



Lunsj med fag

# Fangvekster og lagelighet

Norsk Landbruksrådgiving SA

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Rådgiver presisjonslandbruk  
og maskinteknikk, korn, grovfor  
og jordhelse

# Dagens gjennomgang

- Vårsådde fangvekster - etablering
- Har fangvekster effekt på lagelighet?
- Når er det lagelig?
- Kan gode dekk kompensere for manglende lagelighet?
- Kan vi påvirke jordpakking med trafikk?

# Vårsådde fangvekster



- Konkurransforhold
- Såmengde
- Plantervern/ ugrasharving

Foto: E. Villadsen



# Påvirker fangvekstene laglighet på våren?

- Utvintrende - nei
- Overvintrende
  - Utsetter ikke opptørking på våren sammenlignet med høstpløying
  - Utsetter ikke temp.stigning på våren sammenlignet med høstpløying
  - Vekst må avsluttes
- Kan bruke vann utover våren ved våt vår(?)



Henriksen T.M et.al

Hva med den langvarige effekten av  
fangvekster?

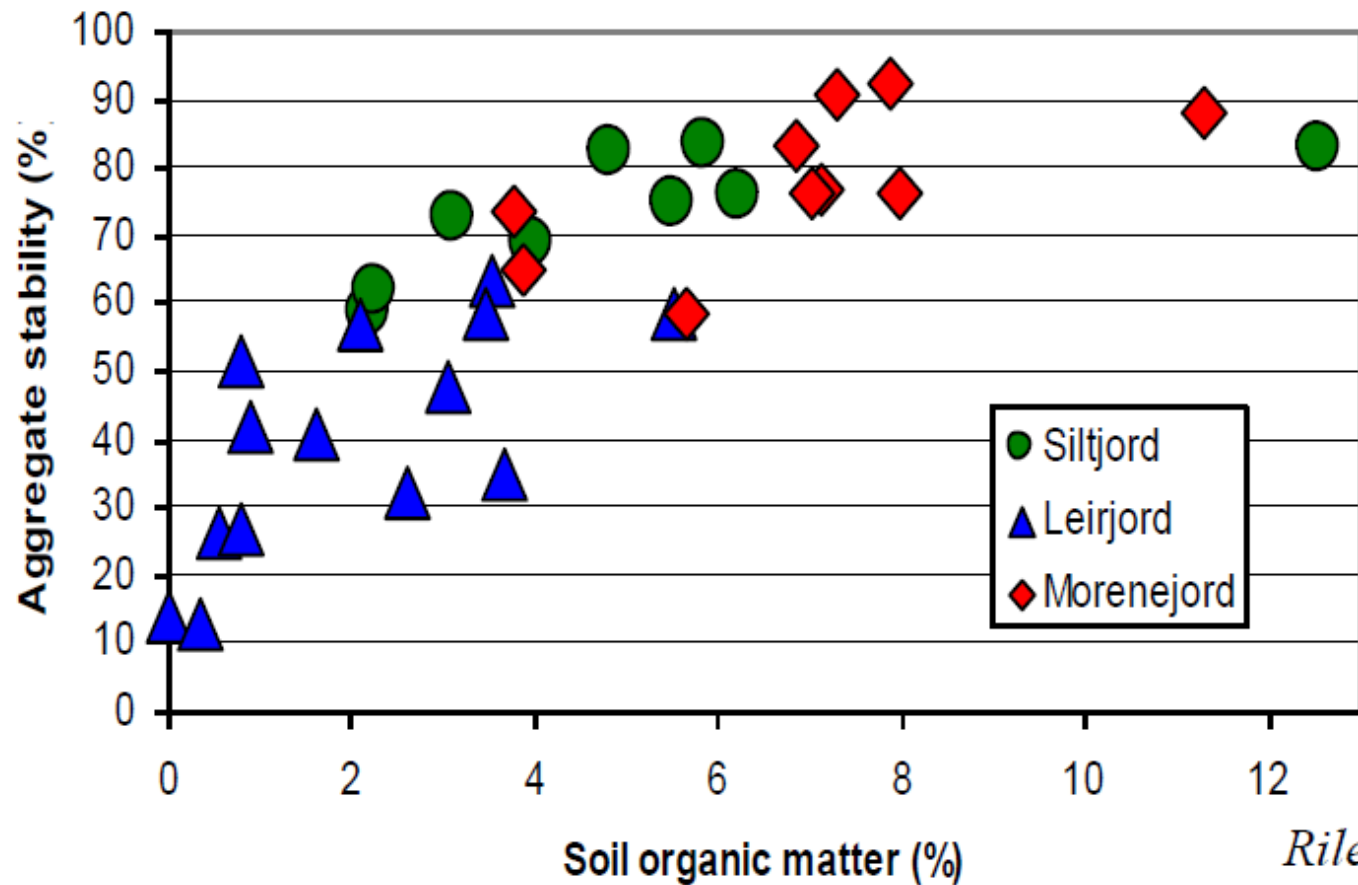


# Fangvekster og jordstruktur

- Fangvekster = fotosyntese og planterøtter større del av året
- Tilfører mer organisk materiale til jorda og er positivt for jordlivet
- Mer jordliv gir mer frigjøring av næring og lager god jordstruktur
- Plantene får bedre forhold å vokse i, og jorda håndterer bedre ytre påkjenninger



# Hva betyr organisk innhold for jordas struktur?



*Riley 1983*



# Jordpakking og dekkutrustning

**Welcome to Terranimo®**

Terranimo® is a model for prediction of the risk of soil compaction due to agricultural field traffic.



