



Transition paths to sustainable legume-based systems in Europe

## Selection of clovers for living mulches

Clover living mulches can be a tool contributing to multifunctional benefits when well-managed. For example, evidence suggests they can help reduce reliance on agrochemical inputs, such as nitrogen fertiliser. It is important to select a clover species and variety that will work with the crop they are partnered with, with consideration of machinery and management options, as well as crop structure.

White clover (*Trifolium repens*) and Alsike clover (*T. hybridum*) are low-growing perennial species with reasonably good longevity and frost tolerance, and modest nitrogen fixation. Their prostrate growth habit makes them useful when undersown to cereal crops, as machinery can be set so that the clover does not interfere. Red clover (*T. pratense*) is a perennial species with deep rooting and good nitrogen fixation. Its upright growth habit means that it is more suitable with taller crops, such as maize, to avoid interference with machinery. Crimson clover (*T. incarnatum*) is an annual species of moderate height, limited frost tolerance, and which can give rapid soil fertility boosts, but will die back after flowering. Persian clover (*T. resupinatum*) is a fast-growing annual producing much biomass, but with very limited frost tolerance. Berseem clover (*T. alexandrinum*) is the least frost tolerant clover, which can support incorporation into the soil before following crops, and reduced interference with machinery at harvest.

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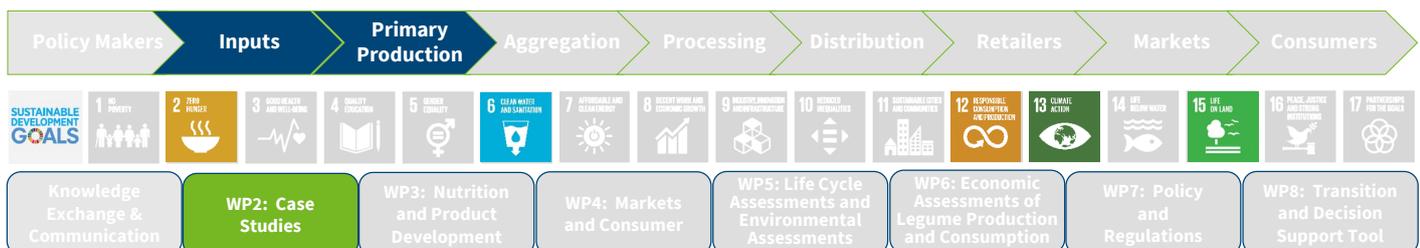
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### Keywords

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Each species has different benefits, and specific varieties might further supplement these. Advice should be sought from farm advisory services, agronomists, and seed companies to select the best-suited species and varieties for local conditions, and for the desired clover behaviours and outcomes.



**Figure 1.** Wheat (left) and maize (right) with under sown clover.  
Photo credits ©: Jennifer A. Banfield-Zanin (left) and David George (right).



### About TRUE

The EU funded project "TTransition 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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