

16th International Rapeseed Congress



Accelerating Breeding Efficiency by Applying High-Throughput Phenotyping and Genomic Prediction Methods in Canola

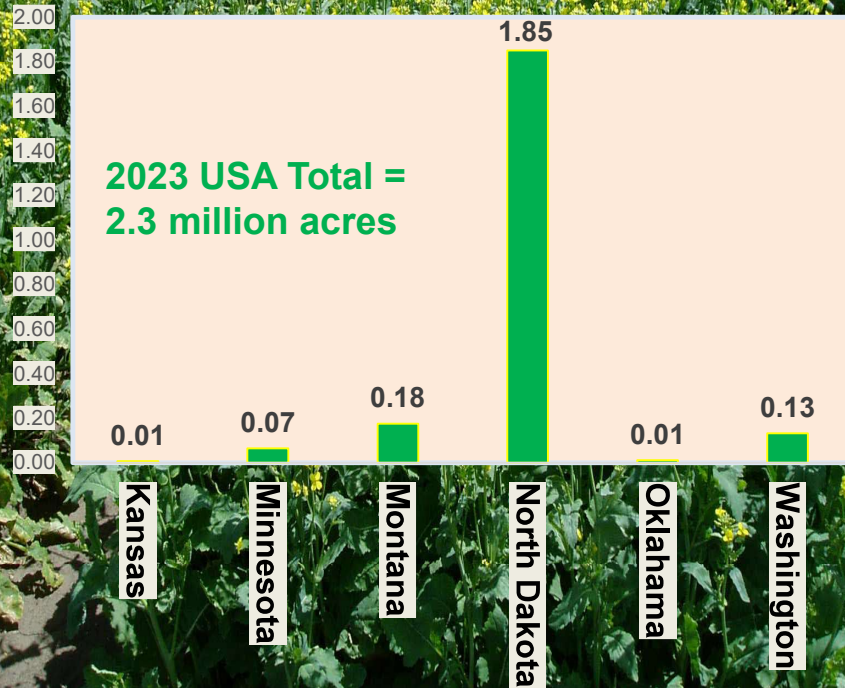


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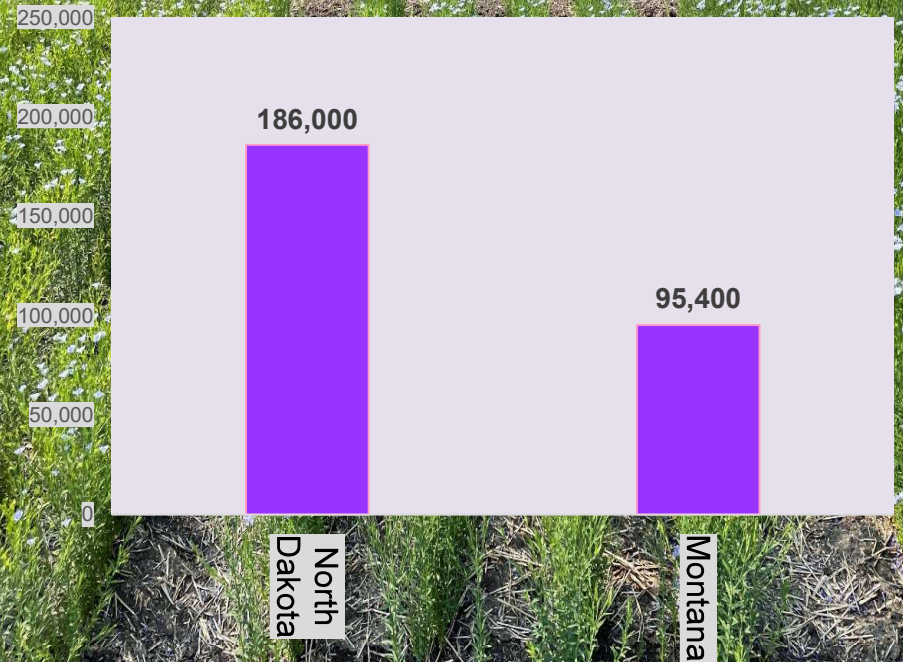
Canola

