

GOOD PRACTICES FOR *DEHESAS & MONTADOS:* *Adaptive Rotational Grazing*



Livestock management practice that imitates the movement of large herds of wild ungulates, completely consuming the pasture, strongly impacting it and the soil, followed by sufficient recovery periods.

Benefits:

- 1 Increase in grass-to-soil ratio.
- 2 Improvement of profitability of holdings via reduction of external inputs.
- 3 Increase in productivity and pasture quality.
- 4 Improvement of ecosystem functionality: water and nutrient cycles.
- 5 Improvement of soil quality: reduction of compaction and increase of fertility.



GOOD PRACTICES FOR DEHASAS & MONTADOS: Adaptive Rotational Grazing

Background

In recent years many dehasas have become threatened due to the abandonment of pastoral practices or their intensification. This is causing a degradation of the ecosystem, resulting in a lack of tree regeneration, loss of quality and productivity of pastures, changes in vegetation and soil erosion.

Since the 20th Century, thanks to the work of André Voisin and Allan Savory, various grazing strategies have emerged, which - through mass grazing at high density for limited time (short grazing periods and adequate recovery periods) - are resulting in improvement of ecosystem health and profitability of holdings.

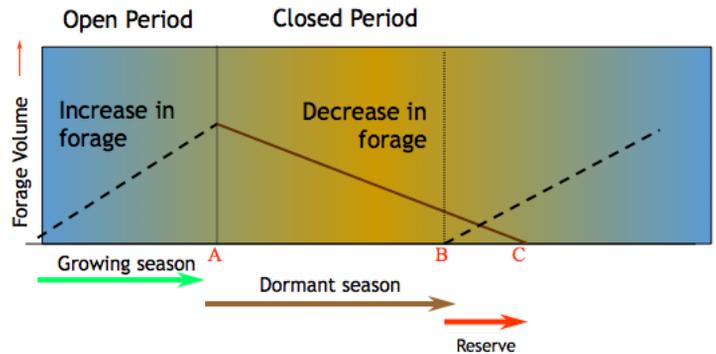


Adaptive rotational grazing in Defesinhas farm (Elvas)

When?

The year is divided into two periods:

- **Open period or growing season:** we focus on producing the highest regeneration and amount forage possible. The key decision will be the recovery period with the aim of avoiding overgrazing of the pasture.
- **Closed period or dormant season:** The main objective here is to manage the available forage and facilitate animal impact to prepare for the following season. In this case the key decision will be how many times we graze the same paddock.



Implementing the Practice:

Where?

Adaptive rotational grazing can be implemented in any ecosystem, and is not restricted by any kind of climatic or environmental factors.



Farm under adaptive rotativa grazing (left) VS. under continuous grazing (right) in Africa.. Savory Institute

How?

Design of infrastructure (including water supply):

The number of available paddocks and managed herds will condition the grazing and its effects. There should be enough of paddocks to allow for the longer recovery periods (during the slow growth season) and facilitate shorter grazing periods. To calculate the appropriate number of paddocks the following formula may be used:

$$\text{N}^{\circ} \text{ of paddocks} = \frac{\text{Recovery periods/}}{\text{(grazing time + n}^{\circ} \text{ of herds)}}$$

Therefore, we must have access to a water supply that can be distributed throughout each paddock, under the maxim that "the water must come to the animal, not the animal to the water".



Adaptive rotational grazing in the 'Mundos Nuevos' farm (Badajoz)

Ecological Monitoring Results

As part of the Iberian *Dehesas & Montados* project, the effects of rotational grazing on the ecosystem, biodiversity and soil quality have been assessed.

Consideration of all aspects affecting livestock management.

