Effect of Treatments after 85 years on Soil Carbon

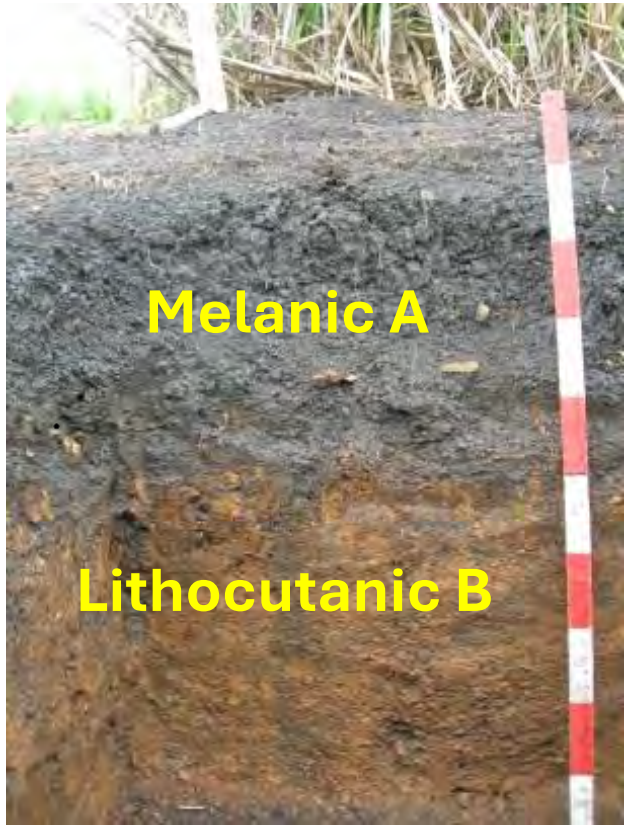
Thandile Mdlambuzi

Thandile.Mdlambuzi@sugar.org.za

2024

BT1 – A Valuable Asset

- **BT1 is a SASRI project**: Greatly contributed to understanding of SOM loss under sugarcane monocropping
- Established on **25 October 1939**
- Long term trial planted on a very ***Clayey Soil***
- Very little contamination between plots



