


How Breedbase Helps Our Breeding Program

WheatCAP Meeting, 2023

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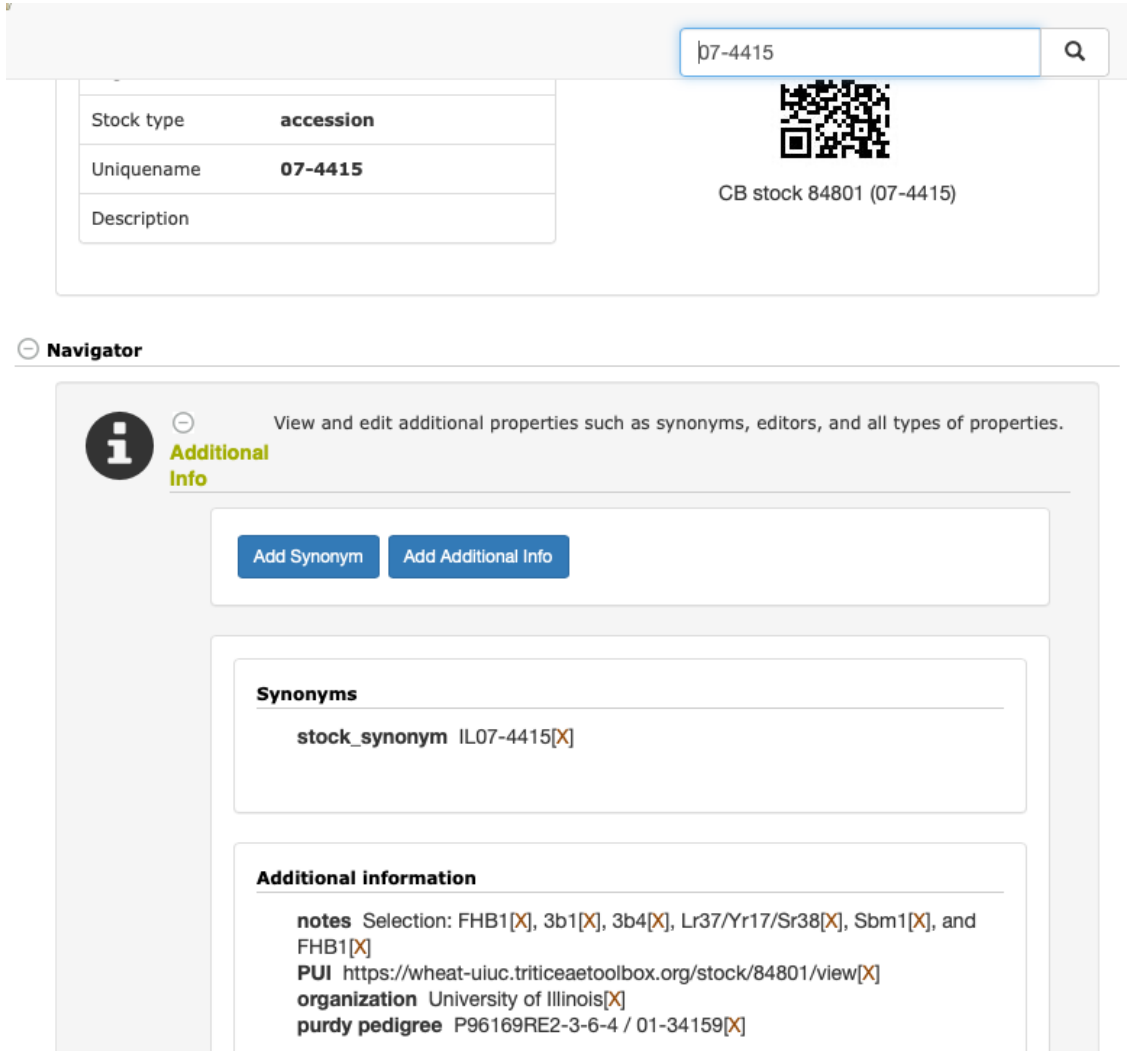
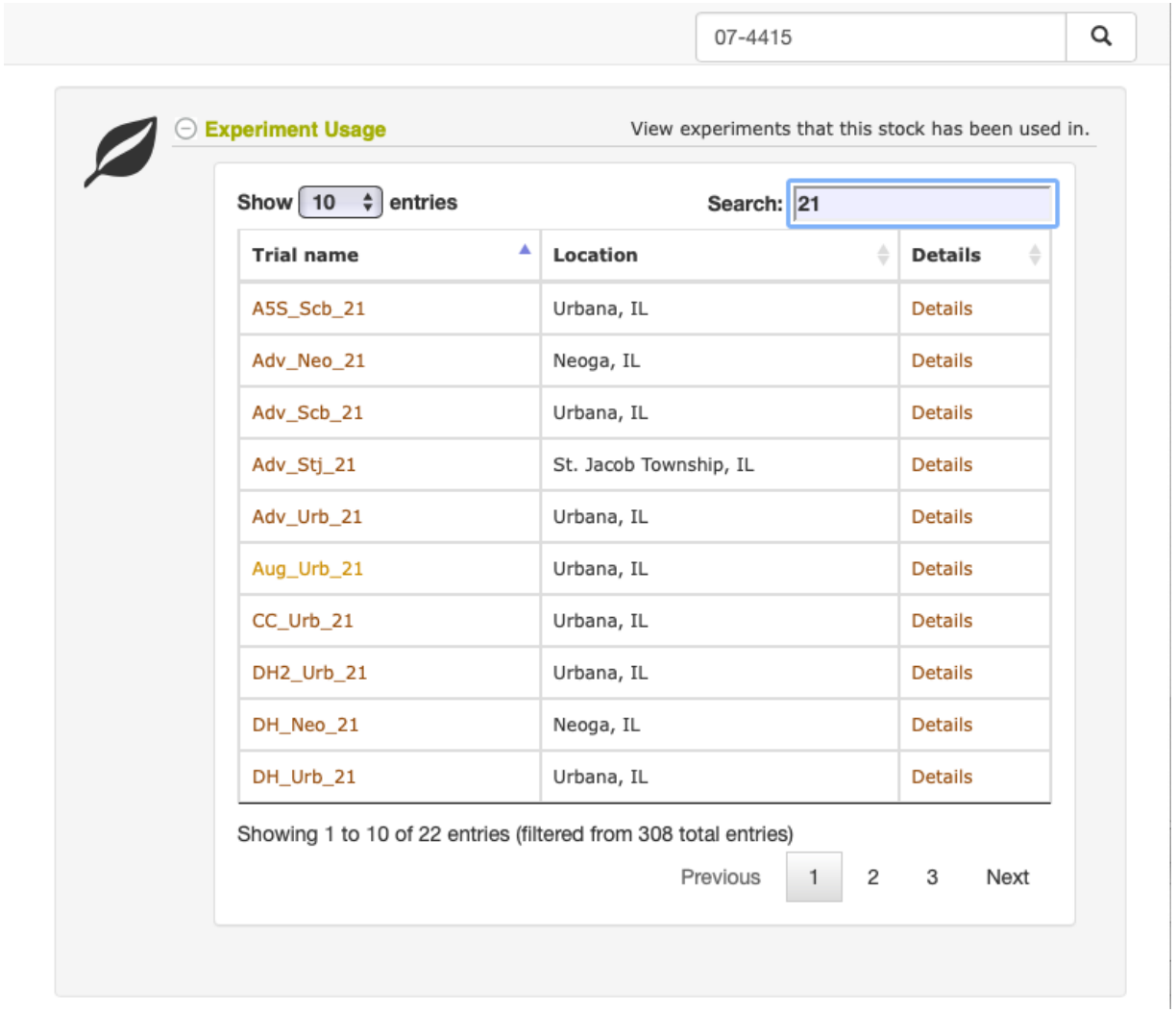
1. Finding Information on Lines of Interest