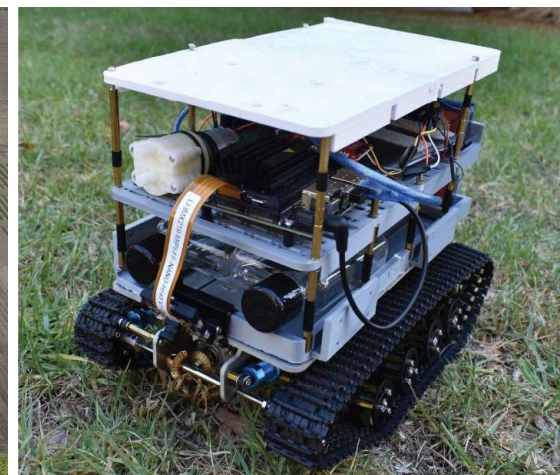
North Dakota Canola = 83%



Flaxseed

North Dakota Flaxseed = 67%





High-throughput Phenotyping (HTP)



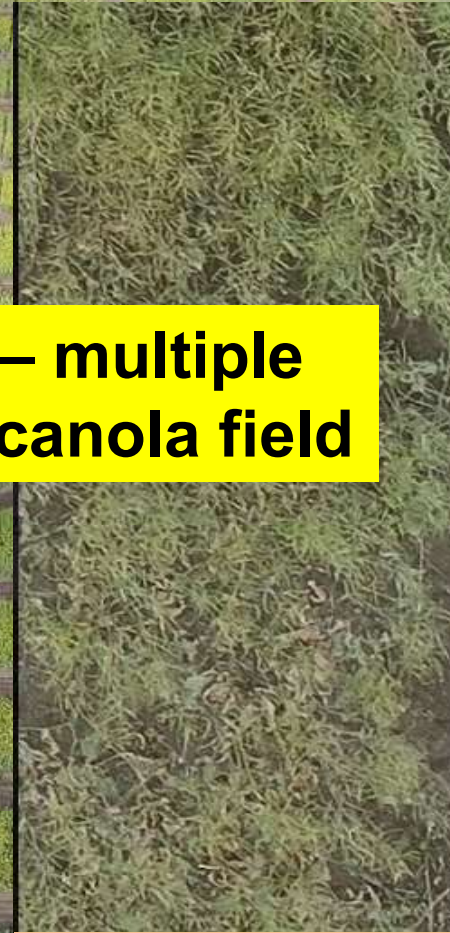
Application of Unmanned Aerial Vehicle (DRONE) for HTP



