

A photograph of a field trial plot. The plot is enclosed in a black mesh fence supported by white poles. Inside the plot, there are several rows of green grass plants growing in dark soil. Each plant is marked with a small orange wooden stake. The plants are arranged in a grid pattern. In the background, there are more plants and some pink and orange flags. The overall scene is a well-maintained agricultural experiment.

**PSG Meeting 5<sup>th</sup> February, 2020**  
**2019 Field Trial Update**

# Three Experiments

## Experiment A

- Clonal replicates of ODR6205 T<sub>2</sub> Family E

## Experiment C

- ODR6205 T<sub>2</sub> Families O and M

## Experiment D

- AR1 Endophyte in ODR4501 T<sub>2</sub> and ODR6205 T<sub>2</sub>

Replicated swards and a few space plants

**Hypothesis 1: ODR6205 T<sub>2</sub> plants have an increase in foliar lipids compared to their null controls**

**Hypothesis 2: ODR6205 T<sub>2</sub> plants have an increase in harvestable biomass compared to their null controls**

# Harvest Dates

## Transplant date

Experiments C and D 21<sup>st</sup> May

Experiment A 10<sup>th</sup> June

H1. 25<sup>th</sup> June (Experiment A was at 3 leaf stage, Experiments C and D at 5 leaf stage)