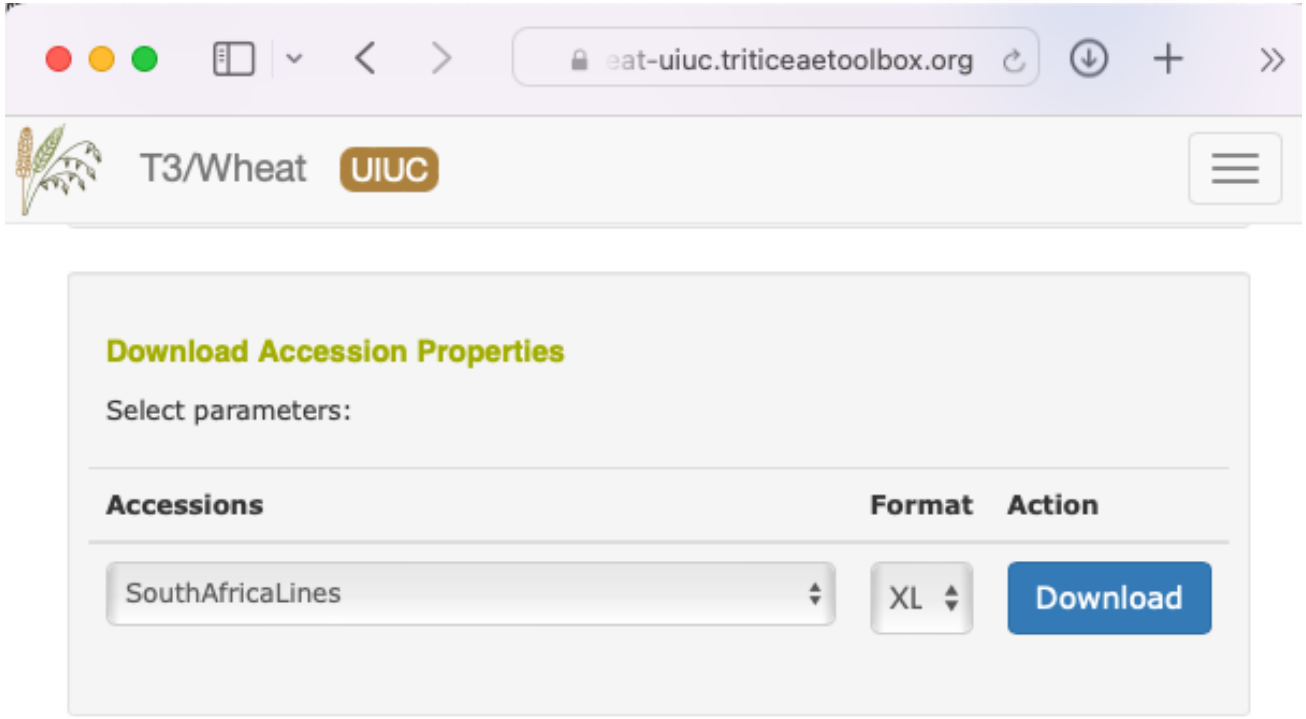
- Are X line(s) in your trials?
- Does X line have Fhb1?
- What's the pedigree of X line(s)?
- Can you tell me something about the parents of X?

Line Search Example





Example retrieving pedigrees



accession_r	species_nar	population_r	organization	synonym	PUI	variety	country of o	notes	accession n	purdy pedigr	filial generation
18-14535	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240518/view					12 - 8545/07-4415	
18-17905	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240558/view					G09418/MO 080104//10-21934	
18-6852	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240634/view					09-3264/12 - 7918, 09-3264/12-7	
19-13414	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/239388/view					13-20171/10-21934	
19-18153	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/239636/view					02-19463-7/12-21660//12-8545	
19-18156	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/239637/view					02-19463-7/12-21660//12-8545	
19-18826	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/239645/view					10-19464/11-36131//P0762A1-2	
19-27565	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240134/view					13-1910/02-19463-7	
US17-IL-10	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240834/view					10-21934/13-1910	
US17-IL-11	Triticum aes	UIC Winter	University of Illinois		https://wheat-uiuc.triticeaetoolbox.org/stock/240851/view					11-662/10-21934	

