A healthy soil needs weeds

S. Carlesi, M. Ranaldo, J. Izquierdo, J. Le Corff, Z. Mintale, B. Gerowitt, A. Cirujeda
EWRS Working Group on Weeds and Biodiversity

REDUCED HERBICIDE USE

Potential Disservices

- Lower yields

Potential Services

- Cost reduction
- Safe for human health
- Safe for the environment
- Improved soil fertility?
- Sustain overall soil biodiversity?

STATE OF THE ART

Weeds have the potential to:

- Facilitate crop colonization by mycorrhizal fungi (van der Heijden et al., 1998; Rinaudo et al., 2010)
- Reduce soil erosion covering the soil (Hernandez et al, 2005)
- Reduce nutrient leaching (Webster and Goulding, 1995; Askegaard et al., 2011)
- Act as trap crop for soil-born diseases and pests (Sholte, 2000; Rämert et al., 2001)

RESEARCH GAPS

Positive functions of weeds for soil health have not been explored in depth so far.

To our knowledge no study has determined:

- The role of weeds in improving soil structure in conservation tillage
- The weed community that is effective in sustaining multiple ecosystem services
- The trade-offs between advantages and yield reduction caused by weeds

FILLING GAPS

Innovations and Know-how:

✓ Identify **management practices** resulting in **weed communities** with traits that limit yield loss while supporting **soil health**

✓ **It will support conversion to Conservation Agriculture, IWM or Organic Agriculture**

Acknowledgements: we thank all participants of the 5th workshop of the WG Weeds and Biodiversity; we thank EWRS for providing a travel grant to C. Von Redwitz, A.I. Marì Leòn and H. Pannwitt. This poster is part of a series of three that resulted from a short training course on 'Targeting communication tools – content, pictures and graphics' to improve communication on biodiversity strategies towards stakeholders and potential financing organizations held by Chiara Tuoni