



Natural values on semi-natural and permanent pastures grazed by horses

MTT Animal Production

Markku Saastamoinen, Susanna Särkijärvi

University of Helsinki,

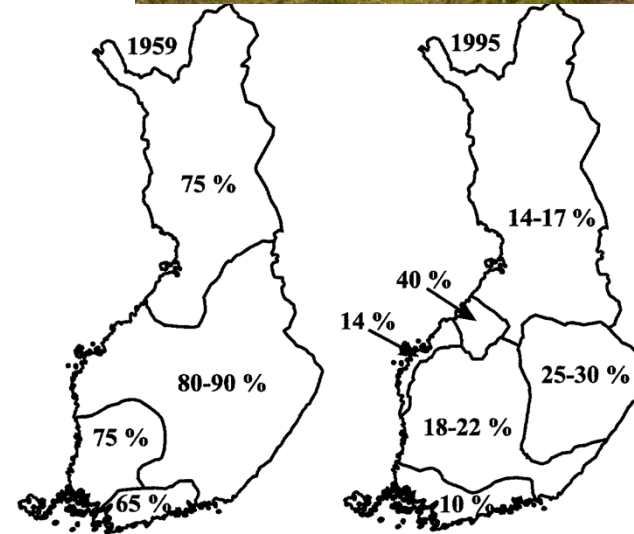
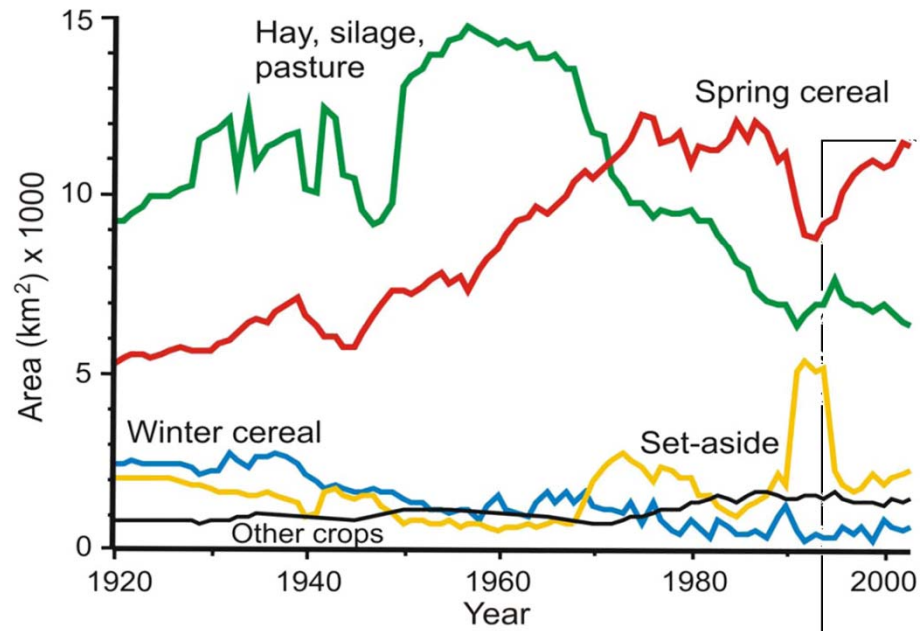
Dep. Agricultural Sciences

Irina Herzon, Cathrine Schreurs



Why pasturing is relevant for the society?

- Grazing of animals has declined during the centuries and monoculture has increased
- As the result, we have lost lot of open land areas with large biodiversity; bushes and woodland have occupied the former open landscapes
- In meadows and grasslands some most dominating species has occupied area from other species