H2. 23<sup>rd</sup> July

H3. 19<sup>th</sup> August

H4. 16<sup>th</sup> September

H5. 8<sup>th</sup> October

Termination 11<sup>th</sup> October



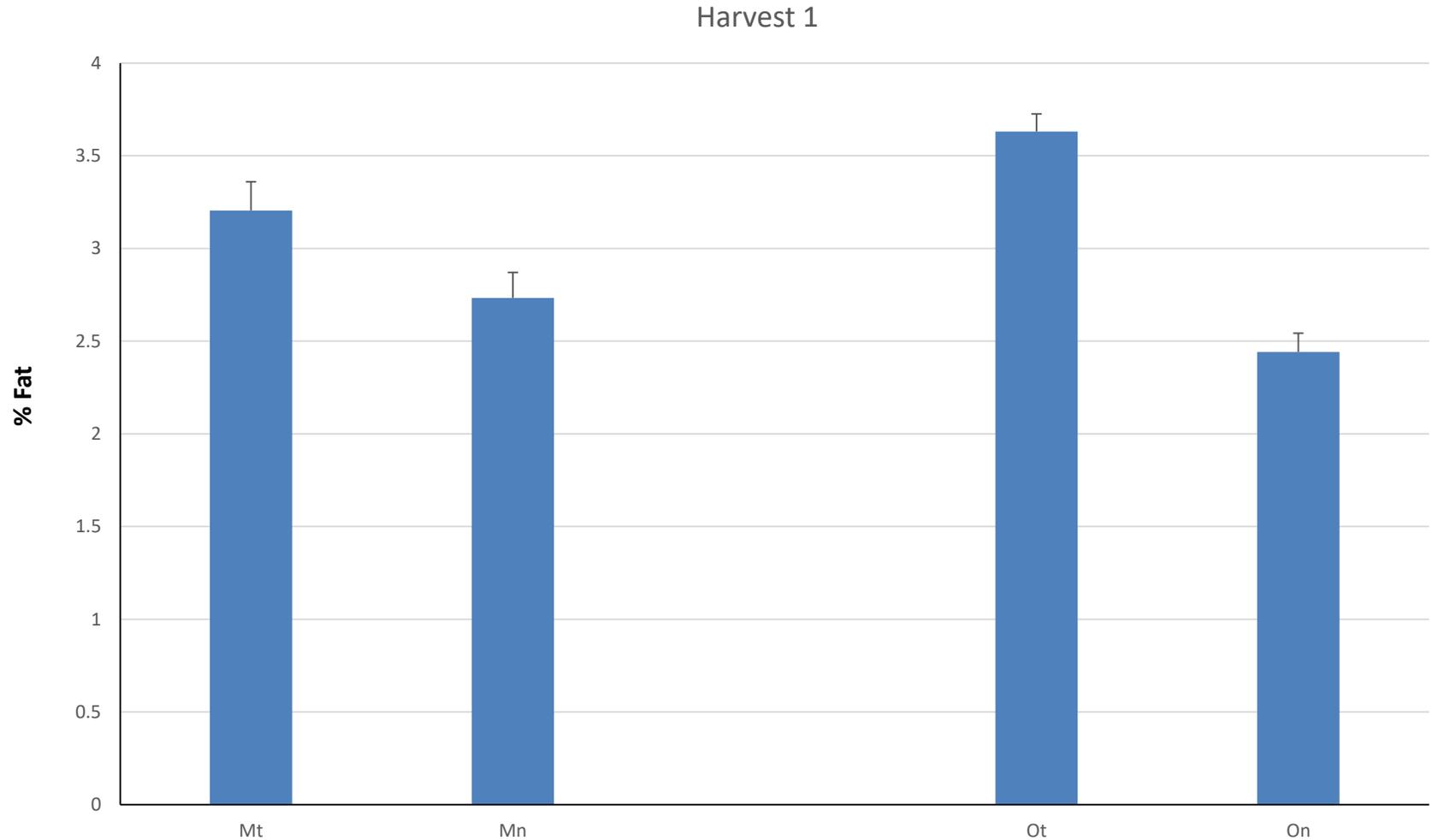
23<sup>rd</sup> July  
Harvest 2



# Fatty Acid Phenotype Harvest 1 (25<sup>th</sup> June)

**Family M 