



Transition paths to sustainable legume-based systems in Europe

The profitable integration of grain legumes: barley in Scotland as a case study

Problem

Legume cropping is low across Europe, occupying 1-4 % of the arable farmed area. In Scotland, grain legume cultivation accounts for less than 1 % of the arable area. In contrast, barley occupies two thirds of the area and while half is used as animal feed, half serves whisky and beer production. Since these fermentation-based businesses account for £10 billion of UK tax revenue, any loss of barley production area needs careful consideration: especially since domestic barley production falls 20% short of demand.

Therefore, a major challenge is: how may legumes be integrated into a barley dominated system?

Practical recommendations

Intercropping barley with peas is an option and intercropped-barley yield can match that of monocropped-barley.

However, pea-plant density needs to be controlled to 20% or less of barley plant numbers. Also, more-upright pea varieties should be sought (e.g. maple pea). To safeguard the nitrogen content of the barley to meet malting qualities, no more than 20 kg/ha ammonium sulphate may be added at seed-drilling, and direct-drilling of seed is

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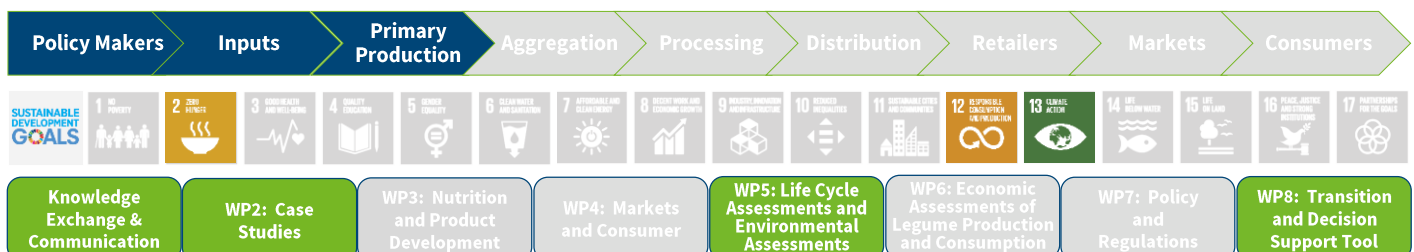
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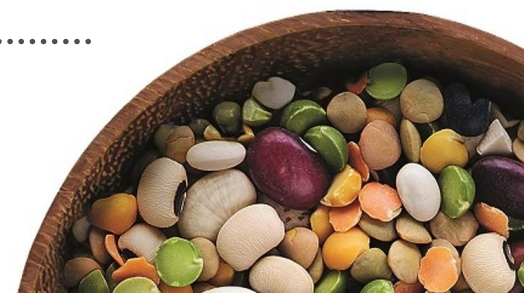
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All Practice Abstracts prepared by the TRUE Project in the EIP-Agri common format can be found here: <https://ec.europa.eu/eip/agriculture/en/find-connect/projects/transition-paths-sustainable-legume-based-systems>





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preferred to help reduce pathogen incidence. Herbicide and pesticide applications can probably be avoided. Seed may be separated after harvest for different markets or used as a mixture for feed on farm. This approach can deliver 20% more yield per unit area and higher gross margins than conventional agronomy.



Barley and peas growing together. Photocredits © The James Hutton Institute



About TRUE

The EU funded project "Transition paths to sUustainable 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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