

Use of hayseed by traditional farmers in the Carpathian basin - in particular in the Eastern Carpathians

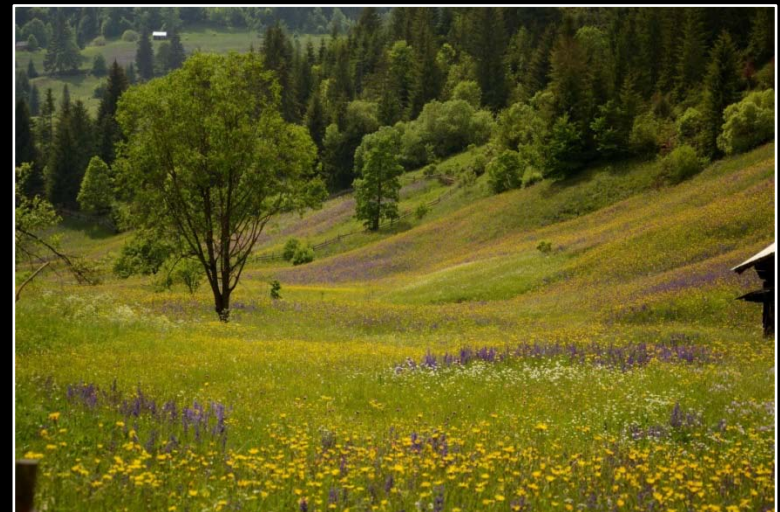


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Hortobágy, 2015

Extensive - traditional grassland management - mountain hay-meadows

- **Labour-intensive land-use system**
- **Typical low-input farming**
- **Elaborated practices on hay meadows**
- **Low average income**
- **Intensification and abandonment**
- **Maintain high biodiversity (plants, birds, insects (Orthoptera, Lepidoptera))**



Gyimes in the Eastern-Carpathians (Romania)



People in Gyimes (local knowledge holders)...

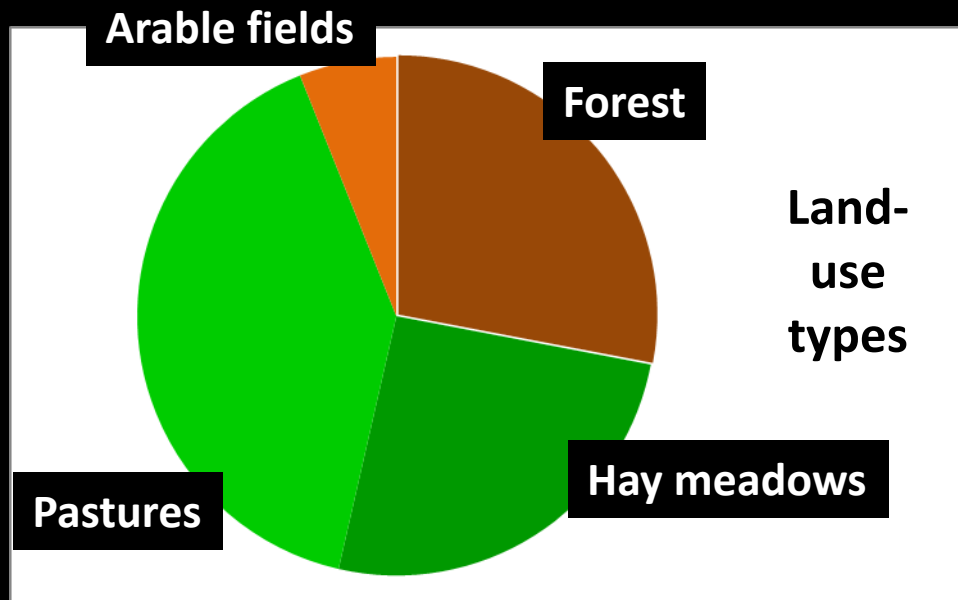


- Csángó ethnic group, Hungarian mother tongue;
- First settlers: 18th century;
- 14.000 inhabitants (3 settlements);
- Special culture with lots of archaic elements (dance, folk music, religion etc.)
- Self-subsistence farming - based on animal husbandry (cattle and sheep)
- Deep traditional ecological knowledge about the landscape, vegetation and dynamic processes



...and landscape

- Formerly closed spruce forests – nowadays fragmented forest patches – mosaic landscape
- Species-rich, high nature-value semi-natural grasslands (dominated by *Festuca rubra*, *Arrhenatherum elatius*, *Agrostis capillaris* etc.);



Traditional grassland management in Gyimes

- Mowing by scythe or single-axe motorized mower (technique and timing)
- Parcel rotation
- Manuring
- Oversowing with hayseed
- Oversowing with *Onobrychis viciifolia*
- Selective weeding certain (mainly poisonous) plant species
- To suppress some shrub species (e.g. *Spiraea chamaedryfolia*)
- Cleaning on hay meadows in spring
- Drainage spring fens
- To suppress moss patches



Ideas – What is hayseed?