2024

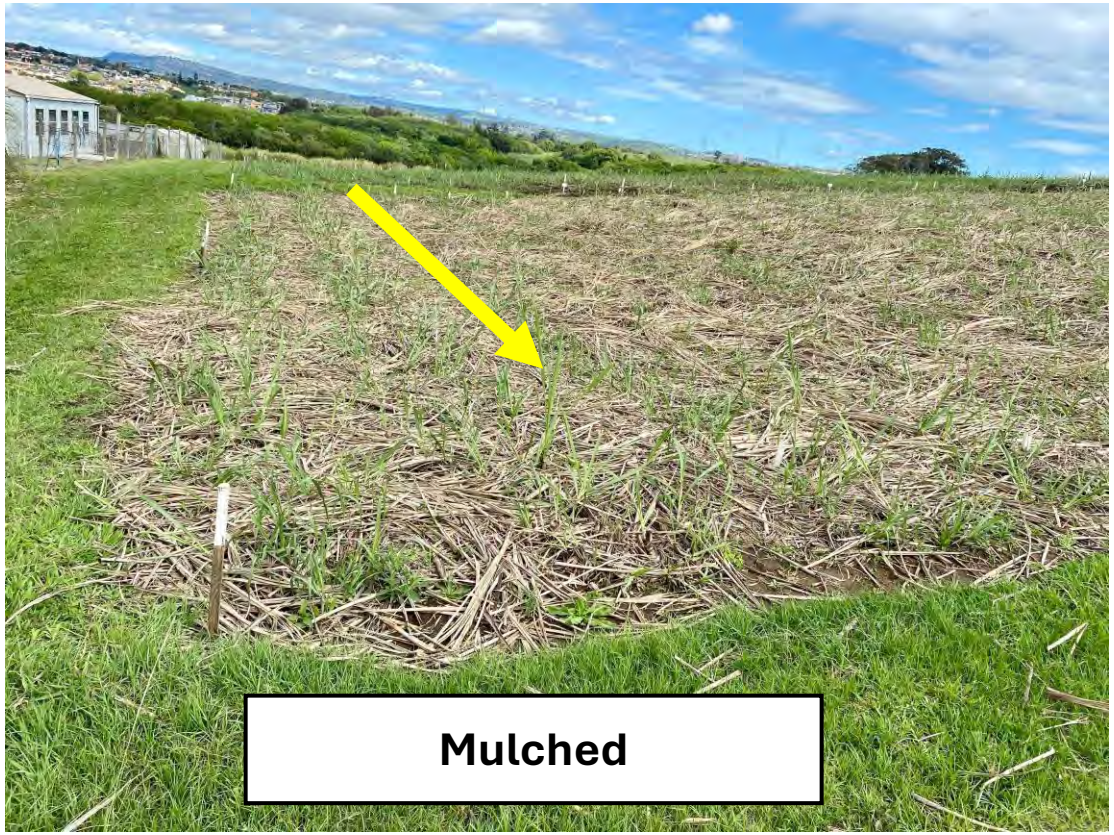
BT1 treatments

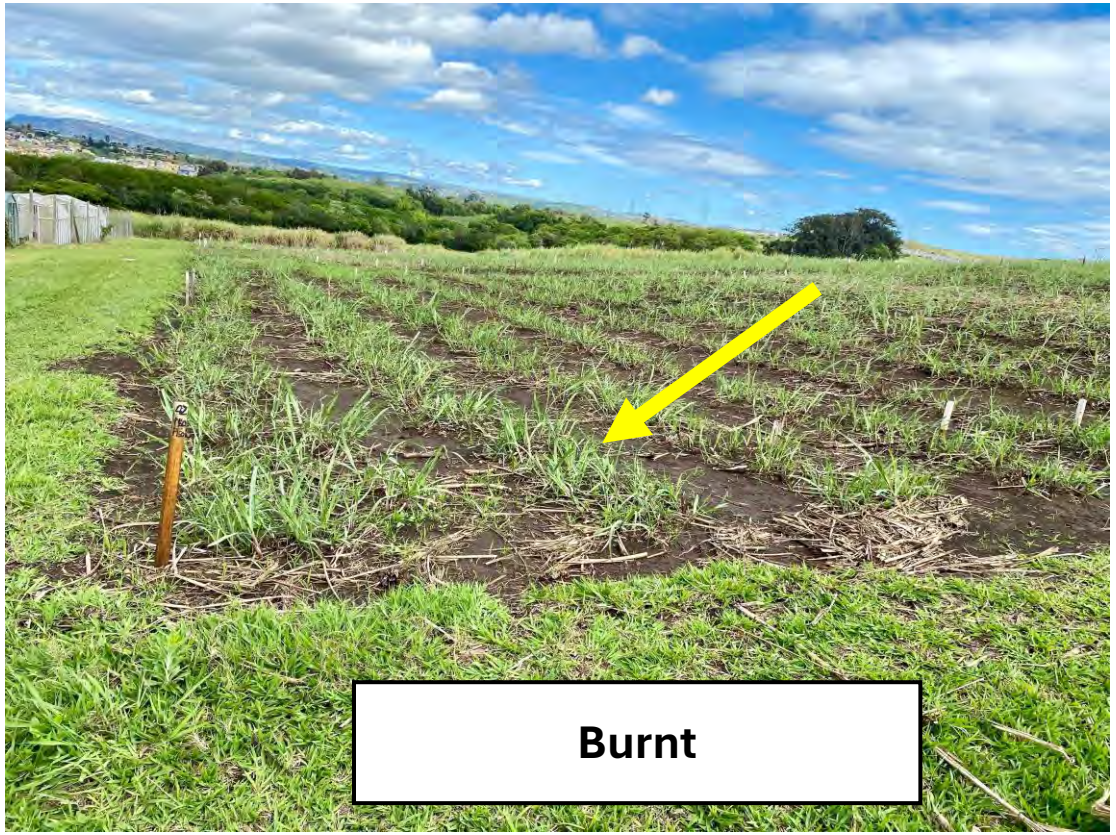
Code	Treatments			OM
BtoFo	Burnt	Tops removed	No Fertiliser	Zero
BtFo	Burnt	Tops retained	No Fertiliser	Little
MFo	Mulched		No Fertiliser	Max
BtoF	Burnt	Tops removed	Fertilised	Zero
BtF	Burnt	Tops retained	Fertilised	Little
MF	Mulched		Fertilised	Max