Tapio Heikkilä, MTT Archive



Martina Motzbäuchel, MMT Archive

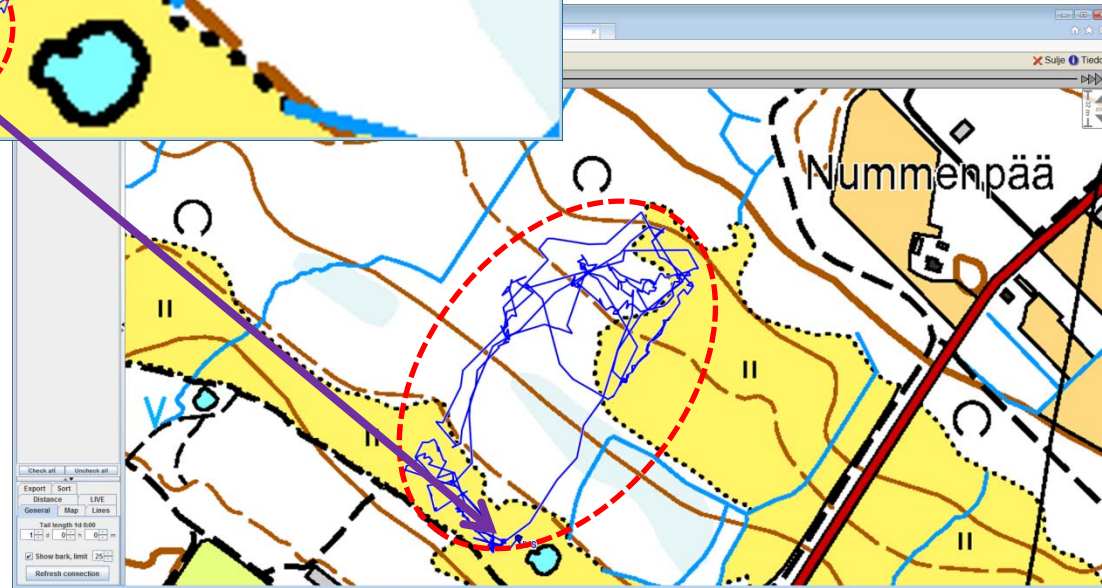
- Herbivores are important for efficient utilization of areas with natural vegetation (meadows, pastures etc)
- Natural areas have been traditionally managed with local breeds of ruminants (sheep, cattle, goats)
- In the recent years the number of grazing ruminants has declined; same time the number of horses has increased

- Horses have a **greater intake capacity** of roughages than ruminants which enables them to control competitive grasses and maintain open areas in pastures
- Horses prefer grass and less mature plants with better nutritional quality but are able to modify their foraging behaviour; tolerate high fibre contents (better than sheep and cattle)

- Horses are selective grazers; eat mainly graminoids and herbs, make less use of forbs and legumes than ruminants
- The time horses spend grazing is 70% of the daylight time
- Horse walk 12-15 km (or more) during a day when grazing



Day 1



Day 6

Objectives

- Estimating impact of horses on vegetation and ground on semi-natural permanent pastures; diet preferences, habitat of the horse, trampling
 - Estimating the feeding value and nutrient intake of horses
- > Optimizing the grazing pressure and pasture management

Material and methods

Summer 2012, three case pastures, all long-term horse management:



**Semi-natural,
extensive**



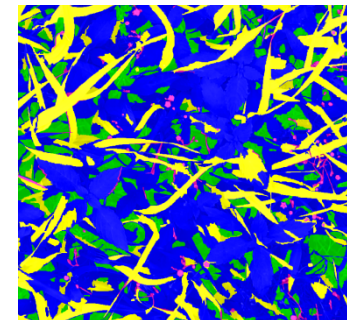
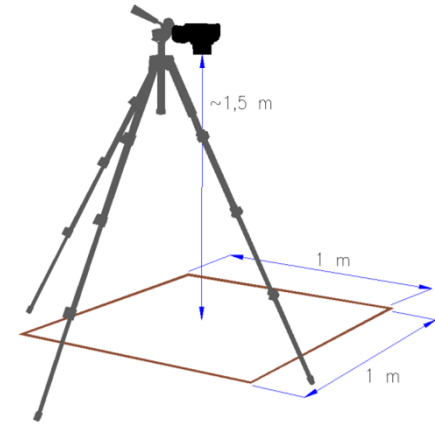
Semi-natural, protected



**Permanent,
ecological**

Data:

- Survey of vegetation and ground
- Forage quality
- Nutritional status, body weight
- Health data (e.g. insect bites, injuries)
- Interviews with 50 horse owners and pasture owners