Hay meadows



Hay making



Hay storing



Feeding animals



Broken parts of plants
+ seeds + dust

Scattering of hayseed



Hayseed full
with viable seeds



Storage of hayseed
In barrels or in bags



Collecting hayseed



The use of hayseed in Europe

- Artificially established grasslands – by sowing hayseed – replaced abandoned vine-yards (after vine pest)
- Hayseed application after abandonment of arable field (19-20th century)



The use of hayseed in the Carpathian basin

- Őrség (West-Hungary), Felvidék (Northern part of Hungary) – Paládi-Kovács 1979.
- Hortobágy, Mura-river region, Kászon and Gyimes region (Transylvania) (own data)



The investigation of the use of hayseed in Gyimes from ecological anthropological perspectives

22 semi-structured interviews,
recorded with digital dictaphone

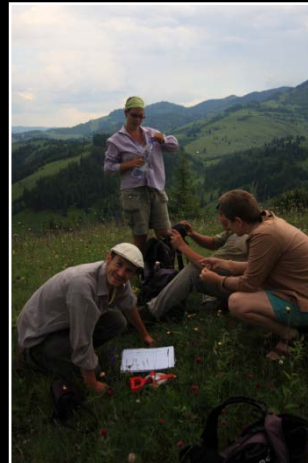
Main questions:

- What is the hayseed?
- How do you usually use the hayseed?
- Why is hayseed useful?
- How much hayseed do you collect in a year?
- When did you last scatter hayseed?
- Which species' seeds are common in the hayseed?
- Which species can spread successfully with the hayseed?



The investigation of the use of hayseed in Gyimes from a restoration ecological perspective

- Collecting hayseed samples (8 inner, 8 outer meadows) – exactly localized haymeadow parcels
- Germination experiment with 0,5 litre samples in greenhouse
- Sample preparation: remove the broken parts of the dried plants, spread seeds - sterile potting soil
- Vegetation survey on the meadows (16 parcels, 3 relevés/parcel)
- Estimate the flora of the parcels

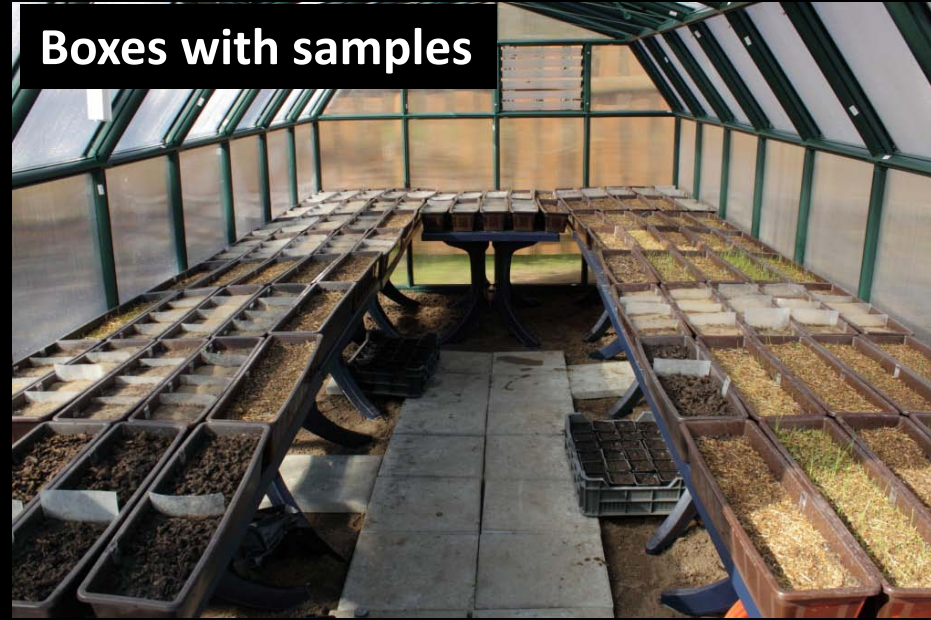


Experimental setup

Seedlings



Boxes with samples



Identification and counting of seedlings



The unidentified seedlings were planted in pots



Results - interviews

How is the hayseed used for?

