

Milk iso C17:0 indicates low dietary rumen degradable protein supply in a Cuban monitoring study

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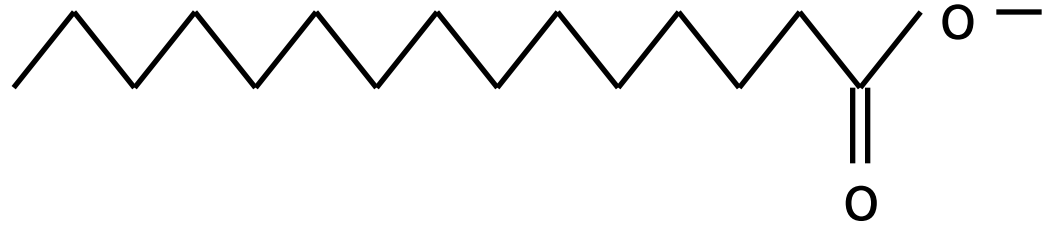
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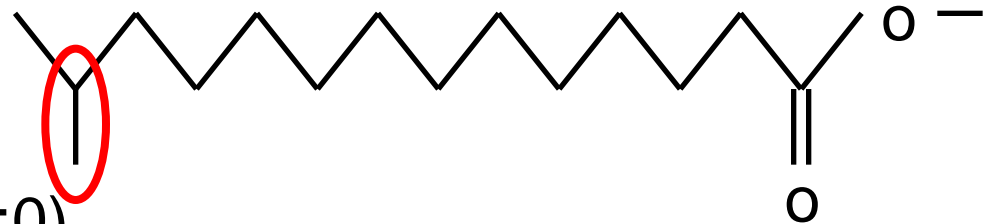
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OBCFA

linear odd-chain
(C15:0, C17:0)



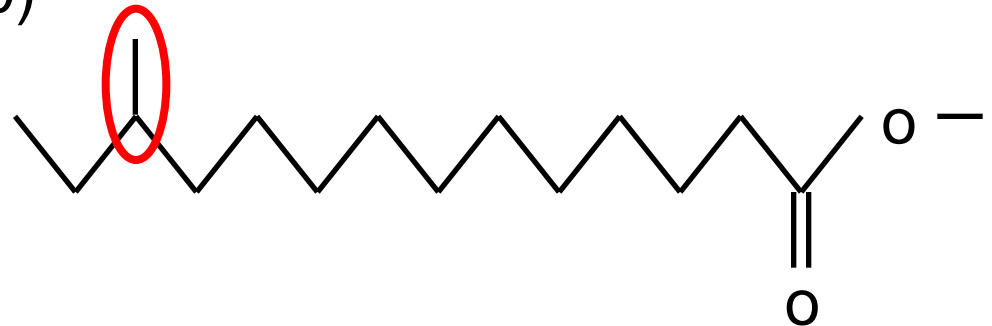
iso branched-chain



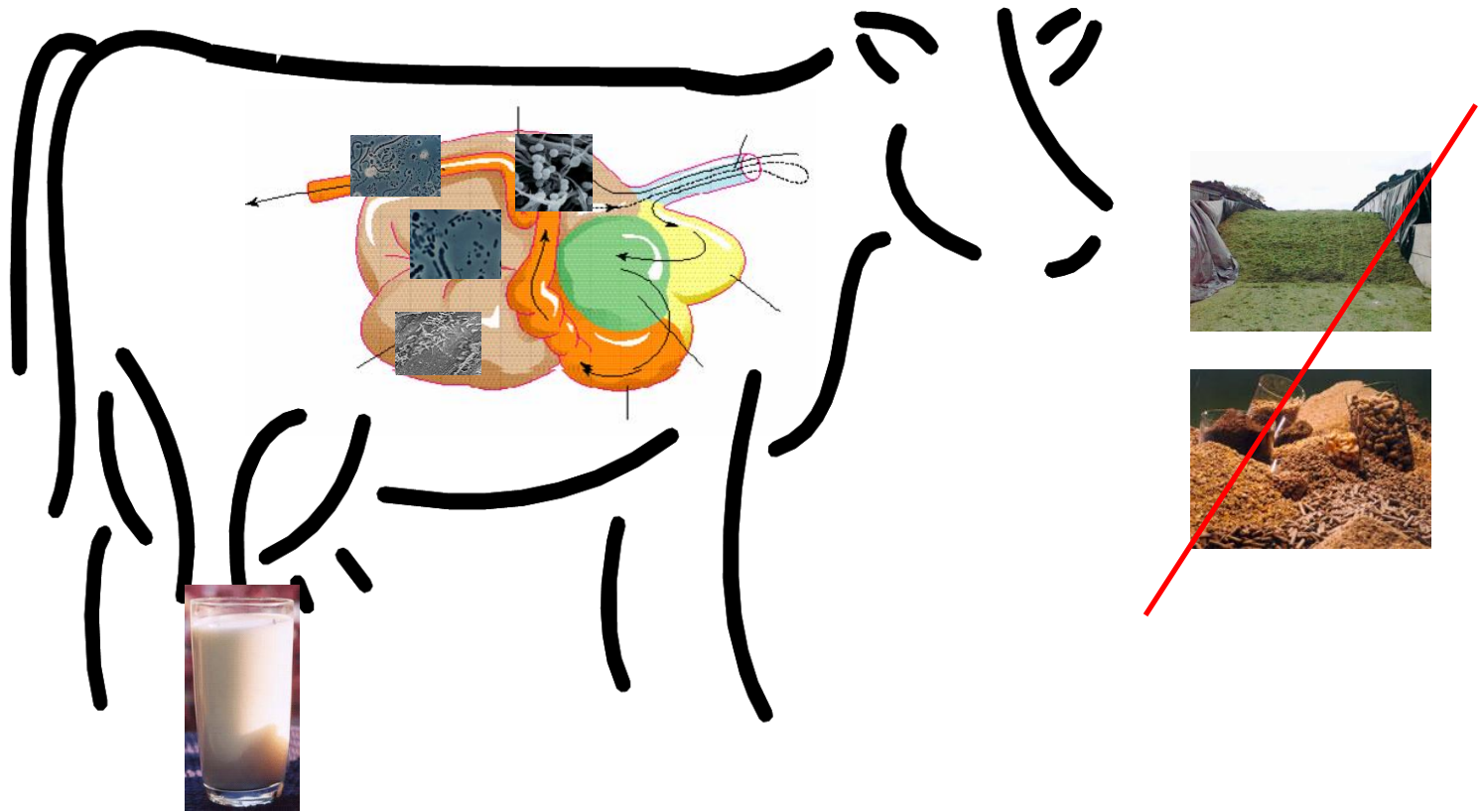
└ even (e.g. *iso* C14:0)

