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## Background

- In tropics, the cultivation of various high-yielding grasses for cattle feeding has become increasingly prevalent.
- In Bangladesh, grass types such as Napier Pakchong, German, and Maize are commonly cultivated for dairy cow feeding.

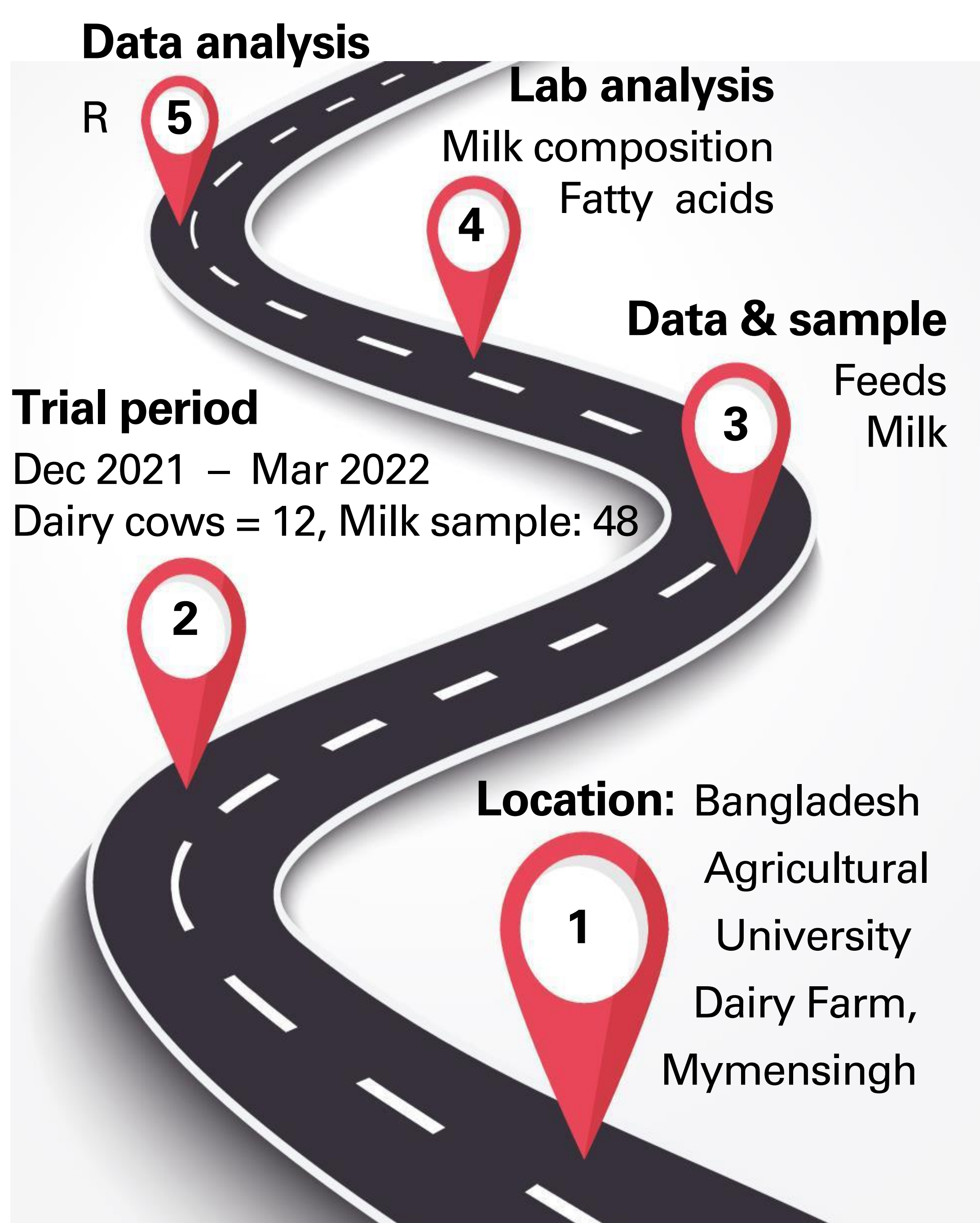
However, the impact of these grasses on the quality of cow's milk remains unclear.



Fig. 1 Preparation of feedstuffs for trials at the Bangladesh Agricultural University Dairy Farm.

**Aim:** We investigate the effects of Napier Pakchong, German, and Maize grass on milk production and quality, focusing on milk composition and fatty acid (FA) profile.

## Methodology



## Results

Grasses do not effect milk yield or composition, although the roughage & concentrate ratio varied significantly ( $P < 0.05$ ) (Tab. 1).

