



Harvest Weed Seed Control

BCPC Weed Review October 2024





Project Aims

- New window of non-chemical control focused at harvest – move away from reliance on glyphosate
- Develop protocol for weed assessment to develop reliable efficacy data (initial UK data suggest 38-83% reduction)
- Problem of seed return in non-till situations.
- Obtain quantifiable commercial return
 - Data from other countries for Redekop SCU suggests cost-benefit of £190,000-220,000 over a 5yr period.



Harvest Weed Seed Control (HWSC) was a one-year £56,000 research project funded by the Research Starter part of Defra's Farming Innovation Programme. Defra are working in partnership with Innovate UK, The UK's innovation agency, who are delivering the programme. Project number: 10054327

Harvest weed seed control

April 2023-March 2024



Innovation Manager
Tom Allen-Stevens

BOFIN



Project Lead
Adam Driver



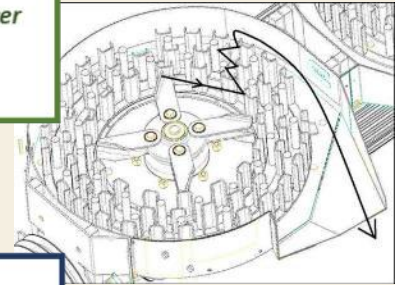
Work Package One

Three sampling protocols developed for testing

Rolled out with sampling packs to at least 50 farmers

Guidance notes established; platform set up for sharing data

Project Monitoring Officer
Innovate UK



Weed monitoring/analysis
Protocol development

Will Smith



On-farm protocol testing
HWSC operation lead

Adam Driver

DRIVER FARMS

Protocol testing
at least **50 Seed Scouts**
BOFIN members (voluntary,
engaged enthusiasts)

On-farm trials

Two Weed Control Pioneers

BOFIN members (farmer subcontractors)



Work Package Two

Three on-farm trials combining
HWSC with cultivations

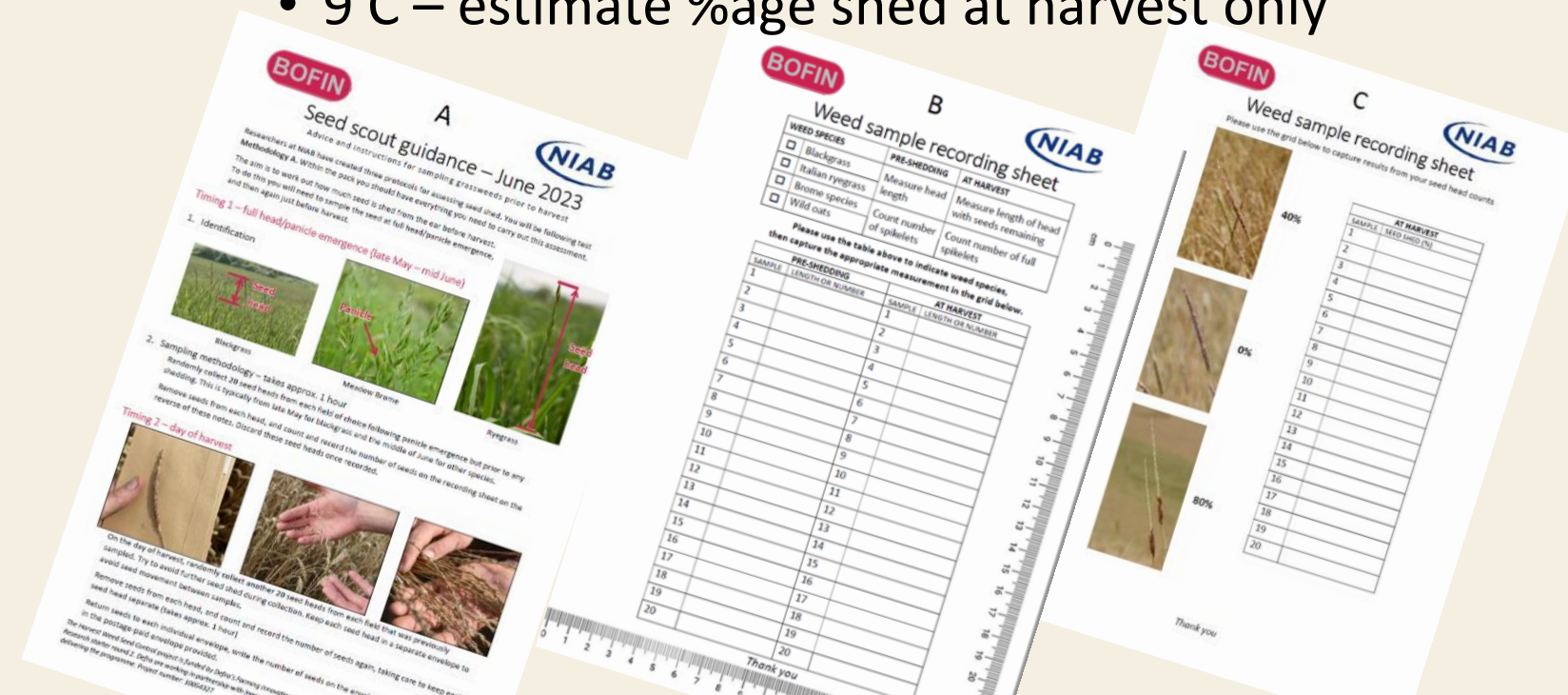
Analysis of results and feedback to
farmers