Contrasting treatments = MF vs BtoFo or MF vs BtoF

2024

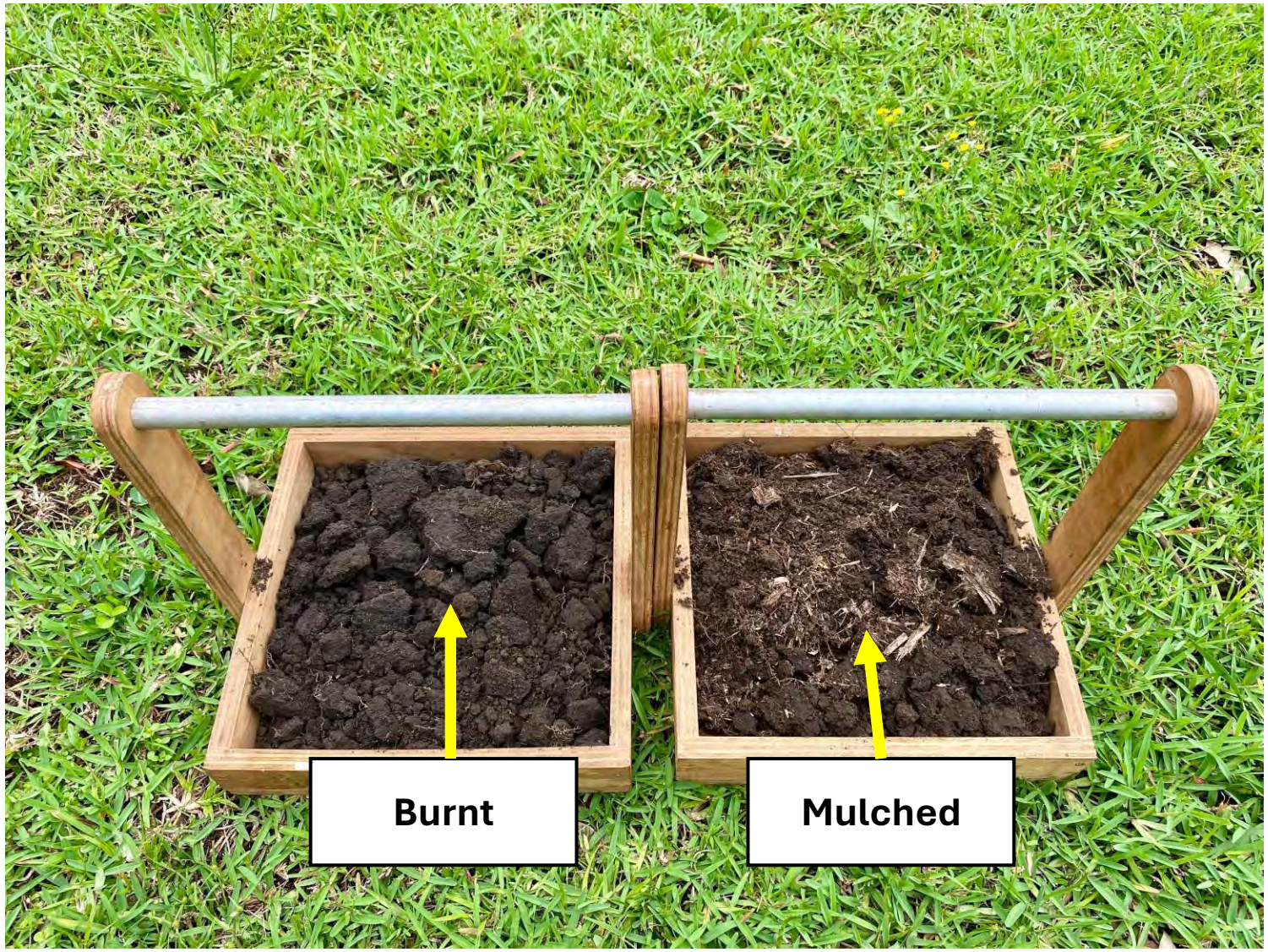
Mulching and burning of cane





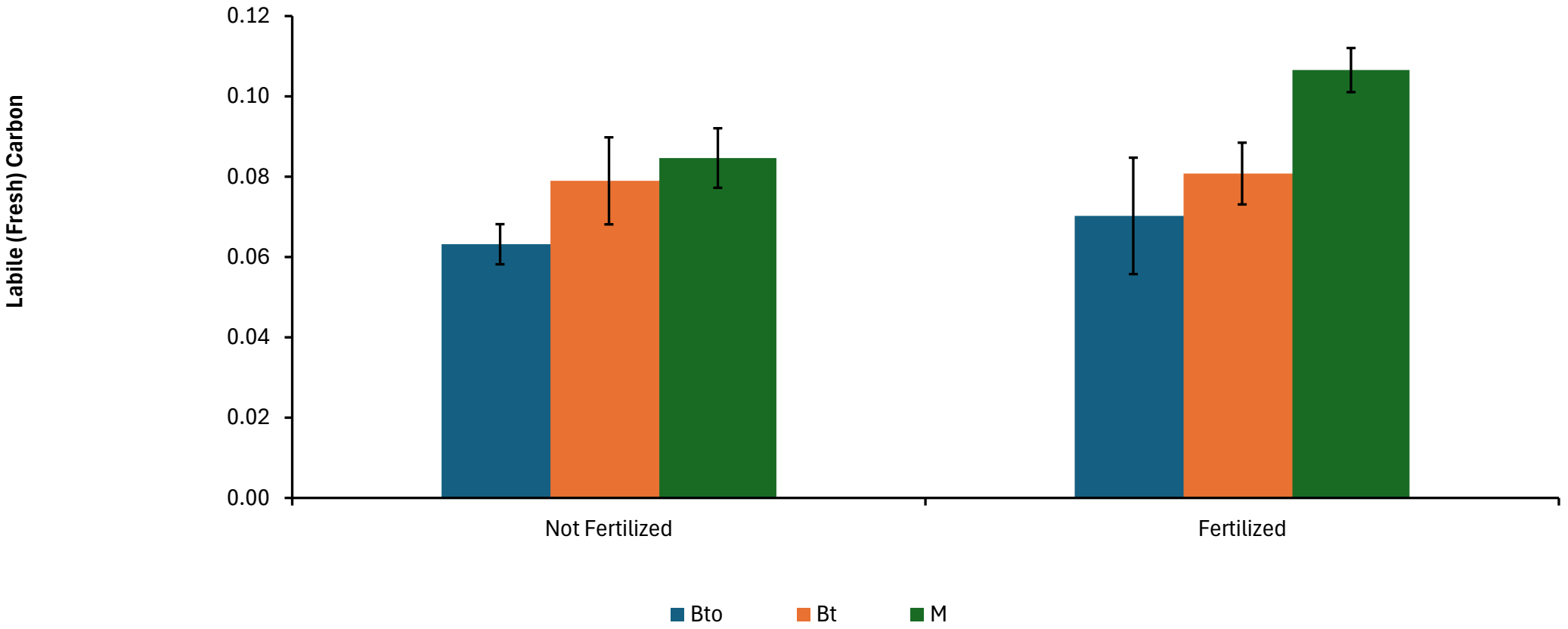
2024

Freshly sampled plots



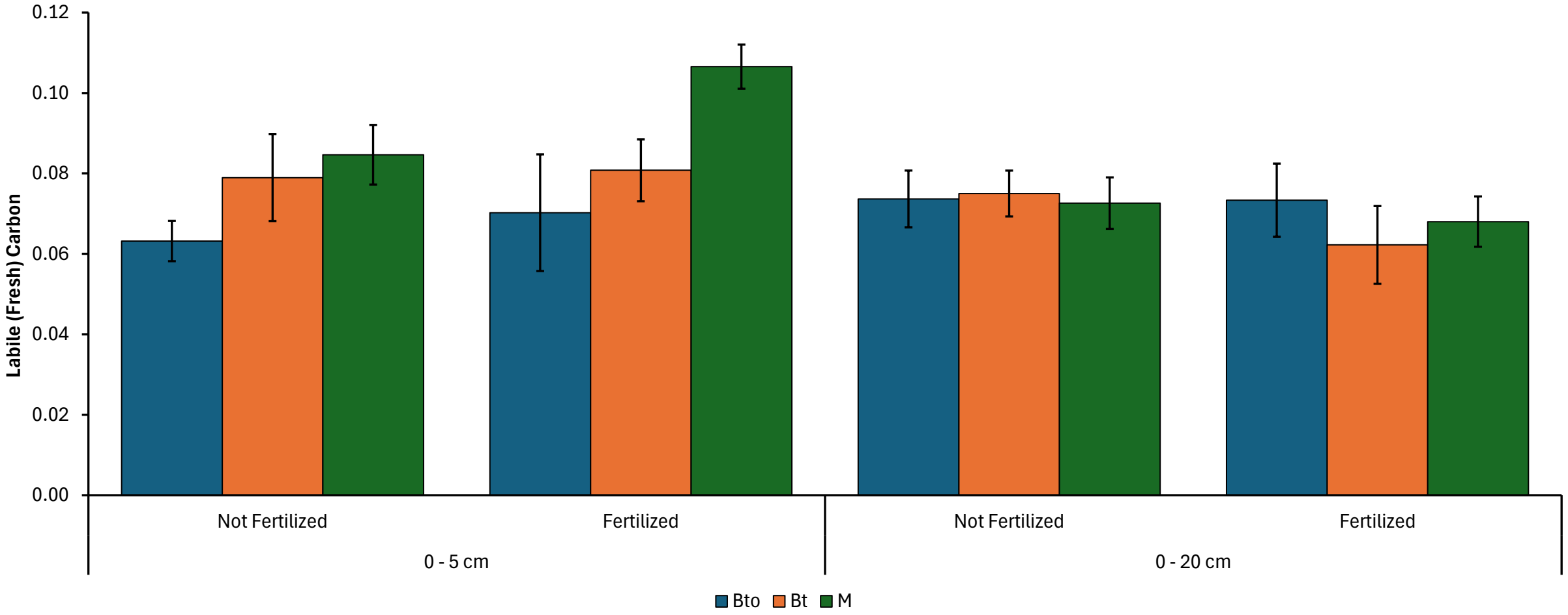
