Practice Abstract #2

TRansition paths to sUstainable legume-based systems in Europe

What are the best companion crops for lentil?

Problem

Lentil cultivation is not easy in temperate climates, such as in Germany. Lentil plants have an indeterminate growth and small, weak tendrils. Under summer drought, as in the Mediterranean region, lentil growth stops due to water shortage, and plants do not lodge. Under humid conditions, the lentils continue to grow, and plants lodge easily due to stem instability. Hence, lentils need a companion crop to stabilize the plants in these climates. Since crop water content at harvest is often ≥20% in Germany, immediate drying is crucial. Lentils and the companion crop must then be separated using adequate technical facilities.

Experimental field of lentils with barley as companion crop.
Photo credits ©: Sabine Zikeli

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Policy Makers | **Inputs** | **Primary Production** | Aggregation | Processing | Distribution | Retailers | Markets | Consumers

SUSTAINABLE DEVELOPMENT GOALS

Knowledge Exchange & Communication | **WP2: Case Studies** | WP3: Nutrition and Product Development | WP4: Markets and Consumer | **WP5: Life Cycle Assessments and Environmental Assessments** | WP6: Economic Assessments of Legume Production and Consumption | WP7: Policy and Regulations | **WP8: Transition and Decision Support Tool**

All Pratice Abstracts prepared by the TRUE Project in the EIP-Agri common format can be found here: https://ec.europa.eu/eip/agriculture/en/find-connect/projects/transition-paths-sustainable-legume-based-systems

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Practical recommendations

Farmers should consider the following issues when selecting companion crops for lentils:

- Is the growing season similar?
- Is the sowing depth similar?
- Is the leaf architecture of the companion crop suitable to reduce lodging?
- How does the companion crop compete with lentils versus weeds?
- Are facilities available to dry the harvested crop?
- Are facilities available to clean and separate lentil seeds from companion crop seeds?
- Is there a market and a satisfactory price for the harvested companion crop?

Similarity of growing seasons, suitable phenotype of the companion crop, and availability of facilities for drying, cleaning and separating are basic requirements. For sowing depth, a compromise can be achieved, or seeding carried out in two passes or with special seeders. Competition of companion crops with lentils and weeds can be adapted by the mixing ratio and number of plants per square meter. A mixed cropping system for lentils contributes to species diversity and thus to overall ecological requirements.

About TRUE

The EU funded project "TRansition paths to sUstainable legume based systems in Europe" (TRUE) is a balanced practice-research partnership of 24 institutions, which aims to identify the best routes, or "transition paths" to **increase sustainable legume cultivation and consumption across Europe** and includes the entire legume feed and food value chains.

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