17% increase**

**Family O 49% increase**

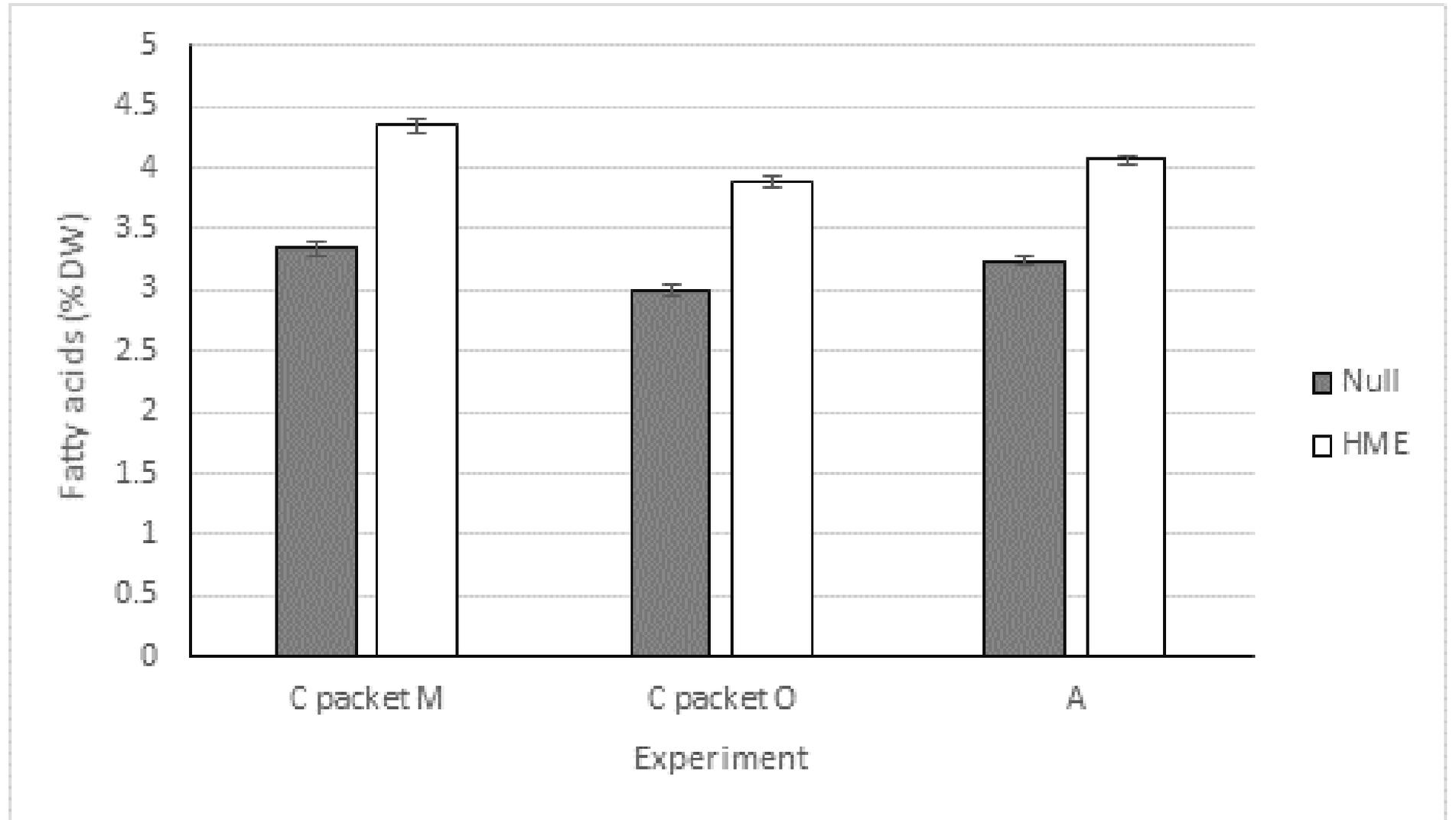


# Fatty Acid Phenotype Harvest 5 (8<sup>th</sup> October)

**Experiment C**  
**Family M 29.9% increase**

**Family O 29.7% increase**

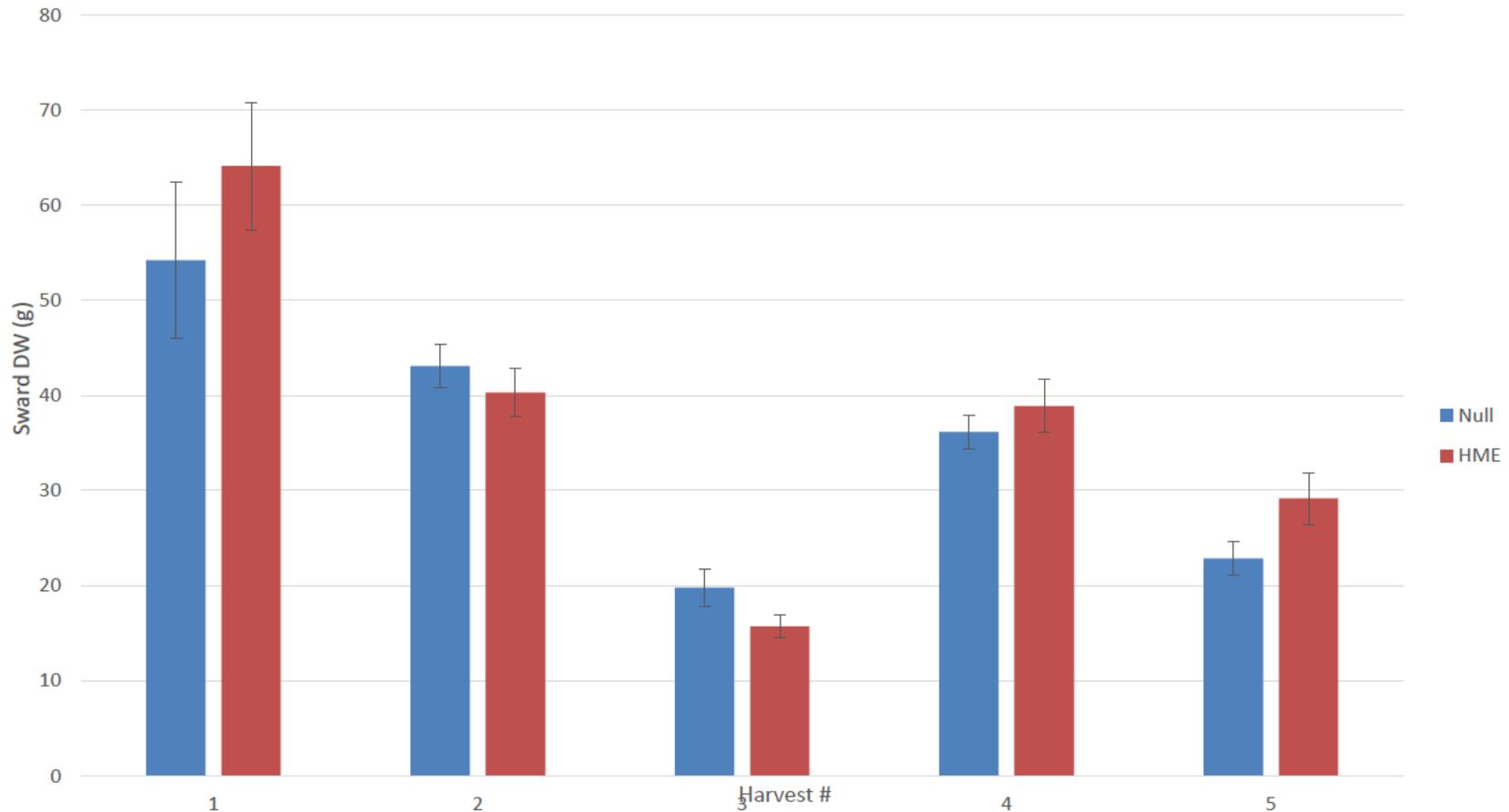
**Experiment A**  
**Family E 25% increase**



