## Supplemental material A

Questions (Q) and responses used in the survey of conservation tillage practices in Scania (translated from Swedish)

Q1. Do you use any type of tillage at your farm?

 $\Box$  Yes (continue to Q2),  $\Box$  No (ending your participation)

Q2. Are you working at a farm in Scanian?

 $\Box$  Yes  $\Box$  No

Q3. Select the alternative that corresponds to your age.

- $\Box$  15-20 years  $\Box$  21-30 years  $\Box$  31-40 years  $\Box$  41-50 years
- $\Box$  51-60 years  $\Box$  61-70 years  $\Box$  > 70 years
- Q4. Select the alternative that best corresponds to your highest completed education.

 $\Box$  Basic education (grade 1-9)  $\Box$  Secondary education

 $\Box$  Tertiary education

Q5. Do you have any off-farm work experience?

 $\Box$  Yes  $\Box$  No

If Yes, what type of work? (Optional)

Q6. Select the alternative that best corresponds to the total area of cultivated land at your farm.

 $\Box$  1-30 ha  $\Box$  31-50 ha  $\Box$  51-100 ha

 $\Box$  101-200 ha  $\Box$  201-300 ha  $\Box$  > 300 ha

Q7. Approximately how much of your crop production area do you own, expressed as a percentage?

Soil type/dominating grain size fraction	Most common	Second most common
Sand		
Sandy moraine		
Coarse silt		
Fine sand		
Silt		
Fine sandy clay		
Silty clay		
Clay till		
Light clay		
Medium clay		
Heavy clay		
Organic soil		
Other		

Q8. In the area used for crop production at your farm, which soil type/grain size fraction is the most common and second most common?

Write here if you wish to comment on your reply.

Q9. How much of your annual working time to you allocate to crop production, in percentage?

Q10. Do you intend to continue to work in agriculture the coming 10 years?

 $\Box$  Yes  $\Box$  No

Q11. Are you involved in decision making at the farm where you work?

 $\Box$  Yes  $\Box$  No

Q12. Do you apply any type of reduced till or direct seeding in your crop production?

 $\Box$  Yes  $\Box$  No

Practices included in the definition of reduced tillage are: -Shallow (5-7 cm) and deep (20-25 cm) plowless tillage -Shallow plowing (10-15 cm) -Plowing with additional equipment such as furrow presses -Plowing and seeding in one operation Definition of direct seeding: -No preplanting tillage.

Write here if you wish to comment on your reply.

Q13. During the first half of the year (January-June) which types of tillage do you apply and in what proportions (as % of the total area used for crop production)?

Example:

If you use shallow plowing on all fields, select "Used" for shallow plowing, and write 100% in the "proportion of total cultivated land" row. Because more than one practice may be used in the same field the total may exceed 100%. If you use any practice more than once, please state that in the comment text box below.

Tillage practice	Not used	Used	Proportion of the total area used crop production (%)		
Shallow plowless tillage					
Deep plowless tillage					
Shallow plowing					
Plowing and seeding in one operation					
Plowing with additional equipment					
Direct seeding					
Deep plowing					
Write here if you wish to comment on your reply.					
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Q14. During the second half of the year (July-December) which types of tillage do you apply and in what proportions (% of total area used for crop production) do you use each tillage type?

## Example:

If you use shallow plowing on all fields, select "Used" for shallow plowing, and write 100% in the "proportion of total cultivated land" row. Because more than one practice may be used in the same field the total may exceed 100%. If you use any practice more than once, please state that in the comment text box below.

Tillage practice	Not used	Used	Proportion of the total area used crop production (%)		
Shallow plowless tillage					
Deep plowless tillage					
Shallow plowing					
Plowing and seeding in one operation					
Plowing with additional equipment					
Direct seeding					
Deep plowing					
Write here if you wish to comment on your reply.					
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Q15. For approximately how long have you been practicing reduced tillage or direct seeding?

Write here if you wish to comment on your reply

Q16. Which factors influence your choice of tillage practice? Read through the alternatives and select the most important, second and third most important factor that influence your tillage practice choice.

Factor	Most $2^{nd}$ most $3$		3 <sup>rd</sup> most
	important	important	important
Soil type			
Crop rotation			
Access to machine park			
Profit			
Time requirement			
Weed pressure			
Laws and regulations			
Soil structure			
Fuel prices			
Season			
Environmental impact			
Organic matter content			
Prevalence of stones			
Concern for earthworms			
Traditions			
Herbicide prices			
Recommendations by peers			
Number of employees			
Farm size			
Concern for soil microorganisms			
Other			
Write here if you wish to comme	nt on your reply	/.	

## Q17. How do you <u>perceive</u> that the following factors are affected by reduced tillage compared to deep plowing (20-25 cm)? Please provide an answer for each factor.

Factor	Increase considerably	Increase somewhat	No difference	Decrease somewhat	Decrease considerably	Don't know
Seed dispersed weeds						
Root dispersed weeds						
Fuel requirement						
Labor requirement						
Need for fungicides						
Need for herbicides						
Importance of preceding crop						
Net income						
Soil compaction						
Soil erosion						
Fertilizer requirement						
Nutrient leakage						

Tillage practice	Increased	Unchanged	Reduced
	use	use	use
Deep plowing			
Reduced tillage			
Direct seeding			

Q18. Compared with your current use of tillage practices, to what extent do you plan to change tillage practices in the future?

Q19. From which sources do you gather information on tillage practices? Select all relevant alternatives.

□ Colleagues	□ Specialized journals and mail	□ Consultants and advisors	□ Field trips and agricultural fairs
□ Internet	□ Direct contact with researchers	□ Books and reports	□ Other

Write here if you wish to comment on your reply.

Q20. Write here if you would like to add any further comments (optional).