

Selection of the correct seed alone is insufficient

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The correct combination of a restoration method adapted to a site with a site-specific seed mixture and choice of the correct restoration period, plays a decisive role for successful restoration.

Seed mixtures

Only a seed mixture appropriate to the site should be used for restoration.

Restoration methods

The correct planning of a building project is already an important prerequisite for subsequent, successful recultivation. The aim of the restoration should already be considered during planning to ensure that the redistribution of humus, or the intermediate storage of grass sods, can be easier realised.

The most common restoration methods are given as follows.

- **Simple dry seeding**
Seed and fertiliser are sown in a dry state manually or with suitable seeding machines with no additional auxiliary material.
- **Hydroseeding or sprayed seeding**
Seed, fertiliser, mulch, soil aids and adhesive are mixed with water in a special spray container and sprayed on the area to be restored. In extreme cases this method can also be used from a helicopter.
- **Cover-crop seeding**
Used as cover crop are winter rye, oats and barley. Through the rapid emergence of the cover crop, areas of bare earth are covered more quickly. The restoration seeding that eventually forms site-specific vegetation develops between. Cover-crop seeding is suitable for steeper sites

that are strongly exposed to the sun. Quicker erosion protection, however, is not to be achieved through cover-crop seeding. In lower zones, the cover crop should be mowed and cleared early enough to avoid hindrance to the development of emerging seed.

- **Hay flower seeding**
The material for hay flower seeding should come from hay that is not older than one year. It should be cut late enough to contain a sufficiently high content of ripe seeds. Seeding should take place on moist soil, or the hay flowers should be moistened with water. The hay flowers should definitely come from the same or comparable site.
- **Hay mulch- and hay thresh seeding**
Seed is won for hay mulch seeding through mowing areas that carry site-specific vegetation. For hay thresh seeding, the hay thresh is taken from suitable donor fields. The harvest time is to be so

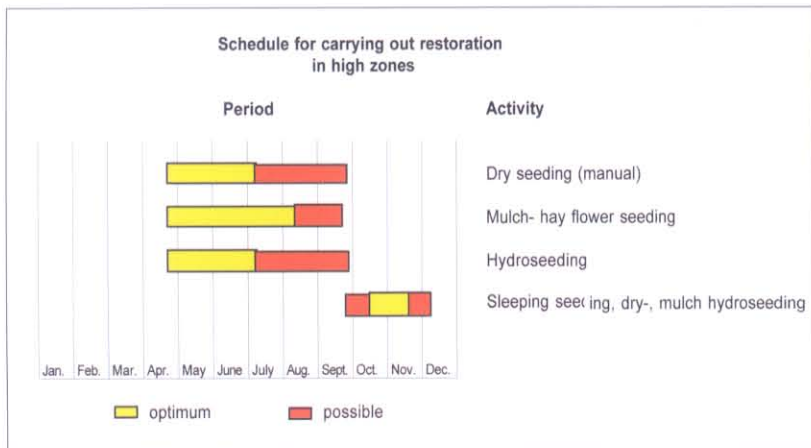
chosen that as many of the desired species as possible are ripe in seed. The ratio of donor area to restoration area lies between about 1:1 to 1:2.

- **Straw seeding**
A 3-4cm cover of straw is spread over the seed. Straw layers that are too deep are to be avoided because it could lead to difficulty when removing the straw.
- **Seed-sod combination process**
A covering of grass sods is combined with dry- or wet seeding. The grass sods used must be appropriate to the site-specific species of vegetation.
- **Geological textiles**
Geological textiles can be used combined with various seeding methods and are used first and foremost on sites with extreme danger of erosion and conditions.



Hydroseed





(Krautzer 1999)

Optimum restoration time

The correct restoration time is decisive for the success of restoration. Restoration is most assured when seeding takes place immediately after the completion of levelling, but only when the soil is sufficiently moist. All delay leads to the loss of the fine particles that are so important for restoration. The optimum restoration times are given in the following table.

Fertilising

The permanent restoration of raw soil on extreme sites places the greatest demands on the restoration mixture and the fertiliser. It serves rehabilitation and optimisation of soil stability as well as plant nutrition to an absolutely necessary degree. Only ecologically harmless fertiliser should be used that takes effect slowly and permanently and promotes the build-up of humus. The offer of nutrition in the root area must be adapted to the needs of the germinating plant.

ReNatura® provideVerde®

During the germination of the seeds, penicillium fungus colonises the seedling roots and

expels organic acids. This results in the phosphorous attached to the soil particles being released and made available to the plant. Algae develop on the topsoil and provide additional organic substances to the soil when they die off. Mixed with the soil substrate, provideVerde® engenders a stronger and consistent root formation in cultivated plants.

Advantages

- stronger and more consistent root formation
- promotes the rapid establishment of a vegetation cover
- long-lasting and balanced nutrition supply

- eases manual sowing, is aroma free, easy to mix and is not dusty
- one work process is sufficient, annual re-fertilisation is unnecessary
- purely organic
- conform to EU Bio-VO 2092/91 idgF
- permitted by Bio Ernte Austria

Use

- for hydro- or dry seeding or as an additive to soil substrates
- restoration of areas of raw soil on extreme sites
- seeding of golf-courses and sport grass
- roof planting

Volume of use: 400 – 800kg/ha

Composition

It is of great importance to use a process as appropriate to nature as possible for restoration. The “healing of wounds in the landscape” is to take place with site-specific seed and a restoration method appropriate to the site. Successful and long-term restoration can be achieved with the use of ReNatura® mixtures combined with the correct restoration method. This restoration success also leads to a reduction of subsequent costs.

Comparison of various restoration methods.

Method	Site conditions	Advantages	Disadvantages	Erosion protection
Manual simple dry seeding	Cultivable topsoil must be available	rapid, simple seeding	Erosion danger	3
Mechanical simple dry seeding	Drivable areas	Inexpensive	Humus topsoil required	3
Hydroseeding with a spay canister	Raw soils, embankments with steep, smooth surfaces	Mechanical use, slight costs, rapid, simple method	Drivable building site, limited radius of action	2
Hydro-seeding by helicopter	Extreme, inaccessible areas	Unlimited radius of action	Application exactitude	2
Cover-crop seeding	Steeper fields or embankments severely exposed to the sun	Method for steep embankments	Labour intensive	2
Hay-flower seeding	Above the forest line on fresh, not too steep areas	Site-specific seed	Product quality, cultivatable soil	2
Hay mulch- and hay thresh seeding	Useable on all, not too steep areas	Site-specific vegetation	Suitable donor areas, long lead time for Material acquisition	2 - 3
Straw-cover seeding	On humus-free sites in wind protected, not too steep zones	Mechanical protection of the topsoil, rapid, assured germination	Several work stages, poor straw rotting in high zones	1
Seed-sod combination process	On all sites with grass turfs in the vicinity	Useable on large areas		1-2
Geological textiles	Steep embankments to 45°	Immediate erosion protection, shading, humidity conservation	Expensive	1

1 = very suitable 2 = suitable 3 = limited suitability

