Horticulture in Hungary
Case Study 10

Experimenting crop diversification and low input farming

Experimentation plot of 1,3 ha with 28 rows of asparagus located in Jakabszállás (Hungary)

2 TYPES OF INTERCROPS TESTED

1. **Asparagus + field pea**
2. **Asparagus + oat**

The 1.8-m-wide interrow spaces between the asparagus ridges allow intercropping. As intercrops two fodder crops widely cultivated in the pedoclimatic region have been chosen for the experiment: pea, with nitrogen-fixing bacteria on root nodules and high P and K contents, and weather tolerant and also nutrient-rich oats

AGRONOMIC BENEFITS

1. **Increased soil nitrogen content,** especially the available forms
2. **Increased soil exchangeable nutrients**

ENVIRONMENTAL BENEFITS

1. **Reduced wind erosion**
2. **Reduced transpiration of the bare soil surface**
3. **Increased soil organic matter**

SOCIOECONOMIC BENEFITS

1. Intercropping provides basic food material for the valuable products
2. Extension of the seasonal work period

WHY IMPLEMENT CROP DIVERSIFICATION?

Diversification is **beneficial for providing soil cover and protection against desiccation and wind erosion.** It also promotes soil aggregation through increasing carbon and nitrogen content and preventing the leaching of nutrients

AGRONOMICS DRAWBACKS

1. **Asparagus harvest and spraying period for intercrop is the same**
2. 30-40% of intercrop was damaged or weakened due to the main crop fieldwork
3. The harvesting of intercrops requires **specialised machinery**

ENVIRONMENTAL DRAWBACKS

No environmental drawbacks

SOCIOECONOMIC DRAWBACKS

1. Increased labour efforts
2. Organising the season works becomes more complex

FINAL CONCLUSION

Intercropping raises technological problems in view of pesticide application and crop harvesting. At asparagus harvest time no pesticide can be applied to the intercrops. The harvesting of intercrops requires specialised machinery.
Further problems with asparagus production include the lack of a trained labour force which does not allow expansion to meet market demands. Field-level diversification can ultimately contribute to the design of a diverse landscape pattern with higher biodiversity too

HORIZON 2020 DIVERFARMING