Select machine

- Self propelled machine
- tractor
- configure 130-180 HP tractor
- Trailer / pulled machine
- configure Trailed seed drill
- 3-point-hitch machine

current machine: Eksempel med standard-utrustning og høyt trykk

New machine Save the configured machine my machines

current machine: Eksempel med standard-utrustning og høyt trykk

Trailed seed drill	130-180 HP tractor		
Attached load	6'000 kg	Operating weight	9'000 kg
Curb weight	5'000 kg	Curb weight	6'500 kg
Load weight	1'000 kg	Front weight	500 kg
Trailer load	2'000 kg	Trailer load	2'000 kg
Axle weight loaded*	4'000 kg	Proportion front axle loaded*	32 %
Working width	6 m	Front axle loaded*	2'880 kg
Total combination weight	13'000 kg	Rear axle loaded*	6'120 kg
Adhesive weight*	69 %	Speed	50 km/h
<input type="checkbox"/> Remove trailer		Working width	6 m
		GPS	Yes

\* the displayed values have been rounded



sandy loam - moraine area - Moist

Moist Wet

**Configure tyre / cat**

Axle load distribution left/right **50,50 %**

Change on both sides

130-180 HP tractor > Left rear wheel / Right rear wheel

Traction > Michelin MultiBib > 600/65R38 (153 D)

Pressure **1.1 bar**

Recommended pressure (50 km/h): 1.10 bar

current machine: Eksempel med standard-utrustning og høyt trykk

Trailed seed drill 130-180 HP tractor (50 km/h)

Tractor	Tractor	Tractor
4'000 kg	6'120 kg	2'880 kg
2'000 kg 0.90 bar	3'060 kg 1.10 bar	1'440 kg 0.70 bar
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See results

Decision chart

Print Export


Stress vs. strength

Contact pressure

Soil stress

Multipass

Trailed seed drill 130-180 HP tractor

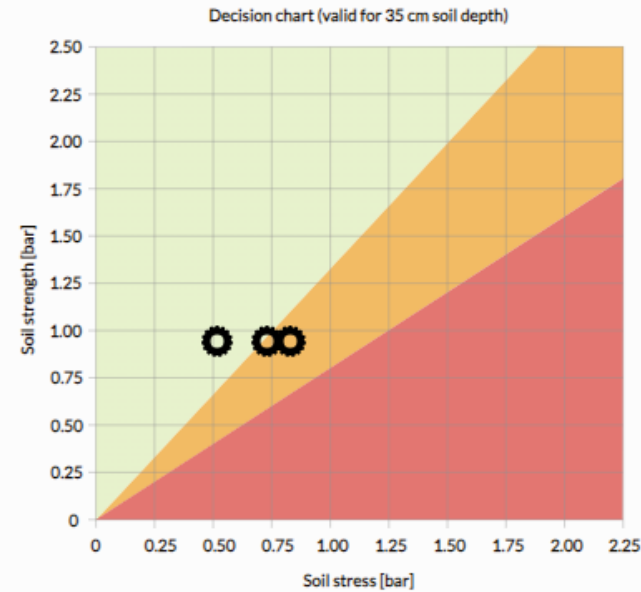


sandy loam - moraine area - Moist

Considerable risk of soil compaction - reduce wheel load or tyre inflation pressure

130-180 HP tractor - Left rear wheel, Right rear wheel

Trailed seed drill - Left front wheel, Right front wheel



Legend

No soil compaction risk
Considerable risk of soil compaction - reduce wheel load or tyre inflation pressure
CAUTION: High risk of subsoil compaction - avoid driving on the field