2. Keeping Track of Seedlots

Seed lot example

Details for List 'SouthAfricaSeedLots'

Details

List Name	SouthAfricaSeedLots
List ID	603
Type	seedlots
Number of Items	25
Description	

List Items

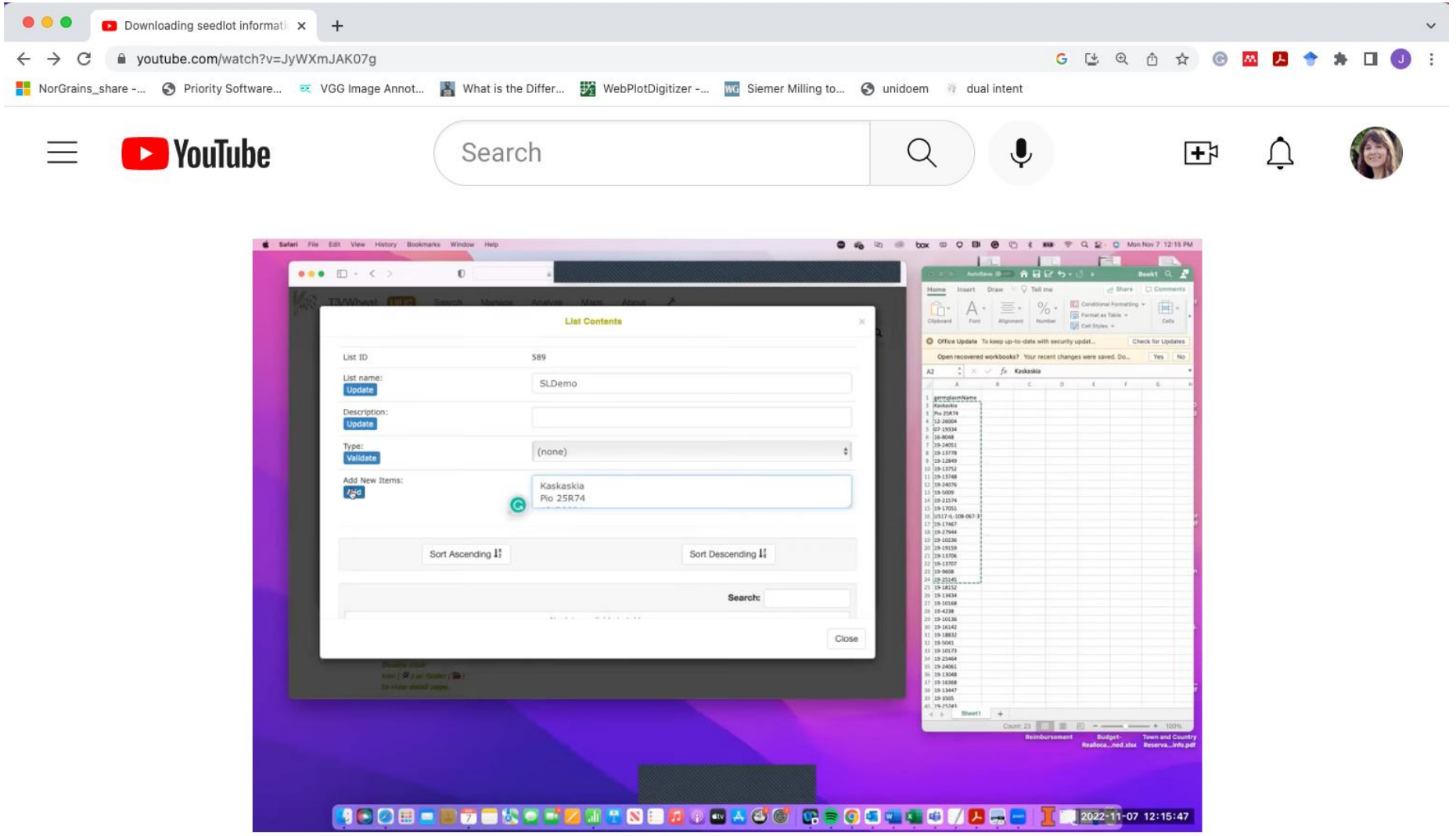
Download List Items

Show 10 entries Search:

