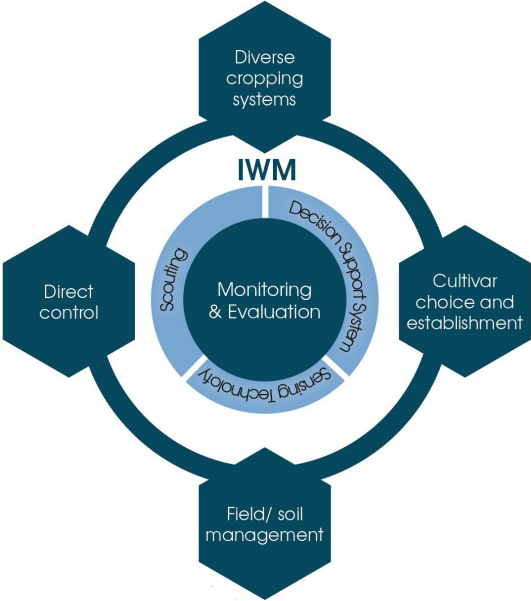


Short-term outcomes of IWM implementation in terms of economics and yields in annual crops



Mette Sønderskov, Aarhus University (DK)
Wim van Dijk (Wageningen University & Research (NL))



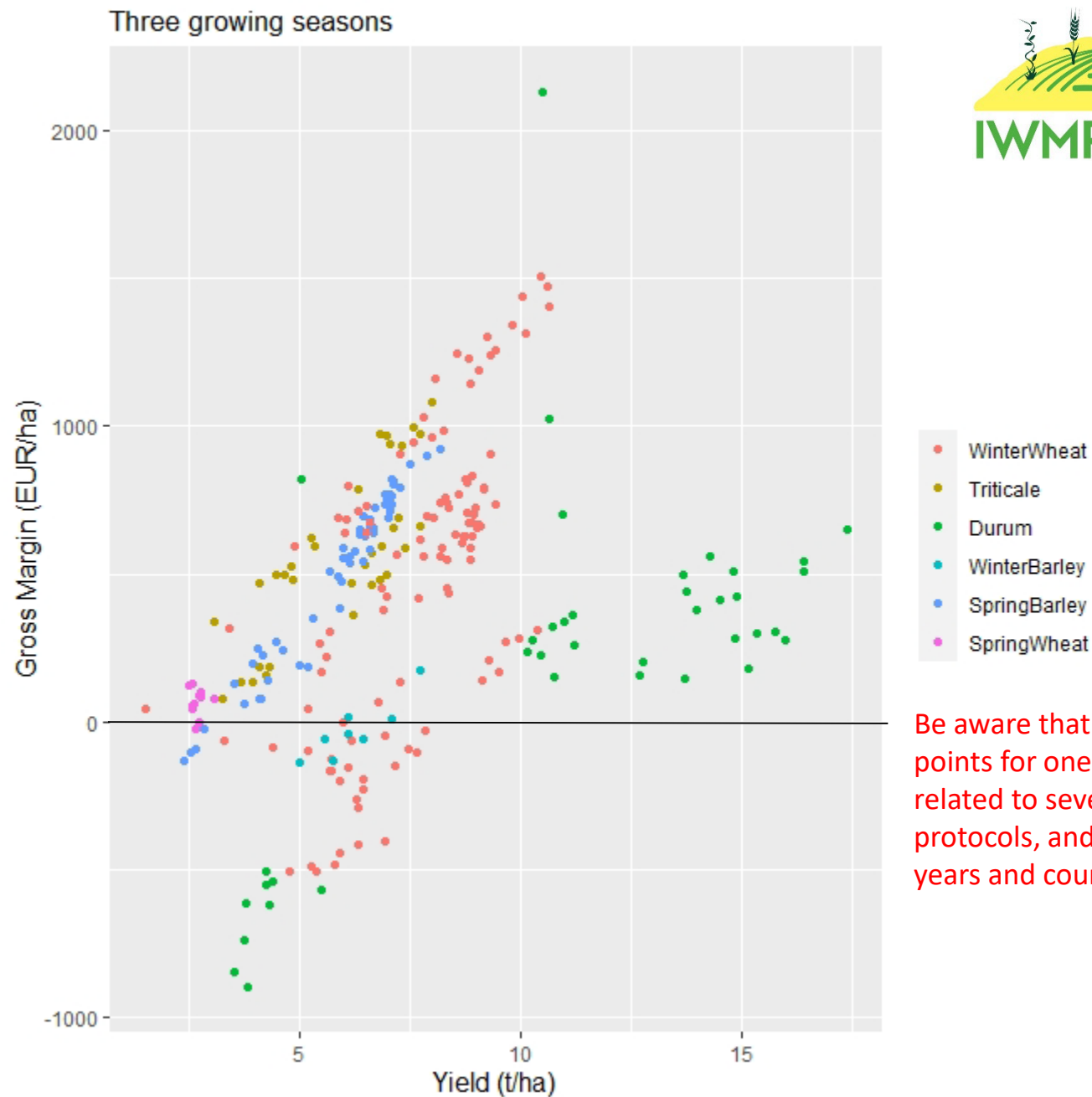
Narrow row crops *(cereals, oilseed rape) – what we did in 2019-2020*



