyn coal basin), recultivated and non-recultivated coal waste heaps were identified. Recultivated waste heaps were artificially afforested in the 80's of the twentieth century. Afforestation was preceded by the process of mining-engineering recultivation and reformation of waste heaps by 20–50 cm-thick-layer of soil mixtures pouring. Recultivated waste heaps are not burning. Waste heaps phytocoenoses that arose in the process of natural self-establishment are the result of a complex interaction between the climatopus and the ecotope: the more favorable they are for vegetation, the more typical phytocoenoses are formed. The floral composition of formed vegetative groups highly depends on site conditions, primarily edaphic factors. In general, there is less amount of species composition in phytocoenoses of damped waste heaps formed in the process of self-establishment compared with recultivated ones. The groups formed on such waste heaps are mostly single-typed and of less phytocoenotic variety of the vegetation cover. However, there are present certain resistant species from the vegetative groups of damped heaps – *Taraxacum officinale* Webb. ex Wigg., *Tussilago farfara* L., *Artemisia absinthium* L., *Artemisia vulgaris* L., *Arctium lappa* L., *Betula pendula* Roth., *Pinus sylvestris* L., *Carex pilosa* Scop. Waste heaps burning increases the temperature of the substrate and promotes the development of herbaceous vegetation (*Carex pilosa* Scop., *Daucus carota* L., *Artemisia absinthium* L., *Impatiens noli-tangere* L.) even in winter.

Since damped waste heaps are capable of self-growth, it is necessary to promote this phenomenon by moving the process to the formation of natural phytocoenoses. This method of technogenic landscapes cultivating will prevent the mining-engineering stage of recultivation and the destruction of the already developing vegetation. The species diversity of damped waste heaps should be expanded by oligotrophs, which can produce underground and aboveground mass, and enrich the edaphotope with nutrients.

On the waste heaps of the studied region, the following micro-associations are developing: *Populus tremula* + *Betula pendula* + *Calamagrostis epigeios*; *Betula pendula* + *Pinus sylvestris* - *Calamagrostis epigeios*; *Betula pendula* + *Populus tremula* - *Calamagrostis epigeios*; *Betula pendula* - *Taraxacum officinale* - *Plantago lanceolata* + *Polytrichum commune*; *Robinia pseudoacacia* + *Betula pendula* + *Pinus sylvestris* + *Salix caprea* + *Hieracium pilosella*; *Populus tremula* + *Betula pendula* - *Pinus sylvestris* - *Calamagrostis epigeios*; *Populus nigra* + *Fraxinus excelsior* - *Taraxacum officinale* - *Urtica dioica* - *Artemisia absinthium*; *Populus tremula* + *Robinia pseudoacacia* + *Arctium lappa* - *Daucus carota*. Extension of the phytocoenoses boundaries must be carried out by them. *Calamagrostis epigeios* and *Daucus carota* are developing on the hill-sides of waste heaps. They have the ability to fix the substrate. It is necessary to promote the development of these species by their seeding in preliminary prepared areas with nutrient soil mixtures in holes and landslides.

For vegetative reclamation of coal waste heaps of Novovolyn mining area the most promising are the following species: tree and shrub – *Betula pendula*, *Populus tremula*, *Populus nigra*, *Pinus sylvestris*, *Robinia pseudoacacia*, *Fraxinus excelsior*, *Salix caprea*, *Corylus avellana*, *Rubus idaeus*, *Rubus caesius*, *Rosa canina*; herbs – *Calamagrostis epigeios*, *Taraxacum officinale*, *Plantago lanceolata*, *Taraxacum hybernum*, *Crepis tectorum*, *Erigeron canadensis*, *Hieracium pilosella*, *Impatiens noli-tangere*, *Sambucus nigra*, *Stenactis annua*, *Urtica dioica*, *Artemisia absinthium*, *Arctium lappa*, *Daucus carota*.

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