



Simba Solo machinery

Conservation tillage in UK arable cropping: Loddington ()

minimum tillage (Eng); non-inversion tillage (Eng!); no-tillage (Eng); direct drilling (Eng)

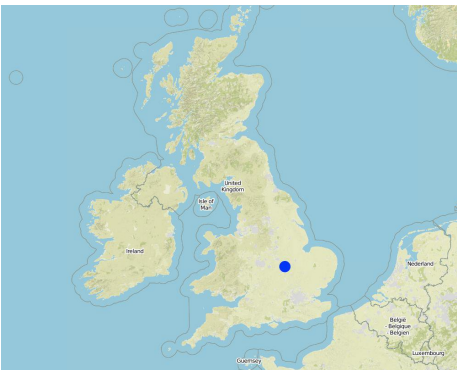
Surface cultivation of up to the top 10cm of soil but not complete inversion

machinery with discs or tines replace the plough for minimal cultivations of the soil. Equally crops may be established by no-tillage/ zero-tillage

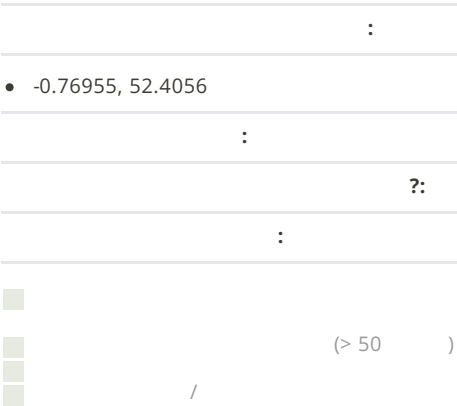
Purpose of the Technology: (i) soil protection (ii) improved crop establishment particularly through the speeding up of operations.

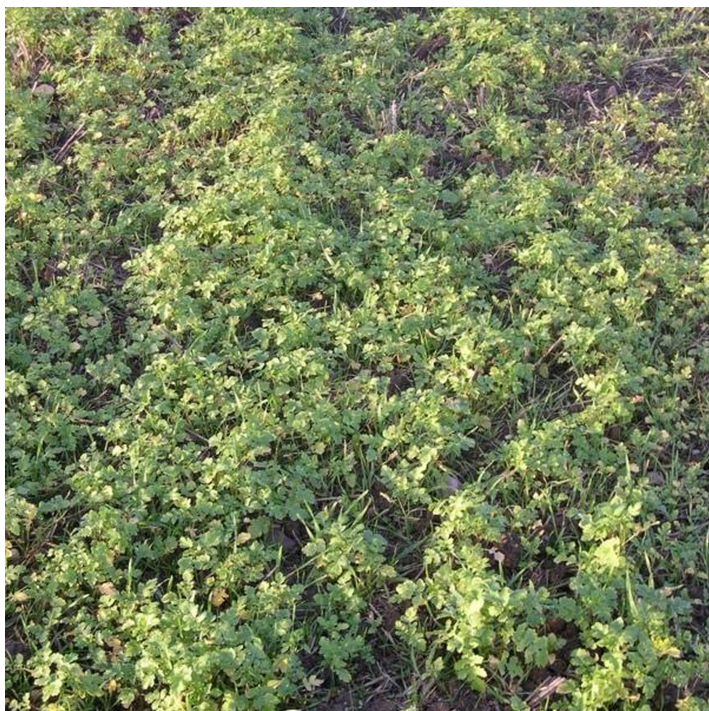
Establishment / maintenance activities and inputs: appropriate machinery, soil condition and following crop all determine establishment. Maintenance: on an annual basis.

Natural / human environment: SOWAP (www.sowap.org) project working with farmer to protect environment and maintain economic viability



