

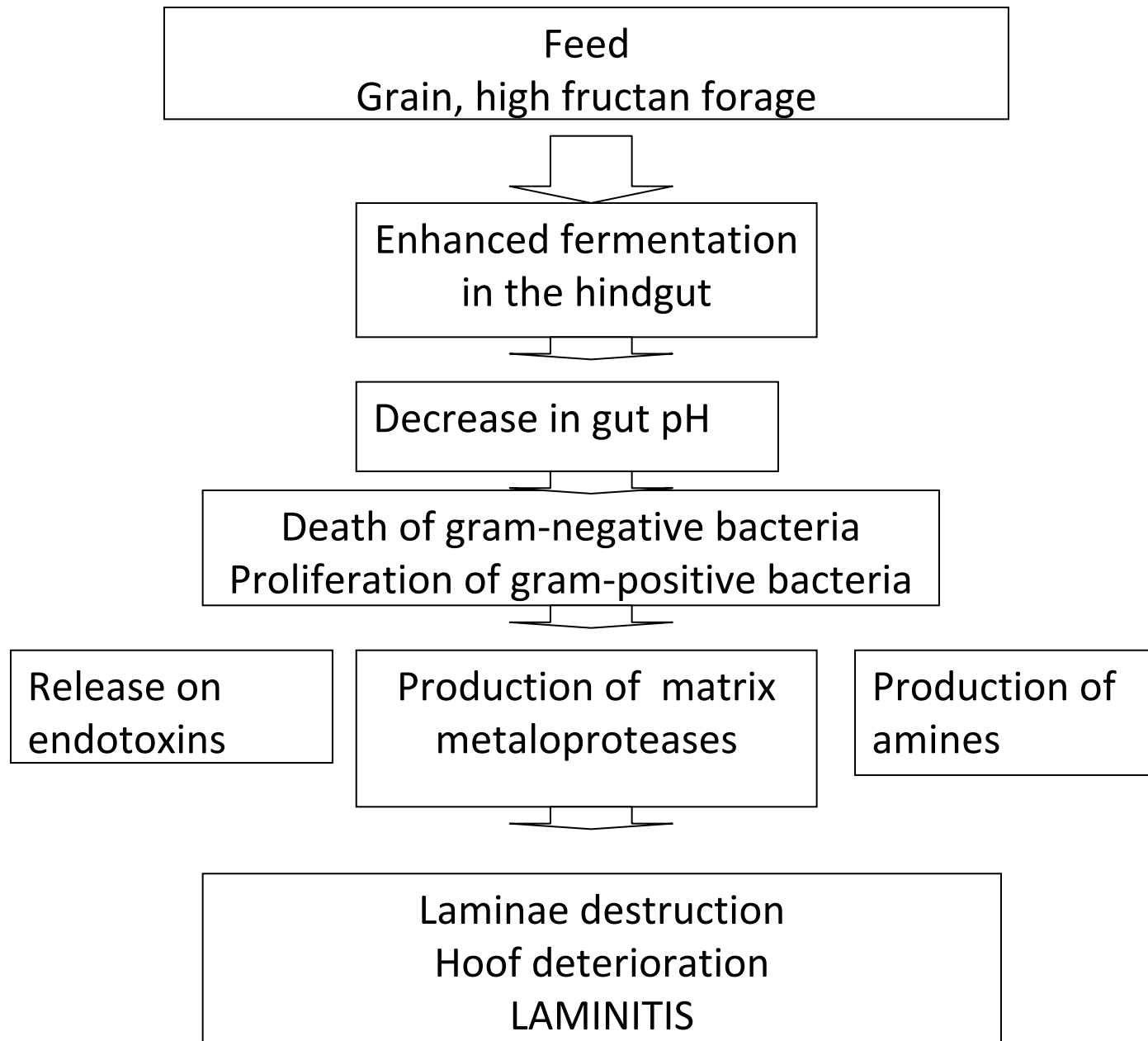
Changes in the bacterial populations in the equine hindgut following the addition of inulin to the diet.

C.J. NEWBOLD¹, B. MACÍAS¹, C. CRAWFORD², J. ELLIOTT², P.A. HARRIS³, S.R. BAILEY⁴, and N.R. MCEWAN¹, *Aberystwyth University, Aberystwyth, United Kingdom*, ²*Royal Veterinary College, London, UK*, ³*WALTHAM Centre for Pet Nutrition, Melton Mowbray, UK* ⁴*University of Melbourne, Melbourne, Australia*

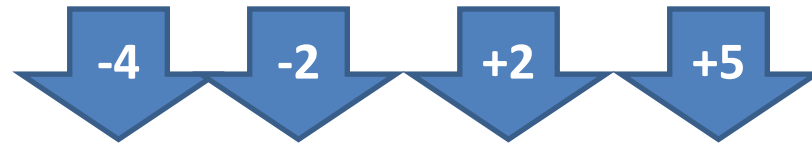
Laminitis: inflammation of the Laminae (the inside lining of the hoof).