BOFIN

Seed Scouts campaign

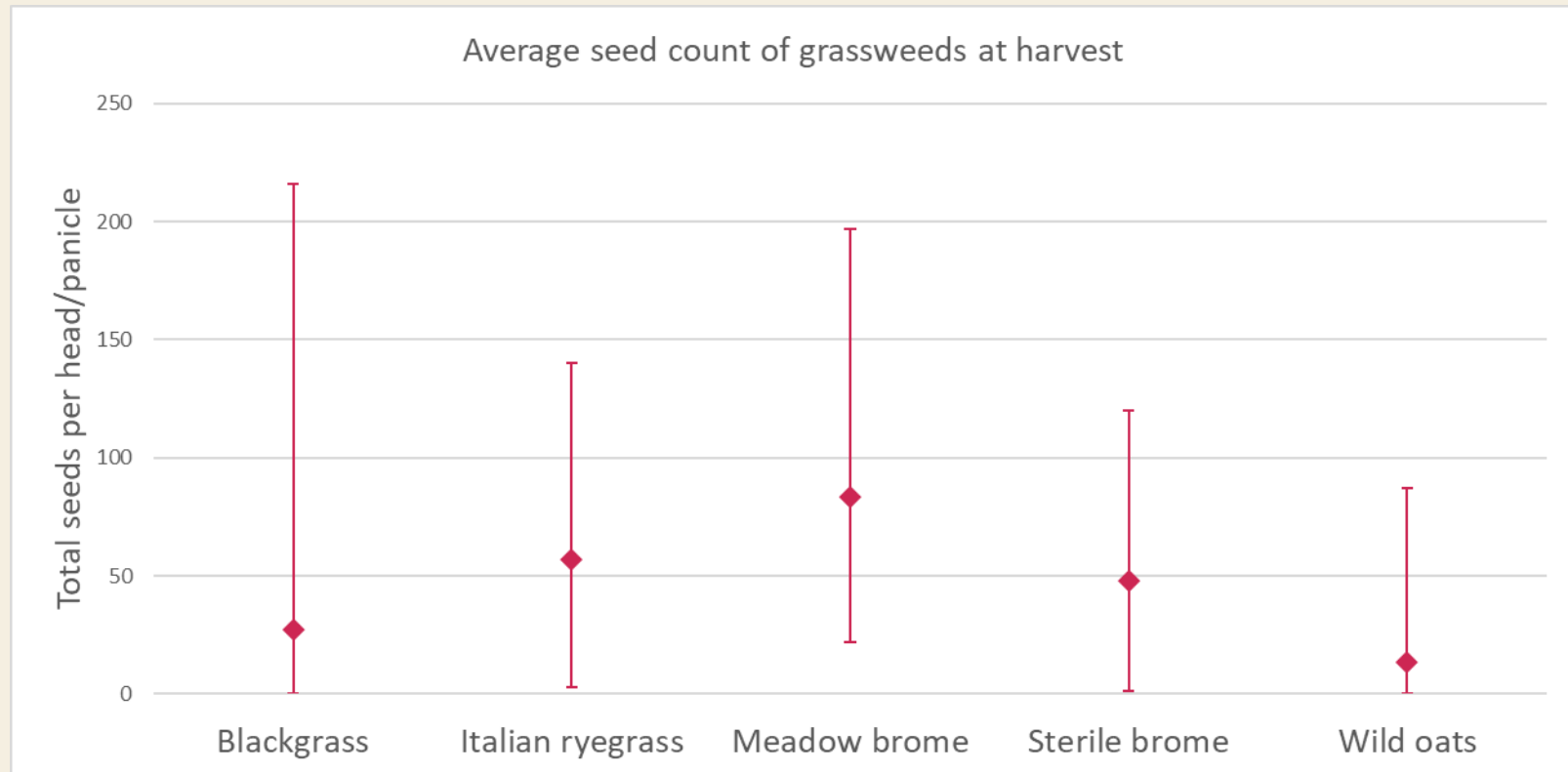
- 42 packs sent out, including postage paid envelopes & 20 sample packets + recording sheet & survey
- 16 A protocol – full seed count before & at harvest
- 17 B – measure length of seedhead/panicle before & at harvest
- 9 C – estimate %age shed at harvest only





Seed Scout results

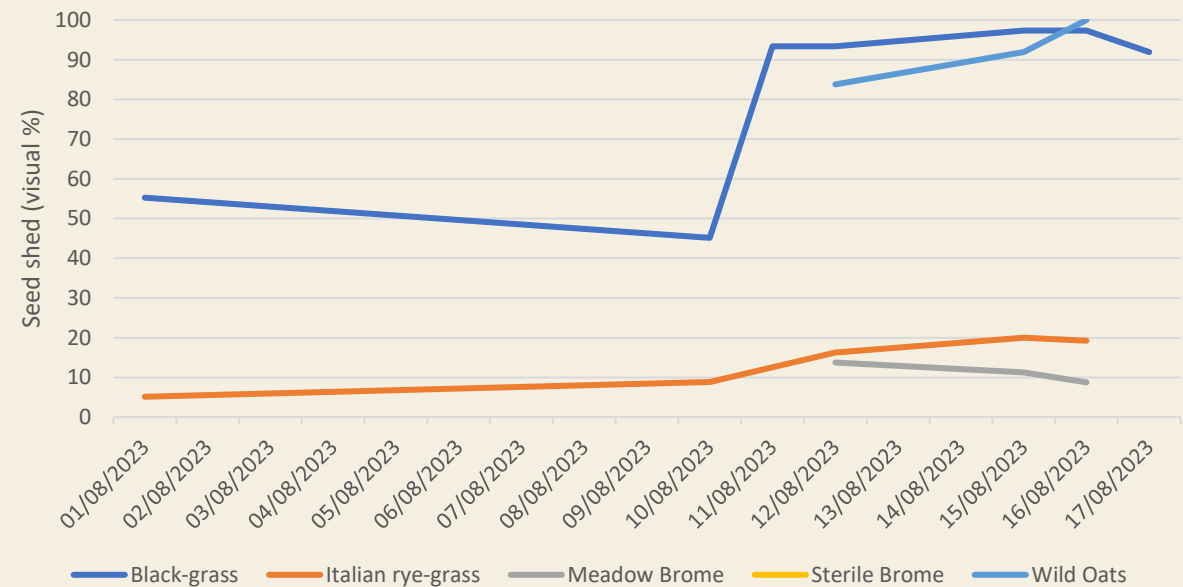
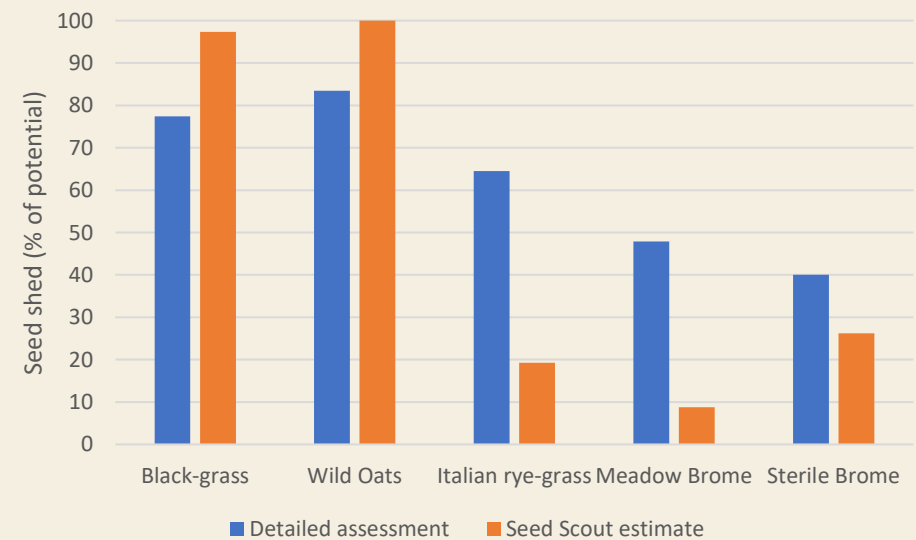
- 26 samples submitted
- 12 farmers sent in samples
- Blackgrass: 20-25%
- IRG: 40-50%
- Meadow brome: 50%
- (Sterile brome: 40%)
- (Wild oats: 5%)