Seedlot Name	Content Name	Content Type	Description	Box Name	Current Count	Current Weight	Quality
LgI_Urb_22-6.2	18-6852	accession		I12	NA	14061.4	
LgI_Urb_22-36.2	US17-IL-111-005	accession		I3	NA	18143.7	
LgI_Urb_22-6.1	18-6852	accession		H7	NA	23133.2	
LgI_Urb_22-18.1	18-14535	accession		I14	NA	453.6	

- Make a list of lines and use it to make a list of seed lots.
- Download seed lot information
- Include the weight and location of selected seed lots in the entry list

	accession_name	Seedlot_Name	Box_Name	Current_Weight
1	IL18-14535	SmallInc21_054	B6	7711.1
2	IL18-17905	SmallInc21_018	E5	9525.4
3	IL18-6852	Lgl_Urb_22-6.1	H7	23133.2
4	IL19-13414	MI_Urb_22-43.1	B5	8618.3
5	IL19-18153	MI_Urb_22-80.2	F3	9071.8
6	IL19-18156	MI_Urb_22-81.1	I6	9525.4
7	IL19-18826	MI_Urb_22-84.1	E1	9071.8
8	IL19-27565	MI_Urb_22-126.1	F7	6577.1
9	US17-IL-108-039	SmallInc21_107	B6	4535.9
10	US17-IL-111-005	Lgl_Urb_22-36.1	A12	9979



Downloading seedlot information for a list of accessions

Brief youtube video to help train staff to use Breedbase to find seedlots

https://www.youtube.com/watch?v=JyWXmJAK07g

3. Speeding up Data Turn-around Time

Less time messing with data gives us more time to prepare seeds. This lets us be more precise and reduces labor needs.

New Timeframe

	July				August				September			
	1	2	3	4	5	6	7	8	9	10	11	12
Operations	Wheat harvest	Oat harvest	Seed cleaning, FDK	Stage 1 seed prep	Arrange selected entries	Stage 2-4 seed prep					Arrange trials	Plant
Design and Analysis		Upload data	Analyze data	Make selections		Design Trials						

Old Timeframe

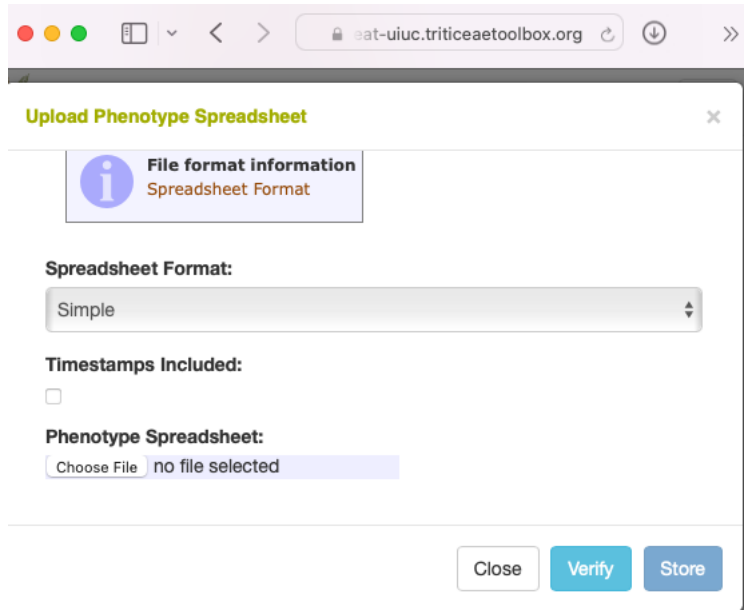
	July				August				September			
	1	2	3	4	5	6	7	8	9	10	11	12
Operations	Wheat harvest	Oat harvest	Seed cleaning, FDK	Stage 1 seed prep			Stage 2 prep		Stage 3 and 4 prep	Arrange Illinois Trials	Arrange cooperatives	Plant
Design and Analysis				Enter data	Summarize stage 2 data	Select stage 2	Summarize stage 3 and 4 data	Select stages 3 and 4				