Laminitis: causes and sequence of events



Feecal samples



Five normal
native breed
ponies

Low carbohydrate diets

**High carbohydrate
(3 g inulin kg BW)**

Six laminitis
prone native
breed ponies

Low carbohydrate diets

**High carbohydrate
(3 g inulin kg BW)**

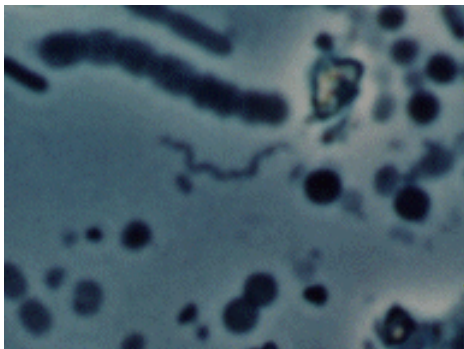
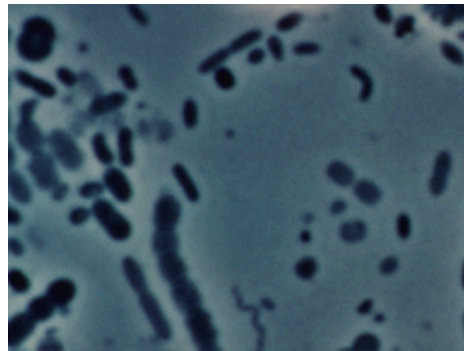
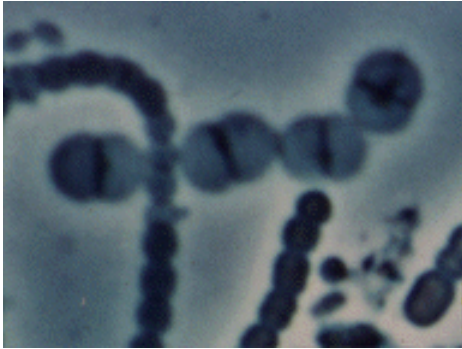
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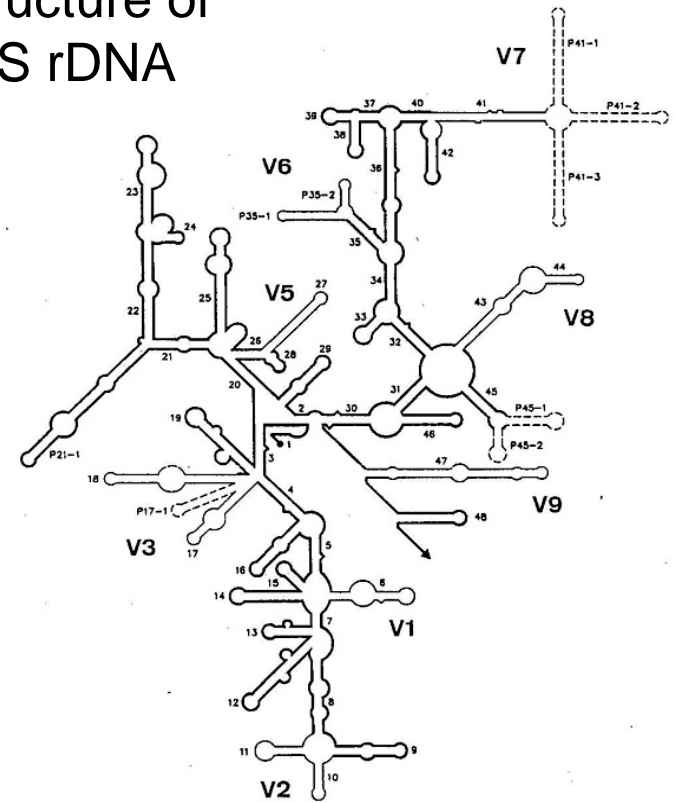
21

Crawford C, Sepulveda MF, Elliott J, Harris PA & Bailey SR
2007 J. Anim Sci. 85, 2949-2958.

