



Univerza v Mariboru

*Fakulteta za kmetijstvo in  
biosistemske vede*

# Grasslands between biodiversity and organic farming

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Univerza v Mariboru

Inštitut za kmetijstvo in  
biosistemske vede

## GRASSLAND BIODIVERSITY:

PLANTS

ANIMALS

MICROORGANISM

FARMERS

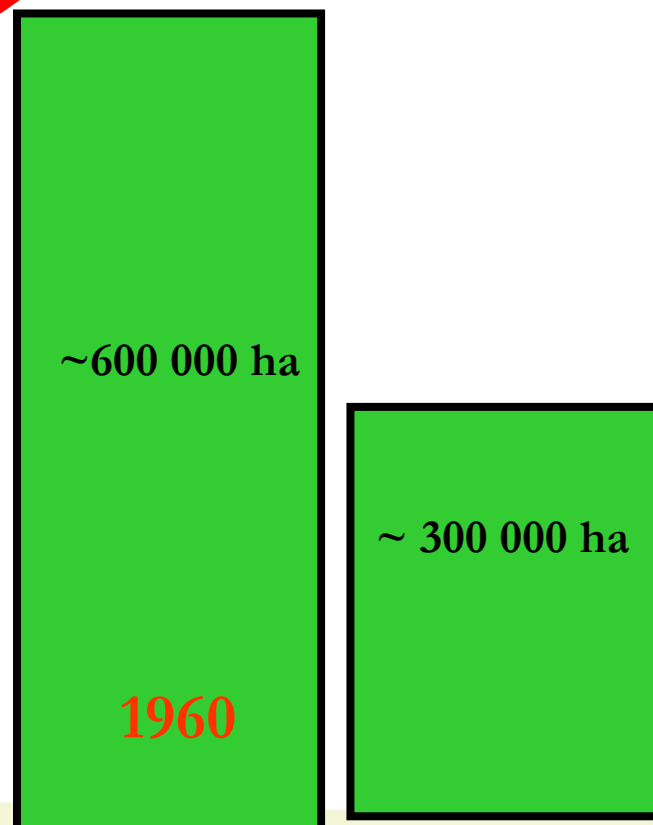
**MOST OF THE  
GRASSLANDS IN  
SLOVENIA IS  
SEMINATURAL**

### THE ROLE OF:

- AGRICULTURAL POLICY (IF GRASSLAND IS MEANT FOR PRODUCTION OF AGRICULTURAL PRODUCTS)

AND

- ENVIRONMENTAL POLICY (IF GRASSLAND IS SELFSUPPORTING IN ORDER TO MAINTAIN (E.G. BIODIVERSITY REASONS))



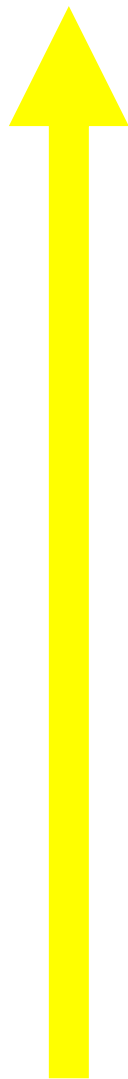


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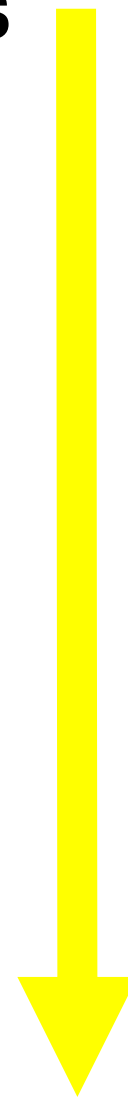
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# MOWING FREQUENCY IMPACTS ON BIODIVERSITY AND HAY CROP FOR ANIMALS

**MOWING FREQUENCY  
(RELATED WITH THE  
AMOUNT OF FERTILIZERS)**



**HAY DIGESTIBILITY AND  
ADEQUACY FOR INTENSE  
CATTLE BREEDING**



**BIODIVERSITY**



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# ORGANIC PRODUCTION

**CONSERVATION OF BIODIVERSITY IS ONE OF THE GOALS**

**REAL EFFECT ON BIODIVERSITY DEPENDS ON MOWING FREQUENCY AND THE AMOUNT OF USED FERTILIZERS**

**BASIS FOR ORGANIC ANIMAL HUSBANDRY IS ANIMALS GRAZING THROUGH THE WHOLE GROWING SEASON AND TO CONCLUDE THAT THE ANIMALS SHOULD STAY IN THE OPEN AIR IN NON GROWING SEASON AS WELL.**

