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SALVERE News

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Semi-natural grassland as a source of biodiversity improvement - A CENTRAL Europe Project



Review of the 2nd regional Workshop in the Czech Republic

The second regional workshop of the SALVERE project took place in the Czech Republic at Radějov, a small village in the heart of the White Carpathian Mts. (Bílé Karpaty) on 11-12 May 2010. It was organized by one of the SALVERE project partners, OSEVA PRO Ltd., Grassland Research Station, and its external co-operator, the local chapter of the Czech Union for Nature and Conservation of Bílé Karpaty. The topic of the meeting "Chances and limitations of using regional seed mixtures" brought together 54 experts from 23 different institutions. The opening talk introduced the Bílé Karpaty Protected Landscape with, its grassland vegetation and restoration program based on using regional seed mixtures. In the first sessions, invited speakers talked about experiences with regrassing in the Czech Republic, including the role of spontaneous succession and using both, regional species-rich and commercial species-poor seed mixtures. In the second session, the latest information on using site-specific seed mixtures and restoration methods in European countries (Austria, Germany, Italy, Slovakia and United Kingdom) were presented and discussed. The field trip included the visit of successfully regrassed arable land with a regional seed mixture below the Žerotín Nature Reserve and a long walk through the Čertoryje National Nature Reserve, where the participants could enjoy the unique White Carpathian landscape and complexes of species-rich meadows with scattered trees. In the buffer zone of Čertoryje, the donor site (Mesobormion) was visited and in the village of Malá Vrbka, the development of vegetation on the receptor site in the field of arable land was discussed. The optional excursion on the second

day of the workshop led the participants to regrassed arable land at Boršice and Suchov and to Zahrady pod Hájem Nature Reserve, the area with strips of meadows and old orchards, separated by hedges and groves, which has been regular mown to keep numerous thermophilous plant and animal species.

by Magdalena Ševčíková

Semi-natural grasslands as donor sites for seed and plant material used in restoration of species-rich grasslands

In general, grasslands are developed by sowing of commercial seed mixtures coming from the international seed market and mostly comprising non-native ecotypes or species. Even though, in the last 15 years, the knowledge about ecological restoration is increasing, the implementation of new methods into practice is not satisfying yet. Additional, seeds of local provenance are seldom available on the market in larger quantities. All-over Europe, several studies highlighted the extremely high biodiversity potential of extensively or less intensively managed semi-natural grasslands. Their biodiversity can be protected by specific conservation measures but also by the transfer of seeds to suitable receptor sites. The latter, active, form of protection requires the development of sustainable and cost-effective methods. The selected donor site must fulfil specific criteria:

- representative species composition (typical for the vegetation type and the region)
- low amount of problematic species (neophytes, varieties and foreign ecotypes from propagation)

- ± good accessibility
- easy to harvest

Since the main obstacle for the implementation of near-natural re-vegetation methods is the identification of donor sites, in Germany some federal states decided to create donor site registers Saxony-Anhalt: www.spenderflaechenkataster.de (Hefter & Jünger accepted), Thuringia: www.tlug-jena.de/sfk-thueringen/ (Kirmer & Korsch 2009). These internet data bases allow data mining for suitable donor sites. In the next step, nature conservation authorities and land owners must be contacted to obtain permissions for the harvest of seeds. In summer 2009, the SALVERE partners harvested seed and plant material in different vegetation communities: Arrhenatherion sites (all partner, 15 sites), Bromion sites (4 partner, 4 sites), Molinion sites (2 partner, 2 sites) and one Deschampsion site (1 partner). At the moment, the harvested material is analysed for species composition and content of germinable seeds. The utilisation of plant material or seeds of local provenance leads to the development of vegetation types typical for the landscape unit, therefore contributing to the preservation of local ecotypes (protection of local biodiversity) and the strengthening of local markets (e.g. seed multiplier, local farmers). Within this project, guidelines for seed production and harvesting on potential donor sites will be developed to promote restoration and creation of species-rich grasslands.

Hefter, I.; Jünger, G.; Baasch, A.; Tischew, S. (accepted): Spenderflächenkataster Sachsen-Anhalt und Informationssystem naturnahe Begrünungsmaßnahmen - ein deutschlandweites Fachinformationssystem zur Verwendung autochthonen Pflanzenmaterials. Naturschutz und Landschaftsplanung.

