

Cover crop mixtures as dead mulch for soybean

Cover crop mixtures terminated as dead mulch for no-till soybean

Readiness for use: 

Efficacy: 

How it works

- Cover crops can be established as intermediary service crops in early fall on soil prepared by minimum tillage
- Alternatively, they can be undersown as living mulch in the preceding winter cereal crop (e.g., wheat) in early spring together with flex tine harrowing, and then kept on the soil until soybean (or other summer crops) sowing
- If undersown in winter cereals, late post-emergence herbicide application against dicots should be avoided due to phytotoxicity against the cover crop (better pre-emergence or early post-emergence applications)
- Cover crop grass:legume mixtures should be preferred to pure stands when planted as intermediary crops, to reduce the risk of cover crop establishment failure due to extreme weather events
- A tall grass cover crop, with long stem, is essential in the mixture to keep weeds under control. Legume cover crop can help sustaining the early growth of soybean and avoid the risk of N lack before nodulation of its roots
- Few days before soybean sowing, a roller crimper or a cut-roller should be operated to terminate the cover crop as a long-season dead mulch to prevent from weed infestation
- Better to operate the crimper rollers at late stages of cover crops (milky-dough for cereals, 70% flowering for legumes) to increase their effectiveness.
- Drought risk can be minimised by reduced soil water evaporation thanks to the physical barrier created by the mulch, anyway optimal sowing date occurs at around mid-May
- A strip-tillage machine or a no-till sowing machine are needed to establish the soybean
- Drip irrigation, sub-irrigation and in-furrow fertiliser application +/- fertigation should be implemented to reduce weeds and prevent from nutrient lack
- Incorporate the cover crops into the soil instead of terminating them as dead mulch if their biomass is too low



Figure 1. Organic soybean directly sown in the dead mulch provided by rye cover crop



Figure 2. A cut roller or a roller crimper is the proper equipment to terminate a rye cover crop



Figure 3. No-till sowing of soybean can occur few hours later the pass of the rollers

Read more

[Inspiration sheet on roller crimpers](#)

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