

# Soil protection by agricultural contractors – a question of conviction?



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## Dealing with soil compaction in agricultural contractors - results of a survey

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### INTRODUCTION

According to a survey of German farmers, harvest as well as slurry application are the most outsourced field operations to contractors.\* These field operations are particularly relevant in terms of avoiding soil compaction due to the high machine weights. We questioned how contractors deal with the soil hazard of compaction.

### METHOD & DATA

- online survey of agricultural contractors in Germany (2020)
- invitation by e-mail and advertisement in magazine
- 36 complete responses (Fig. 1)



Fig. 1: Harvesters (right). Number of participations per federal state (left; participating contractors partly operate in several federal states).

### RESULTS & DISCUSSION

Importance of soil compaction in the daily work processes (n = 36)

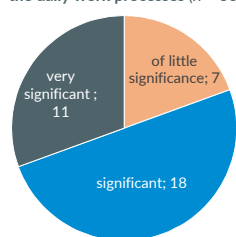


Fig. 2: Frequencies of answers to the question "What is the importance of soil compaction in your daily work processes?".

Reasons for offering solutions to prevent soil compaction (n = 32)



Fig. 3: Frequencies of answers to the question "Why do you offer technical options for soil protection?".

Offer solutions to prevent soil compaction (n = 36)

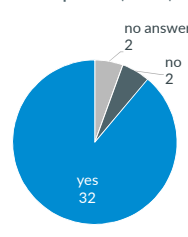


Fig. 4: Frequencies of answers to the question "Do you offer technical or work organization solutions to prevent soil compaction?".

participants stated that

- soil compaction plays a significant role for management of work processes (Fig. 2, Fig. 7)
- non-economic factors like own conviction were reasons for soil protection (Fig. 3)
- they apply measures to avoid soil compaction (Fig. 4, Fig. 6, Tab. 1)

- the demand from customers for technology that is soil-saving was often low (Fig. 5)
- indicators of soil compaction were rarely a topic in employee training courses (Fig. 8)
- ! few participations → participants poss. more ambitious than average

Customer demand of soil-saving technology (n = 36)

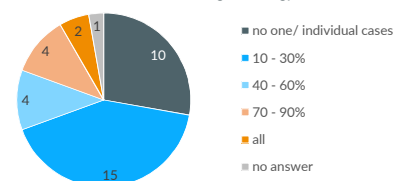


Fig. 5: Frequencies of answers to the question "How many of your costumers request soil-saving technology?".



Fig. 6: Frequencies of answers to the question "To what extent do you agree with the statements?" (n = 36).

Tab. 1: Number of Mentions to the question "Which of the technical options do you offer with your machines?".

	Harvest of canola, cereals, grain corn (n = 23)	Slurry application with tractor (n = 20)	Slurry application with slurry tanker (n = 20)	Silage corn harvest tractor (n = 20)	Silage corn harvest chopper (n = 20)
ground friendly tires	15	14	15	15	14
tire pressure adjustment system	4	11	11	8	8
quick release valves	3	3	2	2	3
separation of road and field transport	6	0	0	0	0
crab steering	1	0	0	0	0
half caterpillar	9	0	0	0	1
caterpillar	1	0	0	0	0

Number of mentions: 0% 75%

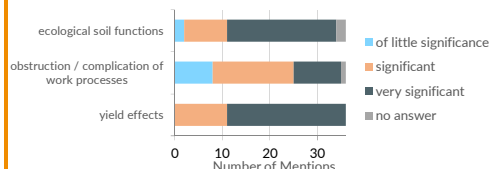


Fig. 7: Frequencies of answers to the question "How significant do you consider soil compaction to be with respect to the following effects?" (n = 36).

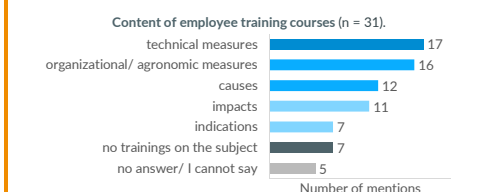


Fig. 8: Frequencies of answers to the question "What content on the topic of soil compaction/ protection is covered in the employee training courses?".

\* Ledermüller, S.; Fick, J.; Jacobs, A. Perception of the Relevance of Soil Compaction and Application of Measures to Prevent It among German Farmers. Agronomy 2021, 11, 969.