RESULTS: 1. Interviews

Benefits:

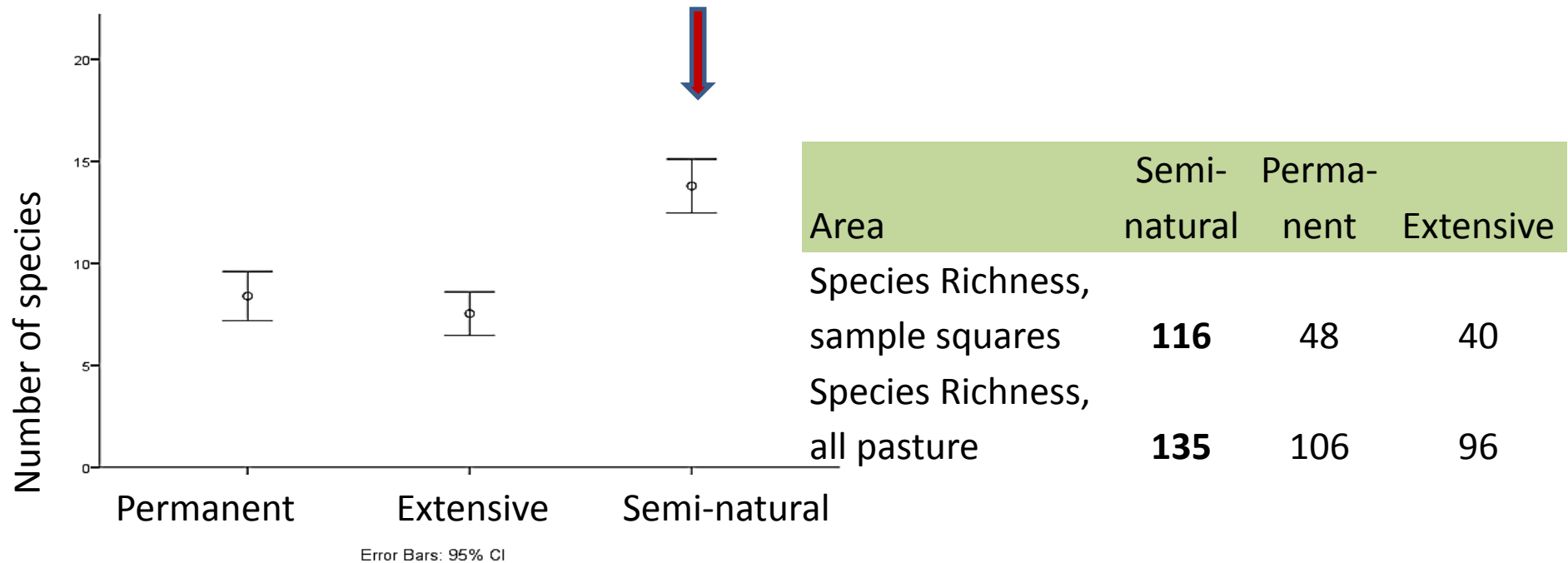
- to horses – top reason: gradual foraging and moving, more and varied exercise, healthy digestive system, less behavior problems, socializing in a herd,
- to the environment:
landscape, use of resources
- to the owners: ease on the owner's workload



- Most desirable information: establishing and managing pastures, suitable types, sown and native species, benefits from pastures (esp. to urban people).
- The most frequently mentioned challenges: insects and weeds (= plants unpalatable to horses).

Everyone with a possibility to graze was satisfied.

RESULTS: 2. Biodiversity



On semi-natural pasture - the highest biological diversity

On intensive (permanent) pasture, *still high diversity* – why? HORSES?