Trial	Country	Partner	Pillar 1	Pillar 2	Pillar 3	Pillar 4	Pillar 5
1	Italy	SSSA/ISEA	Cover crops Legumes species				
2	Italy	CNR			Seed bed prep. False seed bed	Herbicide Post emergence Mech. Weeding Tine harrow	
3	France	APCA by CRA- CVL/CIA- IDF		Sowing date Delayed 2 weeks		Herbicide Pre- + post- emergence	
4	France	ACTA-ARV		Sowing date Delayed 2 - 3½ week		Herbicide Pre- + post- emergence	
5	France	APCA by CRA- CVL/CIA- IDF		Sowing date Early + late		Herbicide Post-emergence	
6	France	INVIVO		Sowing date Delayed 2 weeks			
7	France	APCA by CRA- CVL/CIA- IDF	Cover crops Not specified	Sowing date Delayed 2-3 weeks	Tillage Tillage once, different intensities or no-till Seed bed prep. False seed bed		
8	France	APCA by CRA- CVL/CIA- IDF		Sowing date Delayed 3-5 weeks	Seed bed prep. False seed bed		
9	France	ACTA-ARV				Herbicide Pre- + Post- emergence Mech. Weeding Weed hoeing	
10	France	INVIVO			Tillage Ploughing or no-till	Mech. Weeding Tine harrow	
11	France	APCA by CRA- CVL/CIA- IDF				Herbicides Post-emergence	

12	Slovenia	AIS		Sowing date Delayed 2 weeks	Seed bed prep. False seed bed	Herbicides Post-emergence Herbicide rate Mech. Weeding Tine harrow	
13	Slovenia	BSR		Sowing date Delayed 2 weeks		Herbicides Post-emergence Herbicide rate Mech. Weeding Tine harrow	
14	Denmark	AU		Sowing date Delayed 3 weeks	Tillage Ploughing or no-till	Herbicides Pre- + Post- emergence Mech. Weeding Weed hoeing	DSS, Need based spring application with Crop Protection Online
15	UK	NIAB		Sowing date Delayed 2 weeks	Tillage Ploughing or no-till	Herbicides	
16	UK	NIAB				Herbicides None selective Mech. Weeding Weed hoeing	
17	UK	NIAB	(Crop rotation)		Tillage Ploughing or no-till		
18	UK	NIAB	Intercropping Beans, oilseed rape, species mix			Herbicides Post-emergence	

Gross margin =
The income from physical harvested yield
– all costs related to the cropping practice



Examples from 2020 with positive results

UK spring barley:

Delayed sowing time with reduced herbicide use
/no herbicide use

OR

Sowed at wide rows with weed hoeing without
herbicide use

Slovenia Winter barley:

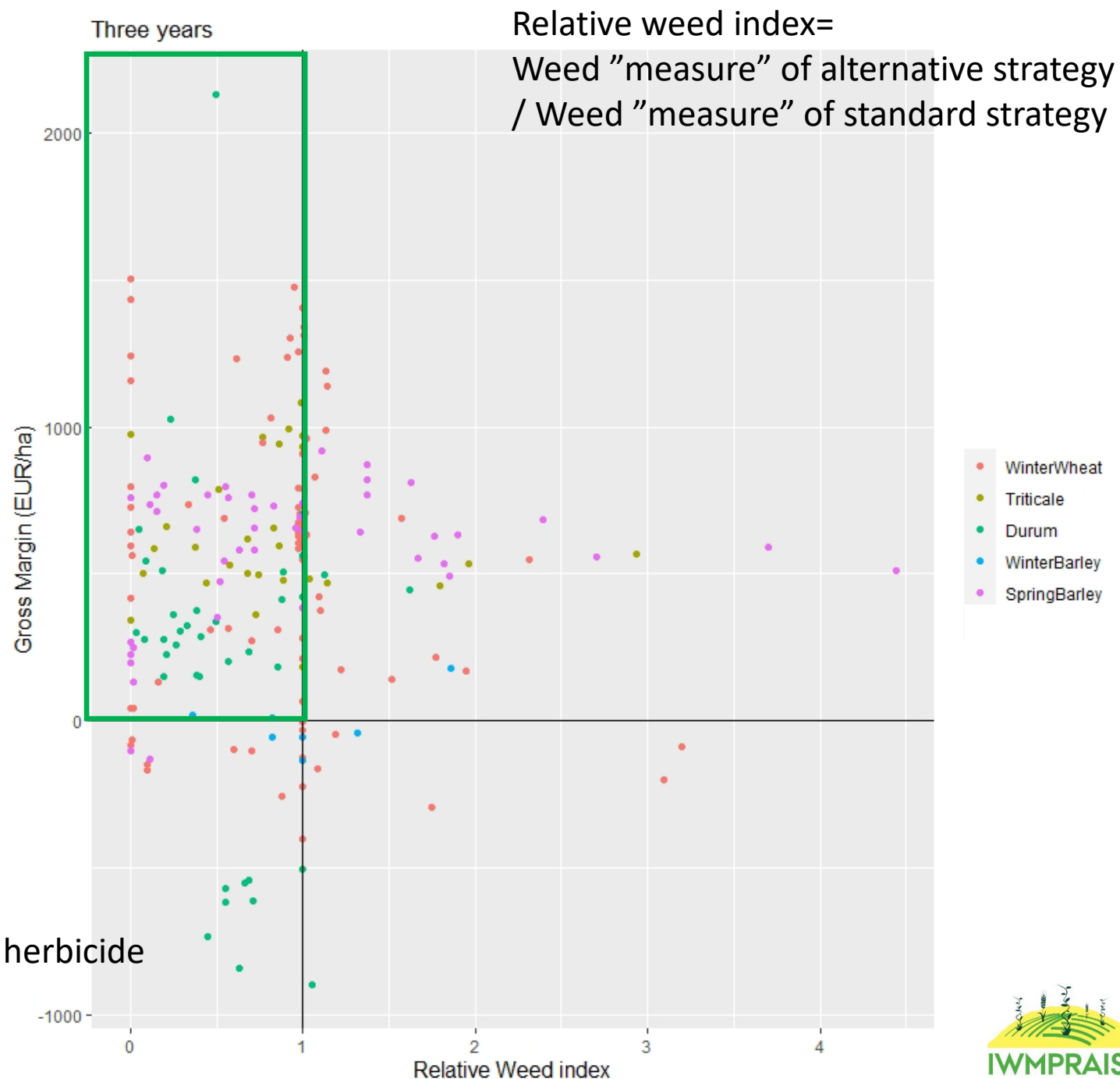
Two times post-emergence spring tine harrowing
with reduced rate of herbicides

