



**18th
European
Weed
Research
Society
Symposium**

EWRS 2018

17-21 June 2018
Ljubljana, Slovenia

**New approaches for
smarter weed management**

Book of Abstracts

www.ewrs2018.org

Weed management in cereals with cover crops - do they help or hinder?

Jukka Salonen

Natural Resources Institute Finland (Luke), JOKIOINEN, Finland

Sustainable crop production calls for integrated weed management approaches. Cover crops (CCs) have been studied primarily in the context of soil fertility and soil structure but they might also supplement the weed management toolbox, particularly when adapted to long-term control strategies. The challenge in organic cropping is to provide strong weed suppression without severely compromising weed species diversity and crop yields. Several CC species, mainly sown in mixtures, were studied in organically cropped 3-year field experiments in southern Finland. CCs were sown concurrently with spring barley in 2015 and in the same plots with winter wheat in early May 2016. The subsequent effect on weeds and crop yield was studied in spring wheat in 2017. Among the studied legume species, low-growing *Trifolium pratense* L. and *T. repens* L. were more suitable CCs than the tall species *T. incarnatum* L. and *T. resupinatum* L. var. *majus* Boss. Italian ryegrass (*Lolium multiflorum* Lam.) fitted well in mixtures with clovers. White sweet clover (*Melilotus alba* Med.) was highly aggressive both as a CC in 2016 and as a volunteer weed in 2017, particularly in reduced tillage. Managing with CCs and weeds remains questionable in reduced tillage systems. Annual weed species which emerged early in the spring and grew fast and tall were not effectively controlled with CCs. The CC competition against weeds increased towards and after harvest time and therefore more profound studies on weed seed/rhizome suppression are warranted. With an optimal CC mixture, seed rate and sowing time no significant yield losses were detected in a sufficiently tall and dense crop. CC establishment in clay soil in early spring works well for both spring and winter cereals but prevents mechanical weed control operations at later growth stages. The study was part of the PRODIVA project »Crop diversification for better weed management«.