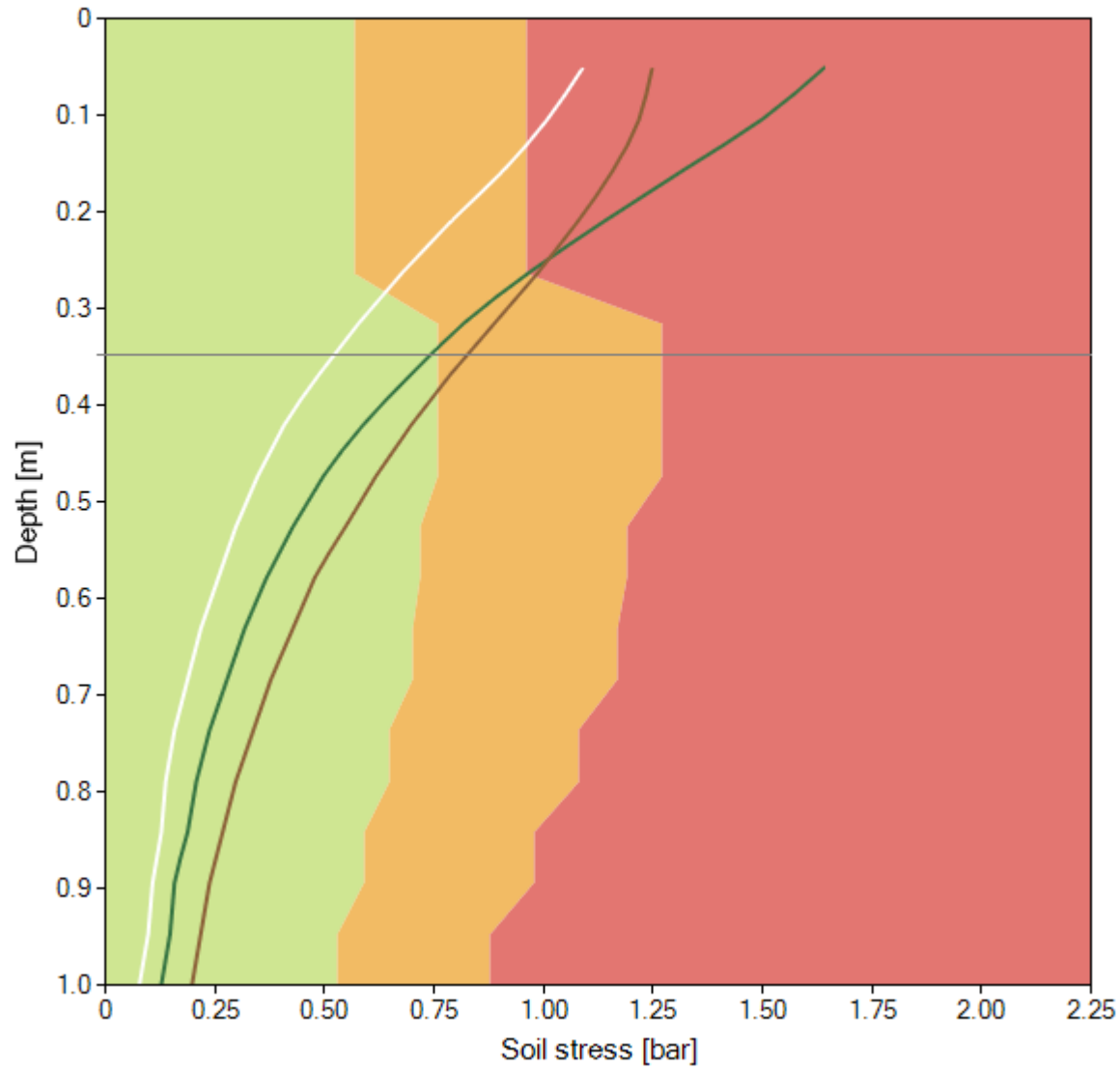
1 bar = 100 kPa

130-180 HP tractor	Soil stress	Soil strength
Left front wheel	0.52 bar (52 kPa)	0.95 bar (95 kPa)
Right front wheel	0.52 bar (52 kPa)	0.95 bar (95 kPa)
Left rear wheel	0.83 bar (83 kPa)	0.95 bar (95 kPa)
Right rear wheel	0.83 bar (83 kPa)	0.95 bar (95 kPa)