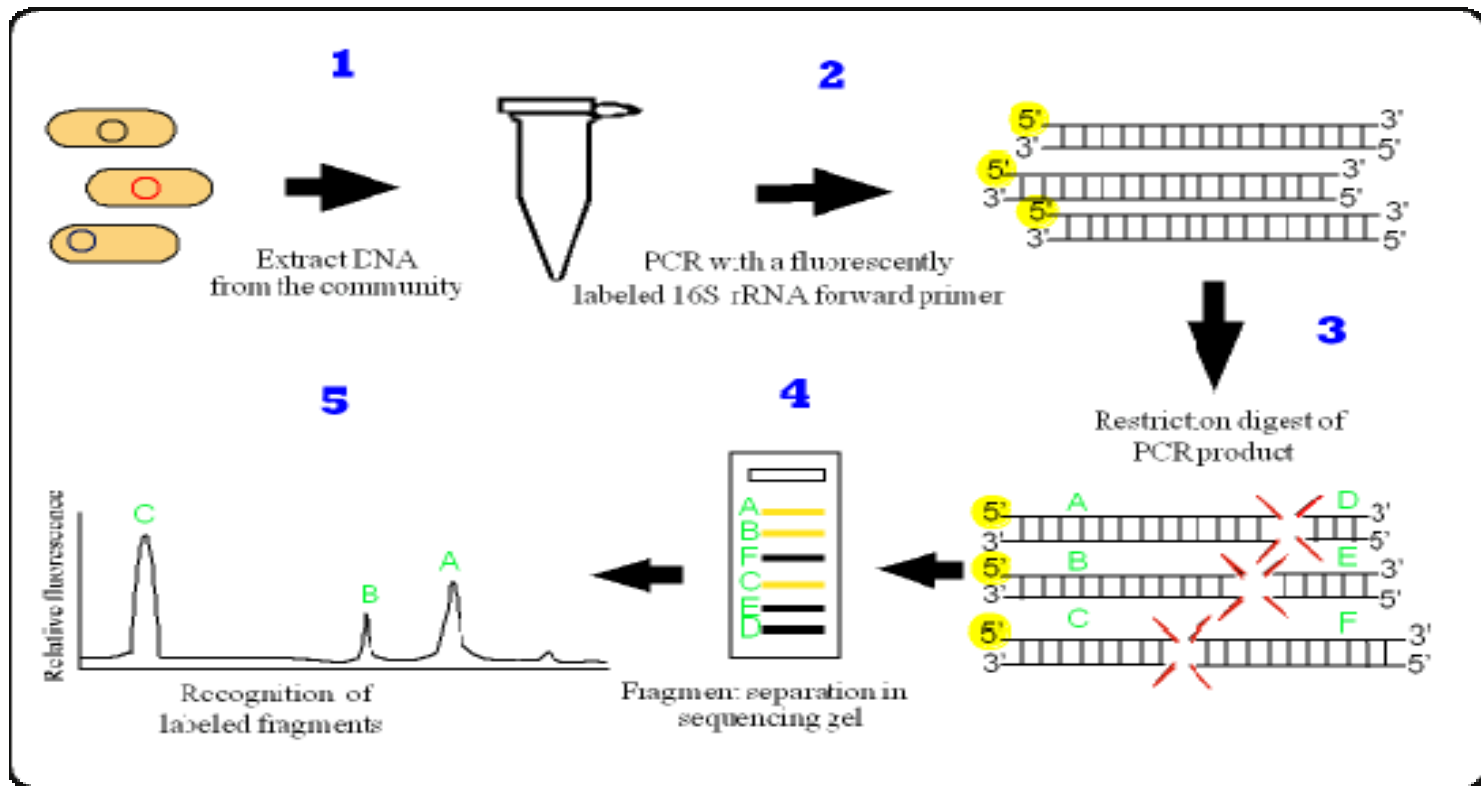
16S rRNA



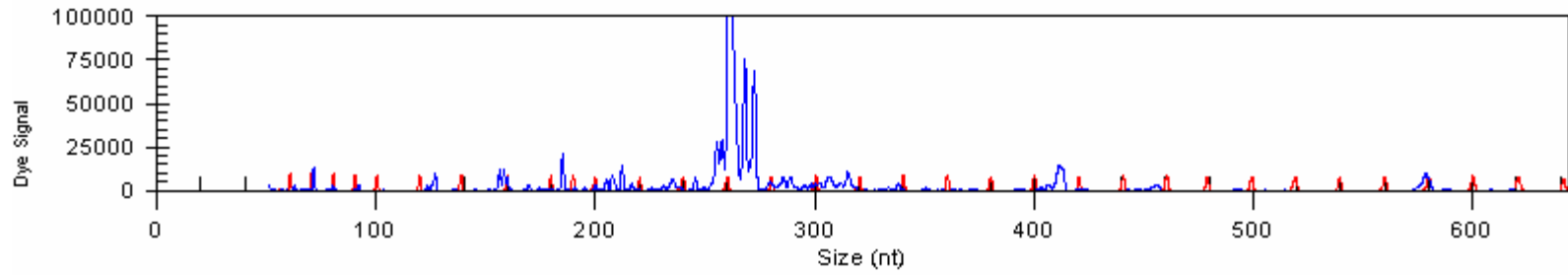
Structure of
16S rDNA



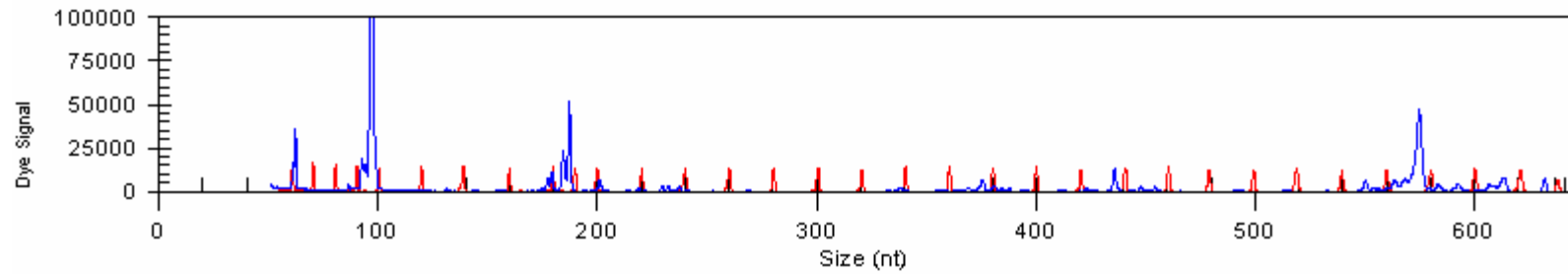
T-RFLP : Terminal restriction fragment length polymorphism