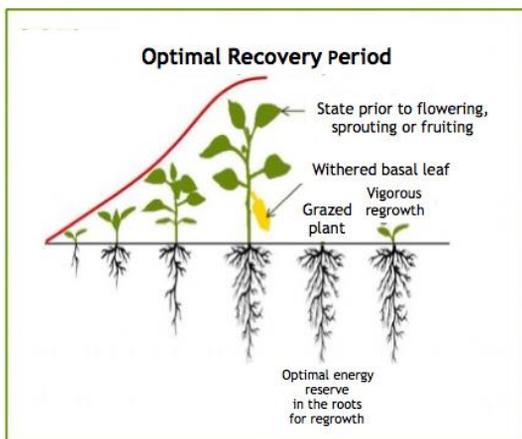
We must first define the goals of “integral” management regarding its social, environmental and economic angles. When planning grazing we must consider every aspect of livestock management:

- Reproductive management of the flock (mating, birthing, lactation...)
- Animal health management (disease control...)
- Livestock exclusion due to sowing, pannage, vegetation regeneration...
- Holidays and non-working days
- Areas that require specialised attention (toxic vegetation, eroded terrain...)

Timing of pasture recuperation and short grazing periods

Recovery times refers to the time it takes for grazed vegetation to recover and become grazable again.

By analysing the pasture growth curve, the optimal pasture resting point may be identified when the exponential growth has concluded and the plant begins to mature.



Optimal plant recuperation period.

Improvement of ecosystem health

The dehesas where this practice was implemented presented an improved ecosystem functionality - such as water and nutrient cycles; community dynamics and productivity. *Ecological Health Index* assigns a score to the ecosystem's health based on 11 biological indicators. Dehesas with adaptive rotational grazing scored highly on the index - especially in terms of soil cover, a key factor for nutrient and water cycles.

The dehesas under adaptive rotational grazing also presented a greater richness in plant species and a higher quality and productivity of the pasture.



Natural regeneration at Defesinhas farm (Elvas, Portugal)

Improvement of soil quality

The results show a tendency towards higher soil quality in farms with rotational grazing, showing less compaction; greater nutrient availability (phosphorus, potassium, nitrogen and carbon); as well as a higher biomass and activity of microorganisms in the soil.

Also, the biological activity of ants and earth worms was greater in dehesas under rotational grazing.

Case studies within the project

Dehesas & Montados:

Mundos Nuevos Farm (Badajoz, ESP)

They currently have a total of 80 paddocks, with an average of 8 ha. each.

The livestock, (made up of 1,400 merino sheep), is divided up into two breeding groups, concentrating the lambing into September, January and May.

The grazing is arranged in short periods, (average of 3 days per paddock), alongside adequate pasture recovery periods, (with an average of 50 days). The average livestock density is 17 LU/ha. (111 sheep).

During the dormant season (summer) livestock are passed through the majority of the enclosures to feed on the seeds produced by the pasture. The livestock are grazed twice, with supplementary feeding, in sown pastures.

Three years on since the practice was implemented, supplementary feeding costs relating to sheep have been reduced by 55%, where as costs relating to lamb feed have been reduced by 33%. Making a saving of 20 euros/sheep/year.

Defesinhas Farm (Elvas, PT)

The farm has a total of 50 paddocks with electric fencing, with an average of 10 ha. each.

The livestock is made up of 240 cows (mertolenga-angus crosses); 45 heifers and 4 bulls. The animals are organised in a single herd, except during the breeding period (April-May and June) where they divided in two groups: the heifers and the cows. The calving is concentrated during the months of January, February and March.

The average grazing period per paddock is 3 days, ensuring the recuperation of the pasture with an average recovery period of 120 days during the slow growth season (Autumn-Winter) and 40 days during the fast growth season (Spring).

The average livestock density is 30 LU/ha. achieving a herd effect thanks to strategic supplementary feeding at appropriate points, changes in watering points, etc.

During the dormant period livestock are passed through for a swift graze of each enclosure.

Since applying these practices there is a striking increase in surplus pasture come the summer, with an average of 80% of the area under standing pasture. Prior to the grazing plan, less than 20% of the total area had surplus pasture.

Work carried out within the Iberian Dehesas & Montados Project. The project goal is to improve the ecological state and economic viability of the dehesa via the application of various cultural practices. Project coordinated by Asociación Trashumancia y Naturaleza, WWF España, ANP-WWF Portugal, with support from the MAVA Foundation.

Coordinated by:



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