Date of harvest

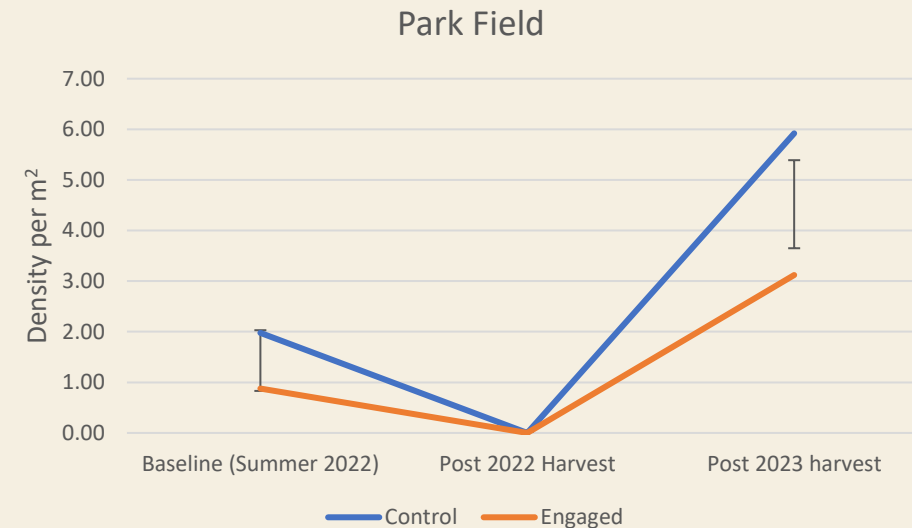
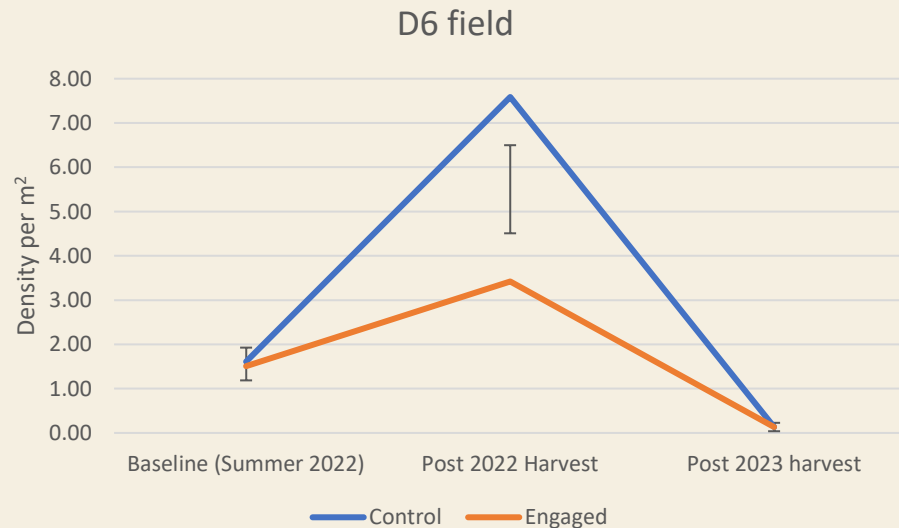
- Makes a real difference with blackgrass
- Illustrates the difference with Italian ryegrass





The SCU trials

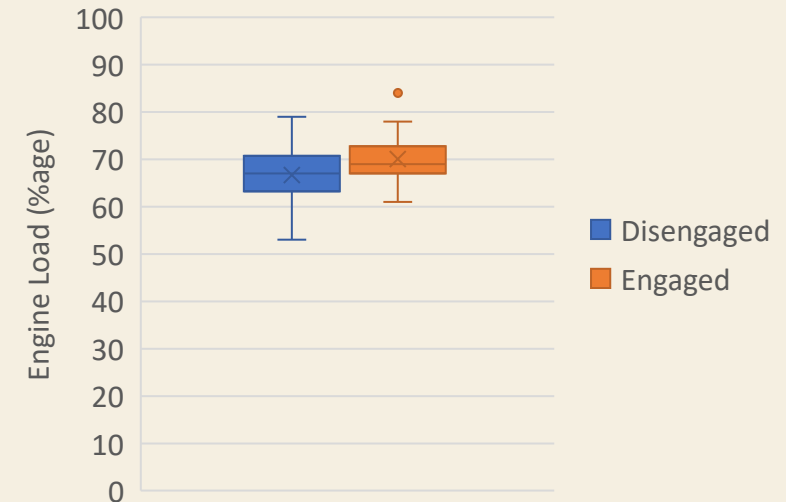
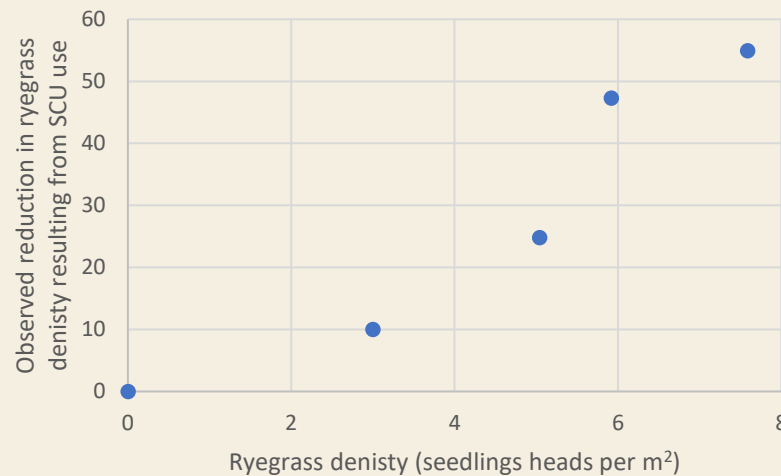
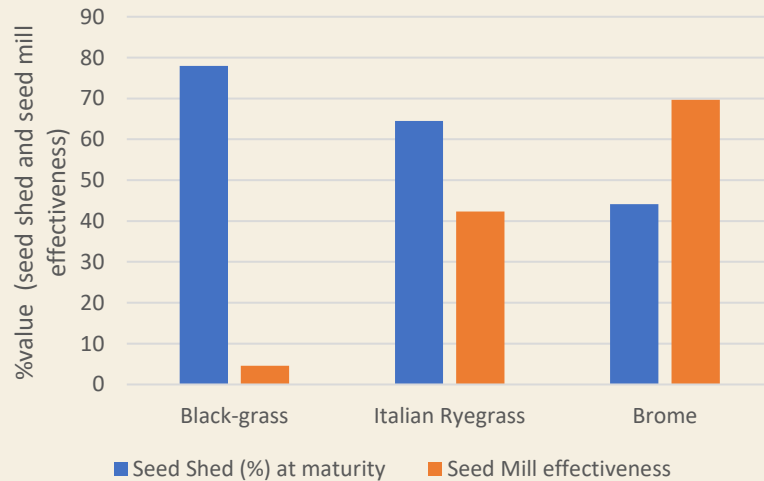
Location	Managed by	Primary weed species	Secondary weed species	Combine manufacturer and model
Fitzroy Farms	Ted Holmes & James Sarson (Velcourt Farming)	Italian Ryegrass	Black-grass	New Holland CR9.90
NIAB Hinxton	NIAB Farms	Meadow Brome	-	Case 7320
Overbury Estates	Jake Freestone	Black-grass	Meadow Brome	John Deere S790
Driver Farms	Adam Driver	Black-grass	Meadow Brome	Claas Lexion 8800
Belvoir estates	Keith Challen	Black-grass	Soft Brome	Fendt Ideal 10