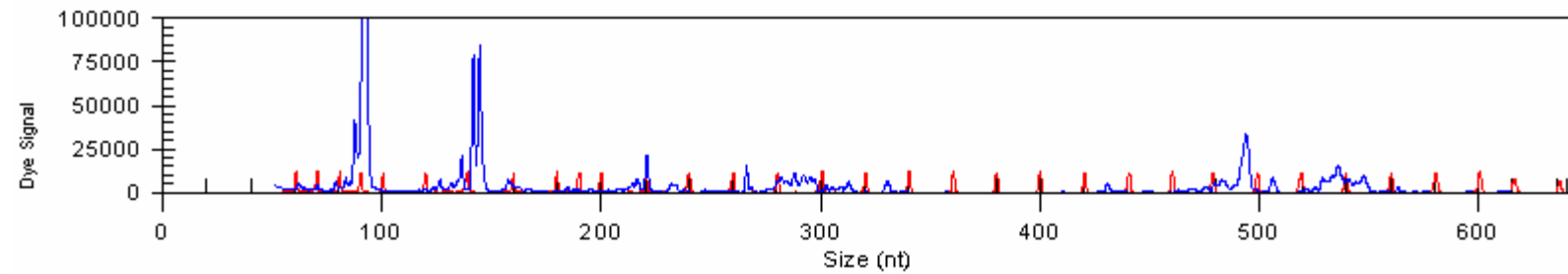
Hae3



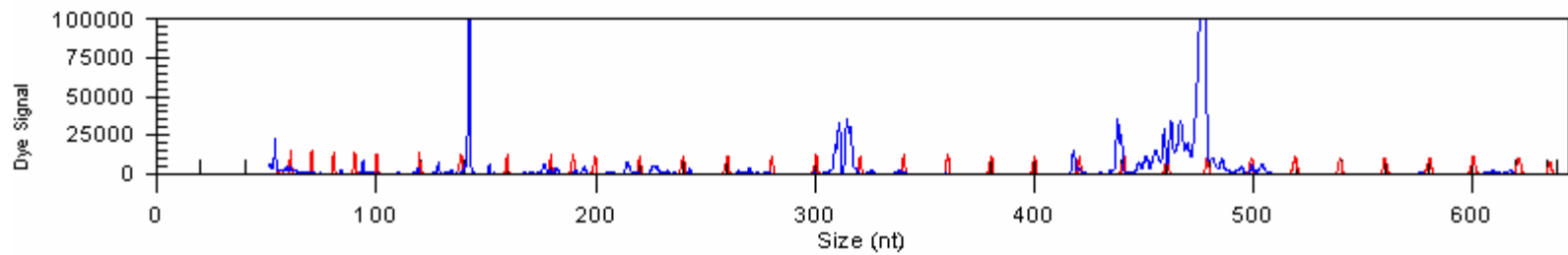
Hha1



Msp1