RESULTS: 3. Selective grazing

- ❖ All grasses and clovers – clear preference
- ❖ Also eaten: at least 15 more native species:
 - *Deschampsia cespitosa* (tafted hair-grass) – but not enough to keep it from becoming dominant (mainly wet places)
 - *Agrostis capillaris* (coach grass) - but not enough to keep it from becoming dominant (only in dry places)
 - *Achillea millefolium* (milfoil)
 - *Taraxacum sp* (dandelion)
- + 11 more native species
- ❖ The preferred species covered 76% of the ground on the semi-natural pastures
- ❖ Some poisoning plants present but avoided



-> pasture and vegetation become heterogeneous,

-> some species survive better



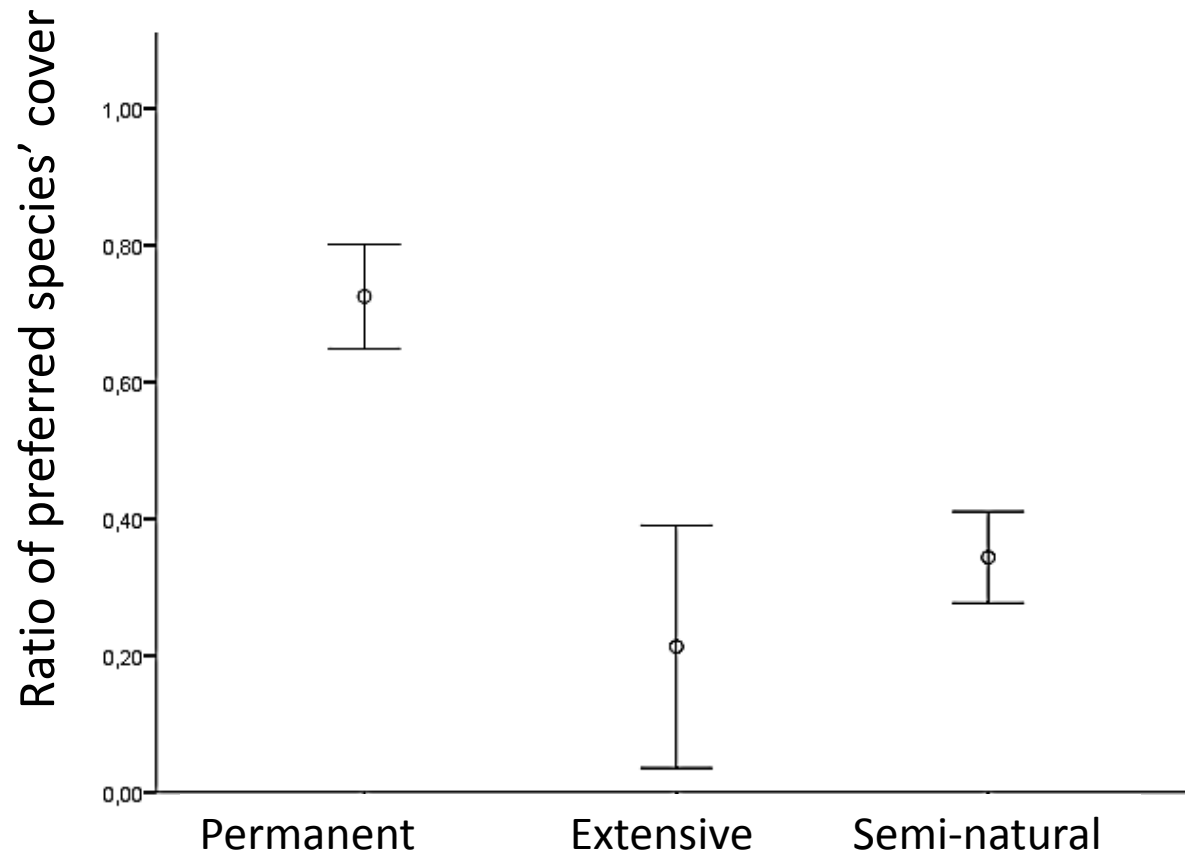
1) Meadow indicator species:

selected – 7 spp avoided – 25 spp

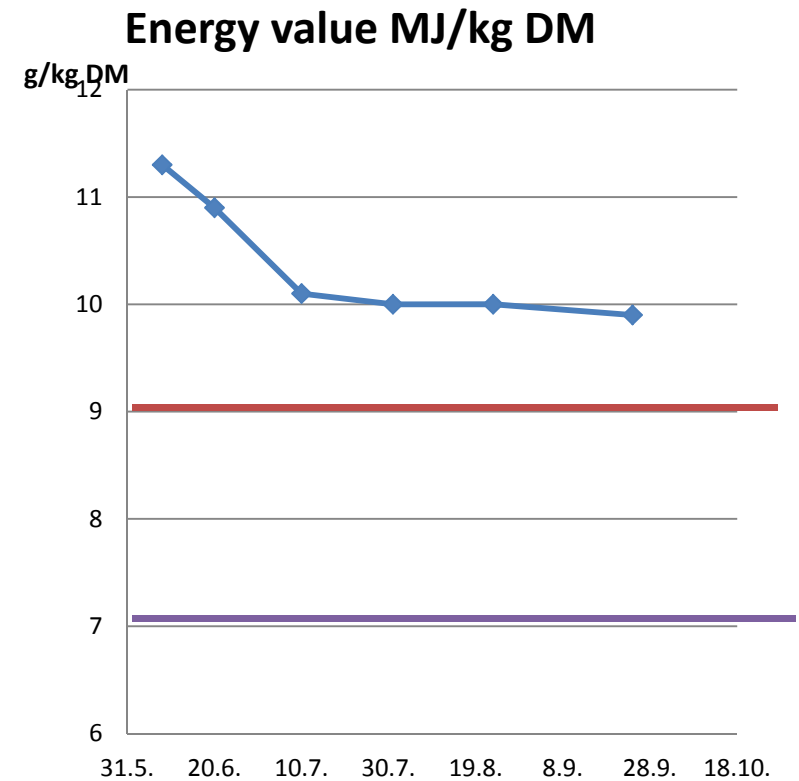
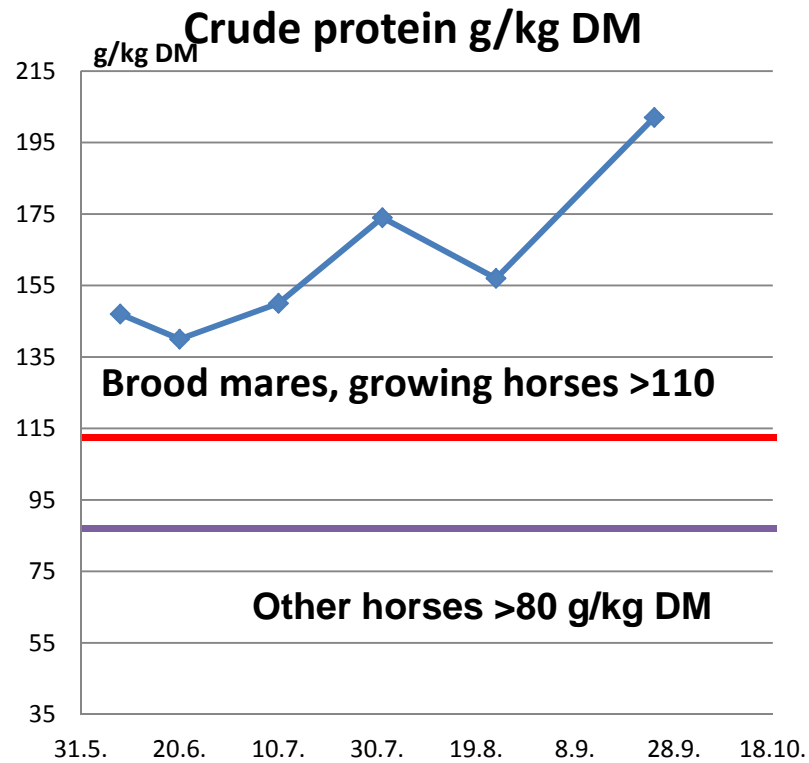
2) Usefulness for pollinators – equally good