51 DAS



66 DAS



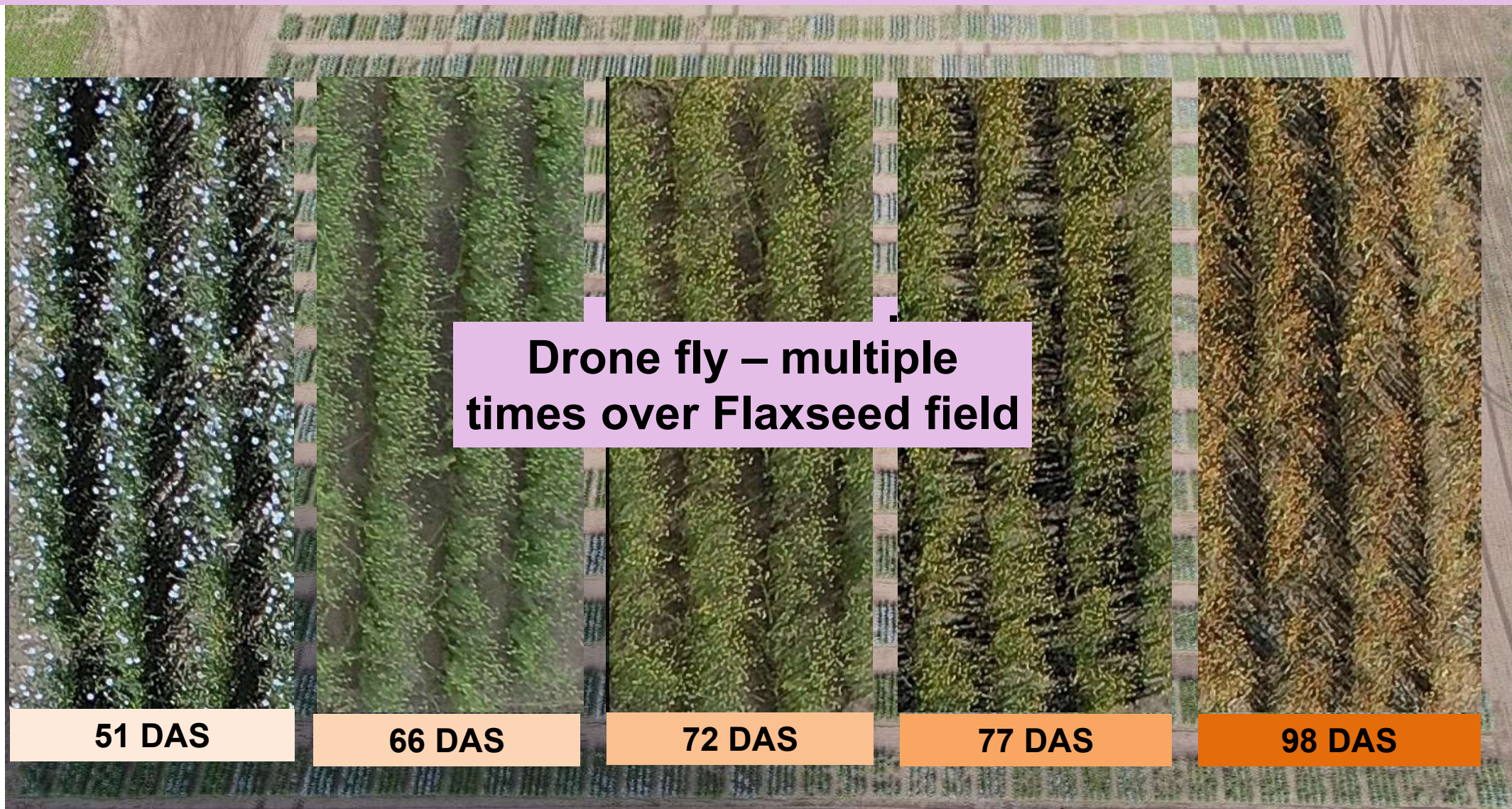
72 DAS



77 DAS

Drone fly – multiple times over canola field

Application of DRONE for High Throughput Phenotyping

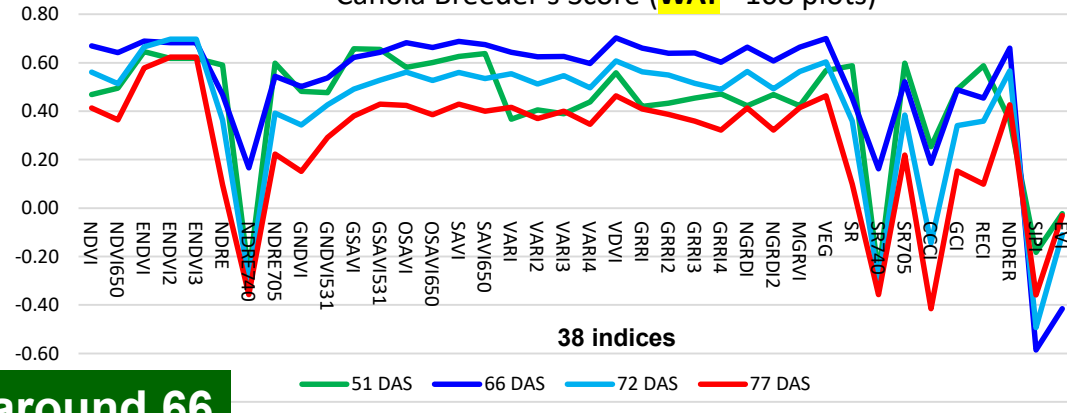
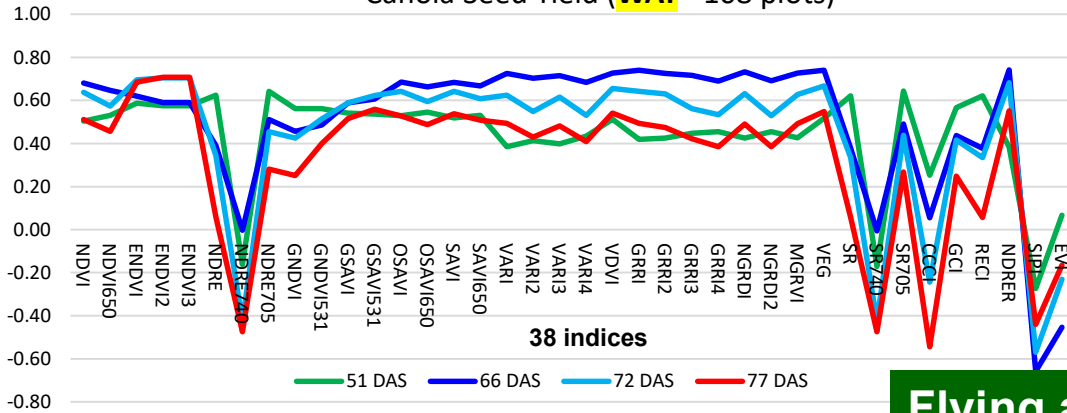