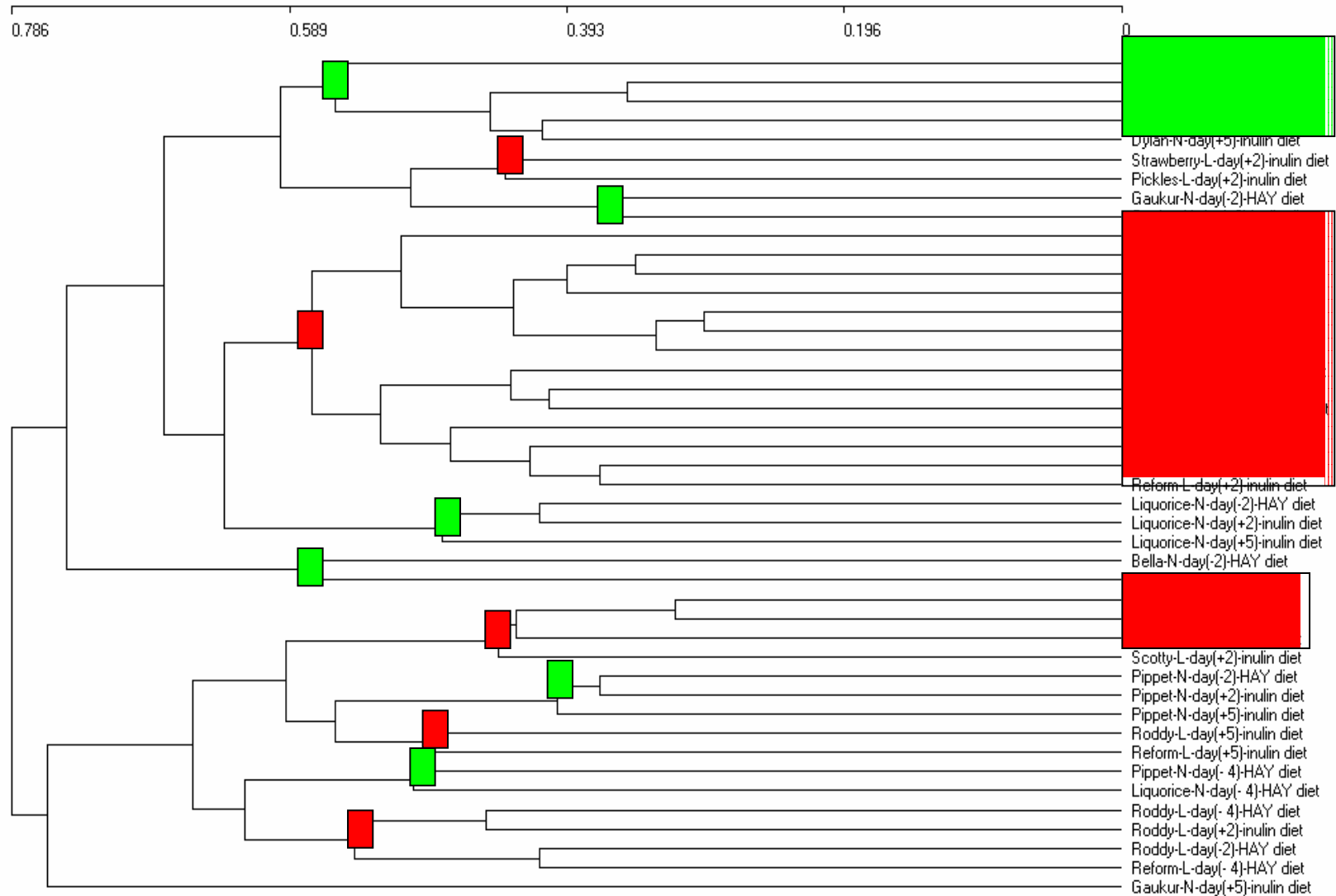


Rsa1

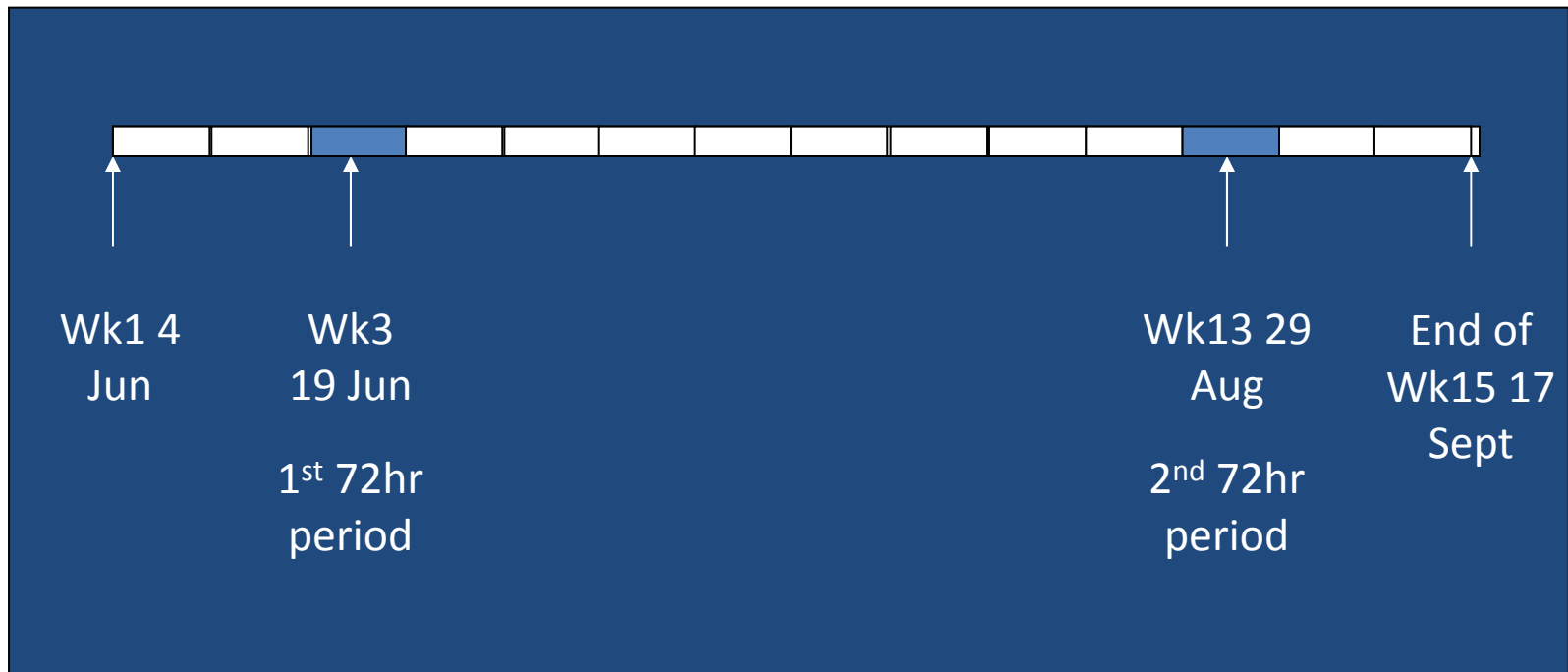


T-RFLP

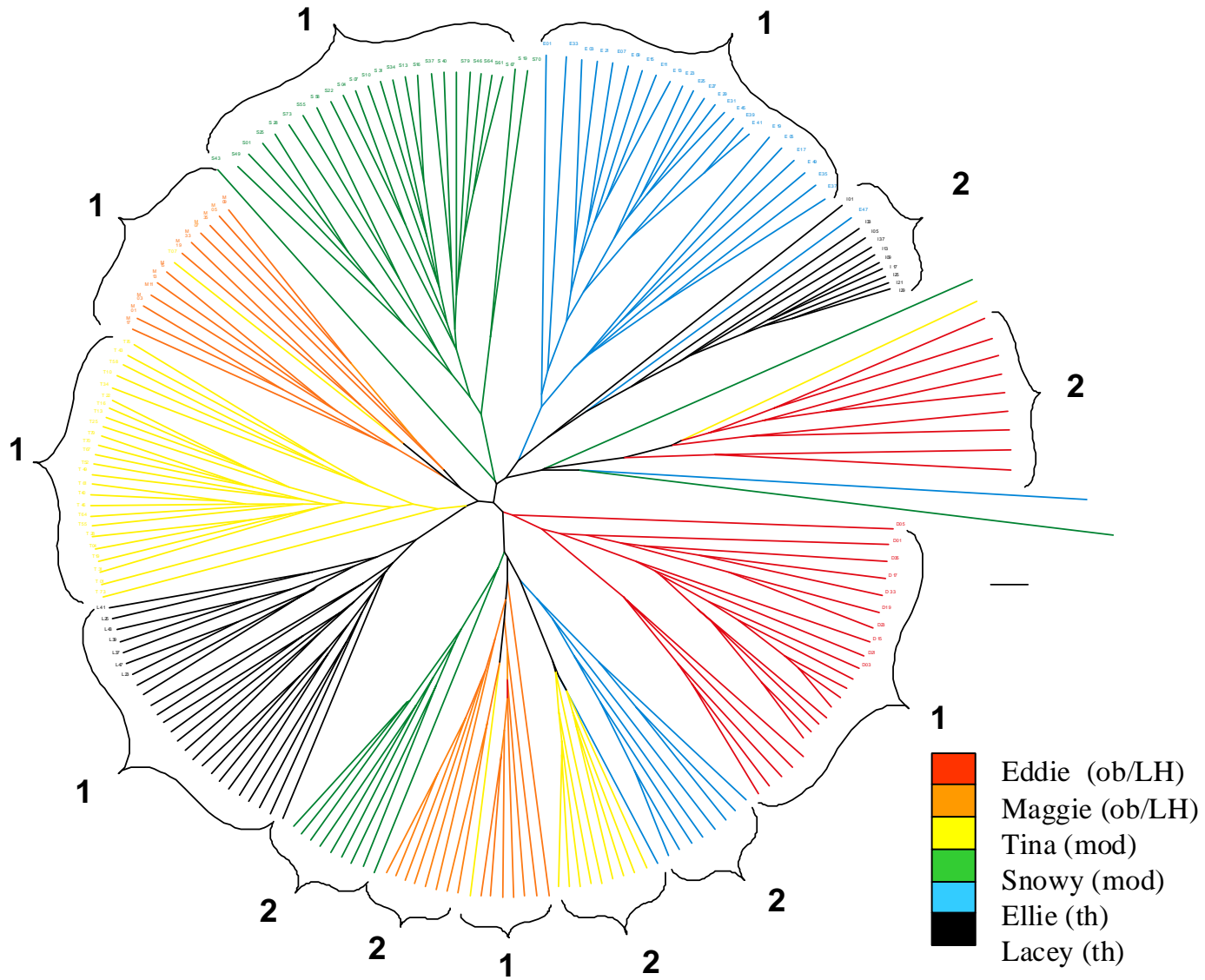
All enz (Hae 3, Hha1, Msp 1) 10-5%
Setup for Cluster : Complete linkage
Distance measure: Bray-Curtis
Lam v Non Lam



