Mineral efficiency

Test Farm De Marke

MILK

1 Description of the innovation

On test farm De Marke, situated in Hengelo (Gld.), research is carried out into a clean and profitable dairy farm, where attempts are made to minimize the burden of the environment. Gerjan Hilhorst is one of the researchers. The research focus is how the losses of ammonia, nitrate, phosphate and greenhouse gases can be limited as much as possible. This is tried by using manure and minerals as efficiently as possible. The experimental farm is very focused on the efficiency of manure, minerals and roughage.

To increase the efficiency, the company uses a management tool that predicts the grass growth per plot. This contributes to a better understanding of the crop growth on a parcel and can help to determine the ideal harvest moment, to make a difference in efficiency. At this moment the system only predicts kilograms of dry matter per hectare, this will be expanded in the coming years with a prediction of raw protein and VEM value of the grass. The system predicts grass growth by linking different information. Data that must be entered in the system are the current grass height, fertilization, weather and moisture conditions in the soil.

The system is still in development, at the moment no distinction is made between nitrogen from animal manure and nitrogen from artificial fertilizer. Furthermore, the moisture balance on the bottom of the farm is very decisive for the growth of grass, because of the drought-sensitive soil, the system now does not take sufficient account of this. At this moment the system can only be applied to the parcels that are only used for mowing and not the parcels that are grazed, the company wants to make this possible in the future.

Farmer's strategy

The strategy of the farm is based on the best efficiency of the nutrient balance.

Achievements: Too predict the grass growht

Failures: The system works very irregularly and takes too little account of the moisture condition.

Results: Better grass quality

2 Farm description

ENVIRONMENT

Soil: Sandy

Climate: Temperate oceanic

Altitude: ±sea level

Slope: flat

GRASSLAND MANAGEMENT

Grazing: Yes

Grazing management: Strip stocking

Length of grazing periode: 5 months/year

Main composition grassland: Perennial ryegrass, Italian ryegrass, Festulolium, red and white clovers

STRUCTURE

Agricultural Area	33 ha UAA
Permanent grassland	*11 ha*
Temporary grassland	*22 ha*
Production method	Conventional
Stock	90 dairy cows
	50 young stock
Breed	Holstein-Friesian
Milk production	8600 kg/year
Annual Work Unit	1,3

WHY IT IS WORKING

The innovation is still in development. When it is ready you can make decisions for give the manure and fertilizer.

- The farm can make samples from all the cars with grass and maize silage
- Due to the test farm system, there is a lot of data avalible for this innovation
- It will increase the efficiency on manure, fertilizer and soil quality