

NFTS Network 22 January

# Large-scale field trials at KMC

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# Agenda

- ◆ What is KMC
- ◆ Why do we conduct large-scale field trials
- ◆ How do we conduct large-scale field trials and why
- ◆ How do we work with data
- ◆ What challenges do we meet working with farmers



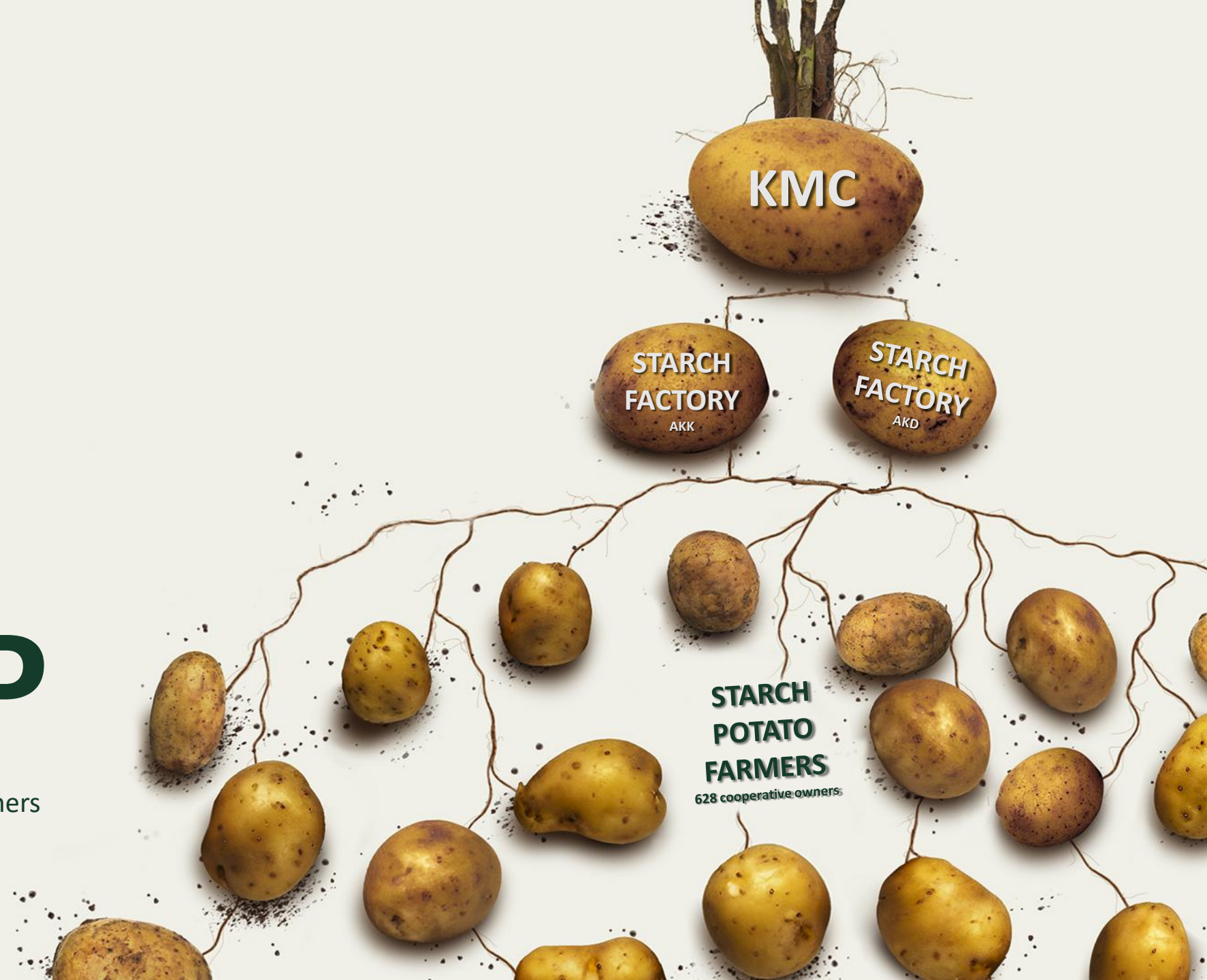


**KMC**

Ingredients to grow your business

# THE KMC GROUP

Owned and operated by Danish farmers  
and other skilled people.