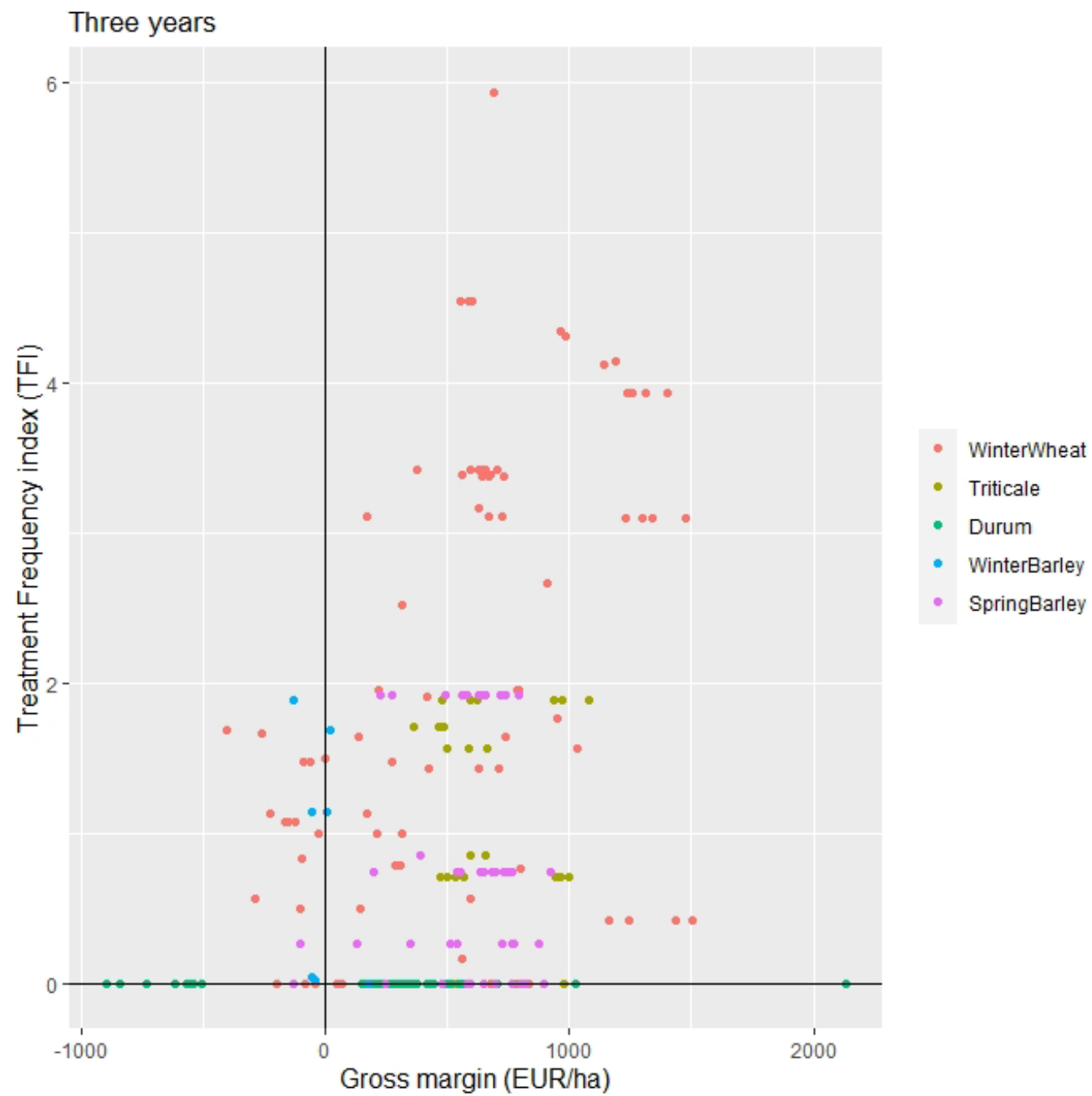
OR

False seedbed with delayed sowing plus two times
post-emergence spring tine harrowing with reduced
rate of herbicides

Italy winter wheat:

False seedbed with mechanical weeding followed by herbicide





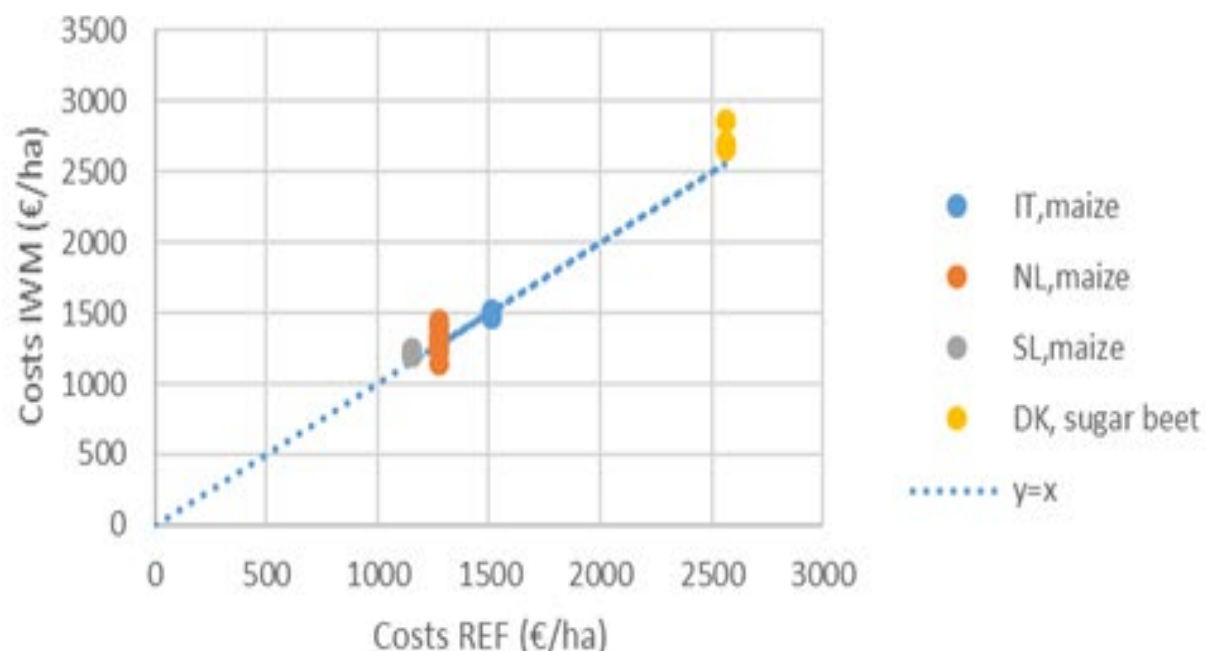
Row crops *(maize, sugar beets, sunflower, vegetables) – what we did in 2020 (+ 2021)*