The SCU trials

	Farm			Average
	Hinxton	Fitzroy	Overbury	
Italian Ryegrass	-	42.3	-	42.3
Black-grass	-	-0.6	9.8	4.6
Meadow & Sterile Brome	65.3	-	74.0	69.7



- Timing of engagement with Seed Scouts
- Protocols were time consuming and challenging – too busy at harvest.
- But the data is needed – a more practical solution is required





GRASP

Grassweed Resilience Alternative Strategies Platform



Get a grip on grassweeds



The challenge

- Blackgrass alone costs industry £0.4bn/yr
- ↓UK wheat production by 1 million tonnes
- Herbicides losing approval
- Consumer pressure against glyphosate



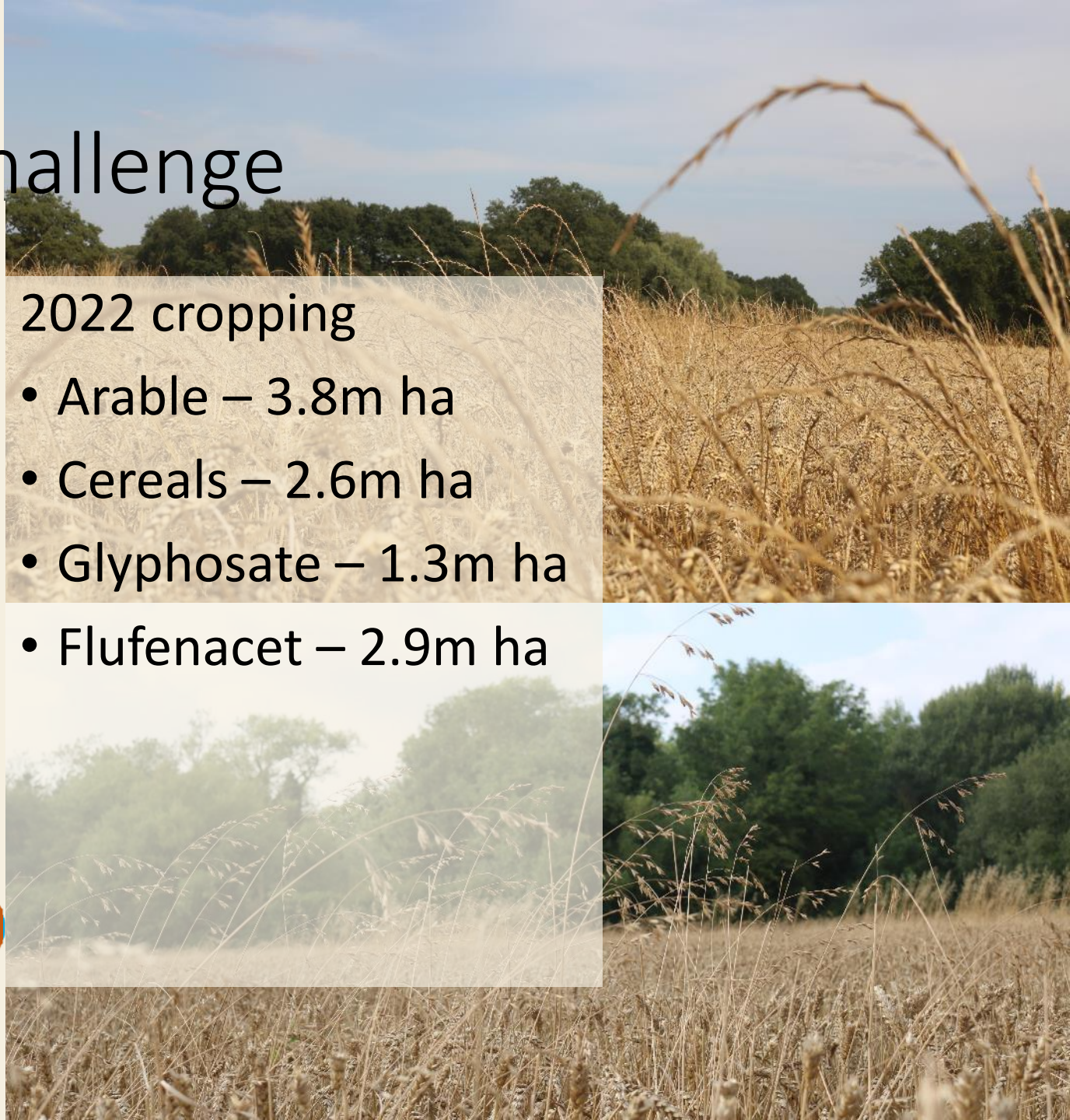


Resistance challenge



2022 cropping

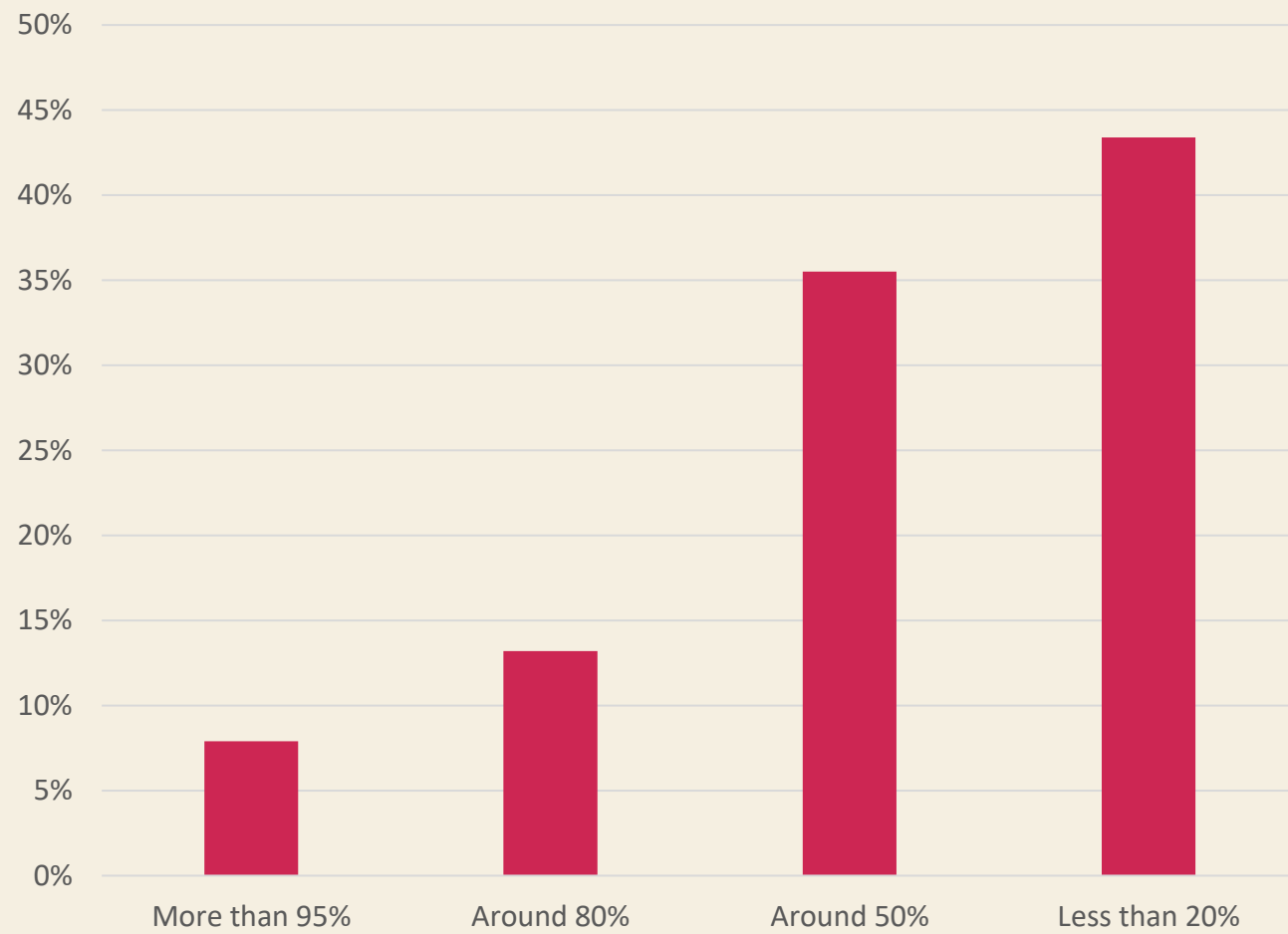
- Arable – 3.8m ha
- Cereals – 2.6m ha
- Glyphosate – 1.3m ha
- Flufenacet – 2.9m ha





Level of reliance on herbicide

How much of the
grassweed control you
currently use is non-
chemical?