# KMC AT A GLANCE

◆ Owned by farmers

◆ Founded in 1933

◆ CAGR of 15% since 2019

◆ 480 Million EUR Revenue

◆ 420 employees at KMC group where 262 are employed at KMC

◆ Focused and specialized in food grade ingredients



WHO IS KMC

At KMC nothing goes to waste.

**Potato starch**

18-20%

**Potato protein**

1-2%

**Potato water and pulp**

73-78%

**Potato fibers**

1-2%









# Why do we conduct large-scale field trials

- ❖ Some products are difficult to get useful answers from in small plots in the normal field trial.
  - ❖ Experiments with planting distance in potatoes are fine to carry out in ordinary trials, but then you only get an answer on how the distance should be for precisely that soil type with its given composition.
  - ❖ Sometimes there is a big gap between trials and practice, and things sometimes turn out differently – and not as well – under practical conditions.
- ❖ *At the end of the day, our goal is to help our owners to do better tomorrow than they do today*



My example for today is about planting distance



# How do we conduct large-scale field trials

- ❖ We have 6 farmers, we use for our large-scale field trials
- ❖ We have yield monitors on all harvesters. These are connected to RTK GPS for the best possible data logging
- ❖ We take 3 starch samples in the longitudinal direction in each replicate, after which the starch content is measured

**SKITSE 1: Led 3 systematisk**

Rækker	1	2	3	4	5	6	7	8	9	10	11	12
Led	1	2	3	1	2	3	1	2	3	1	2	3
Bredde	m	m	m	m	m	m	m	m	m	m	m	m

Marklængde												
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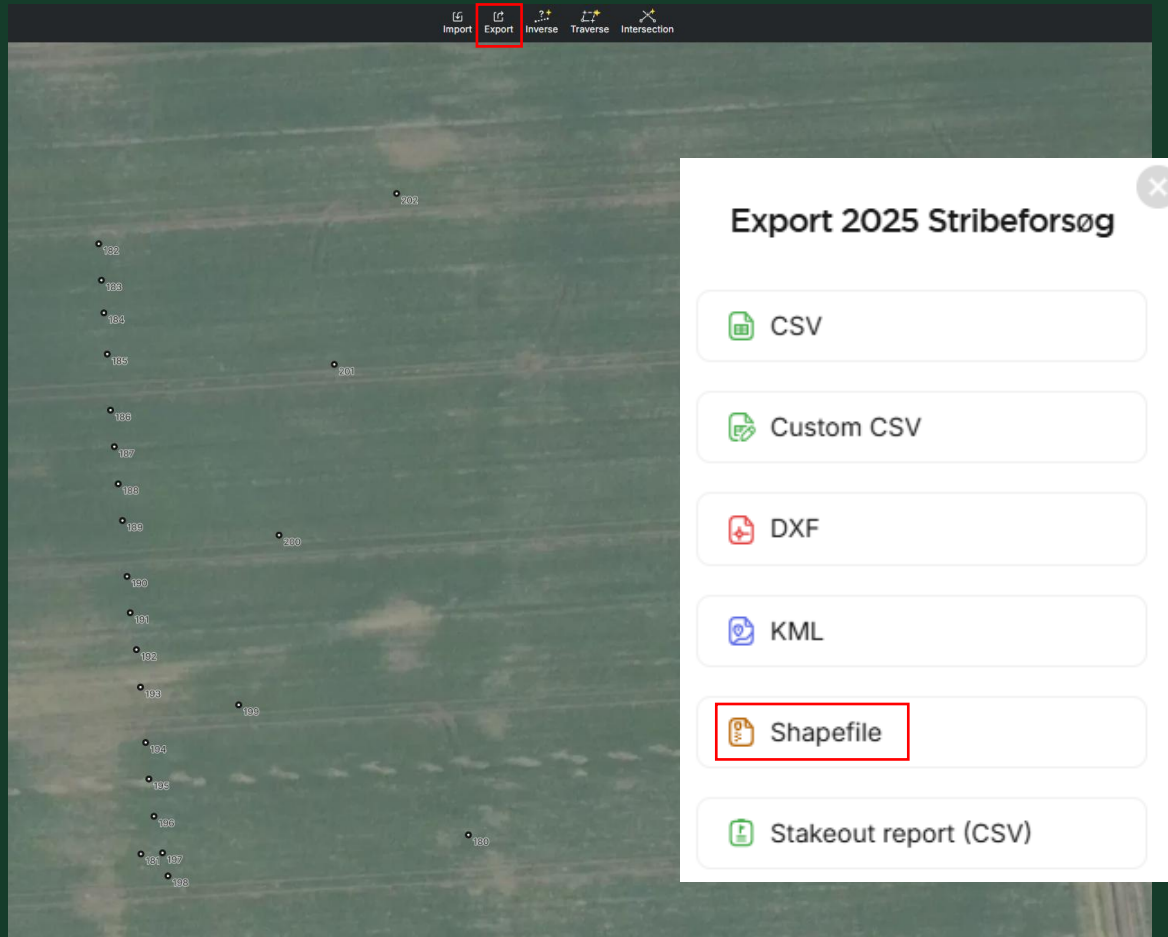
  