Kirmer, A., Korsch, H. (2009). Spenderflächenkataster zur Gewinnung von autochthonem Grünland-Saatgut für Thüringen - Methodik, Stand und Perspektiven. Thüringer Landesanstalt für Umwelt und Geologie.

by Anita Kirmer

Harvesting Methods of donor sites

Manual collection



With the aid of manual collection individual species can be harvested at the respective optimum time. With small-scale restoration activities this is the simplest method of acquiring site-specific material. This method is also very suitable for the collection of basis seed for seed multiplication or the nursery production of plants. Finally, it is also possible to specifically mix rare or especially valuable species with restoration material harvested with other methods.

Fresh cutting, Hay mulching



Another widespread method is the cutting of suitable donor sites at the time when most of the desired species are at an optimum stage of seed maturity. To avoid excessive losses, the material is cut preferably early in the morning when it is moist with dew and then immediately taken to the restoration area (receptor site) and spread there. Another possibility is to dry the cut material and its later use for restoration. Nevertheless, this method requires increased manipulation expenditure, whereby a large part of the diaspore material is lost.

Threshing



A very efficient measure is the use of threshed material from suitable donor sites. Threshing takes place with an appropriately adapted combine harvester

at the time of optimum seed maturity. The threshed material is subsequently dried and as required, roughly cleaned. Through harvesting parts of several areas, a wide spectrum of species can be received at the right moment and stored for a period of years if required. The seed yield is about 150-200 kg ha⁻¹ and the relationship of donor area to restoration area is about 2:1 to 1:2.

Mulch mowing and extraction by suction (vacuum harvesting)

This is a rarely used method where the donor area is mulched and the waste material vacuumed (STMUGV, 2009) together with many insects that normally do not find a basis for survival in the restoration area. With the single extraction by suction, the plant stand on the donor area remains undamaged, only the high-quality mature seeds are vacuumed.

Seed stripping, seed brushing



This method is used above all in North America and England without cutting the plant stand. With the aid of a rotating brush, the mature seeds are brushed from the plants into a container and the harvested material can be reused either fresh or dry.

Salvaging donor soil and plants from a native plant community



The use of diaspore-rich soil, such as acquired from the vegetative parts of plants, is among the most destructive methods of winning restoration material. They are therefore used in the course of constructional measures through which valuable vegetation units are destroyed. Usable are 10 to a maximum of 20 cm of the topsoil. For small areas of restoration it is certainly possible to remove little soil- or plant material from donor areas resulting in a minimum number of patches which become overgrown themselves.

Production of local plants / Regional seeds from seed growers



Plant material or seed is taken from suitable donor areas and plants that will be used on restoration areas are cultivated in nurseries. This method may well ensure the use of site-specific materials in the strictest sense, but due to high production costs can be used only rarely or on small areas only.

A good method that is meanwhile practiced in several countries is the nursery or large-area production of seed of suitable species with the aid of agricultural techniques. Above all species used often and in larger amounts can be produced at a comparatively reasonable costs and implemented on appropriately large project areas. This method, for example, is now used in Austria and Switzerland throughout for restoration above the tree line. There are also successful activities in several countries for the use of landscape construction

A substantial problem in the acceptance of high-priced seed material is partly to be found in the lack of transparency in respect of the area of origin of the material used. To be able to give consumers appropriate assurance, several countries implement certification procedures with seals of quality that guarantee the area of origin of the seed, either in creation (A), or already in use (D, CH). In this way the origin and the requirements of the external appearance of the seed quality (purity, viability) are guaranteed.

by Bernhard Krutzer

Upcoming News

1-2 July 2010	Il restauro ecologico di siti denudati con seme da praterie seminaturali (Ecological restoration on raw soil using seed from seminatural grasslands); Tonadico, Malga Tognola e Mezzano (Trento Province)
23-27 August 2010	SerAvignon 2010 Ecological Restoration and Sustainable Development - Establishing Links Across Frontiers - Avignon, Provence, France www.seravignon2010.org
21-23 September 2010	3 rd Regional Workshop in Banská Bystrica - Slovakia www.salvereproject.eu
18-20 May 2011	4 th Regional Workshop in Germany www.salvereproject.eu

**The SALVERE-Team
wishes
Happy Summerholiday**

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