Canola: Pearson's Correlations between Seed Yield and Imagery data

Canola: Pearson's Correlations between Breeder's Score and Imagery data

Canola Seed Yield (**WAT** - 108 plots)

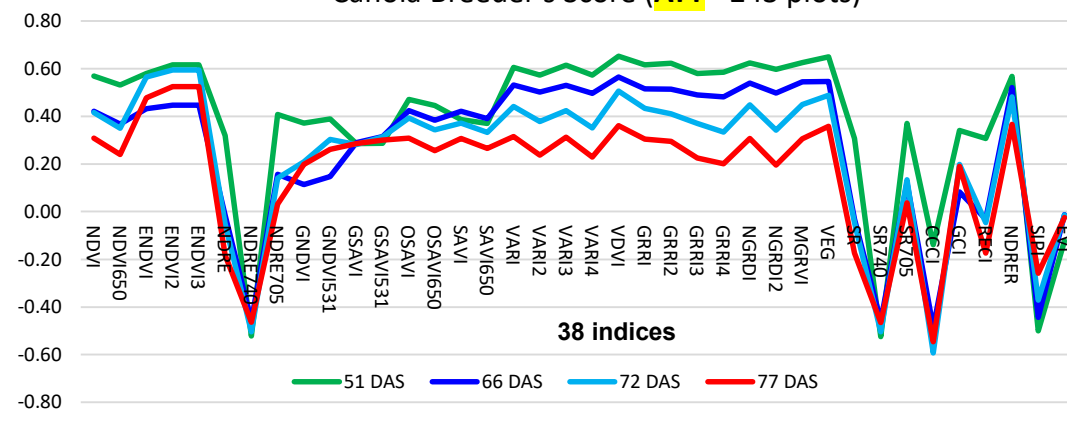
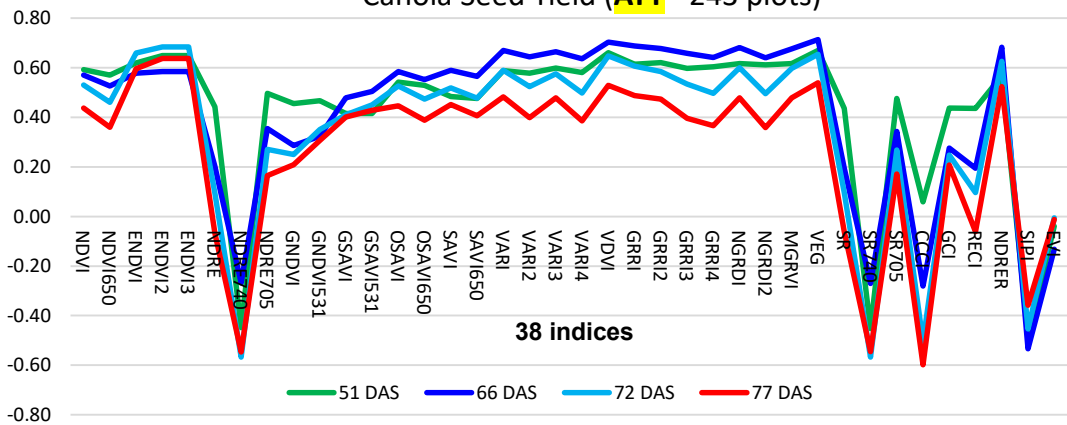
Canola Breeder's Score (**WAT** - 108 plots)