Led 1: 20 cm læggeafstand. Bredde m er lig læggebredde  
Led 2: 30 cm læggeafstand. Bredde m er lig læggebredde  
Led 3: 40 cm læggeafstand. Bredde m er lig læggebredde

Picture: Example how to conduct a large-scale trial for planting distance of potatoes



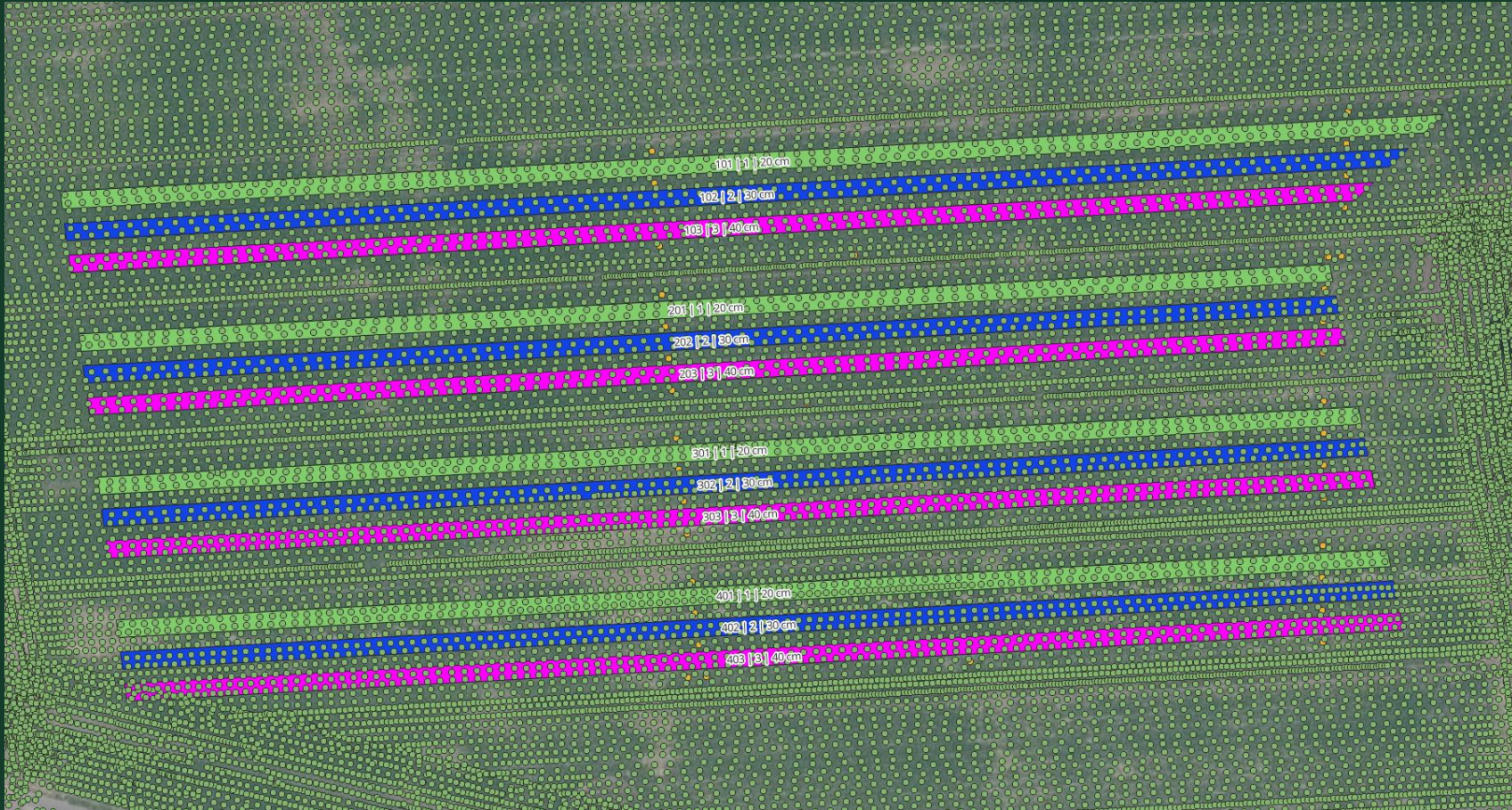
# How do we secure data



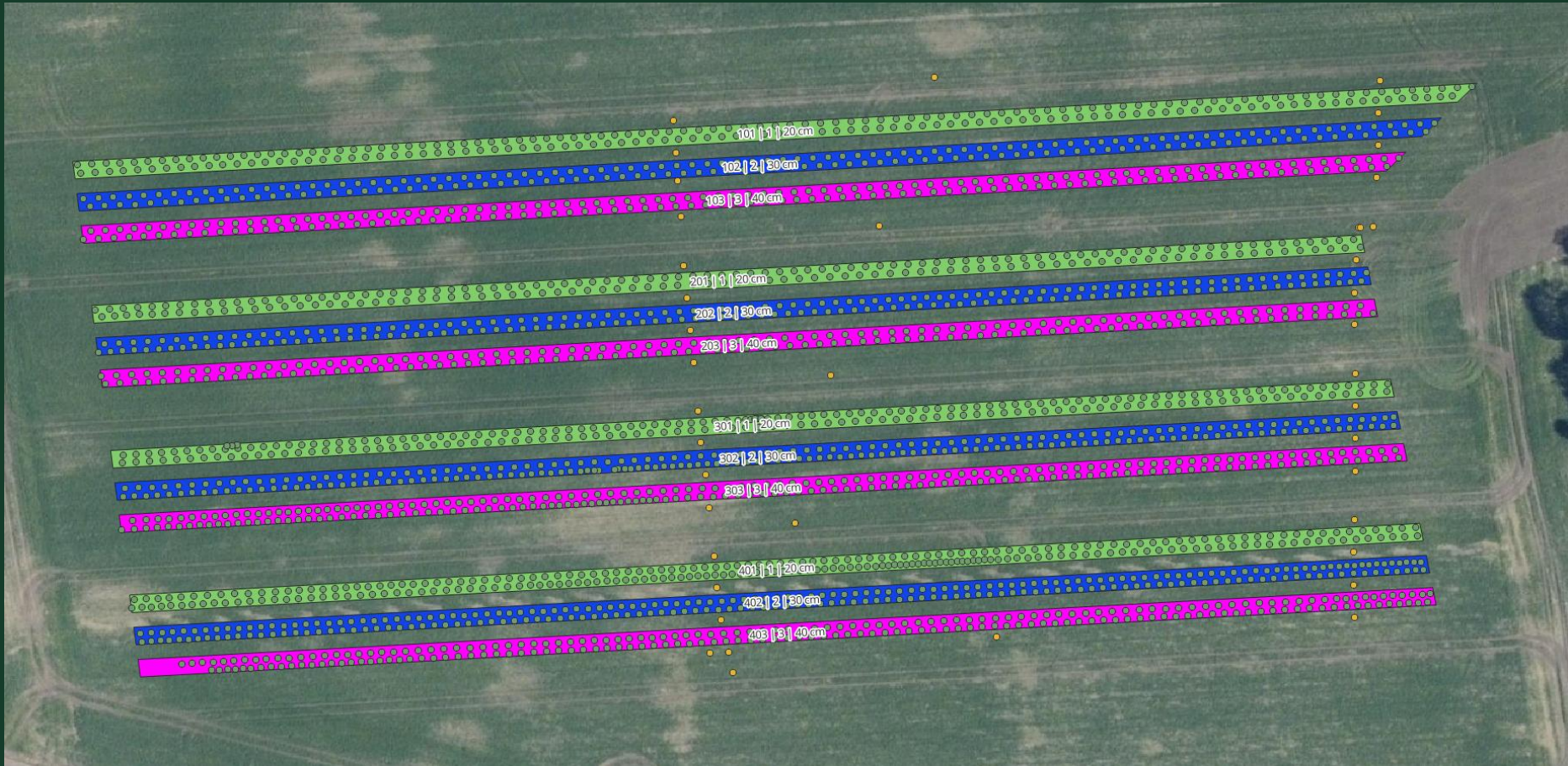
# QGIS















KMC25DK-051-01-udbyttefil — Objekter Totalt antal: 2414, Filtrerede: 2414, Udvalgte: 0



