In vitro fermentation of *Solanum lycocarpum* St Hil.

H. R. Lima Neto; A. S. Chaudhry & M.M.H. Khan

School of Agriculture, Food and Rural Development at **Newcastle University**, UK

1 Introduction

•*Solanum lycocarpum* St Hil. is widespread in Brazil as it grows naturally in dry areas and poor soils.

•Its high amount of secondary metabolites demands an alternative way in which this plant can be used in livestock production systems.

•Characterization of its fermentation profile by means of the **Volatile Fatty Acid (VFA)** analysis is **one** step towards its sustainable use for ruminants.

•An *in vitro* trial was conduced for this purpose

2 Material & Methods

A triplicate 5 x 2 x 4 factorial trial involved:

➢Five dried fractions – (Flower=Fl, Fruit=Fr, Leaf=Lf, Stem=St and Root=Rt)

➢Two inclusion levels: 0.2 and 0.4 g

➢Four incubation times: 08, 24, 48 and 96 hours in tubes (Fig 1.)

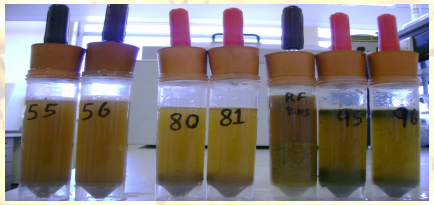

Fig1. 50 ml centrifuge tubes with the inoculum plus *S. lycocarpum* samples

3 Results

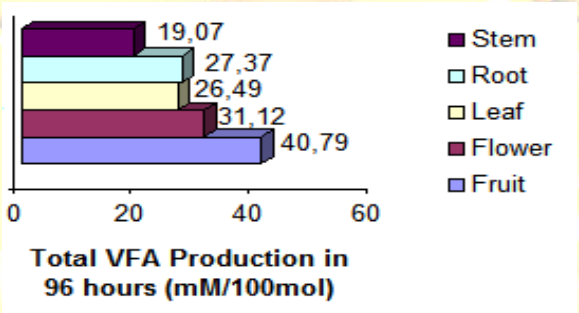

Fig. 2. Total VFA production of different fractions of *Solanum lycocarpum* St Hil (mM/100 mol)

▪In vitro trial confirmed the hypothesis that the greatest VFA profiles were found in fruit, flower and leaf (Fig 2).

▪Fluctuation over time showed that once fed to ruminants the VFA production will depend mainly upon the flow rate of ingested biomass in the rumen (Fig. 3)

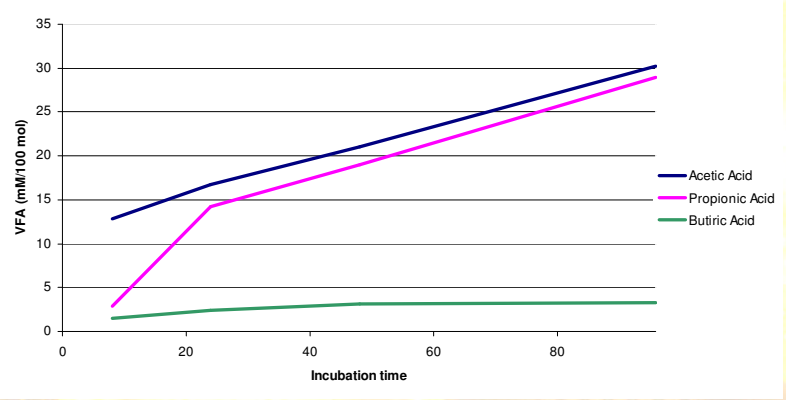

Fig 3. VFA concentration over time of incubated *Solanum lycocarpum* St Hil. fruit.

4 Conclusion

➢Dietary manipulation of ruminants with the inclusion of the fruit or leaf from *S. lycocarpum* as an additive is possible.

➢Further studies will assess the potential of this plant as an additive for the ruminant production.

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▪Fruit fraction had the highest effective production of VFA (Fig 2)

▪Acetic, propionic and butyric rates of productions were 0.09 ; 0.045 and 0.0015 mM /hour respectively for this fraction.

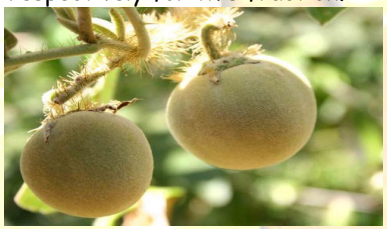

Fig 4. Fruit of *Solanum lycocarpum* St. Hil