

# Choosing cover crops for arable crop rotations

## Problem

Growing cover crops in organic arable crop rotations provides many agronomical benefits. Cover crops improve soil fertility and N self-sufficiency, limit nitrate leaching and soil erosion and/or break weed, pest or disease cycles. Nevertheless, choosing appropriate cover crops can be a challenging task.

## Solution

A French working group initiated by ITAB developed a decision tree for selecting adequate cover crops in arable crop rotations. The decision tree is complemented by technical guides that provide information on cover crop management and appropriate cover crops, depending on specific constraints and objectives.

## Outcome

The tools aim at highlighting the main technical challenges as well as the ways and means of reflection, which can improve the understanding and the implementation of direct sowing into vegetal cover in organic agriculture.

## Applicability box

### Theme

Soil quality and fertility, nutrient management, pest and disease control, weed management

### Geographical coverage

Temperate climate

### Application time

When planning next year's crop rotation

### Period of impact

Succeeding crop and crop rotation

### Machinery

Not applicable

### Best in

Arable crops

## Practical recommendation

### First step: Determining the constraints

Considering constraints with regard to suitability of cover crops helps to narrow the number of potential plant species. A first selection refers to the main crops, the intercropping period, dates of sowing and the soil type.

### Second step: Ranging objectives

In a second step, applicable objectives are selected from a proposed list. The species that are best suited to meet the objectives are selected.

### Third step: Adapting cover crop management

In a third step, the methods of sowing and crop termination are taken into account. If the selected species with the best characteristics do not match the available workforce and machinery, species selection is redefined.

### Fourth step: Final choice

The fourth step refers to the selection of a single species or a combination of different species. Seed costs and seed availability on the market or the farm finalize cover crop selection.

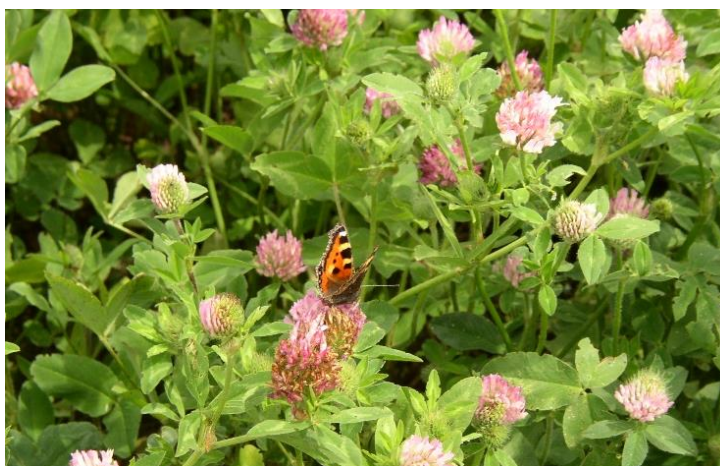


Figure 1: Red clover (*Trifolium pratense* L.) (Laurence Fontaine/ITAB)