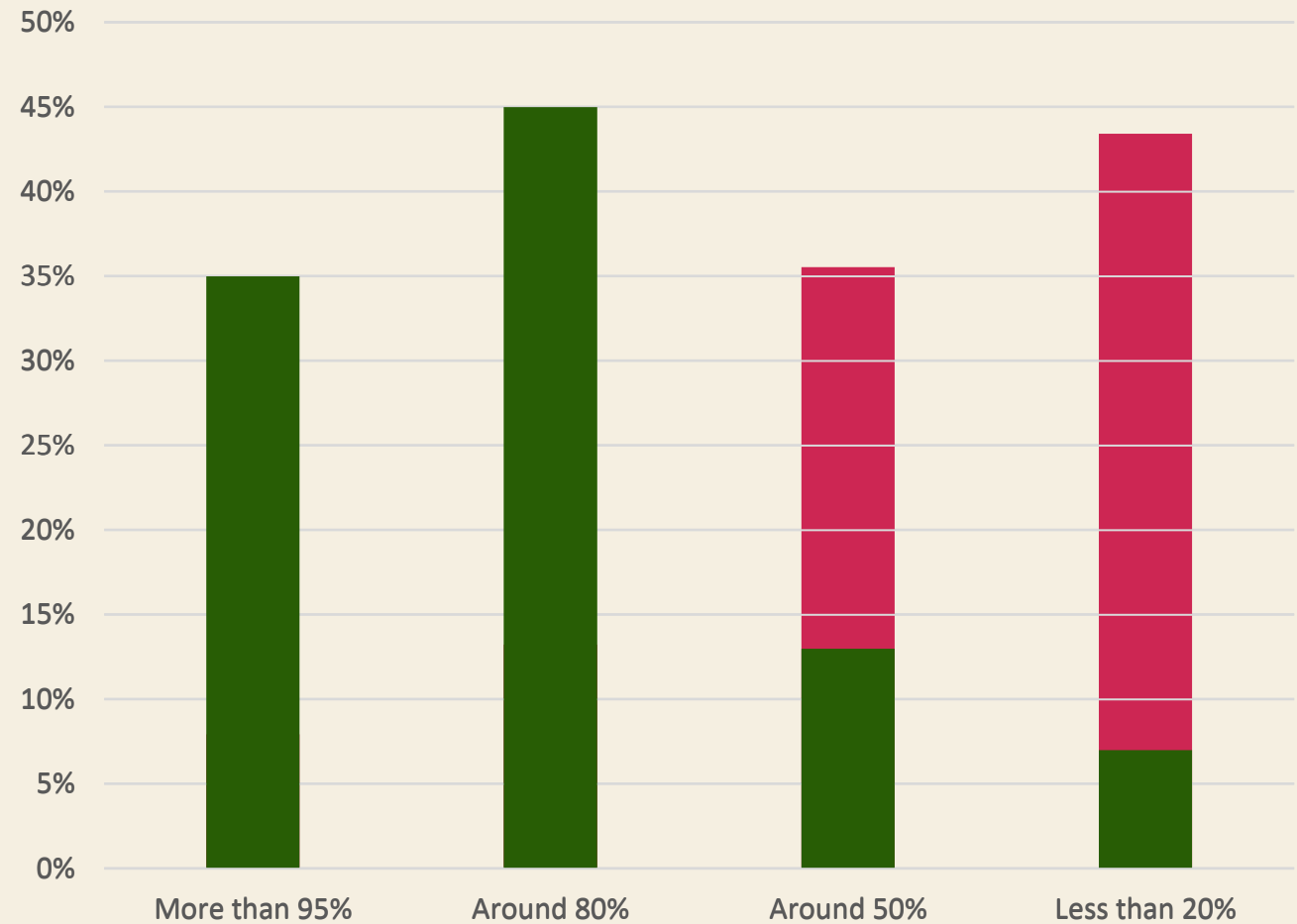


Source: BOFIN, 2024. n=152



Aim of GRASP

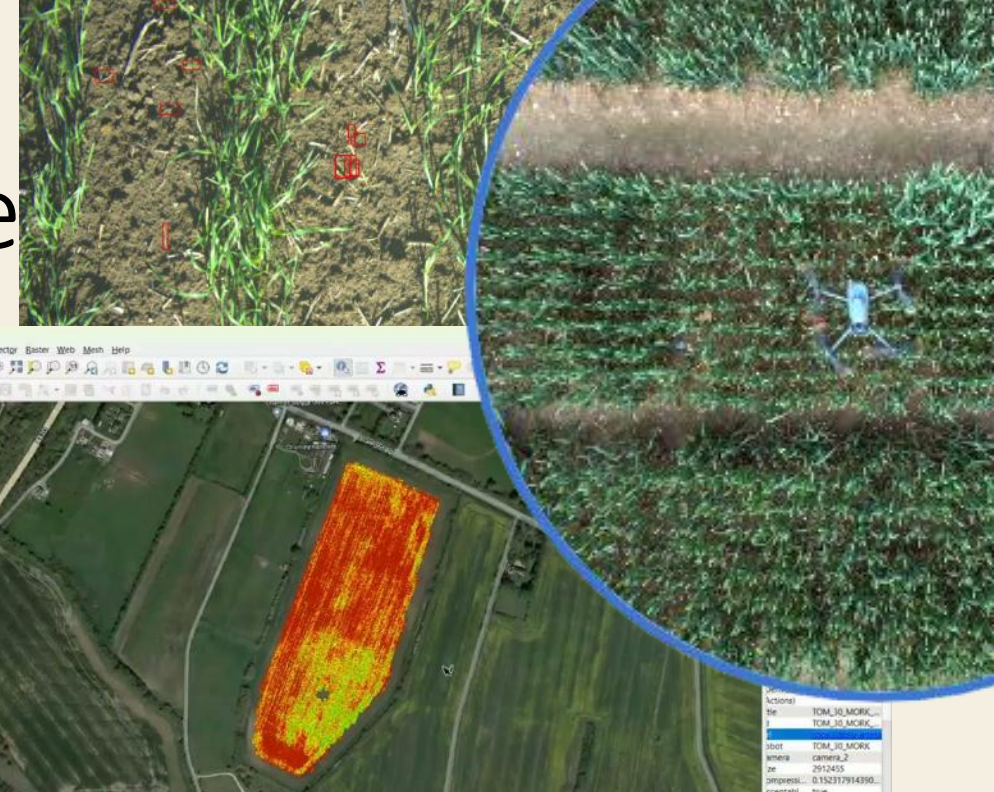
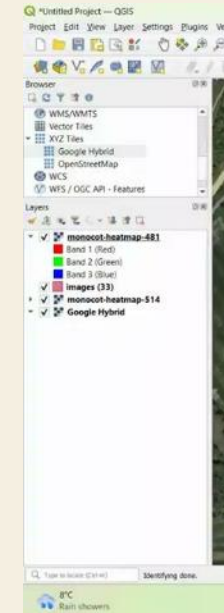
80% of farmers get more than 80% of their grassweed control from non-chemical methods