	fid	time	device_id	course	heading	altitude	speed	lon	lat	delta_min	delta_max	kg	eld (ton/ha) correcte	Parcel	Led	REP	Time_2	Zone
547	558	03-10-2025 15:01:04 (UTC)	2035335839315...	266	falsk	falsk	5	910043765130172 <sup>8</sup>	56,10356902641...	20	3500	30,4304	94,30028893551...	102	2	1	NULL	3
548	559	03-10-2025 15:01:07 (UTC)	2035335839315...	266	falsk	falsk	5	909992565130262 <sup>8</sup>	56,10356742641...	20	3500	29,7388	92,15710055061...	102	2	1	NULL	3
549	560	03-10-2025 15:01:09 (UTC)	2035335839315...	266	falsk	falsk	5	909943165130352 <sup>8</sup>	56,10356582641...	20	3500	29,4462	91,25036700315...	102	2	1	NULL	3
550	561	03-10-2025 15:01:11 (UTC)	2035335839315...	266	falsk	falsk	5	909893665130438 <sup>8</sup>	56,10356422641...	20	3500	28,9674	89,76662119823...	102	2	1	NULL	3
551	562	03-10-2025 16:20:08 (UTC)	2035335839315...	266	falsk	falsk	5	914116365141851 <sup>8</sup>	56,10335842641...	20	3500	13,9384	43,19348898794...	203	3	2	NULL	1
552	563	03-10-2025 16:20:10 (UTC)	2035335839315...	266	falsk	falsk	5	914068765141938 <sup>8</sup>	56,10335692641...	20	3500	19,8436	61,49302058207...	203	3	2	NULL	1
553	564	03-10-2025 16:20:12 (UTC)	2035335839315...	266	falsk	falsk	5	914021265142019 <sup>8</sup>	56,10335542641...	20	3500	26,733	82,84247410855...	203	3	2	NULL	1
554	565	03-10-2025 16:20:14 (UTC)	2035335839315...	266	falsk	falsk	5	913973365142107 <sup>8</sup>	56,10335382641...	20	3500	29,6324	91,82737926063...	203	3	2	NULL	1
555	566	03-10-2025 16:20:16 (UTC)	2035335839315...	266	falsk	falsk	5	913925465142189 <sup>8</sup>	56,10335232641...	20	3500	29,393	91,08550635816...	203	3	2	NULL	1
556	567	03-10-2025 16:20:18 (UTC)	2035335839315...	266	falsk	falsk	5	913877665142228 <sup>8</sup>	56,10335072641...	20	3500	30,058	93,14626442056...	203	3	2	NULL	1
557	568	03-10-2025 16:20:20 (UTC)	2035335839315...	266	falsk	falsk	5	913829565142361 <sup>8</sup>	56,10334922641...	20	3500	31,8402	98,66909602780...	203	3	2	NULL	1
558	569	03-10-2025 16:20:22 (UTC)	2035335839315...	266	falsk	falsk	5	913781965142444 <sup>8</sup>	56,10334772641...	20	3500	32,7446	101,4717269926...	203	3	2	NULL	1