2024

Effect of management practices on fresh carbon at 0 - 5 cm depth

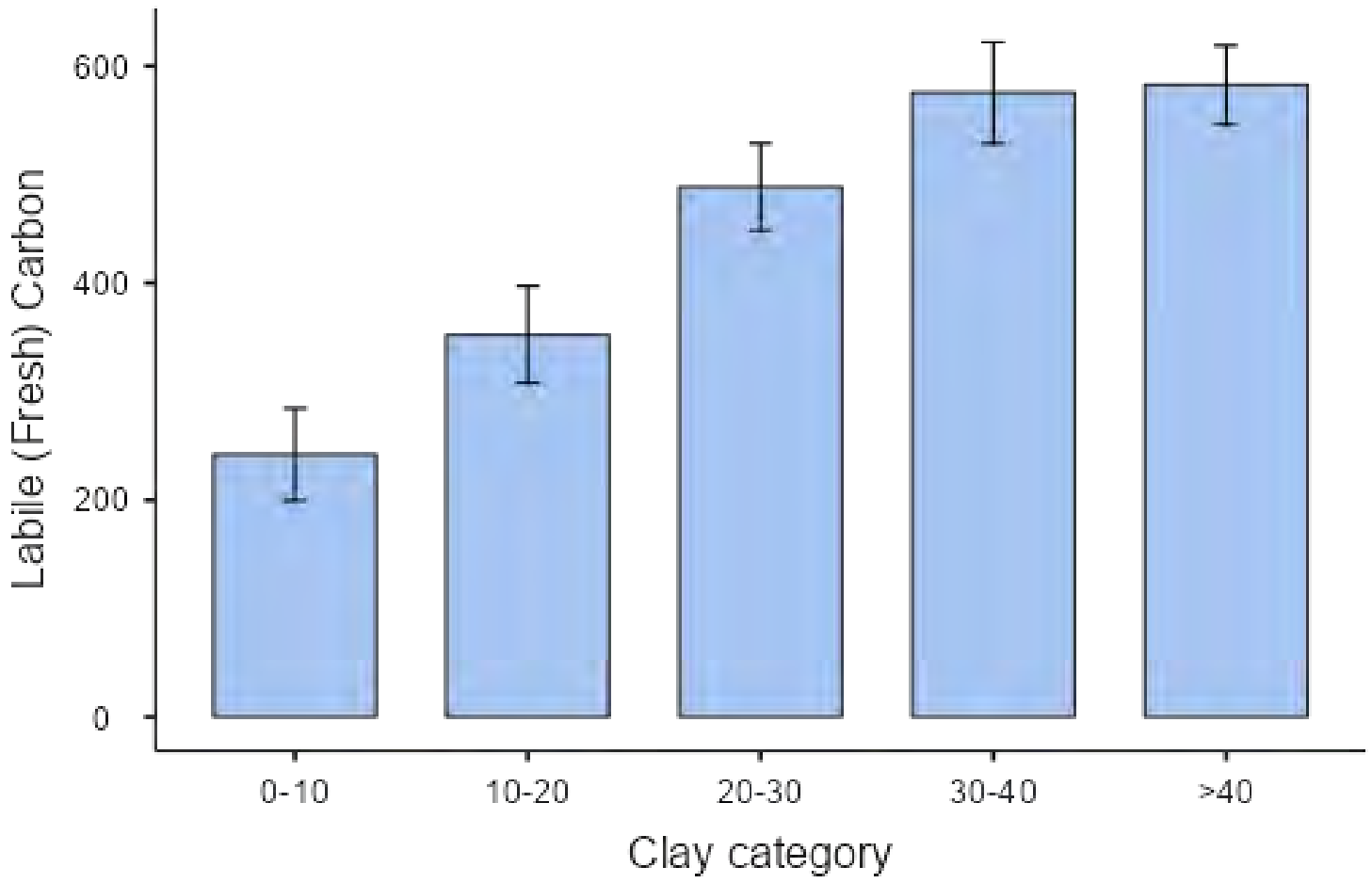


2024

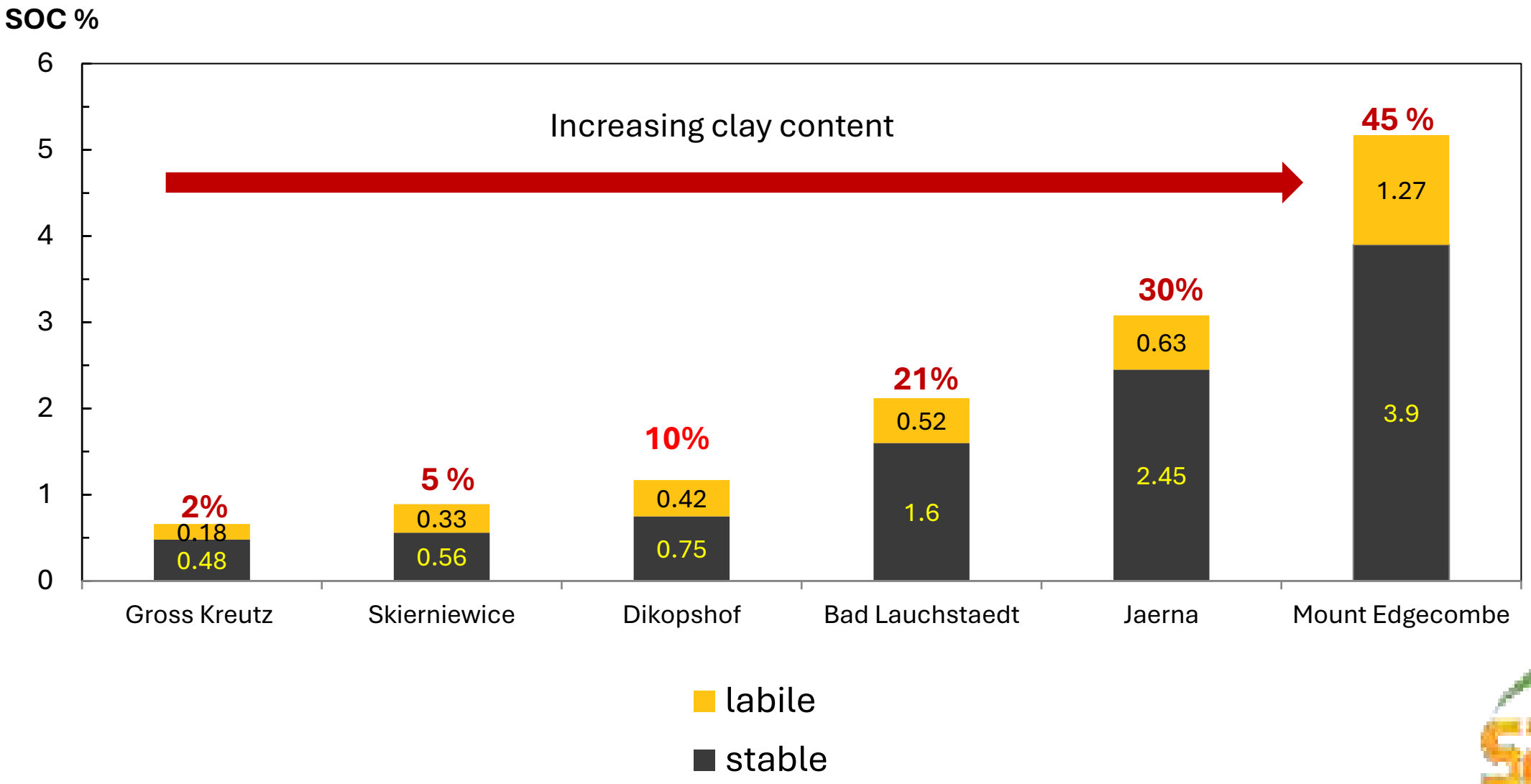
Effect of management practices on fresh carbon at 0 - 5 and 0 - 20 cm soil depths



Effect of texture (clay) on fresh carbon



Labile carbon trends



2024

END OF SHOW & TELL

Effect of treatments on soil carbon

- Carbon (Need to show two trays of fresh topsoil from two contrasting treatments and residue samples – 1 yr old vs fresh. Also need good pictures of 1) these two trays and 2) surface cover of two contrasting treatments). See example of trays in slide 5 below.
- From your SASIAA presentation shortly discuss:
  - Figure 1
  - Figure 3
  - Figure 2 or Figure X (see next slide comparing sites in Germany to BT1)
- Please note: Convert the y-axis units in your Figures 1-3 to %. It is much more understandable.