

Cover crop mixtures as dead mulch for grain maize

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

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 maize (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 legume cover crop in the mixture is essential to sustain maize early growth, thanks to N fixation
- Few days before maize 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
- If early maize sowing is needed, cut rollers or mowers should be preferred to roller crimpers for higher termination rate
- A strip-tillage machine or a no-till sowing machine are needed to establish the maize
- 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. Grain sorghum directly sown in the dead mulch provided by rye:vetch mixture



Figure 2. Sharpened blades of a cut roller can increase cover crop termination rate



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

Read more

[Inspiration sheet on roller crimpers](#)

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