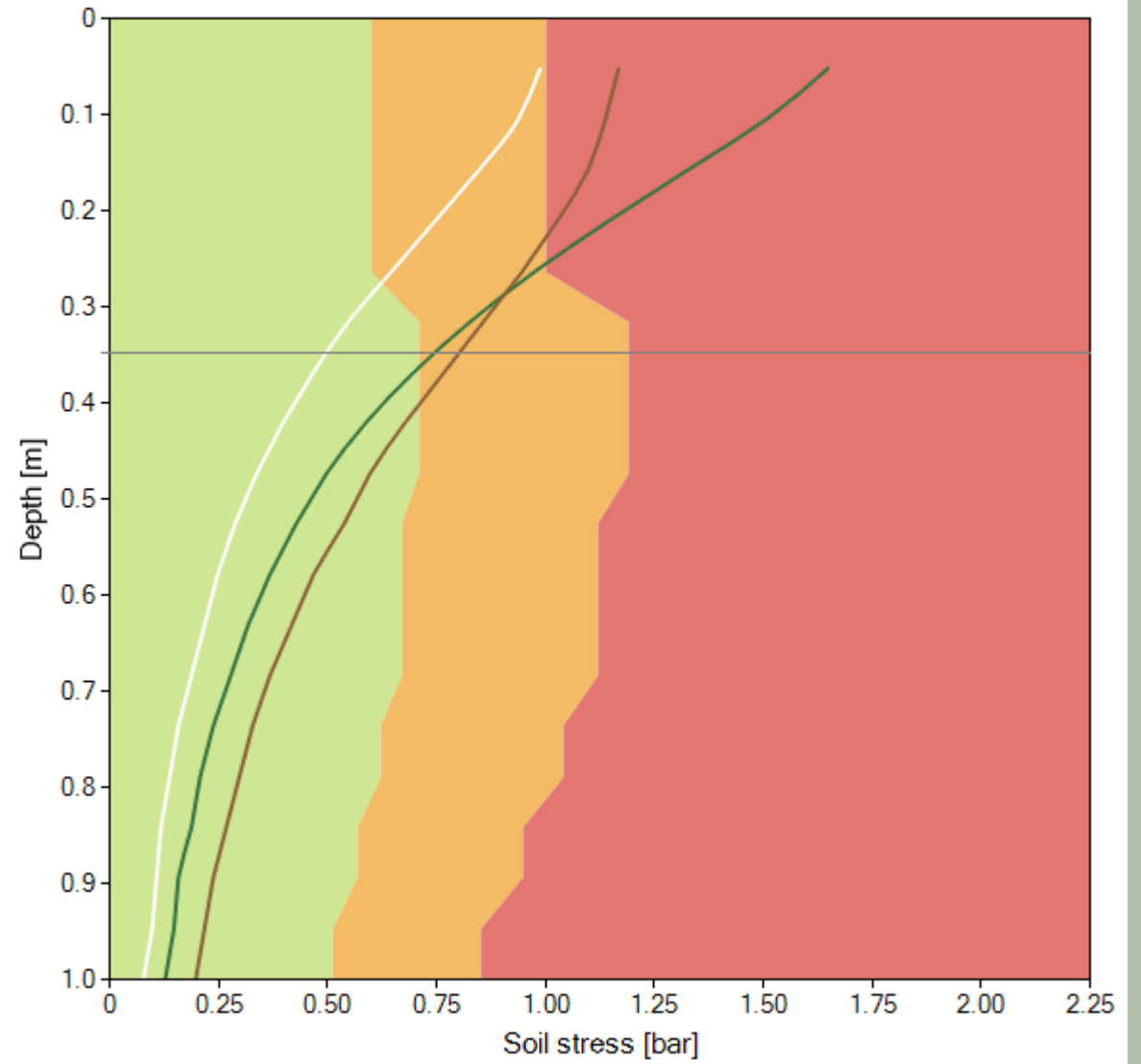
Trailed seed drill	Soil stress	Soil strength
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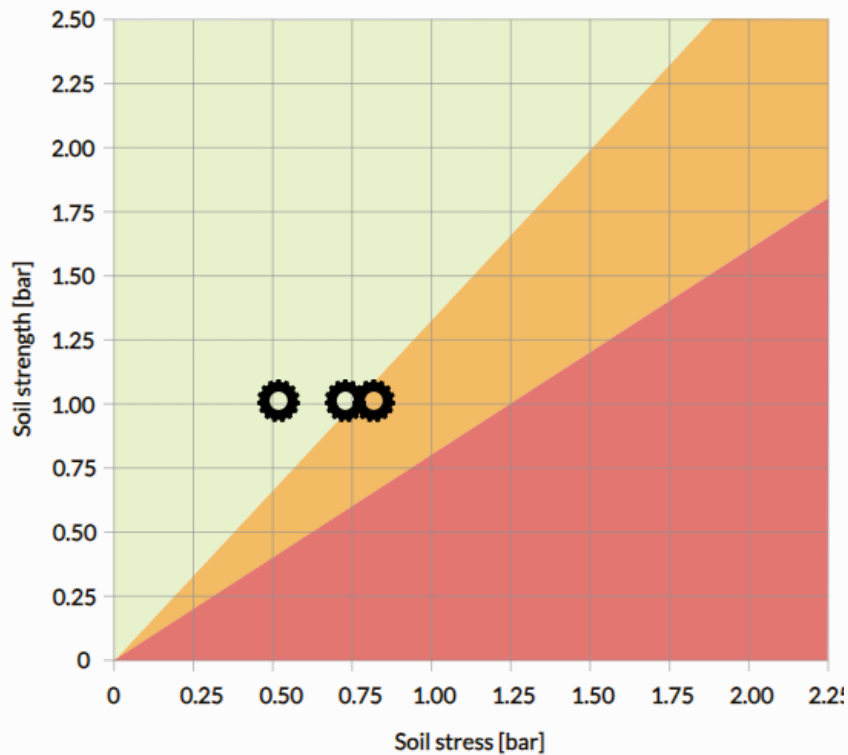
Stress vs. strength



Stress vs. strength



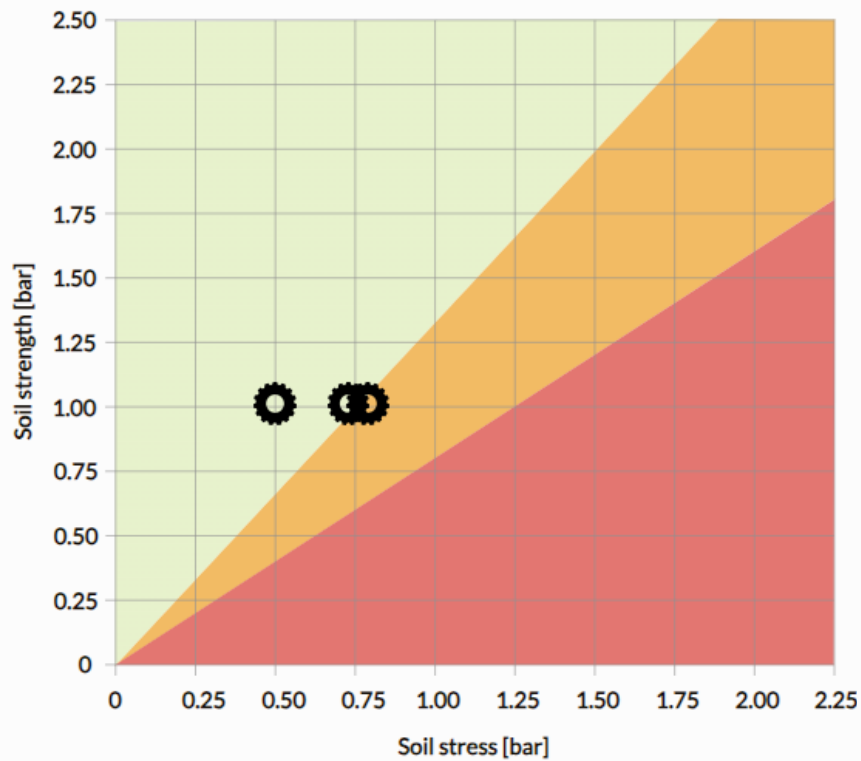
Decision chart (valid for 35 cm soil depth)