Tab. 1: Effect of grass treatment on diet, milk yield & it's composition. Number of cows in trial: 12, number of milk sample: 48

Item	Grass type			SEM
	Napier Pakchong	German	Maize	
Roughage	5.78 <sup>b</sup>	5.79 <sup>b</sup>	6.13 <sup>a</sup>	0.09
Concentrate	4.14 <sup>a</sup>	4.05 <sup>a</sup>	3.81 <sup>b</sup>	0.06
Milk yield (kg/d)	7.01	6.69	7.03	0.42
Fat (%)	4.87	4.97	5.02	0.12
Protein (%)	2.83	2.81	2.88	0.02

- German grass-fed group: Fat & Lactose yield -  
+ Correlation +  
- Napier Pakchong grass-fed group : Milk & protein yield -

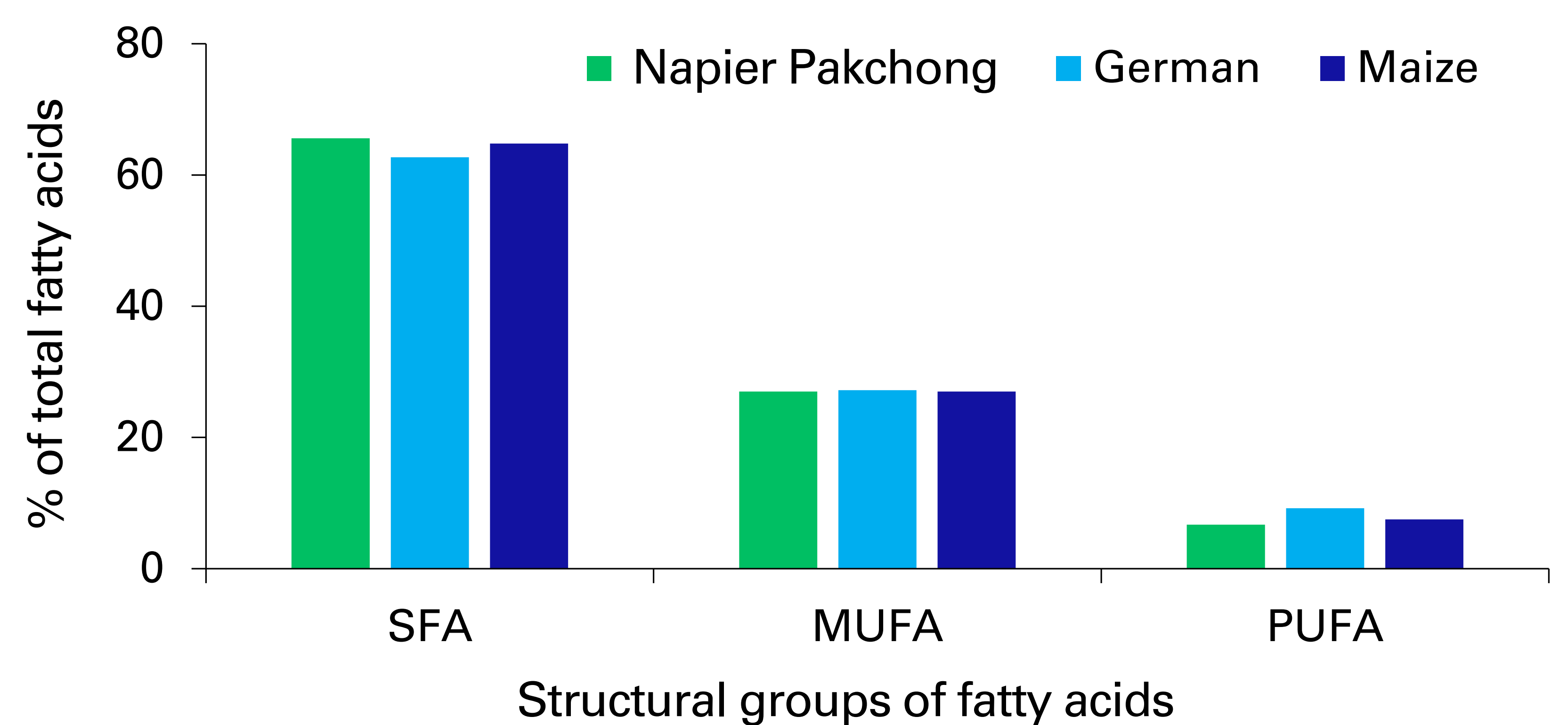



Figure 2. Effect of various grass treatment on structural group of fatty acid. Values are expressed in percent of total fatty acids.

- The German grass-fed group showed lower saturated FA than the other groups ( $p > 0.05$ ) (Figure 2).
- The redundancy analysis revealed that milk from cows fed with Napier Pak chong grass had a positive correlation with monounsaturated FA ( $p = 0.001$ ). While milk from German grass-fed cows showed a positive correlation with both polyunsaturated and monounsaturated FA, milk from Maize grass-fed cows was positively correlated with saturated FA ( $p > 0.05$ ).



### Highlights

- Milk yield and composition are similar for all grasses.
- German grass showed lower saturated FA.
- Napier Pakchong grass had a positive correlation with monounsaturated FA