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CULTIVATION OF PEAT-BASED SWARDS IN UKRAINE

Many countries in the world are engaged in growing turf both on special mineral (grass swards), and on the basis of peat (peat-based swards).

Peat-based sward is the cover of the mower type that is formed from interlacing of fibrous root systems and aboveground parts of herbaceous plants on peat basis. They are used to create decorative, sports and other types of lawns. In addition to their ornamental and aesthetic value, peat-based swards are of great economic importance, especially in order to strengthen the earthen slopes of roads and railways, the construction of hydromeliorative structures, consolidation of riverbanks and reservoirs. Creating a turf cover on steep slopes by sowing grass seed is considered to be ineffective as much of the seed is washed out by rains. Under such conditions, the protection of slopes from water and wind erosion demands the significant reduction of the period necessary for soil turfing. To do this, the best peat-based swards previously (30-40 days earlier) grown on drained peat deposit are to be used.

The key point of peat-based swards cultivation is as follows. Plants are characterized by tropism – growing movement of organs (stems, roots, leaves), caused by the directed action of any stimulus - light (phototropism), temperature (thermotropism), water (hydrotropism), oxygen (aerotropism) and chemicals (hemotropism).

This property of plants has been used for growing swards on drained peat deposits, which are characterized by high acidity. Lime is input into the thin loosened surface layer to neutralize the acidity of peat, mineral fertilizers to create conditions for plants growing only within a thin layer, and then grass seed is sown. Plants develop only in the cultivated layer, because, due to the high acidity, lack of fertilizers and poor aeration of the lower layers of the deposit, the plant roots do not penetrate into these layers but intertwine in the cultivated layer, forming a solid rubbery turf almost not bound to the lower layers of the deposit – peat-based swards. Cut into strips, peat-based swards are easily separated from the lower layers of peat deposit with the help of specially designed machines. The stripes of peat-based swards are strong enough, so they can be folded into rolls and transported to the planting sites where they are unfolded, placed on pre-aligned and wetted soil and tramped down. After 5 - 6 days the grass root system survives.

The best foundation for growing peat-based swards is highland peat of the moss group characterized by high hydrolytic and exchange acidity when compared to conventional soils that allows growing of high-quality swards. Most peat deposits in Ukraine consists of lowland peat types, hydrolytic acidity of which is much lower than in the highland peat of the moss group, making it difficult to obtain high quality products.

Ukraine has developed the technology for the production of peat-based swards on lowland peat deposits types. The studies performed on Smolynskiy station of the state enterprise "Chernihivtorf" showed that a good basis for growing of peat-based swards on the peat deposits of the lowland type is provided by grass-moss peat with the rate of decomposition of up to 30%, ash content of 20% and the necessary acidity.

Peat deposit must be drained and prepared according to the rules of technical exploitation of peat deposits for extraction of milled fuel peat. The prepared layer of the deposit must not contain wood residues and emissions from mineral soil. Around the areas for growing of peat-based swards there must be provided the availability of water supplies for irrigation the turf-forming plants during the care period.