Flying at around 66 DAS is suggested

Canola Seed Yield (**AYT** - 243 plots)

Canola Breeder's Score (**AYT** - 243 plots)

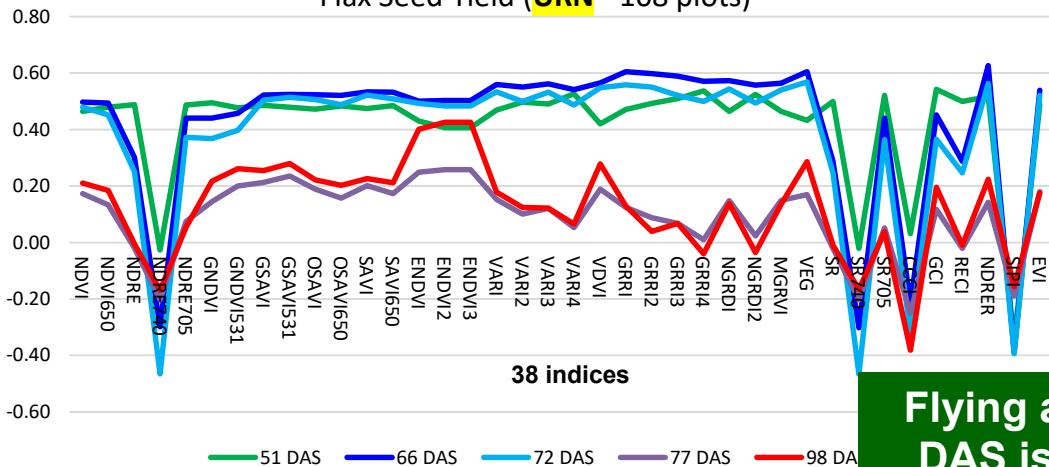


Canola: Pearson's Correlations between Seed Yield and Breeder's Score

	Breeder's Score (WAT)	Breeder's Score (AYT)
Yield (WAT)	0.98****	
Yield (AYT)		0.98****

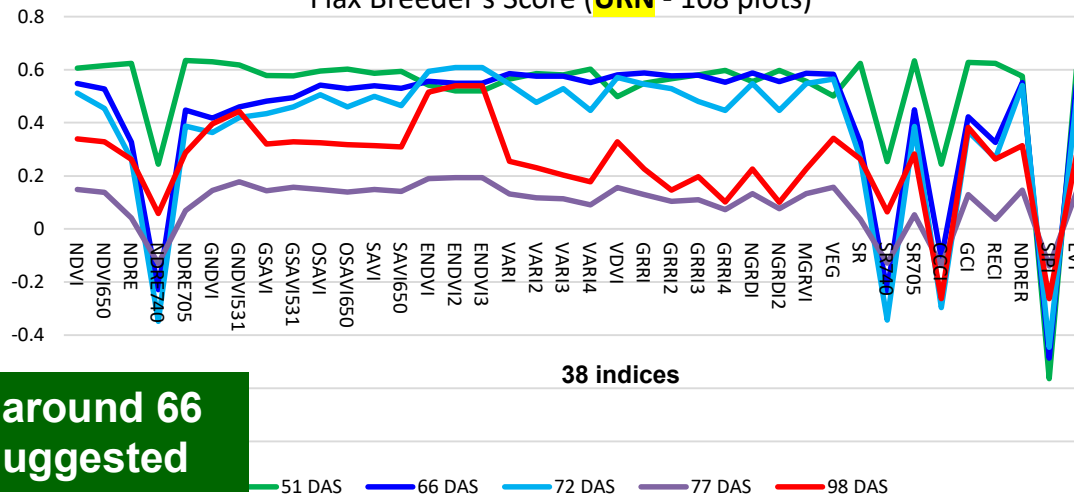
FLAX: Pearson's Correlations between Seed Yield and Imagery data