The Grassweed Circle

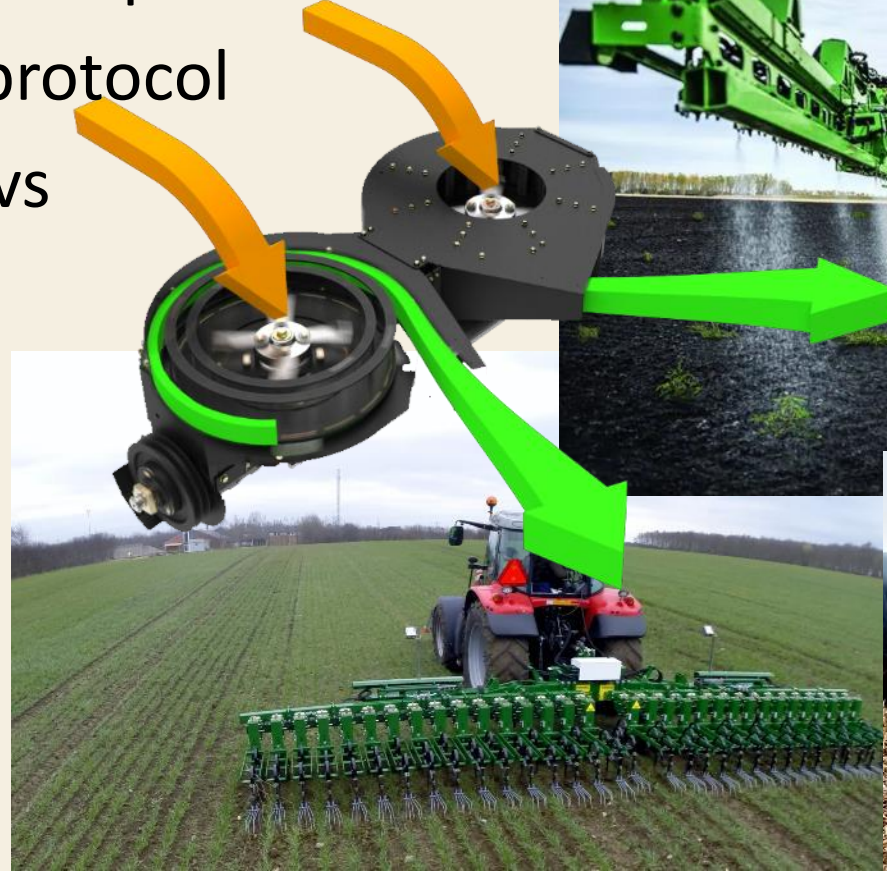
- Community of >200 farmers
- Take responsibility for grassweed monitoring
- Understand population dynamics
- National grassweed database
- Prediction model
- App, compatible with all monitoring platforms



