

Fodder crops in The Netherlands

Case Study 8

Experimenting crop diversification and low input farming

Experimentation plot of 0.27 ha with fodder located in Groningen (The Netherlands)



A DIVERSIFICATION OF MAIZE INTERCROPPED WITH BEANS AT DIFFERENT PROPORTIONS WAS TESTED UNDER ORGANIC AND CONVENTIONAL MANAGEMENT

AGRONOMIC BENEFITS

1. Crop yield under organic management was slightly lower than in the conventional experiment; intercropping increased crop yield under both managements
2. Intercropped system had higher protein content in maize than the monocrop

ENVIRONMENTAL BENEFITS

1. Soil organic matter was higher under the organic management than in the conventional one
2. Earthworms were more abundant in the intercropped systems, related to decreases in soil pH
3. Soil nitrate content was reduced in the diversified treatments at the organic farm, decreasing the risk of water pollution by leaching

SOCIOECONOMIC BENEFITS

1. Financial gain to the maize bean intercrop tested if used to replace feed concentrate, at little to no extra effort
2. These gains become smaller if bean seed prices increase. However, particularly for the 70/30 maize bean intercrop proportion, gains are rather robust to price increases



WHY IMPLEMENT CROP DIVERSIFICATION?

Crop diversification enhances soil quality and economical savings

AGRONOMICS DRAWBACKS

Harvest of maize with beans intercropping might be difficult and requires specialised machinery

ENVIRONMENTAL DRAWBACKS

High drought enhanced the presence of pests that affected some sections of the area, not controlled with intercropping.



FINAL CONCLUSION

The use of intercropping enhanced crop production and quality, soil health and promoted economical savings. In a dairy farm, economic benefits are obtained when fewer cattle feed concentrates are needed.