

Conservation characteristics of maize cultivars ensiled as whole-crop, cob or stover at sequential stages of maturity.



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1. Introduction

- High starch maize is a quality feed for ruminants.
- In Ireland, unfavourable climatic conditions can result in poor yields of an under-developed crop.
- This study evaluated the effects of harvest date on the conservation characteristics of cob, stover and whole-crop from maize cultivars selected for cold tolerance, high biomass and conventional* use.

* = Recommended varieties currently grown for ensiling as a ruminant feed.

2. Methods

- 3 harvest dates (main plots) x 6 cultivars (sub-plots) x 3 replicate blocks

Harvest dates
16 September
7 October
28 October

Cultivars

Tassilo (T)	} Conventional
Beethoven (B)	
Andante (An)	} Cold tolerant
Nescio (N)	
Atletico (At)	} High biomass
KXA 7211 (K)	

- Ensiled as either whole-crop, cob or stover in laboratory silos for 130 days

3. Results

Figure 1. DM concentration and total fermentation products (TFP) of whole-crop maize - effects of harvest (A) and cultivar (B)

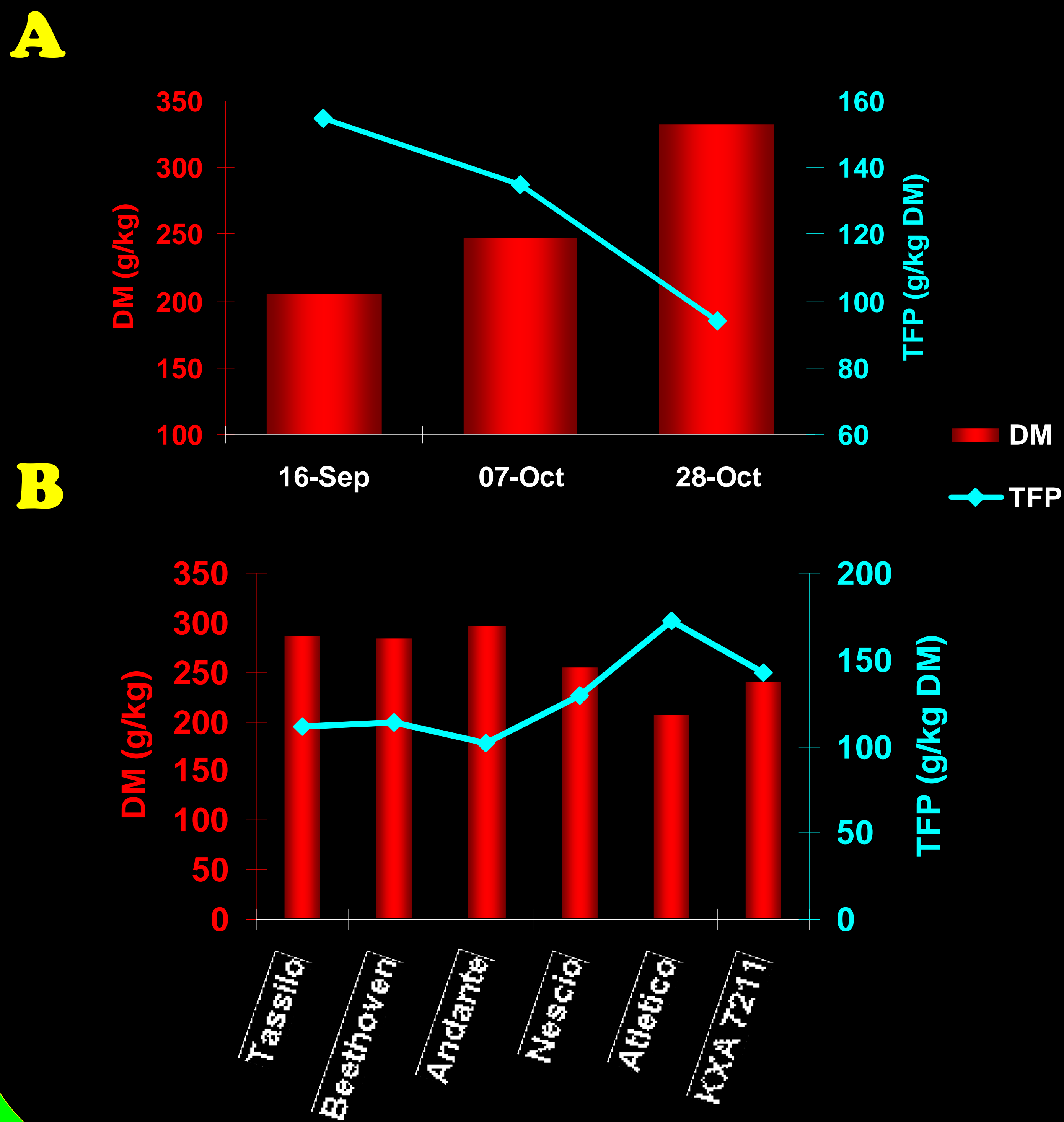
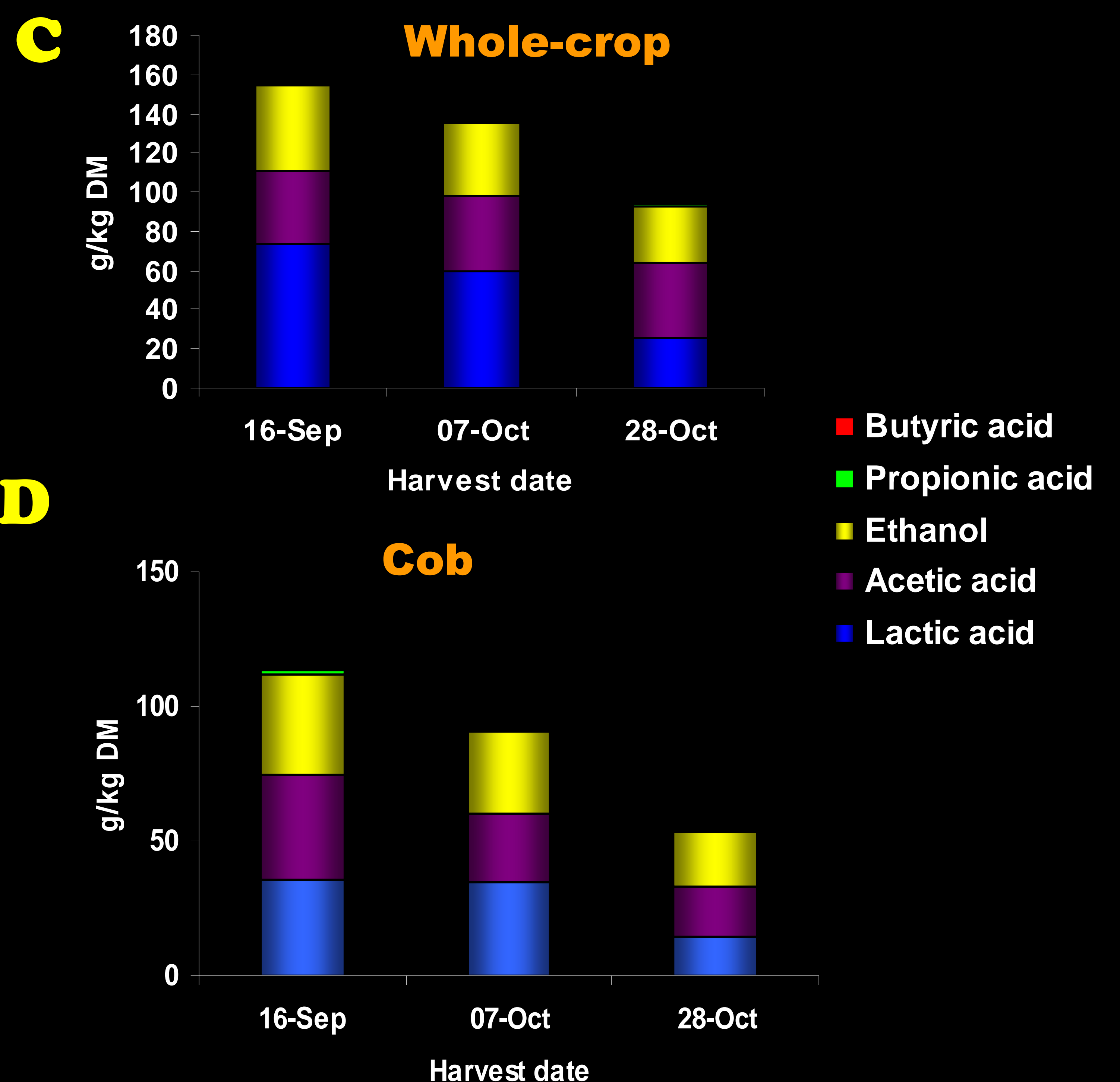


Figure 2. Effects of harvest date on fermentation products of whole-crop maize (C) and cob (D)



4. Conclusions

- Later harvesting resulted in a more restricted fermentation due to increasing DM concentration.
- High biomass crops had a more extensive fermentation due to their lower DM concentration.
- The proportion of total fermentation products in both whole-crop and cob silages that is lactic acid decreased with later harvesting, indicating a shift from homofermentative to heterofermentative lactic acid bacteria activity.