Weed management at the cropping system level

Mechanical weeding with high grass weed pressure (*Lolium sp.*)

Yield (t ha⁻¹) from barley, maize, rapeseed and wheat in relation to weed biomass before harvest (%) 2020 and 2021

Crop yield (t ha⁻¹) response to weed biomass (% of total plant biomass), period 2020-2021 for barley, maize, rapeseed and wheat. *Green dots:* fields using alternative control methods; *red circles:* fields using herbicide; circle size indicates herbicide treatment frequency index. Continuous *blue line:* Swiss yield reference (average 2014 to 2021). Dotted line: 10 % yield loss allowed in PestiRed

Conclusions

• High yield variability is independent of herbicide treatments.
• In certain cases, reference yield levels can be achieved managing fields without herbicides.
• → Combinations of IPM measures and external factors leading to high yields have to be identified.
• In general, on fields without herbicide treatments, weed biomass and the number of weed species tend to be greater.