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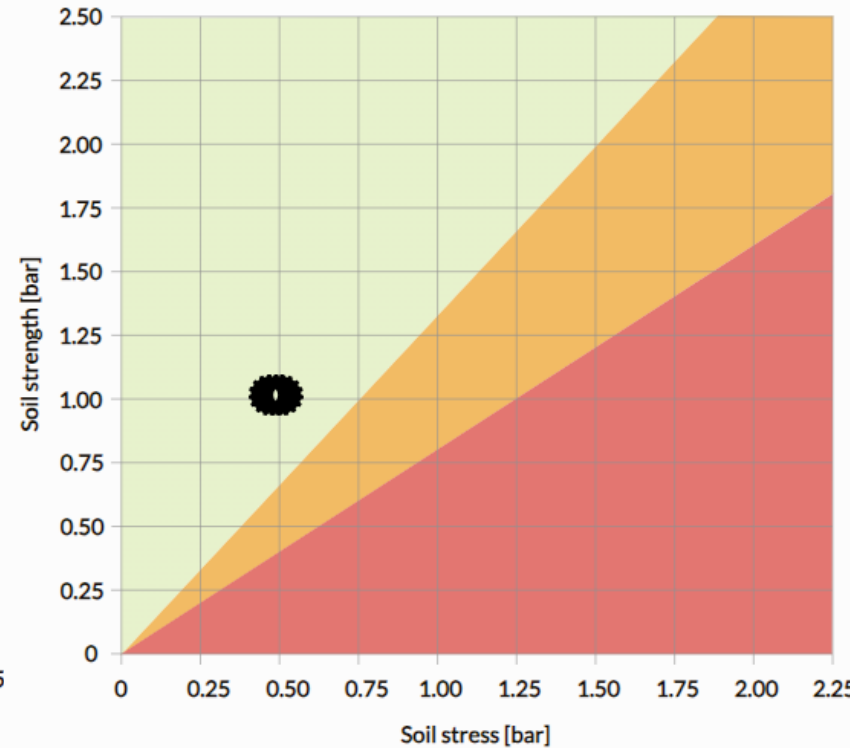
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Pressure **1.1 bar**

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Trailed seed drill 130-180 HP tractor (50 km/h)

Wheel Position	Weight (kg)	Pressure (bar)
Left rear wheel	2'000	0.90
Right rear wheel	3'060	1.10
Left front wheel	1'440	0.70
Right front wheel	3'060	1.10