## Cover crop choice

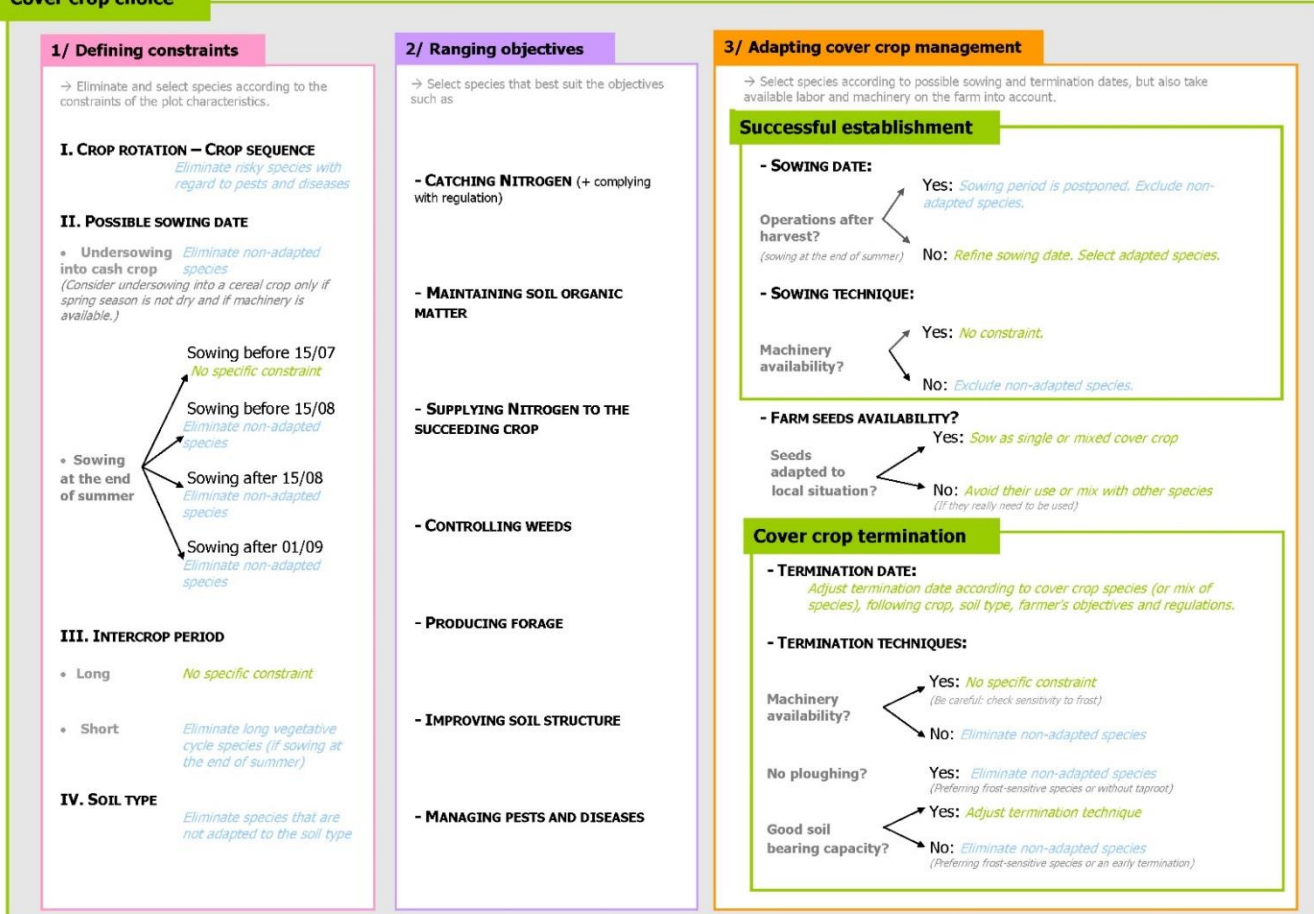


Figure 2: Decision tree for choosing adequate cover crop (ITAB)

## Practical testing and sharing of results

If this tool may be suitable for you, we recommend that you test it under your conditions.

Use the comment section on the [Farmknowledge platform](#) to share your experiences with other farmers, advisors and scientists! If you have any questions concerning the method, please contact the author of the practice abstract by e-mail.



## Further information

### Further readings

- A complete description of the choice procedure: Cadillon A, Fontaine L, Fourrié L, et al. (2012) - Choisir et réussir son couvert végétal pendant l'interculture en AB. ITAB. Available online on the [ITAB website](#) (French).
- A collection of 42 species forms: Ghesquière J, Cadillon A, Fourrié L, et al (2012) - Couvert végétal pendant l'interculture en AB : caractéristiques des espèces- ITAB. Available online on the [ITAB website](#) (French).

## About this practice abstract and OK-Net Arable

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among farmers, farm advisers and scientists with the aim to increase productivity and quality in organic arable cropping all over Europe.

**Project website:** [www.ok-net-arable.eu](http://www.ok-net-arable.eu)

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