Overview of Radimax wheat 2022	Ansvarlig	NHKR
	Oprettet	6/12/2022
Projekt: 7860 Optricop	Side	1 af 2

Overview of Radimax wheat 2022

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Four repetitions of 49 breeder lines from Sejet and Nordic seed were randomized within 4 blocks in a lattice design, with a repeated line LG Skyscraper in every 8th row across the facility. The KU part of the bed included 8 genotypes replicated 6 times, randomised in 3 blocks within each bed. The crop was quite well established with even sowing and no major damage from pest or disease. However in bed 2 there was a patch between lines 243-253 on the north side (above the tubes) where some lines had quite a bad plant stand, most likely due to damage by "aksløberens larve".

Management:

- Crop sown 6-7 October 2021
- Herbicide spray 16 November 2021
- Fertilization 21 March 2022 (NPKS 21-03-10-4 1Mg, 433kg/ha => 90.93kgN/ha)
- Fertilization 25 April (NS 27-4, 280kg/ha => 75kg N/ha)
- Herbicide spraying 29 April 2022
- Pesticide spraying 21 June 2022

Root imaging:

- Imaging (KU lines only) 27 April 2022
- Imaging 1 – 17-18 May 2022
- Imaging 2 – 7-9 June 2022
- Imaging 3 – 13-14 July 2022

Isotope injection

15N and deuterium injected in subirrigation tubes 4+5 on both sides of each bed, 8 June 2022, at mid-anthesis. Flag leaf samples taken at intervals from repeated lines above the injected area, before injection.

Harvest – 26-27 July 2022

- Labelled samples 30cm above irrigation lines on both sides of the bed – whole plant harvested.
- Non-labelled sample of KU lines – whole plant cut.
- Non-labelled samples of breeder lines – spike only cut with sickles.

Post-harvest

All samples threshed, weighted, TKV counted, milled, and will be analysed for 13C and 15N. Labelled samples from above injection area will be analysed for deuterium.

Data available

- Root length data for 3 imaging dates for all tubes – clean data with false positives removed as much as possible. A large number of traits have been calculated for measuring deep root length – including for each month:TRD_40 (soil threshold below which 40cm roots are found), TRD_20, DRL_130, TRDcomb, MRD, as well as deep root growth between months, and sigmoid inflection as a measure of deep roots.
- Labelled samples - grain weight, TKV, plant biomass (KU lines only)
- Non-labelled samples, KU lines - grain + straw weight, TKV, plant biomass (KU lines only)

- Breeder lines labelled samples – grain weight, TKV
- Breeder lines non-labelled samples – sent directly to breeders post- harvest.

Data planned (hopefully early 2023)

- Labelled samples - grain 15N, total N, 13C, total C, deuterium
- KU lines non-labelled samples - grain + straw 15N, total N, 13C, total C.
- Breeder lines labelled samples – grain 15N, total N, 13C, total C, deuterium.
- Control flag-leaf samples at anthesis - 15N + 13C

	A	B	C	D	E	F	G
1	year	ID	bed	block	line	tube	x
2	2022	KU	1	1	Pondus	1	1101
3	2022	KU	1	1	Zyatt	2	1102
4	2022	KU	1	1	Bright	3	1103
5	2022	KU	1	1	Momentum	4	1104
6	2022	KU	1	1	Heerup	5	1105
7	2022	KU	1	1	Sheriff	6	1106
8	2022	KU	1	1	Rembrandt	7	1107
9	2022	KU	1	1	Kvarn	8	1108
10	2022	KU	1	1	Ohio	9	1109
11	2022	KU	1	1	LG Skyscra	10	1110
12	2022	KU	1	2	Ohio	11	1111
13	2022	KU	1	2	Kvarn	12	1112
14	2022	KU	1	2	Zyatt	13	1113
15	2022	KU	1	2	Sheriff	14	1114
16	2022	KU	1	2	Momentum	15	1115
17	2022	KU	1	2	Heerup	16	1116
18	2022	KU	1	2	Pondus	17	1117
19	2022	KU	1	2	Bright	18	1118
20	2022	KU	1	2	Rembrandt	19	1119
21	2022	KU	1	2	LG Skyscra	20	1120
22	2022	KU	1	3	Sheriff	21	1121
23	2022	KU	1	3	Rembrandt	22	1122
24	2022	KU	1	3	Pondus	23	1123
25	2022	KU	1	3	Momentum	24	1124
26	2022	KU	1	3	Zyatt	25	1125
27	2022	KU	1	3	Bright	26	1126
28	2022	KU	1	3	Heerup	27	1127
29	2022	KU	1	3	Kvarn	28	1128
30	2022	KU	1	3	Ohio	29	1129
31	2022	KU	1	3	LG Skyscra	30	1130
32	2022	Breeder	1		Informer	31	1131
33	2022	Breeder	1		LG Skyscra	32	1132
34	2022	Breeder	1		Informer	33	1133
35	2022	Breeder	1		EMPTY	34	1134
36	2022	Breeder	1		LG Skyscra	35	1135
37	2022	Breeder	1		LG Skyscra	36	1136

Selection of the experimental design.