Example: Same-day Phenotype Upload

export

observationunit_name	Plant height -
Org_Dan_21-101	116.84
Org_Dan_21-102	96.52
Org_Dan_21-103	101.6
Org_Dan_21-104	121.92
Org_Dan_21-105	96.52
Org_Dan_21-106	116.84
Org_Dan_21-107	116.84
Org_Dan_21-108	91.44
Org_Dan_21-109	96.52
Org_Dan_21-110	111.76
Org_Dan_21-111	91.44
Org_Dan_21-112	86.36
Org_Dan_21-113	106.68
Org_Dan_21-114	86.36
Org_Dan_21-115	86.36
Org_Dan_21-116	127
Org_Dan_21-117	127
Org_Dan_21-118	127
Org_Dan_21-119	91.44
Org_Dan_21-120	91.44
Org_Dan_21-121	121.92
Org_Dan_21-122	81.28

upload

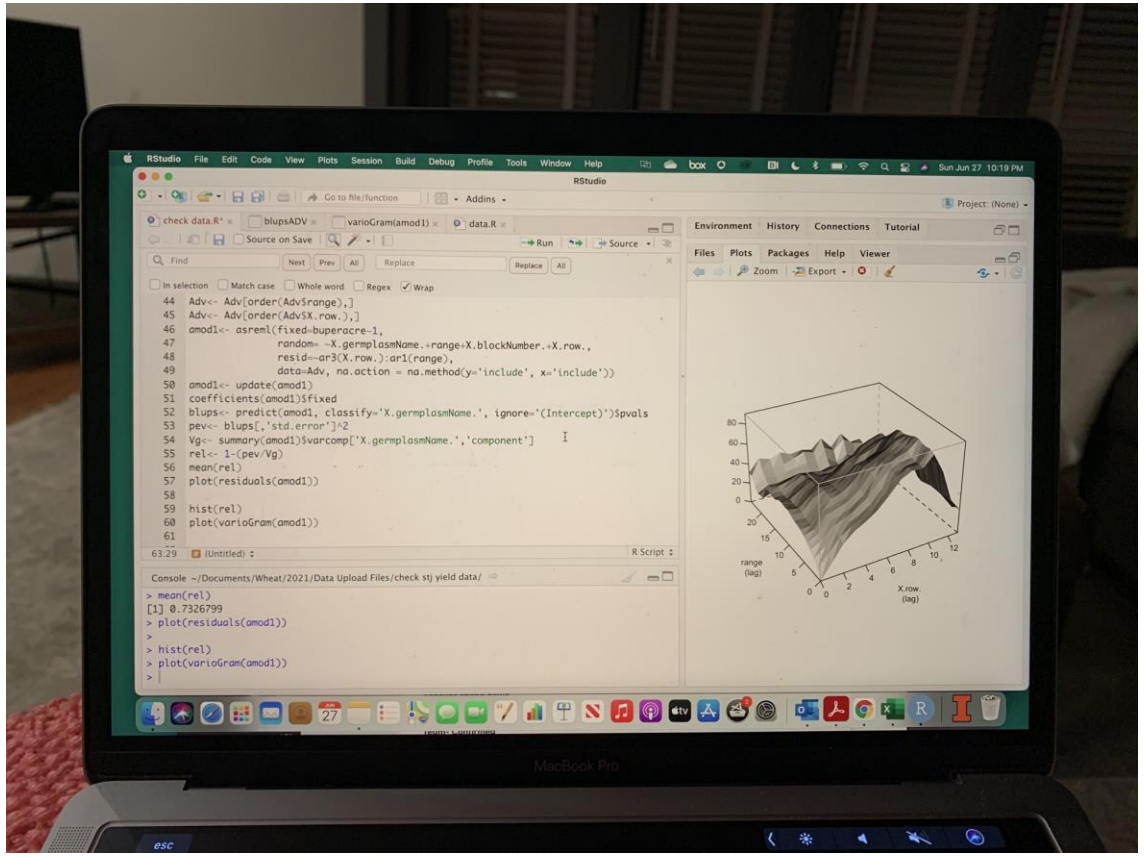


Example: Same-day Yield Trial Analysis

