Legume-based temporary grasslands & forage self sufficiency

MILK

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1 Description of the innovation

The farm Santa Barbara is located in the Nurra Plain, in North West Sardinia (Italy).

The farm shows a rich feeding and forage system. The diet of dry or pregnant ewes is based on fresh forage grazed in temporary grasslands and pastures supplemented with hay and small amounts of concentrates (sugar beetroot pulps). Lactating ewes diet is based on fresh forage grazed on annual forage crops, supplemented with lucerne hay twice a day, and concentrates according to the needs, usually corn, pulses (pea) and barley. All forages and about 90% of the supplements used in the farm are self-produced, except for sugar beetroot pulp, pea and barley that are purchased.

Temporary grasslands and management

A) Annual self-reseeding species (subclovers and medics) in mixture with cereals. Cereals are present in the mix composition to guarantee herbage production in the year of establishment. Grazing is limited in time in the first period after sowing, so that a good establishment is achieved. During winter and early spring, grazing pressure is high. Afterwards, grazing is stopped in order to allow the self-reseeding, The legume-based pasture persists for 3-4 years. These temporary grasslands are not mowed.

B) Annual cereal-legume forage mixtures (local ecotypes of Hordeum vulgare and Lolium multiflorum and Trifolium alexandrinum or T. incarnatum or T. resupinatum). Usually, grazing starts 45 days after sowing and is allowed for no longer than 5 hrs per day. It is stopped in early spring to allow the production of hay.

C) Sulla. Grazing is allowed for no more than 2 hours per day in the first growth period, and then it is increased to a maximum of 4 hours. This crop persists for 2 years and it's exclusively used for grazing.

D) White clover. Grazing is limited in time in the summer period, then is free for animals. This clover crop is exclusively grazed and persists for about 4 years.

E) Lucerne. The crop is not grazed but only used for hay production. The meadow persists for 4-5 years.

Reasons for the innovation

- Reduction of milk cost production
- Improving animal health with the use of species containing condensed tannins , i.e. sulla
- Increase farmer income

Better milk quality

Cost reduction for animal health care

2 Farm description

ENVIRONMENT

Soil types: shallow silt-clay soils, sub-alkaline pH

Climate: Mediterranean climate

Altitude: 60 m a.s.l.

Slope: 0%

GRASSLAND MANAGEMENT

Grazing : Yes

Grazing management type: rotational grazing, combined with mowing (1 cut per year)

Length of the grazing season: 12 months

Forage conservation type: Hay

Fertilisation rate: 100 kg ha-1 of Diammonium phosphate for mixtures, annual clovers and medics; 150 kg ha-1 Diammonium phosphate for lucerne; no fertilisation for sulla.

FARM STRUCTURE

Annual Work Unit: 2 workers

Agricultural Area: 78 ha, 70.5 UAA:

- 48 ha, annual forage cereal mixtures
- 3.5 ha, sulla (irrigated with emergency irrigations)
- 5 ha, subterranean clovers and annual medics pastures
- 5.5 ha, white clover under irrigation
- 3.5 ha, lucerne under irrigation
- 5 ha, corn under irrigation

Activity: dairy sheep raising (Sarda breed)

Number of heads (LSU): 72.5

Stocking rate referred to total farm area: 0,929 LSU per hectare

ANIMAL PRODUCTION

Milk production: 250 l per head per year

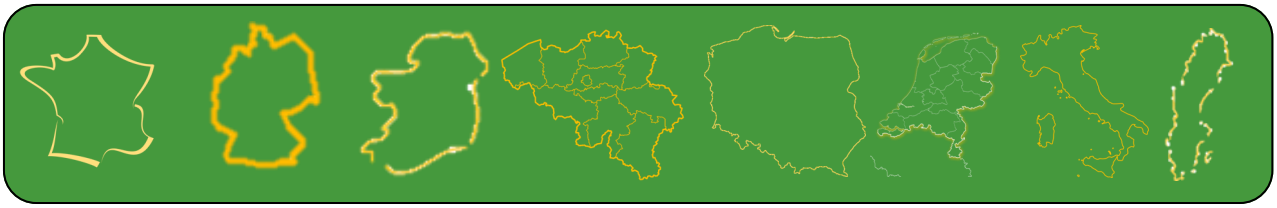
Meat production: 400 milk lambs per year, slaughtered 28 days after birth (carcass weight: 6-7 kg)

WHY IT IS WORKING

The farmers:

- are very motivated to improve the quality of their productions (milk) and to increase forage and hay self-sufficiency.
- are open to collaborations with researchers, consultants and technicians and are actively involved in projects and research activities.

Country shapes



Domains of innovation

- Machinery, tools
- Forage mixture
- Forage conservation technique
- Grazing management system
- Legume management
- Animal feeding management
- Animal type (breed)
- Product processing
- Marketing
- Farm system
- Landscape

Main types of animal