Legume species and management & sheep breed & adaptation of seeder to farm soils

MILK

Giancarlo Littarru

1 Description of the innovation

The farm that belongs to Giancarlo Littarru is located in South West Sardinia (Italy).

The main innovations adopted by the farmer are:

1. Legume-based mixtures. The farmer cultivates sulla, subterranean clovers and serradella. The latter species is cultivated in mixture with cereals (wheat or barley). In the mixture, cereals are seeded with a reduced seeding rate. With the first rains, serradella re-sprouts and can be grazed as pure stands. This strategy allows to carry out soil tillage every two years. The farmer is adopting the same strategy for the first time also with sulla.
2. Sheep breed. The farmer introduced a second sheep breed in his farm (the Israelian breed Assaf) to increase milk production. He raises the Assaf sheep separately from the Sarda sheep, since these breeds have different diet requirements. He manages also the birth seasons separately for each breed.
3. Machinery. The farmer had the idea to modify his precision seeder: the seed distributor is mounted on the front of the tractor while a heavy soil roller operates on the back of the tractor. In this way, he can sow and cover seeds in one passage.

Reason for the innovation

- Reduction of costs for forage production
- Increase of farmer income
- Increase milk production

Improved pastures for production and quality

Better working conditions and more leisure time

2 Farm description

ENVIRONMENT

Soil types: clay soils, acid pH

Climate: Mediterranean climate

Altitude: 140 m a.s.l.

Slope: 10%

GRASSLAND MANAGEMENT

Grazing : Yes

Grazing management type: rotational grazing

Length of the grazing season: 12 months

Forage conservation type: Hay

Animal diet integrated with concentrates (silage, beet pulp, beer threshing)

Fertilisation rate: 150-200 kg ha-1 of Diammonium phosphate (for forage crops and cereals, respectively), and 140-160 kg ha-1 of ammonium nitrate during the crop growth.

Manure available to fertilise 7 ha each year (the manure fertilization is repeated in the same plot after 3 years)

FARM STRUCTURE

Annual Work Unit: 1 full time and 1 seasonal worker (10 months)

Agricultural Area : 87 ha, 82 ha UAA:

- 45 ha, mixtures of cereals (oat, barley) or grasses (ryegrass) and pasture legumes (balansa clover, subclovers, serradella, sulla) used exclusively for grazing

- 16 ha, cereals used for grain production

- 16 ha, annual forage crops (mowed only)

Activity: dairy sheep raising (Sarda and Assaf breeds)

Number of heads (LSU): 50

Stocking rate referred to total farm area: 0,61 LSU per hectare

ANIMAL PRODUCTION

Milk production: 260-280 l per head per year (Sarda) and 430-480 l per head per year (Assaf)

Meat production: 450 milk lambs per year, slaughtered 28 days after birth (carcass weight: 6-7 kg)

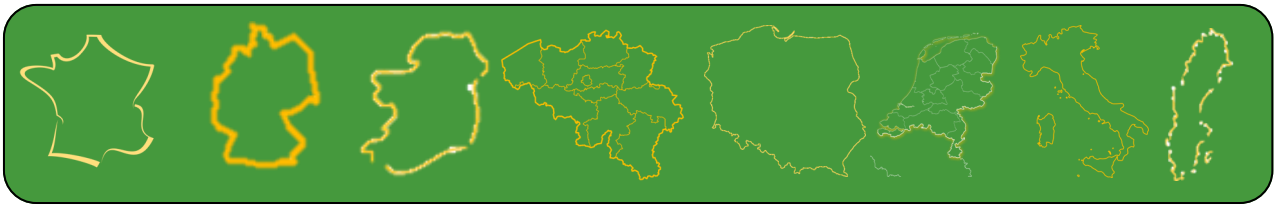
WHY IT IS WORKING

The farmer's curiosity and his attitude to innovate are key determinants.

The farmers payed a particular attention to improve working conditions adopting strategies to reduce the time spent in agronomic practices.

The farmer has a great experience in detecting animal requirements in terms of diet

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