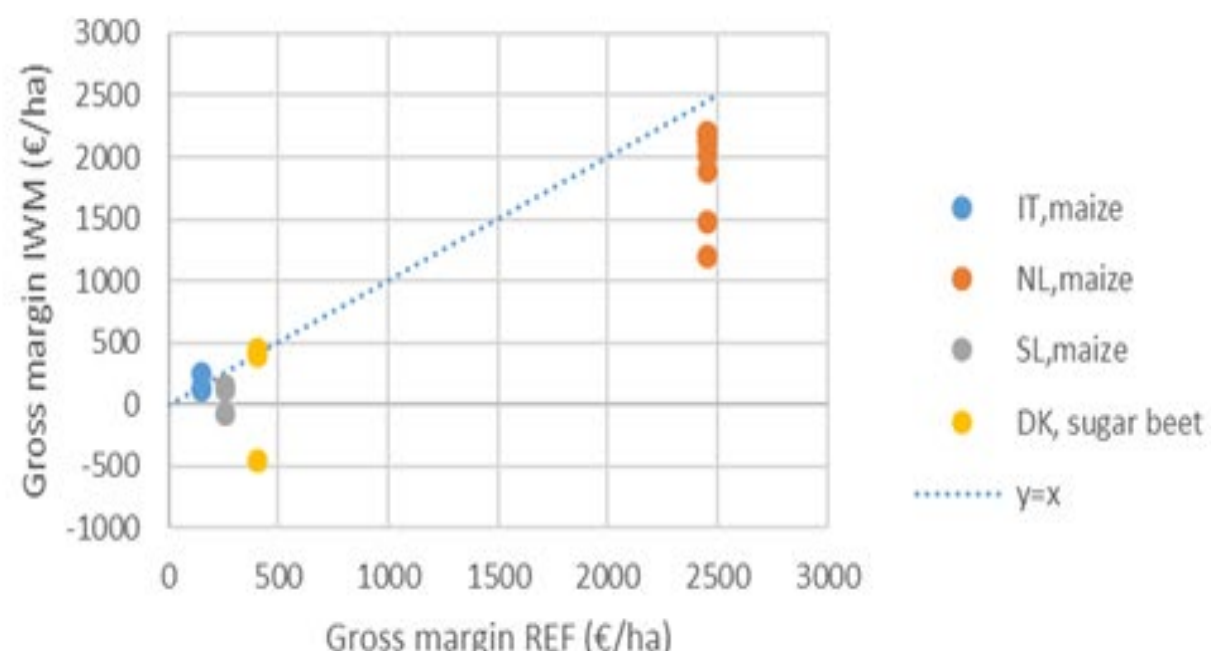
Country <i>Crop</i>	Partner <i>Location</i>	Pillar 1 Diverse cropping systems	Pillar 2 Cultivar choice and establishment	Pillar 3 Field/soil management	Pillar 4 Targeted control	Pillar 5 Monitoring and evaluation
Annual row crops - ARC						
Italy - 2020 <i>Maize</i>	CNR, VA, MAGA <i>Vallevecchia</i>				Pre- and post-em. banded application + simultaneous inter-row cultivation-	Weed monitoring
Italy – 2021 <i>Maize</i> - <i>demonstration</i>	CNR, VA, MAGA <i>Vallevecchia</i>				Pre- and post-em. banded application + simultaneous inter-row cultivation-	
Slovenia <i>Maize</i>	AIS <i>Jablje</i>				Reduced herbicide rate, band spraying, mechanical weeding	
Slovenia <i>Maize</i>	BSR <i>Rakican</i>				Reduced herbicide rate, band spraying, mechanical weeding	
Denmark <i>Sugarbeet</i>	SEGES, AI, FRDK, AU			Ridging	Reduced herbicide rate, band spraying in combination with mechanical weeding Thermal weeding (Robovator)	
The Netherlands – 2020/2021 <i>Maize</i>	WUR <i>Lelystad</i>		Cultivar choice	Sowing bed preparation, method and time	Conventional and mechanical	Weed monitoring