**BASICALLY ANIMALS GRAZING HAS A POSITIVE EFFECTS ON BIODIVERSITY, MOSTLY ON ANIMAL SPECIES**

**GORIČKO IS DROUGHT-THREATENED AREA**

**WHEN MANAGING THE GRASSLAND SPECIAL MEASURES HAS TO BE TAKEN IN THE TIME OF DROUGHT TO PRESERVE THE TURF, WHICH IS BASIS FOR ANIMAL HUSBANDRY. IF NOT MAJOR PROBLEMS CAN OCCURE IN ORGANIC PRODUCTION.**



## **GRAZING AND DROUGHT**

- Methods of cultivation of pastures before drought have influence on how plants react to drought.
- The root system is rather proportional to the above-ground plant parts.
- The constant heavy load of pastures on shallow turf or frequent low mowing leads to the turf with shallow root system = smaller resistance to drought.

**It is recommended not to leave grazing under 7 cm not even in the “normal” years.**

**The animals should not graze the turf under this height during a drought period as well.**

**Therefore we graze the animals as long as the pasture is still available. After that the animals shouldn't load the turf anymore. If we keep the animals outside, it's better to fence the smaller plot and restore the turf.**



**After the end of drought we let the turf to restore itself. Land areas that had been overgrazed last year, should be grazed at higher turf.**

**First we graze subdivisions which hadn't been grazed last year or had been grazed a little.**

**An increase in above-ground biomass in form of dead biomass decreases soil surface and water evaporation – decreases sensitivity on drought.**

**We don't recommend to graze in dry season on a establishing newly seeded turf. In case of grazing this would reduce amount of nutrients for successful regeneration, which in dry period is especially difficult.**



**Experts recommend a late mowing for conservation of animal diversity on grasslands but:**

- frequently mowing decreases animal diversity on grasslands,
- late mowing is not necessary ideal for all animal species.

**Time of first mowing:**

- problem of bird nesting, late first time mowing support in many countries,
- what about spiders, grasshoppers, butterflies, beetles, small mammals, amphibians,...?

**Summer mow can mean seriously danger to spiders and diptera species.**

**Out of sight of animals there is no ideal time for mowing grasslands.**



## How to preserve most of the wildlife when mowing and hay collecting?

- 1. Mowing of meadows should take from the middle to the left or right side of parcel. With this measure we enable the animals to run away.**
- 2. Height of the cut. It is important not to cut too low. It should be at least 7 cm above the ground.**
- 3. Sickle bar mowers kill less animals than rotary mowers.**
- 4. Use of kneading machine highly increases number of killed animals, above all some insect species. We recommend to consider seriously when to use this machine and when to make hay without using kneading machine.**
- 5. It is very important for animals to draw on the borders of unmowed meadows, along the brooks,... We can find a lot of this in Slovenia.**
- 6. Animal grazing. We only mow as much hay as we need it for the winter forage.**





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**In many cases (national parks, protected areas...) we want a specific grass diversity with define bird and butterfly species and rare beautifully blooming plants.**

Not even the organic farming is enough to achieve those specific aims. It is necessarily to specify some actions, like mowing frequency and the number of breeding animals on areas (this is possible to reach also without organic production declaration).

**We can't achieve those aims only with the introduction of organic production and trough passing the load and responsibility for the given aim on farms, because it does not bring a huge amount of milk and meat products. On the other hand small farms can't survive only trough subsidies. If we don't bring extra measures (beside subsidies), which will accompany and encourage development of farms in protected areas, we will even loose those farms showing willingness to farm. Thus grasslands and biodiversity conservation will be even more difficult and expensive.**

There are no such measures - ideal and extra. We shall find the solutions in mosaic of small possibilities, which are specific on a case by case (big role of the state, local policie, institutions which are managing protected areas). Among those measures there are some more like involvement in a complex tourist attraction ( distribution of profit), alternative use of biomass yield (as an energy source), mini-tourist industry of souvenirs,...

**But the most important of all is that we don't leave the farms alone looking for solutions.**