RESULTS: 4. Forage amount

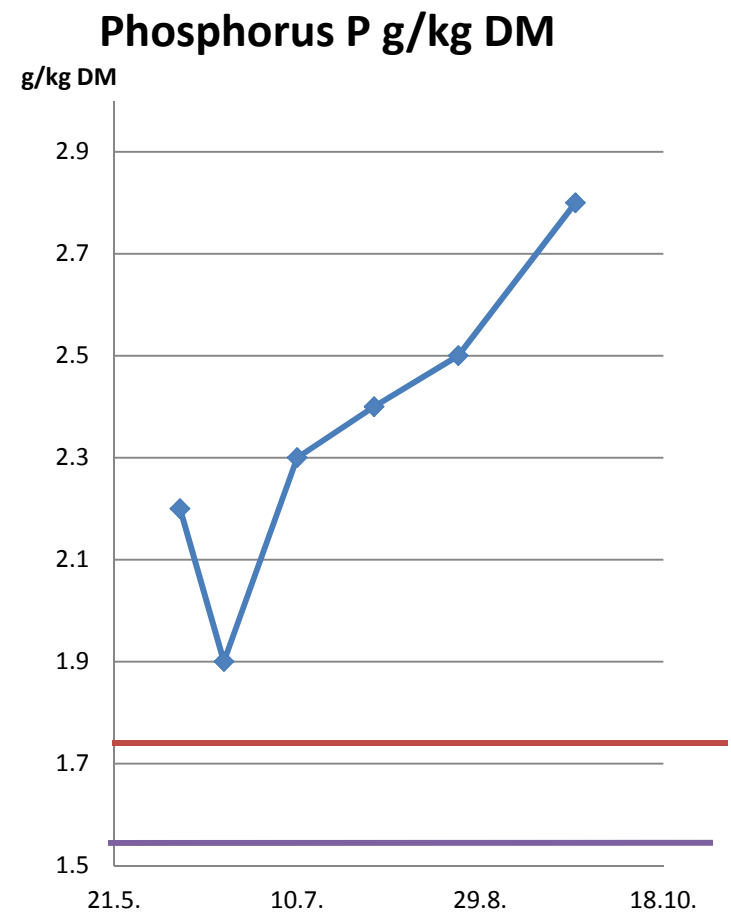
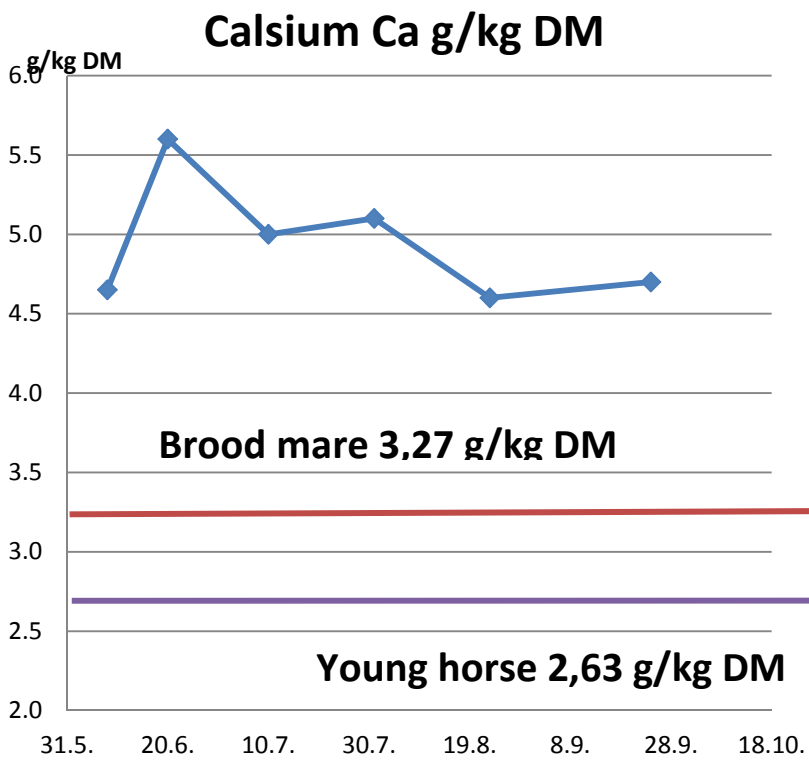
(% of preferred species' cover)