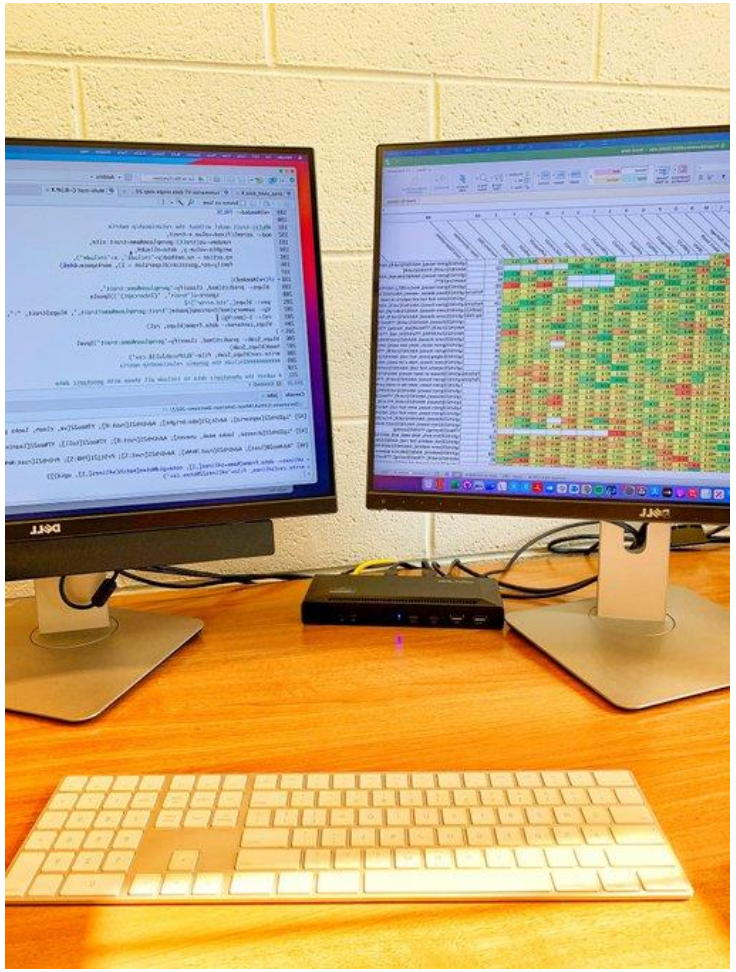
HarvestMaster™

BREEDBASE

R



All data summaries and analyses are completed 12 days after harvest (July 20th)



Gives us time to take thousand kernel weights and treat seeds on all entries prior to seed packing

Thank you

- Juan Arbelaez
- Tadele Kumssa
- Darin Joos
- Lucas Berger Munaro
- Jeremy Logrono
- Raysa Gevartosky
- AJ Ackerman
- Milcah Kigoni
- Anup Dhakal
- Eric Olson
- Clay Sneller
- Dave Van Sanford
- Nicolas Santantonio
- Mohsen Mohammadi
- Fred Kolb

U.S. Wheat & Barley Scab Initiative

NIFA

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WHEAT CAP Coordinated Agricultural Project

SMALL GRAINS