See results

Decision chart

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Stress vs. strength

Contact pressure

Soil stress

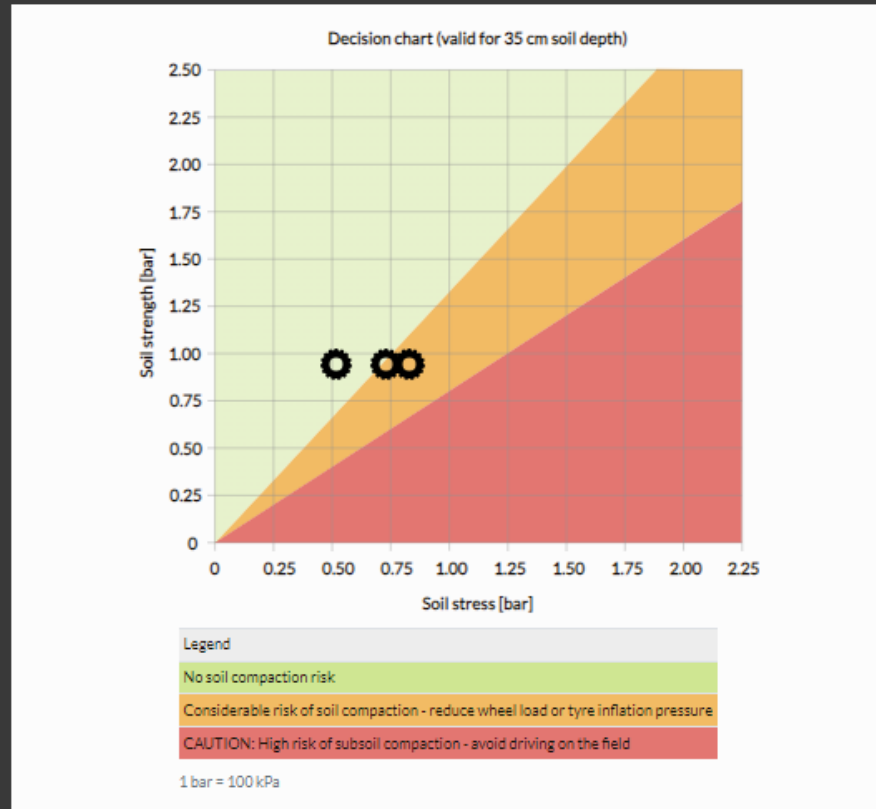
Multipass

Trailed seed drill 130-180 HP tractor



sandy loam - moraine area - Moist

- Considerable risk of soil compaction - reduce wheel load or tyre inflation pressure
- 130-180 HP tractor - Left rear wheel, Right rear wheel
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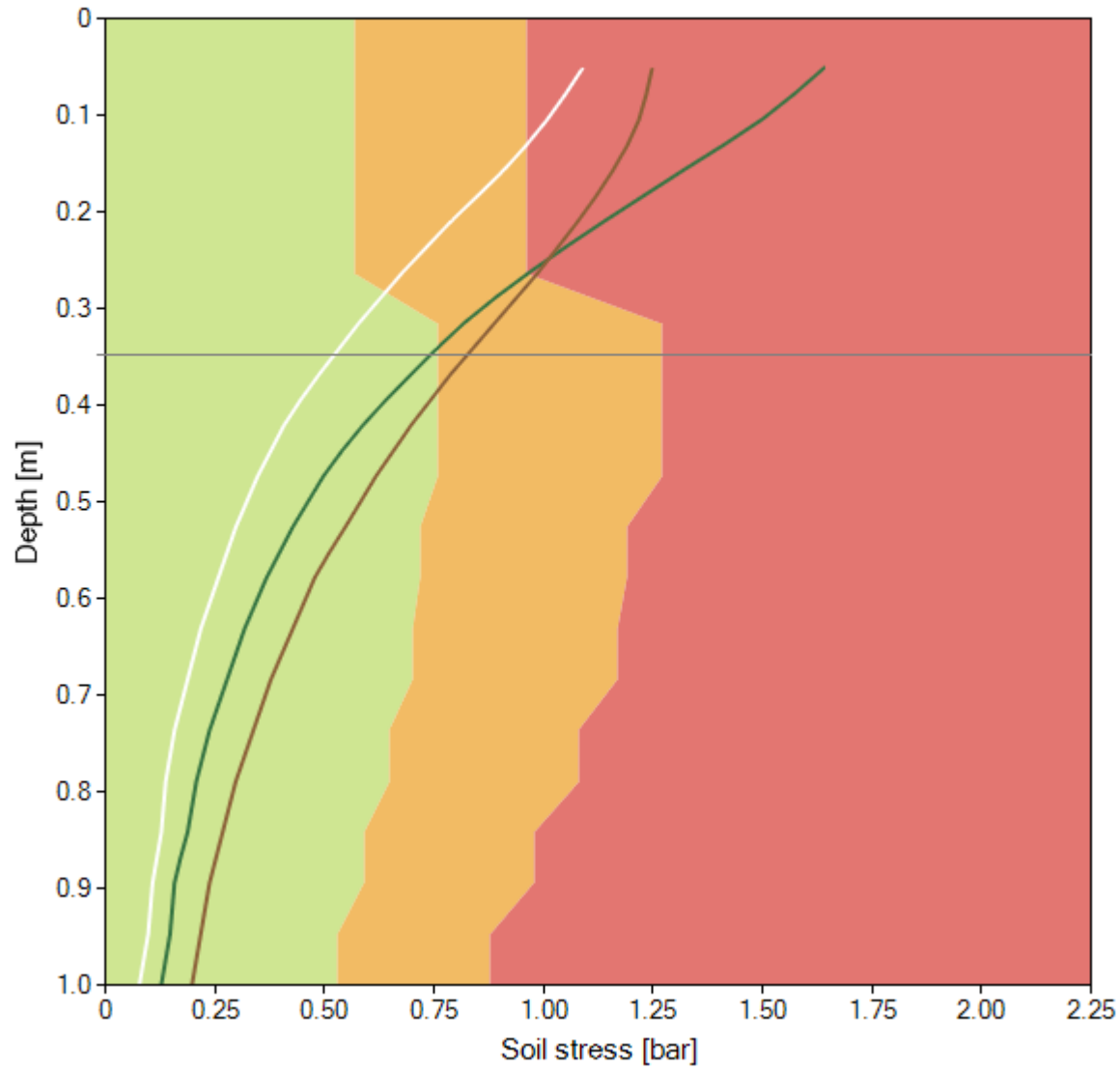


