

## MODIFICATION OF BEACH SHORES - STABILIZATION OF THE HULÍN AREA

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### Abstract

The grassland of a stream bank slope reinforces soil surface and, to a great extent, prevents the occurrence and development of erosion. When proposing suitable grass mixtures, we work on recommendations (Marhoun 1991, Šležingr, 2005)

This will be the subject of a contribution.

**Key words:** Reservoir, water, beach, recreation, bank, grass

### Introduction

It is necessary to realise that grassland composition, its endurance, overall involvement and consequential viability depends on the number of created and sufficiently developed individuals in the first two to three months after seeding. Although seeding is the most common method of establishing grassland, it is not the only one.

### Materials and methods

#### 1. Establishment of Grassland by Seeding

Prior to seeding, the laying of a humus layer on disturbed planed stream bank slope is expected. The follow-up seeding is manual, or mechanisms may be used, from early April to late August. Seeds need to be fertilised in the soil by rolling. If possible, watering in the first month and top dressing are important. To prevent the undesirable development of weed, one or two weeding treatments are necessary after approx. 8 to 12 weeks of seeding. The protective function of stands starts to work within only 2 to 3 months of seeding.

#### 2. Establishment of Grassland by Sodding

For fast and almost immediate effective grassing of banks, so-called sodding may be used. Sods can best be obtained from an adjacent site (meadow, pasture) that has approximately the same site conditions as the locality being reinforced. Sods shall be taken by means of special knives, cutting strips approx. 40 – 50 cm wide. Separate the strips from subsoil using a shovel to achieve optimal sod thickness. Thus removed grass strips shall be divided into squares with sides of 40 – 50 cm. The produced sod should immediately be placed on the site being reinforced.

#### 3. Establishment of Grassland by Hydro-seeding

This is a hydraulic method of seeding when a mixture of seeds, water, fertiliser, organic substance and anti-erosive additives are sprayed under pressure. In this way, inaccessible slopes and other places can be re-vegetated. Within seeds, the prescribed grass mixture or seeds of tree species can be used.

#### 4. Other technologies

In addition, pre-planted grass carpets, especially wherever an immediate aesthetic and stabilisation effect is requested, divided stabilisation strips, slope stabilisation by means of coconut or jute nets placed on the seeded area (prevents erosion) etc. can be used.

### Examples of Composition of Grass Mixtures

Grass mixtures for the <u>eulitoral</u> zone:	kg/ha	% share
Smooth meadow grass	31	25
Swamp meadow grass	19	10
Annual ryegrass	5	2
Reed canary grass	50	55
Meadow foxtail	17	8
Grass mixture for the supralitoral zone:	kg/ha	% share
White clover	15	11
Swamp meadow grass	12	9

Red fescue	20	15
Timothy	10	7
Annual ryegrass	5	4
Smooth meadow bluegrass	25	18
Creeping bentgrass	6	5
Meadow fescue	30	20
Perennial ryegrass	15	11

Grass mixtures with a high <u>erosion control</u> effect :	kg/ha	% share
Smooth meadow bluegrass	40	40
Red fescue, cultivar Tamara	38	25
Chewing's fescue	28	15
Perennial ryegrass	30	20

## Results

Of course, grass mixtures may be modified according to particular conditions, or specific requirements and purpose of grassing. Details can be found, for instance, in the publication *Vegetace v úpravách vodních toků a nádrží*, L. Novák a kol.

## References

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## Souhrn

V rámci stabilizace břehů vodních toků a nádrží hrají vhodné travní porosty zásadní roli coby součást vegetačního doprovodu. Ten dělíme na břehové a doprovodné porosty. Břehové porosty – tedy porosty od hladiny vody po břehovou čáru - jsou základem protierozního a protiabrazního působení. V patě svahu tvořícího břeh je většinou navrhována technická či biotechnická stabilizace a výše po svahu přebírá stabilizační působení vhodná vegetace – dřevinná i bylinná.

Na nádržích s plážovými břehy (sklon do cca 10 stupňů) právě vhodný travní porost velmi dobře stabilizuje břeh především nad zónou výběhu vlny při maximální nejčtetnější hladině. Pod touto zónou je pláž či vytvořená abrazní plošina nejčastěji tvořena písky či jemnozrnným štěrkem

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