Flax Seed Yield (**URN** - 108 plots)

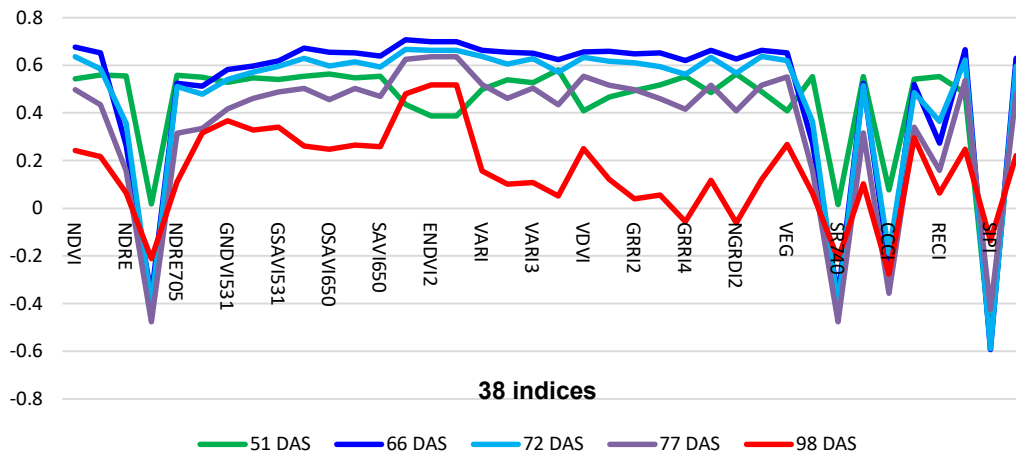


FLAX: Pearson's Correlations between Breeder's Score and Imagery data

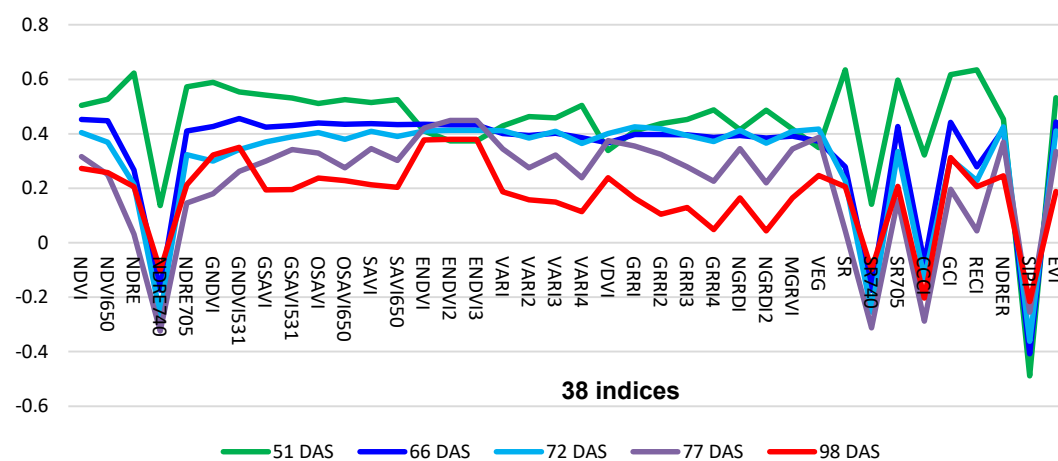
Flax Breeder's Score (**URN** - 108 plots)