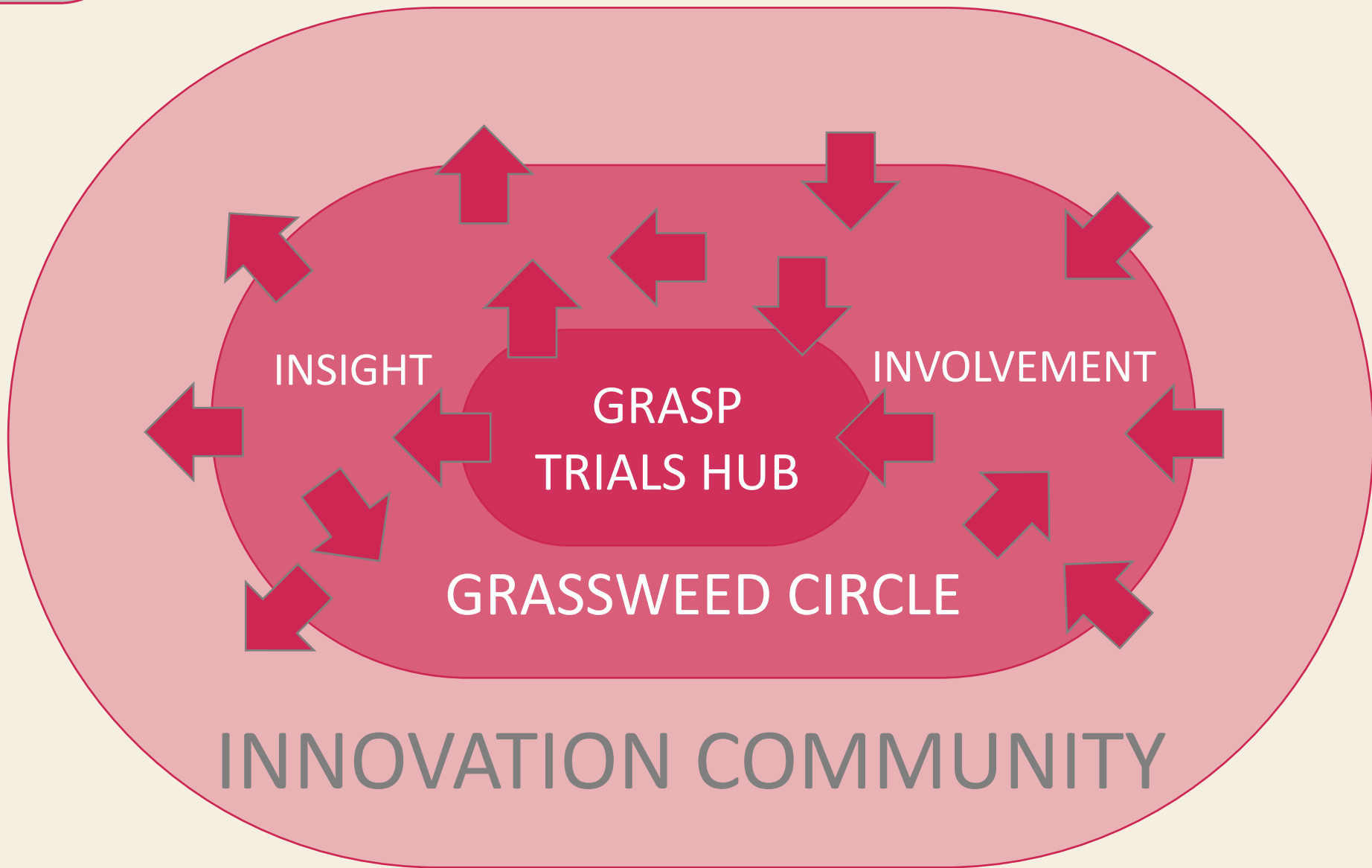


The GRASP trials hub

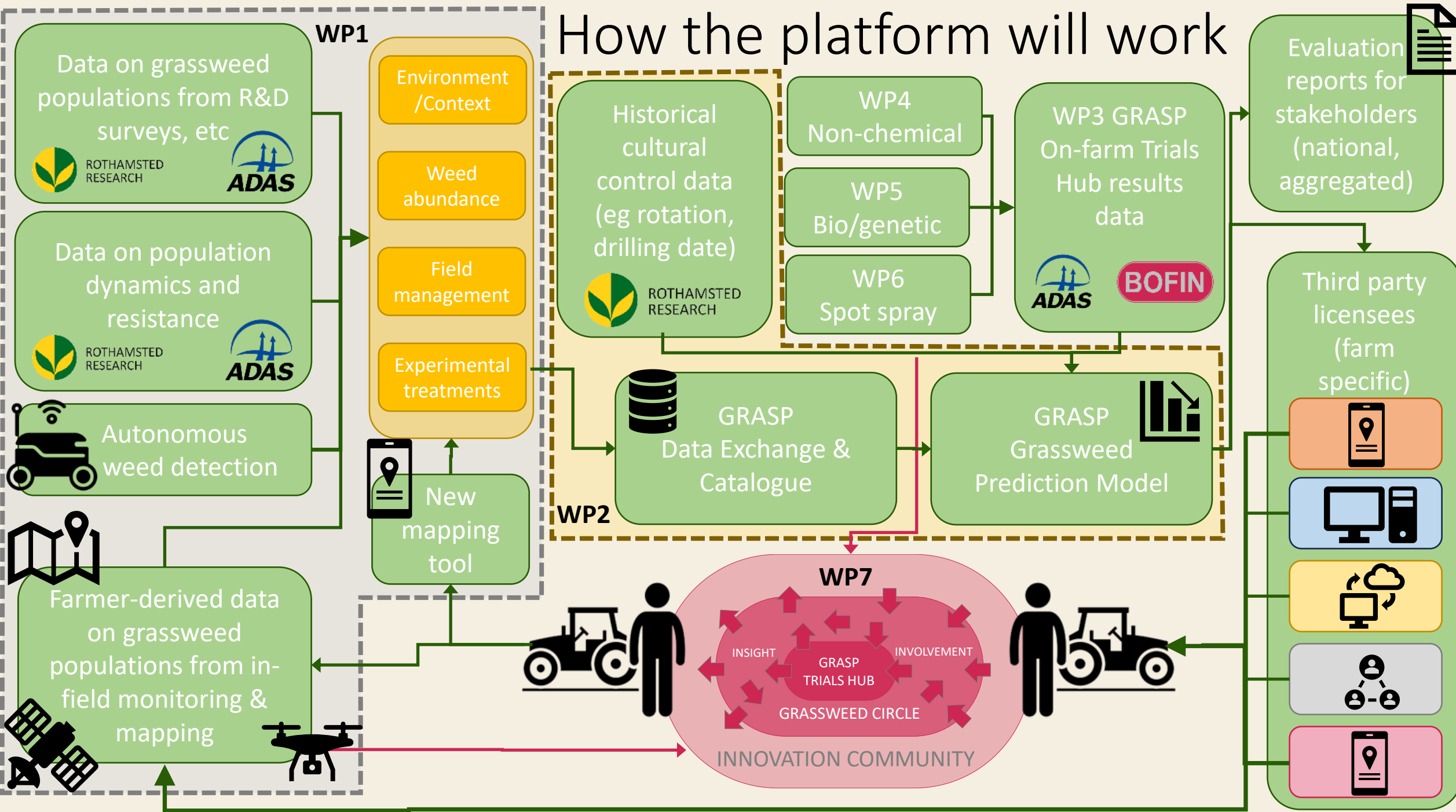
- c50 growers on-farm trials
- Non-chemical techniques
- Follow scientific protocol
- Novel technique vs farm standard