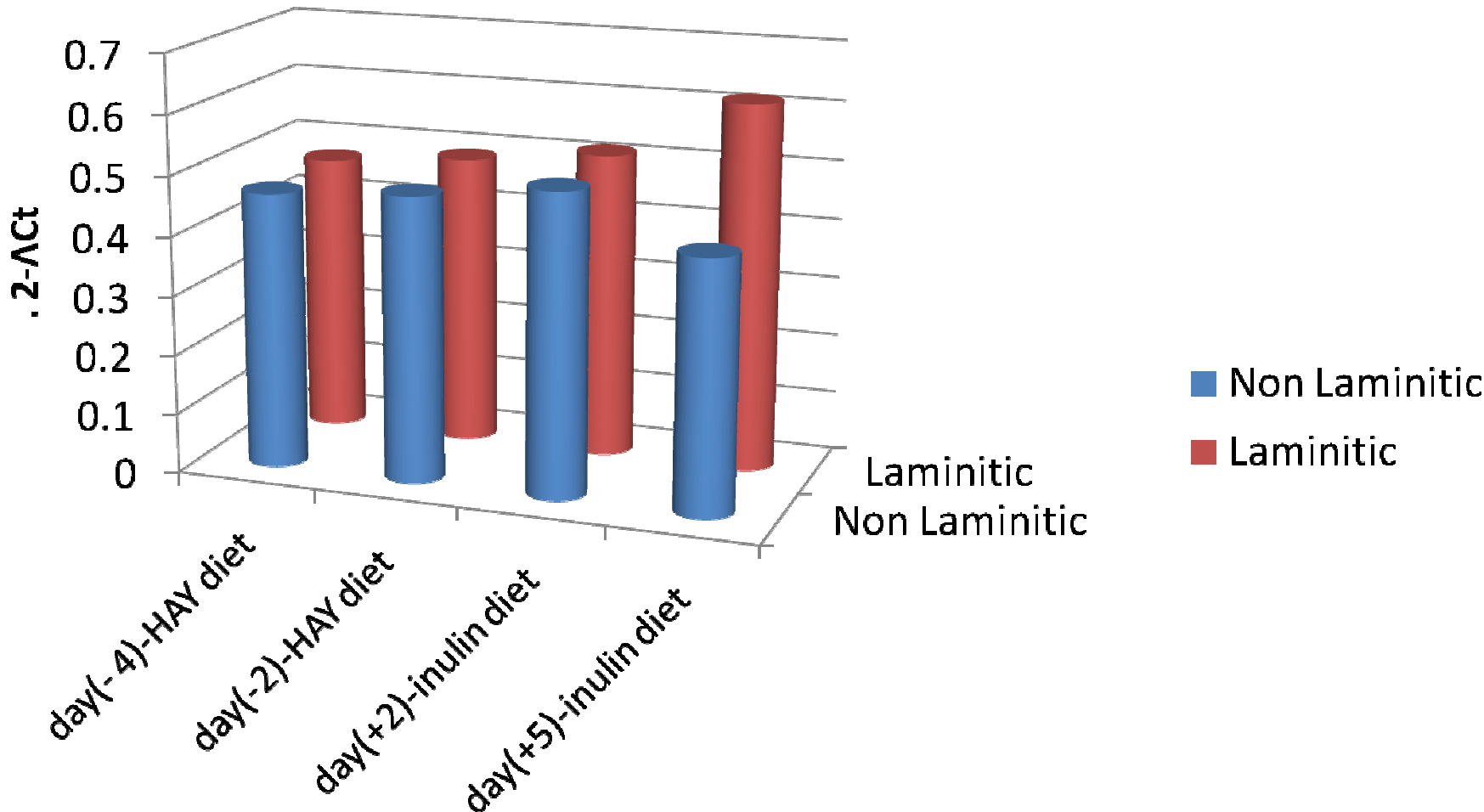
Experimental Design



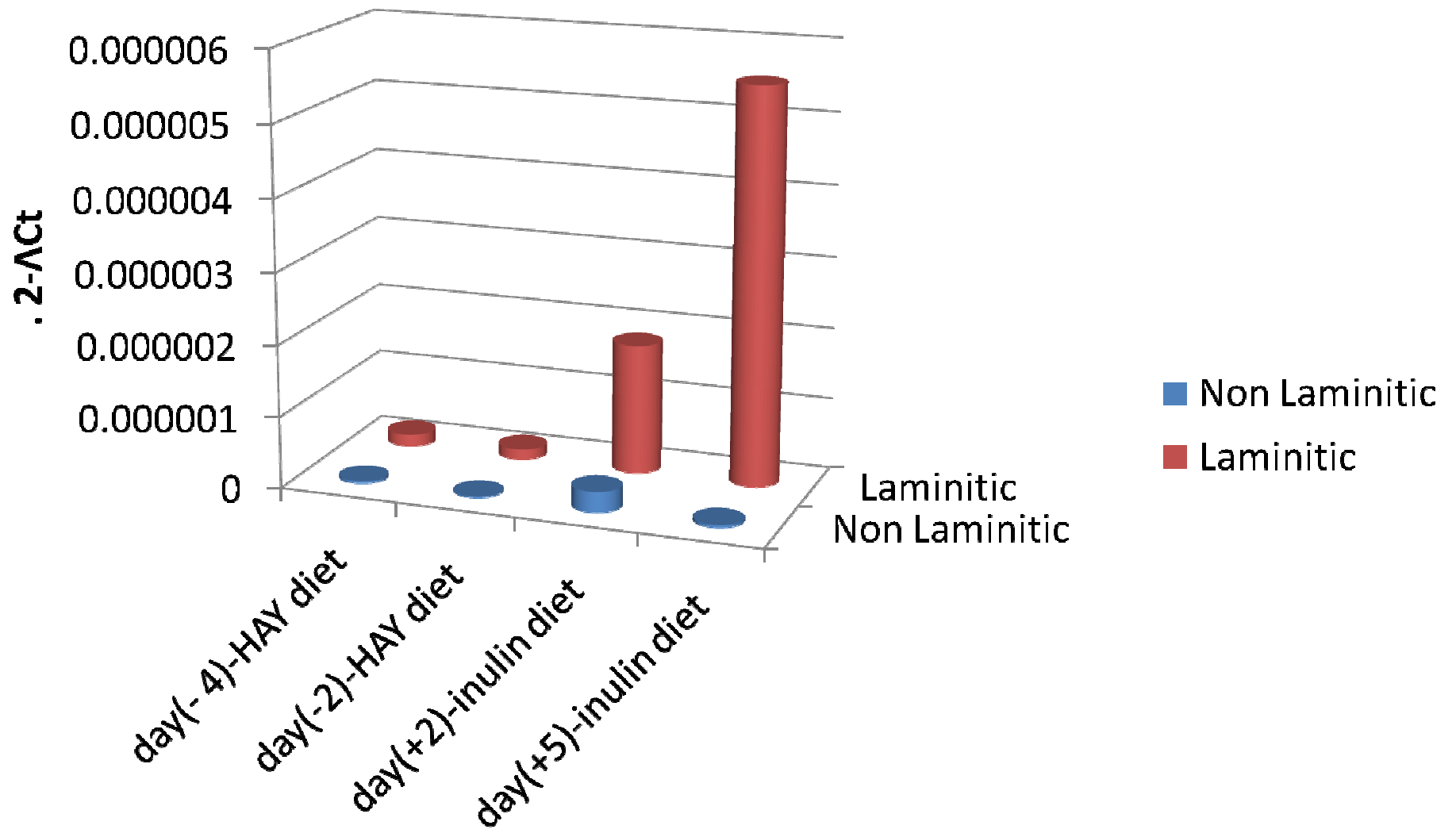
Dendrogram –



Lactobacillus sps



Streptococcus



Conclusions

- These results suggest that the bacterial population of ponies responds differently to the addition of inulin to the diet in laminitic and non laminitic prone animals.
- A clearer understanding of these differences may in time allow us to design strategies to avoid the changes in bacterial population in the hindgut of the horse fed diets high in rapidly fermentable carbohydrate that in time result in laminitis.

Questions ?