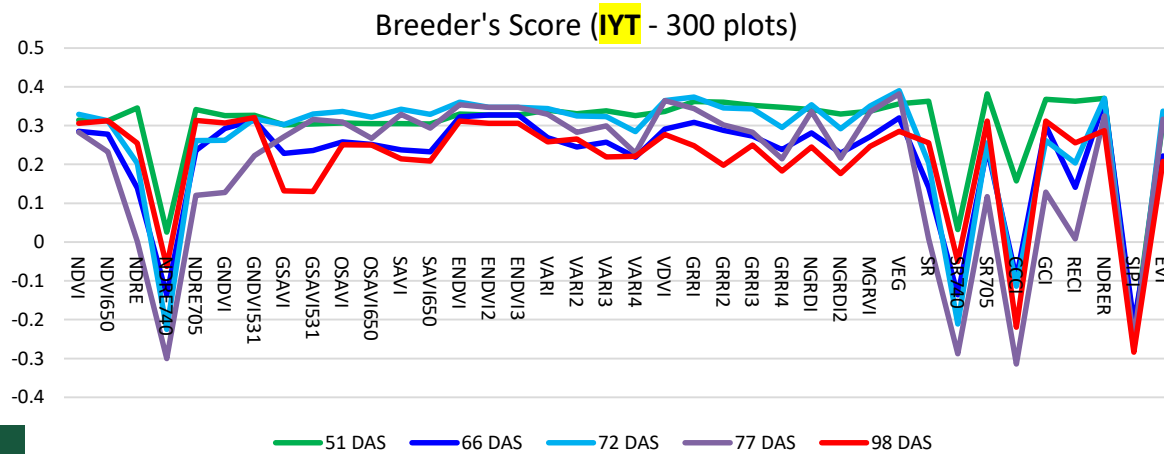
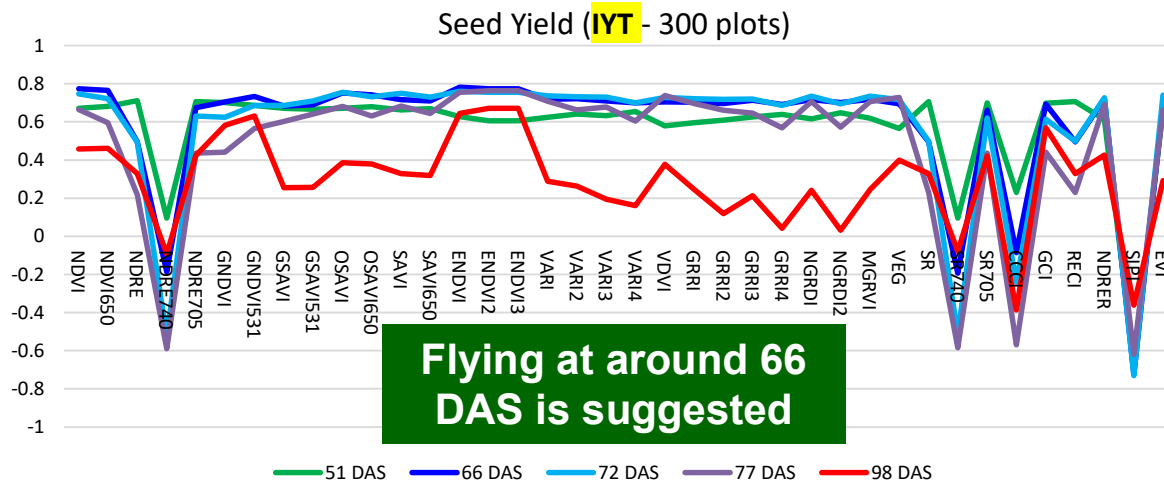
Flax Seed Yield (**AYT** - 147 plots)