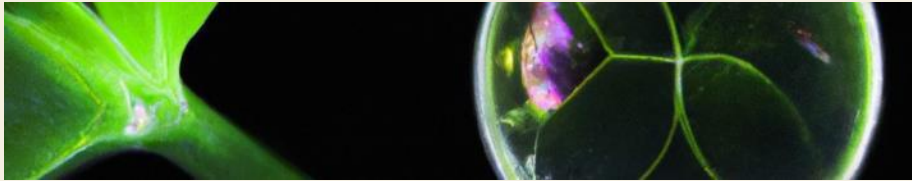
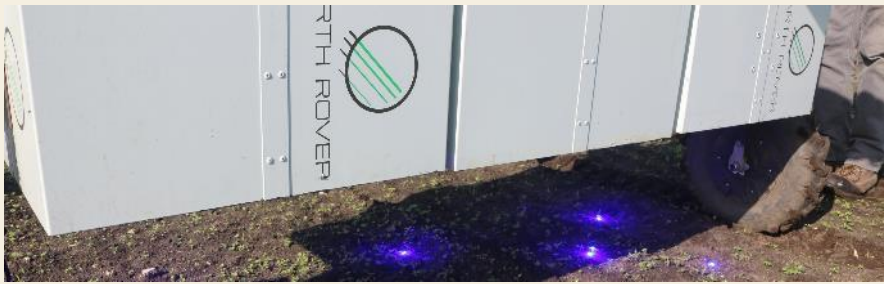


Knowledge Cluster

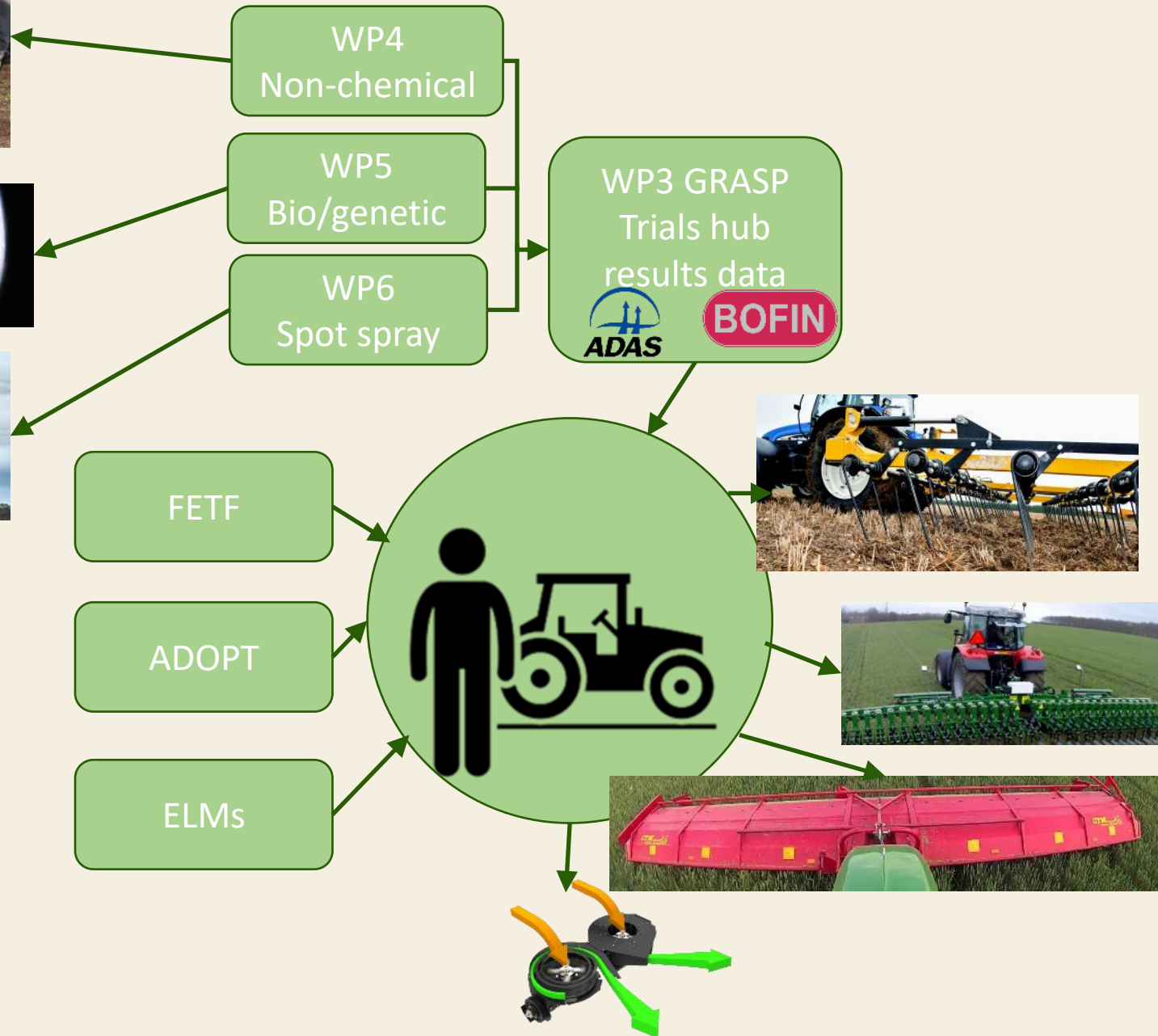


How the platform will work





The GRASP Trials Hub



BOFIN

Thank you

HWSC collaboration
partners



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