1. Hayseed is full with broken scraps of medicinal plants – good for bath
2. For herb tea
3. Feeding animals (pigs, cattle, sheep, poultry)
4. Spread on hay meadows (full with seeds)



Results

- Scattering 4-5 bags hayseed / year
 - 0,5-1 hectare area /farmer /year
- Origin of the hayseed: inner and outer hayseed is mixed

Scattering hayseed on hay meadows is necessary:

- To close gaps in the vegetation cover caused by trampling, extreme drought, dry frost, place of mole hills, ant hills
- Revegetation of abandoned arable fields



Results - germination

- In average 6.000 viable seeds/ hayseed-sample (0,5 litre)
- Average 58 species / sample
- Altogether 135 identified species in hayseed-samples

The most common species were:

Onobrychis viciifolia



Poa annua



Plantago lanceolata

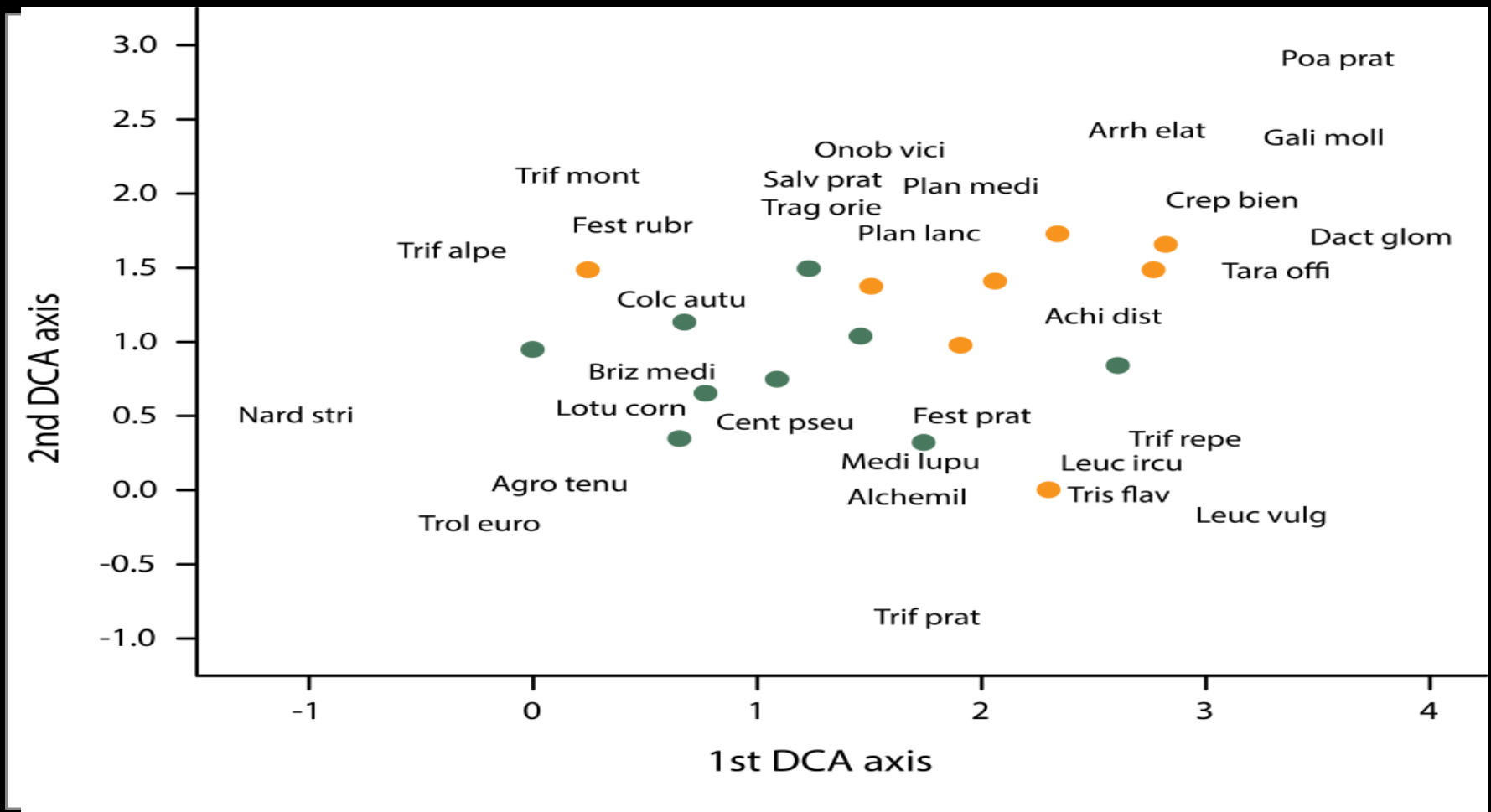


Anthyllis vulneraria



Results - coenological data

- Altogether 210 vascular plant species;
- Average number of species on extensively manured meadows: 39,7/16m²;
- Average number of species on non-manured meadows: 48,3/16m².



Conclusions

- The hayseed plays an important role in the local farming system in Gyimes.
- Csángó people consciously apply hayseed in the revegetation, they are aware of the role of viable seeds in grassland revegetation.
- Hayseed is an important part of the Csángó grassland-management system, it accelerates revegetation processes.
- Hayseed could play an important role in nature conservation as well.
- Hayseed is suitable for maintaining a significant part of species pool on semi-natural grasslands.
- The local hayseed technique predates the uses by restoration ecologists.