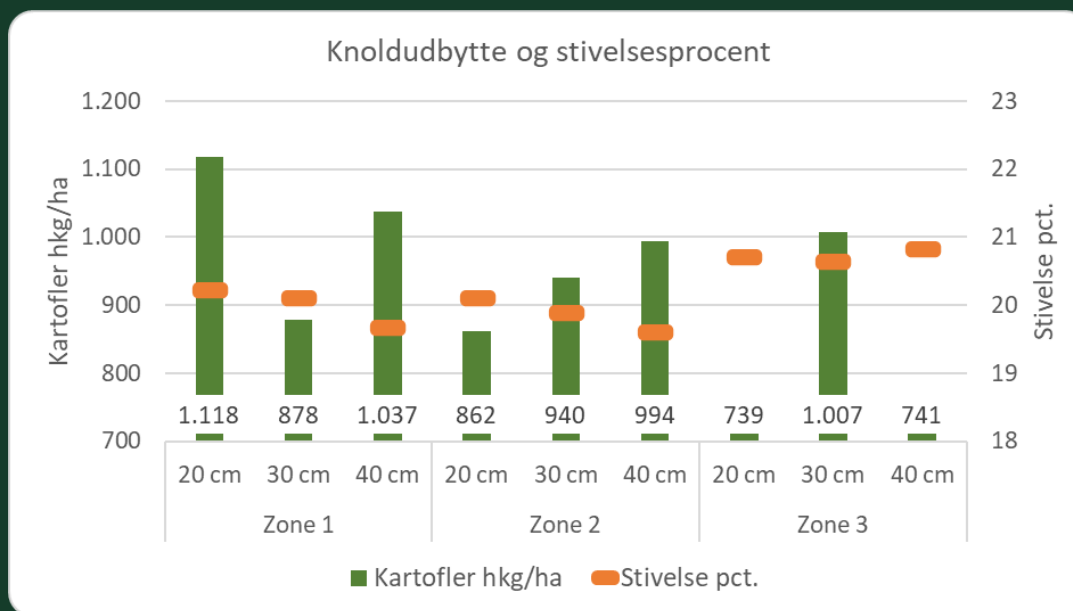
Vis Alle Objekter



Ingredients to grow your business

# Excel gymnastics

Parcel	Gentag else	NFTS	Led	Rækkeafs tand, cm	Kartofler hkg/ha	Stivelse %	Stivelse hkg/ha	Antal målepur	Optagning rækkefølge	Tid, start	Tid, slut	Bemærk ning	Zone 1	Antal 1	UWW 1	Stv.pct. 1	Zone 2	Antal 2	UWW 2	Stv.pct. 2	Zone 3	Antal 3	UWW 3	Stv.pct. 3	P02
1	1	101	1	82,5	864	19,7	170	195					870	61	472	19,4	868	68	479	19,7	854	66	483	20,0	
2	1	102	2	82,5	975	19,6	191	179					969	54	468	19,2	1.001	65	477	19,6	951	60	485	20,1	
3	1	103	3	82,5	810	19,6	159	176					826	49	478	19,7	815	66	470	19,3	791	61	480	19,8	
4	2	201	1	82,5	894	20,3	181	174					934	43	491	20,4	942	69	500	20,9	812	62	477	19,6	
5	2	202	2	82,5	848	20,6	174	191					788	50	502	21,0	891	75	499	20,8	845	66	482	19,9	
6	2	203	3	82,5	869	20,1	175	172					857	44	481	19,8	880	67	491	20,4	865	61	486	20,1	
7	3	301	1	82,5	1.042	20,4	212	204					1.391	51	500	20,9	1.050	84	470	19,3	775	69	503	21,0	
8	3	302	2	82,5	904	19,6	178	220					642	58	480	19,8	795	92	456	18,5	1.265	70	495	20,6	
9	3	303	3	82,5	939	19,8	186	218					1.209	54	467	19,1	1.093	86	472	19,4	582	78	503	21,0	
10	4	401	1	82,5	727	21,0	153	237					1.276	56	489	20,3	586	109	494	20,5	514	72	525	22,2	
11	4	402	2	82,5	1.050	21,0	221	237					1.111	69	494	20,5	1.073	92	495	20,6	968	76	521	22,0	
12	4	403	3	82,5	1.059	20,6	218	211					1.254	61	485	20,1	1.186	83	473	19,4	725	67	528	22,4	
Total					915	20,2		2.414					1.011			20,0	932			19,9	829			20,7	





# How do we get further from now to something useful

- ❖ We need soil data. We will not use the new soil map.
- ❖ We are looking at Soil optix or something similar. Because of the clay and humus content.






# Farmer as a trial host – that must be easy





A photograph of a field with young green plants growing in rows of tilled soil. The scene is captured at sunset or sunrise, with a warm, golden light illuminating the plants and the horizon. The background shows a line of trees under a bright sky.

*At the end of the day, our goal is to help our owners to do better tomorrow than they do today*

## Questions