# Harvest Dry Weights Family M

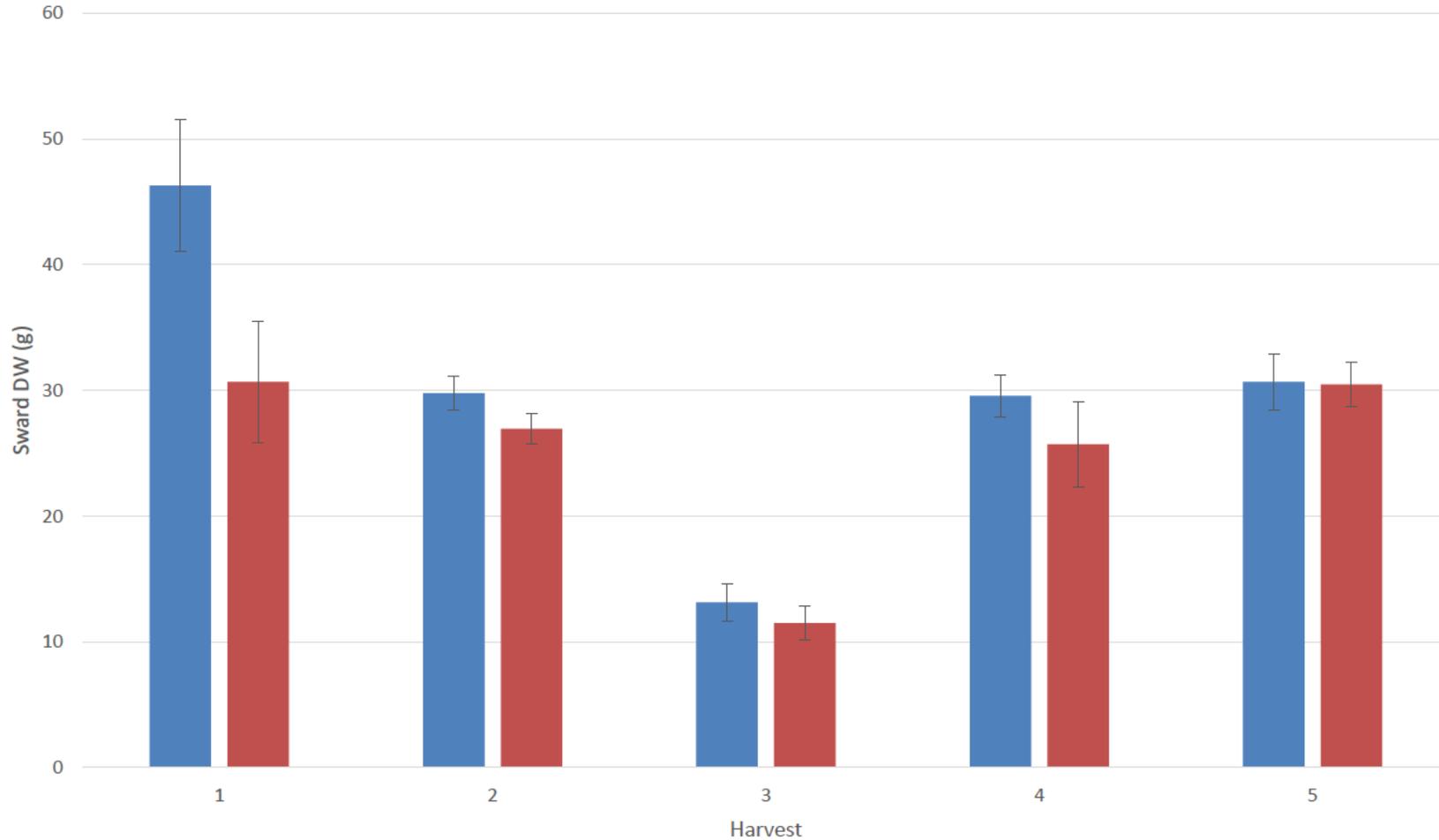
Packet M

**No significant difference H1-H4 but transgenic had significant yield increase at H5**



# Harvest Dry Weights Family O

Packet O

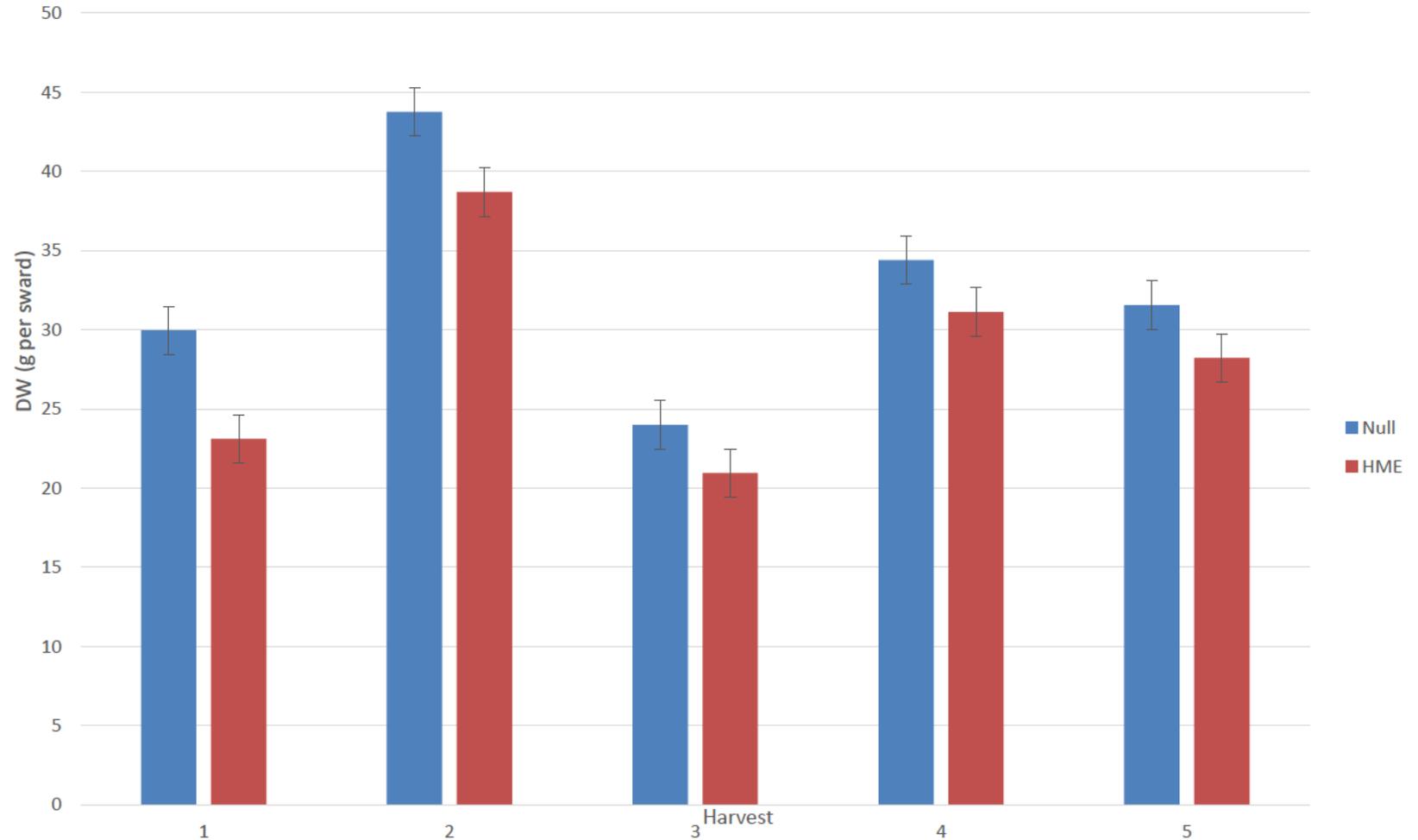


**Yield penalty in H1 for transgenic but no significant difference H2-H5**



# Harvest Dry Weights Experiment A, Family E

**10 – 20% yield penalty  
for transgenic at each  
harvest**



## Summary

For three hemizygous T<sub>2</sub> families (M, O and E) of ODR6205 we saw:

### Family M

- 17 and 30% increase in leaf fatty acids in H1 and H5 respectively
- No significant differences in growth between transgenic and null except H5

### Family O

- 49 and 30% increase in leaf fatty acids in H1 and H5 respectively
- Transgenic swards started with a yield penalty in H1 but caught up in remaining harvests

### Family E (Experiment A clonal replicates)

- Yield penalty in all harvests and 25% increase in leaf lipids at H5

## Next Steps

- The workload is massive and we are processing the samples as rapidly as possible
- For example for Experiment C we have 180 samples x 5 harvests. Each experiment takes several weeks to process and analyse.
- Do not expect to be completed before early May
- Final report to be provided for 7<sup>th</sup> May PSG meeting
- Will combine data with analysis from containment and submit manuscript in high profile journal around June