: Leicestershire, Leicestershire,






Cover crop of mustard and rye

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


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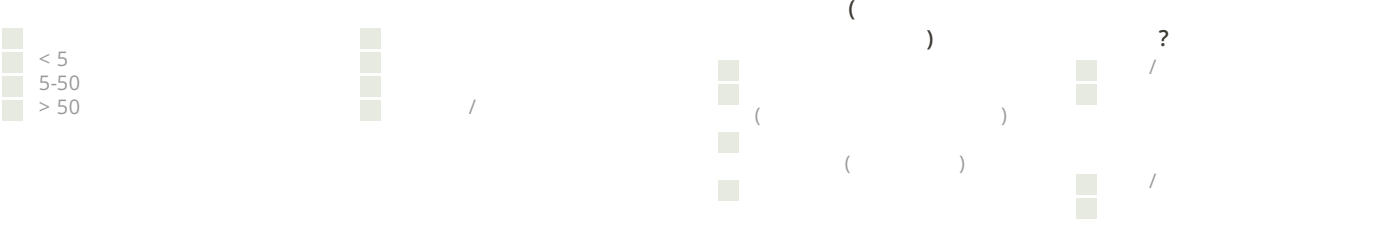
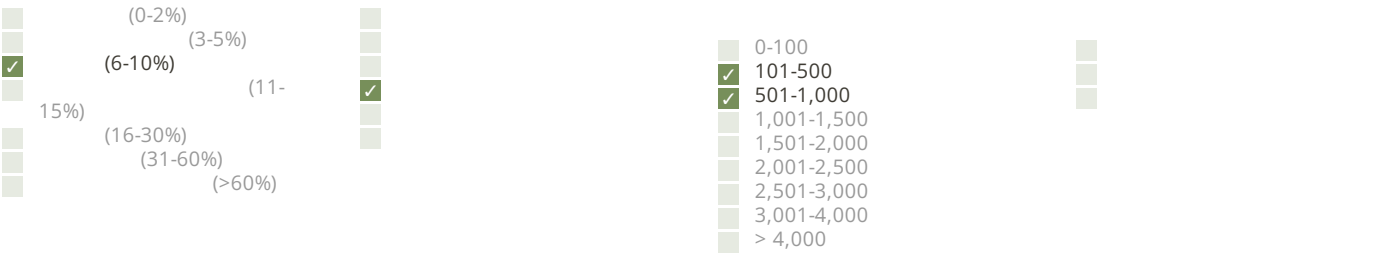
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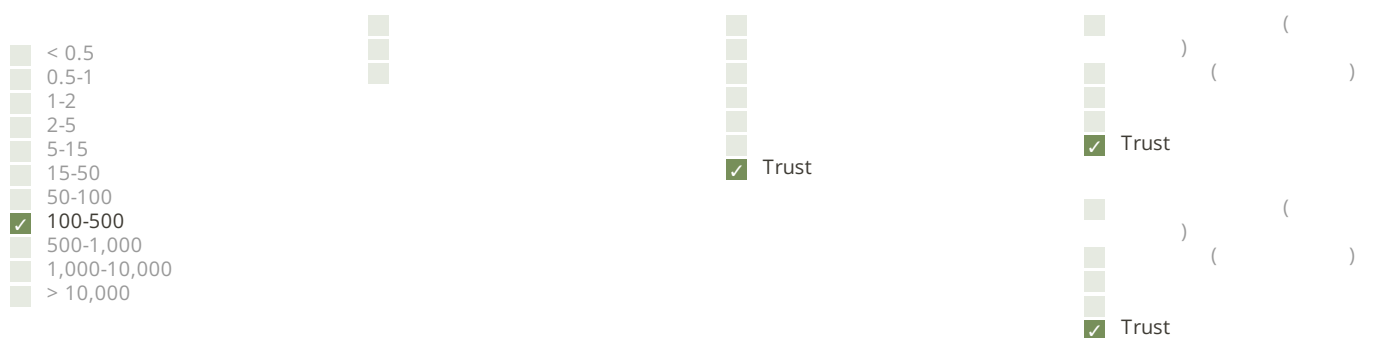
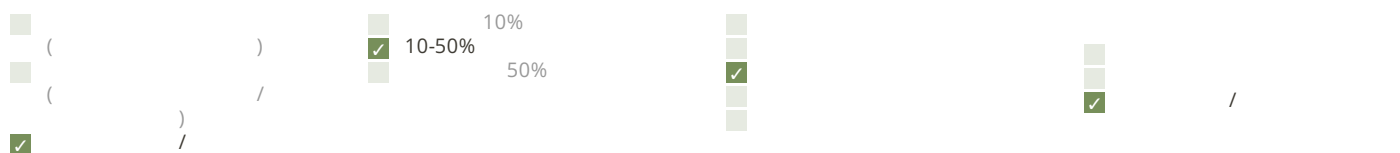
SLM /  SLM / , A1: / , A2: (A 3.1:) , A3:

	UK pounds (£)	
() 1 USD = 0.56 UK	
pounds (£)		
	155.00	Equipment costs, slope (higher horse power required for steeper slopes), time taken for operation

1. Year1: chop straw close to soil surface (/ : harvest / annual)
2. Year1: drill mustard cover crop (/ : after harvest / annual)
3. Year1: incorporate straw and cover crop (/ : September / per crop)
4. Year1: additional cultivation (/ : October / per crop)
5. Year 1: drill crop (4cm depth) (More in Annex 3) (/ : October / once per crop)

			(UK pounds (£))	(UK pounds (£))	%
drill cover crop (year 1)	ha	1,0	67,0	67,0	100,0
drill cover crop (year 2)	ha	1,0	128,0	128,0	100,0
Machine use	ha	1,0	204,0	204,0	100,0
Machine hours (year 2)	ha	1,0	67,0	67,0	100,0
Machine hours (year 3)	ha	1,0	236,0	236,0	100,0
Seeds	ha	1,0	68,0	68,0	100,0
Seeds (kg) cover crop (year 2)	ha	1,0	68,0	68,0	100,0
				838.0	
				1'496.43	





Uncertain after only 3 years

Impression of the technology



Land manager enthusiastic about the technology



Residue and/or cover crop

SLM: 0.01
SLM: 0

Soil fertility

Input constraints

decreased increased

increased decreased

Higher earthworm populations, improved soil microbiology

Better range of herbicide options

Cost of cover crop seed

decreased increased

Can negate the cost savings achieved through the lower crop establishment costs

Soil erosion locally

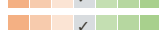
increased decreased

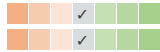
Immediately after drilling cover crop

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Reduced nutrient loss





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- 1-10%
- 11-50%
- > 50%

- 0-10%
- 11-50%
- 51-90%
- 91-100%

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- timeliness
 - How can they be sustained / enhanced? good planning
- improved biodiversity
- improved soil organic matter
- cost effectiveness
 - How can they be sustained / enhanced? increase are under cultivation (economy of scale)
- improved soil quality
 - How can they be sustained / enhanced? continuing practice; retention of straw
- increased soil biodiversity
- improved water quality
- increased work rate

- as above
- potential for increased weed populations improved rotations, greater use of cover crops to compete with weeds
- cost of cover crop seed and lack of appropriate species greater use will encourage lower cost and more speciesw research



Editors

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2011

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2019

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https://qcat.wocat.net/km/wocat/technologies/view/technologies_985/

SLM

Approaches: Participatory on-farm research and demonstration in UK arable cropping
https://qcat.wocat.net/km/wocat/approaches/view/approaches_2547/

- Game & Wildlife Conservation Trust -
- Soil and water protection (EU-SOWAP)