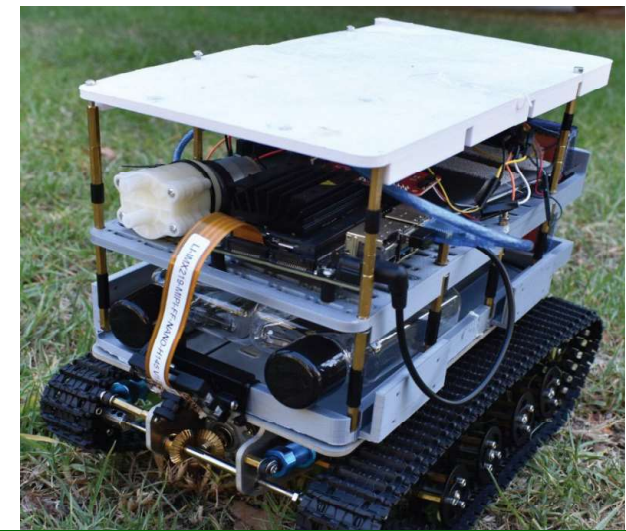
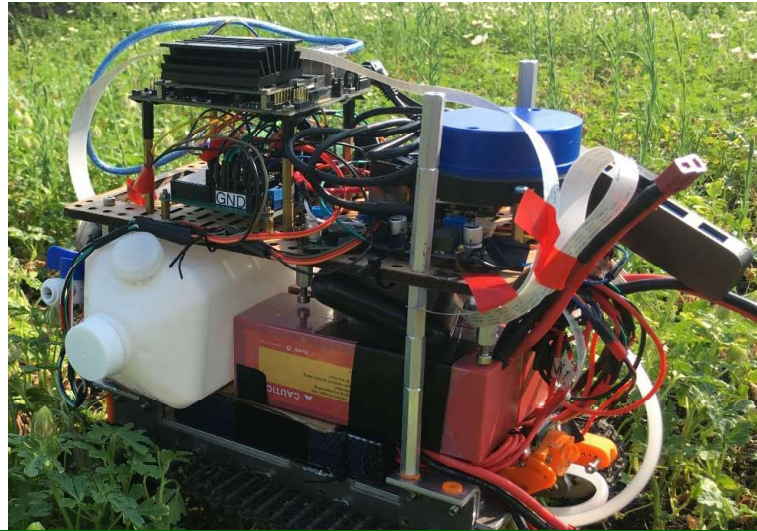
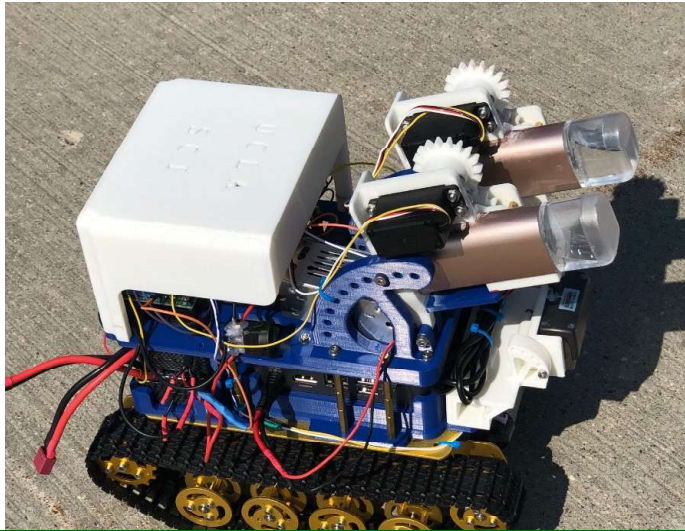


Flax Breeder's Score (**AYT** - 147 plots)



FLAX: Pearson's Correlations between Seed Yield and Imagery data

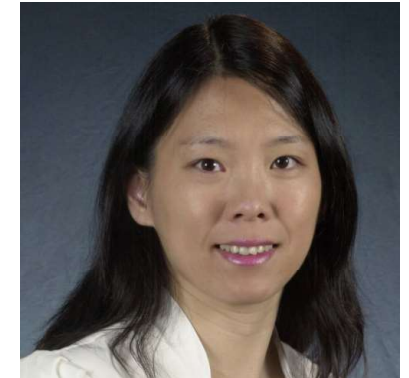




Application of ROBOT for Precision Agriculture



Dr. Khalid Jawed



Dr. Wei Wang

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