

2.4. MIXTURES OF GRASS-SEED FOR AIRPORTS

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Seedcorn-selection for airport-grassland areas

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In consequence of inquiring researches during the last years, it was verified as useful to select the composition of species for airportgrassland areas so that three requirements are met, and that:

- a) Small part of dicotyle species which can be used as birdfeed-plants. (Lowering composition of bird species qualitative and quantitative in the measure of biotop-deterioration).
- b) Better edges capacity of holding for runway, to keep as low as possible an eventual damage of breaking out aircrafts.
- c) Quantitative decrease of mowing during one year by using utmost steadily growing (small annually increase of mass) and stolons runner grass species or sorts.

To accomplish these requirements it is necessary to deviate from the usual seedcorn-combination. The following instructions might be applicable for eventual new-planning of sowing till termination of a corresponding educational-commission by the Technical-University Aachen, professorship for ecology.

Grass species and -sorts:

Agrostis canina var. *arida* = well suitable in using sort "BARENZA" for extreme soil, sandy and diluvial, because of annually increase up to only 21 cm., in any case superior to frequently used *Agrostis tenuis*.

Agrostis stolonifera "Seaside Bent" = agrees saline water, suitable for hydrate, entrophic less acid soils, suitable because of annually increase exclusively up to 22 - 33 cm. high heat-requirement, sensitive to frost.

Agrostis rubra sorts: "OASE, TOPIE, HIGHLIGHT, COQUETTE": medium suitable by annually increase up to 30 - 40 cm. sort "EKO" annually increase only up to 29 cm.

Agrostis tenuis: unpretending, resistant to cutting, resistant to drought, good growth of sward. Sort "HIGHLAND BENT" particularly well suitable.

Agrostis gigantea: short-lived, poor resistance to cutting, no resistance to step.

Poa annua: frequently used sort, plainly rooted, poor resistance to cold.

Cynocurus cristatus "CREDO": suitable moderately in small parts, because of annually increase up to 51 cm.

Lolium perenne: fast growth of step-resistant sward, but supersession of other species, no addition if possible or at most 10 %.

Poa trivialis: only well suitable for humid planes.

Poa pratensis: excellent in case of pH-values between 6, 8 and 7, 0.

Individual sorts: MERION (29 - 35 cm.) MERI, SYDESPORT (33 - 42), NEWPORT, C 1, PRIMO (39 - 44 cm.), PRATO, BARON (34 - 41 cm.), BARONESSE (32 - 35 cm. excellent), NEWS, STERN, STEIN II, SYDSPYDER.

By using sort PRIMA i.g. 8g/qm are enough in productive soils.

Festuca rubra: suitable root system, dense sward. Good sorts: REPTANS, POLAR, PENNLAWN, RASENGOLD and Var. eu-rubra.

In general *Festuca*-sorts are not so advisable however, because of inclination to felt, and for that reason a possible handicap with regard to mowing, therefore only to mix in parts up to 25 %.

Pheleum pratensis: Adverse results of bult growth.

Phleum nodosum: Different sorts much better than type, because resistance to step, but annually increase up to 45 cm, more suitable as addition than *Poa annua*.

The exact composition of grass species must act according to particular soil- and climate conditions, Additions of more species not mentioned are possibly necessary. An according ecological-sociological analysis of the airfield is necessary as precondition for seedcorn combinationselection. Following combinations are therefore only to understand as a rule:

Soils rich in lime

50-60% *Poa pratensis*, diff. sorts

15-20% *Festuca rubra*, sorts and var.

10% *Agrostis tenuis*, one sort

Sandy soils

35% *Festuca ovina*

20-30% *Poa pratensis* sorts

15-20% *Festuca rubra* var.

10% Festuca ovina
14 g/qm
0,05 DM/qm

5-10% Agrostis tenuis ASTORIA
19 g/qm
0.06 DM/qm.

Grass for planting like EMERALD VELVET and FLORENTINER are well as Agrostis stolonifera SMARAGD and PENNCROSS require minimum of cutting on regulary dunged grass areas.

Considering all combinations you realize a constant immigration of grasses from surroundings that means, at modification of species combinati-on, according to nature, is noticeable in the course of the years. But the more intensive way to cultivate such an area the less appearance of diffe-rent natural species. Cultivation means still mowing on the other side, and just such a one should be avoided or reduced. The manner of using will come to extensive grassland therefore - only possible on particular soils, but the increasing combination of species has to put up in that casing. The extensive grassland is profitable of its short grass species which do-minate in general compared to the high growing species which obtain only a poor part.

Hence follows, the preparation of soil should not be overdone in gene-ral with regard to extensive grassland areas, i.e. the native-soil layer should not pass beyond 5 - 8 cm. The inorganic soil fertilizing has been found to be suitable which usually works efficaciously only little time, so that the sowed species have only short time to grow, than stop the growth, after having obtained the closed sward (approximate about 20 kg/ha N, P_2O_5 and K_2O). Sowing requires good moisture-conditions (about 30000 seed/qm) during two weeks. Cultivation = one hay - or mulch-cutting in midsum-mer.

General informations about laying-out of airfield-grassland:

Successsion of cultivation:

1. To dig area to 30 cm. below subsequent 0-line.
2. If required drainage.
3. To apply grit 10 - 20 cm. (granulation 0,6 - 2 mm) and to add with 450 g/qm Phosphatecalcium 10 x 20.
4. 4 - 8 native soil, to add 10 bales of peat per 100 qm (sandy native soil with 8 cm, loamy native soil with 4 cm) and basic dunging.
5. To mill native soil (loamy up to 12 cm, sandy to 8 cm depth).