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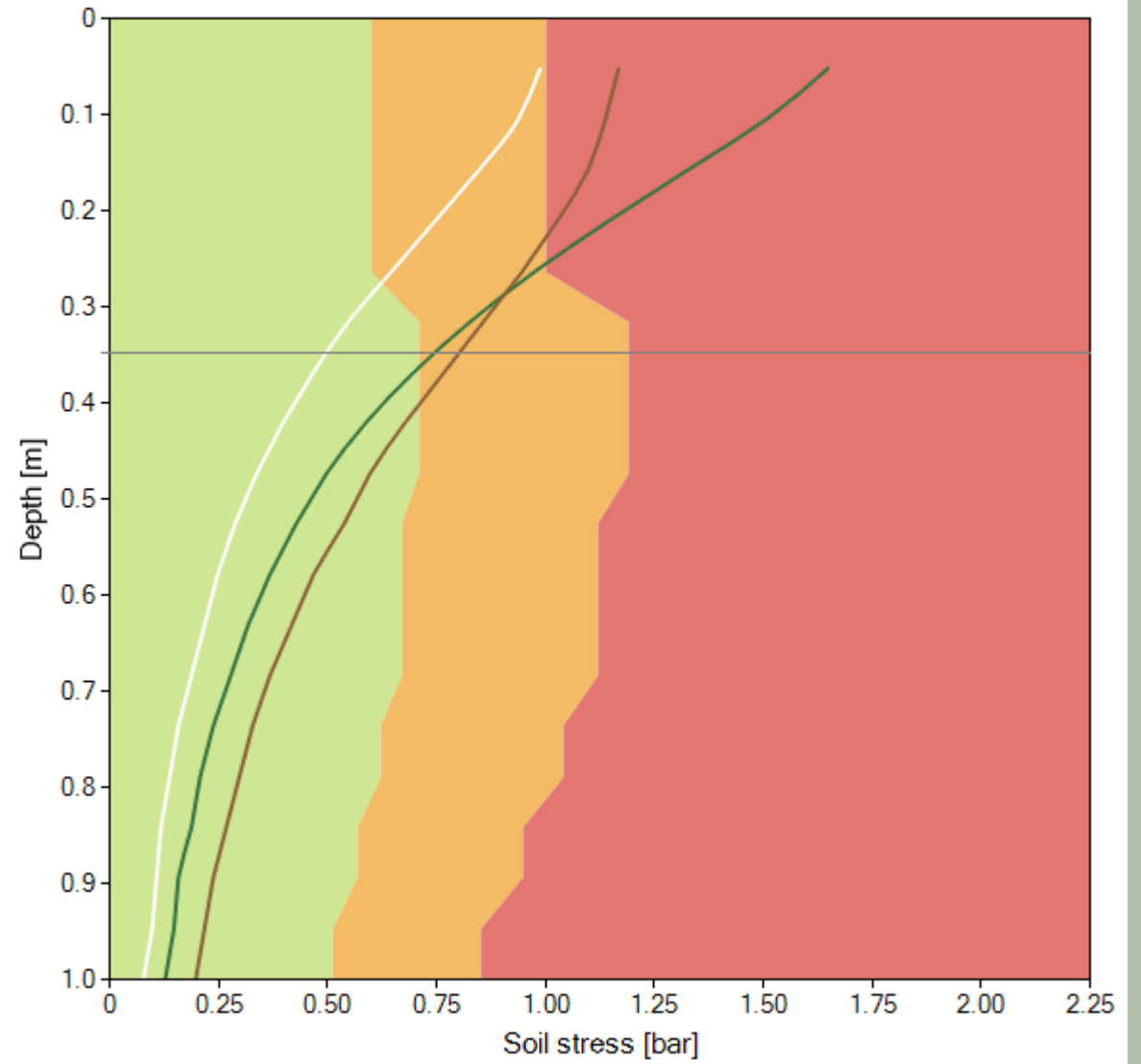
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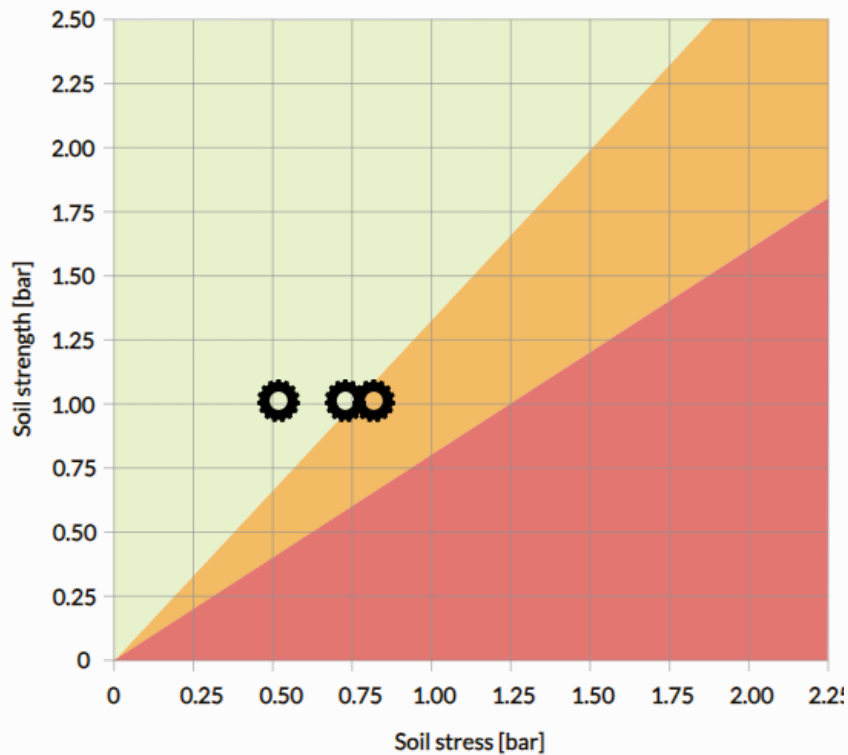
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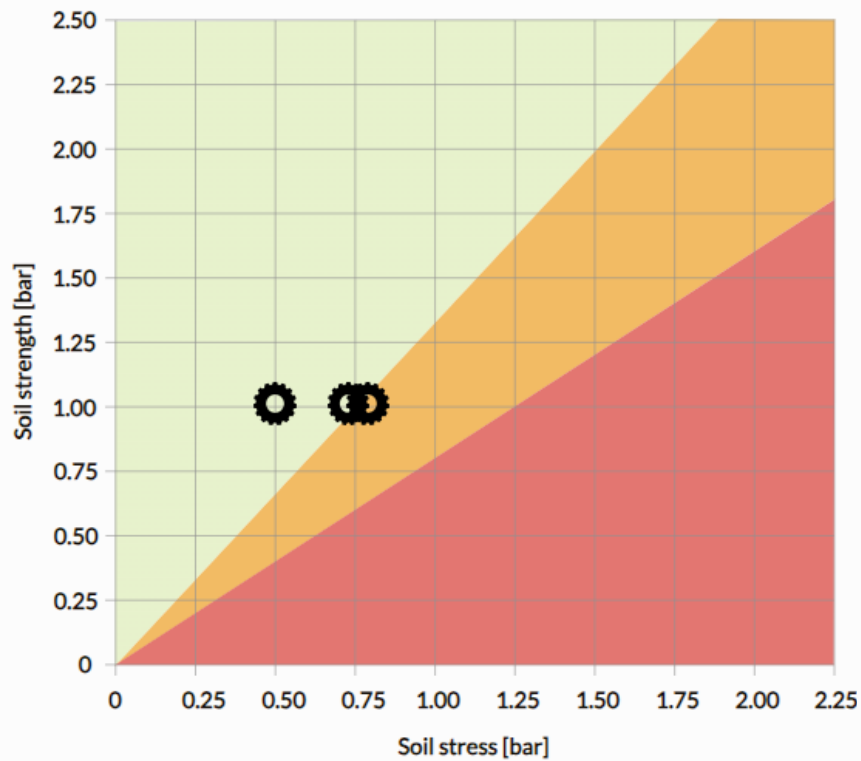
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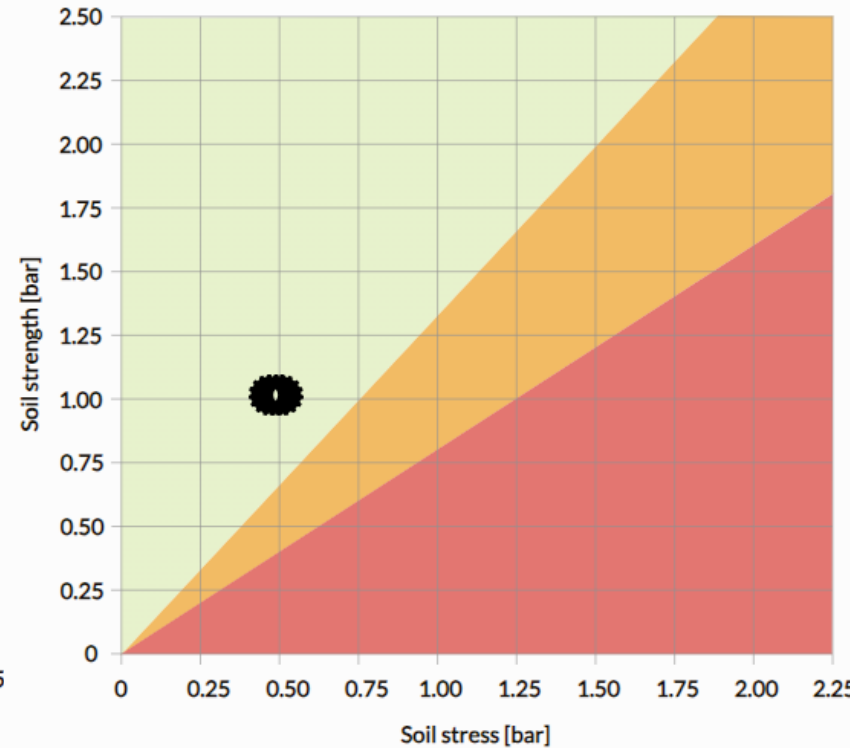
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Trafikkmengde - hvor mye er  
nødvendig?