France <i>Sunflower - 2 experiments</i>	Terres Innovia <i>St Michel, St Valentin</i>					Mechanical and chemical control	Weed monitoring
France <i>soybean</i>	Terres Innovia <i>Dijon</i>					Mechanical and chemical control	Weed monitoring
France <i>Maize</i>	<i>Montesquieu- Lauragais'</i>	Cover crop				Mechanical and pre-emergence herbicide treatment	
France – 3 exper. <i>Maize</i>	Arvallis <i>Belloy sur Somme, Buros and Pusignan</i>					Chemical and mechanical control (different timings)	
Horticultural field crops- HRC							
Italy 2020/2021 <i>HRC</i>	SSSA, CiRRA <i>Pisa</i>	Cover crops, Crop rotation		Tillage intensity		Mechanical control	Weed monitoring
Italy 2020/2021 <i>HRC</i>	SSSA, CiRRA	Living mulch, Crop rotation		Tillage		Mechanical control	
The Netherlands- 2020/2021 <i>ARC and HRC</i>	WUR	Crop rotation	Cultivar choice	nutrient placement, sowing depth, transplanting, tillage systems		Chemical and mechanical control	Weed monitoring

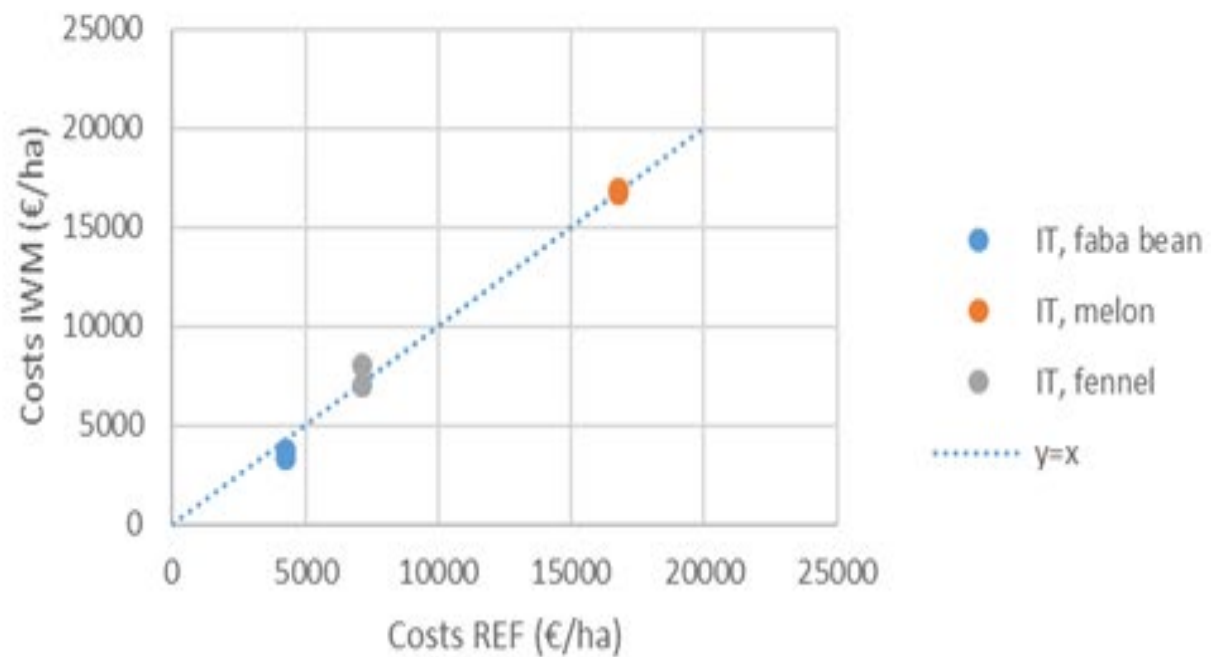
Costs REF vs IWM
Arable crops



Gross margin REF vs IWM (€/ha)
Arable crops



Costs REF vs IWM
Vegetable crops



Gross margin REF vs IWM
Vegetable crops