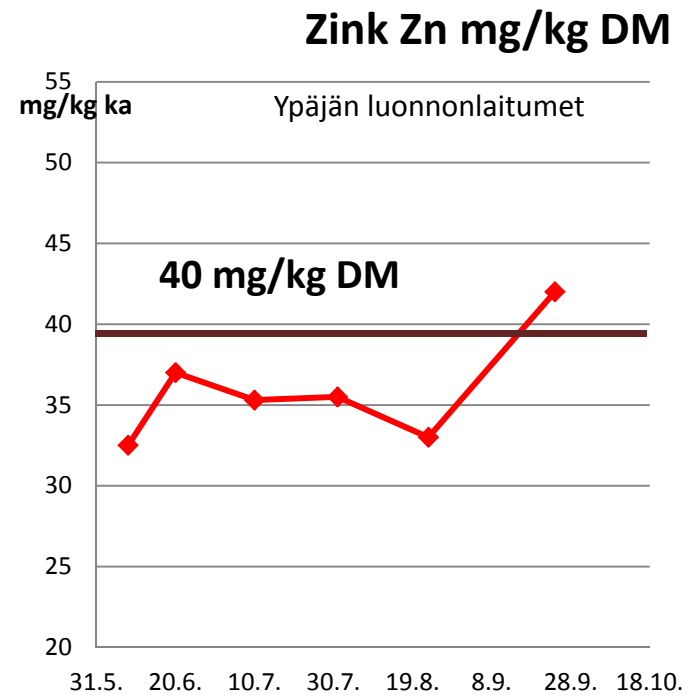
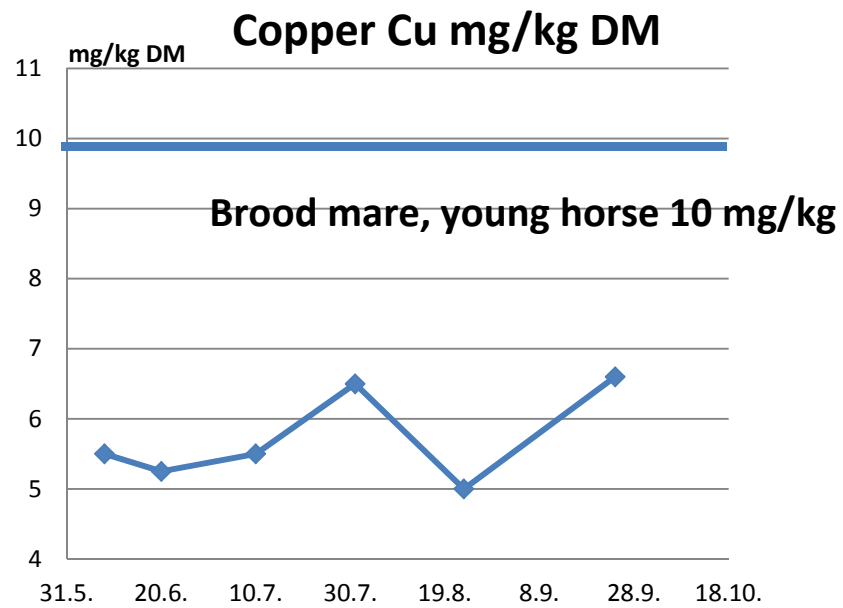
RESULTS: 5. Feed values



Averaged values for the case pastures



Averaged values for the case pastures



Averaged values for the case pastures

RESULTS: 6. Welfare and health

- All horses increased their weight (5-10%)
- Only small scratches (mainly body and head)
- Few insect bites



BUT: big variation
between years and individuals
is known for insects

CONCLUSIONS

- Each area has different soil conditions and natural vegetative cover; site specific factors have to be taken into account
- Horses are strongly selective grazers
- Horses do not eat trees/bushes if grass/legumes are available; hard to keep areas open with horses only (mixed grazing e.g. with sheep; mechanical management)

- The horses select the feeding sites due to vegetation (but also climate, day time, insects etc)
- Grazing at moderate stocking rate increases the heterogeneity of grasslands and thus promotes biodiversity
- The nutritional value meets the needs of most horse categories
- Some mineral contents may be lower in natural grasses than in cultivated areas, especially copper and zinc (but also P)
- Regular health and welfare control during the grazing season

Extensive grazing - a key management tool to support biodiversity and natural values of landscapes in Europe

Thank you