# Plogsystem

- Plog
- Slådd 3m
- Såbedsharv 6m
- Såmaskin 3m
- Trommel 6m
- Gjødselspreder 15m
- Vifte 15m

TURNS	DISTANCE	HEADLAND OVERLAP	WHEEL TRAFFIC AREA	TIME	SHOW/HIDE
Suggestion 1					
172	34.83 km	0.879 ha	86.9%	10:16	

# Redusert jordarbeiding

- Stubbharv 3m
- Såmaskin 3m
- Trommel 6m
- Gjødselspreder 15m
- Sprøyte 15m

[i](#) TURNS   [i](#) DISTANCE   [i](#) HEADLAND OVERLAP   [i](#) WHEEL TRAFFIC AREA   [i](#) TIME   SHOW/HIDE

## Suggestion 1

102	20.78 km	0.653 ha	75.1%	6:19
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# Direktesåing

- Såmaskin 3m
- Gjødselspreder 15m
- Sprøyte 15m



**i** TURNS    **i** DISTANCE    **i** HEADLAND OVERLAP    **i** WHEEL TRAFFIC AREA    **i** TIME    SHOW/HIDE

Suggestion 1

49	9.67 km	0.357 ha	41.9%	2:32
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# Direktesåing 6m

- Såmaskin 6m
- Gjødselspreder 30m
- Sprøyte 30m



**i** TURNS    **i** DISTANCE    **i** HEADLAND OVERLAP    **i** WHEEL TRAFFIC AREA    **i** TIME    SHOW/HIDE

Suggestion 1




24	5.48 km	1.731 ha	25.9%	1:15
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# Oppsummert

- Fangvekster kan påvirke lagelighet over tid
- Gode dekk er viktig, men lagelighet er viktigere
- Hvor mye må du kjøre?



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