└ odd (e.g. *iso* C17:0)

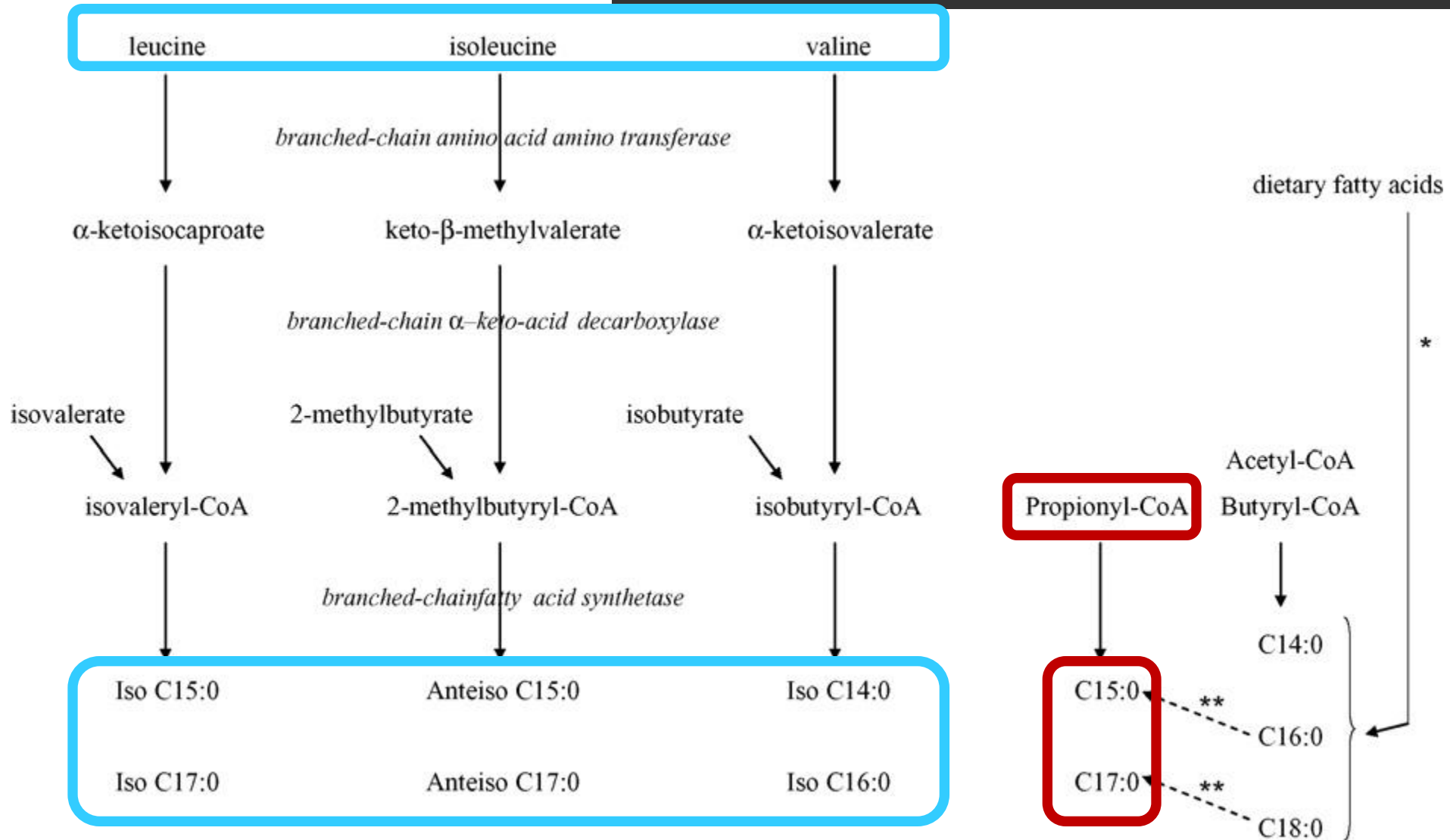
anteiso branched-chain
(e.g. *anteiso* C15:0)



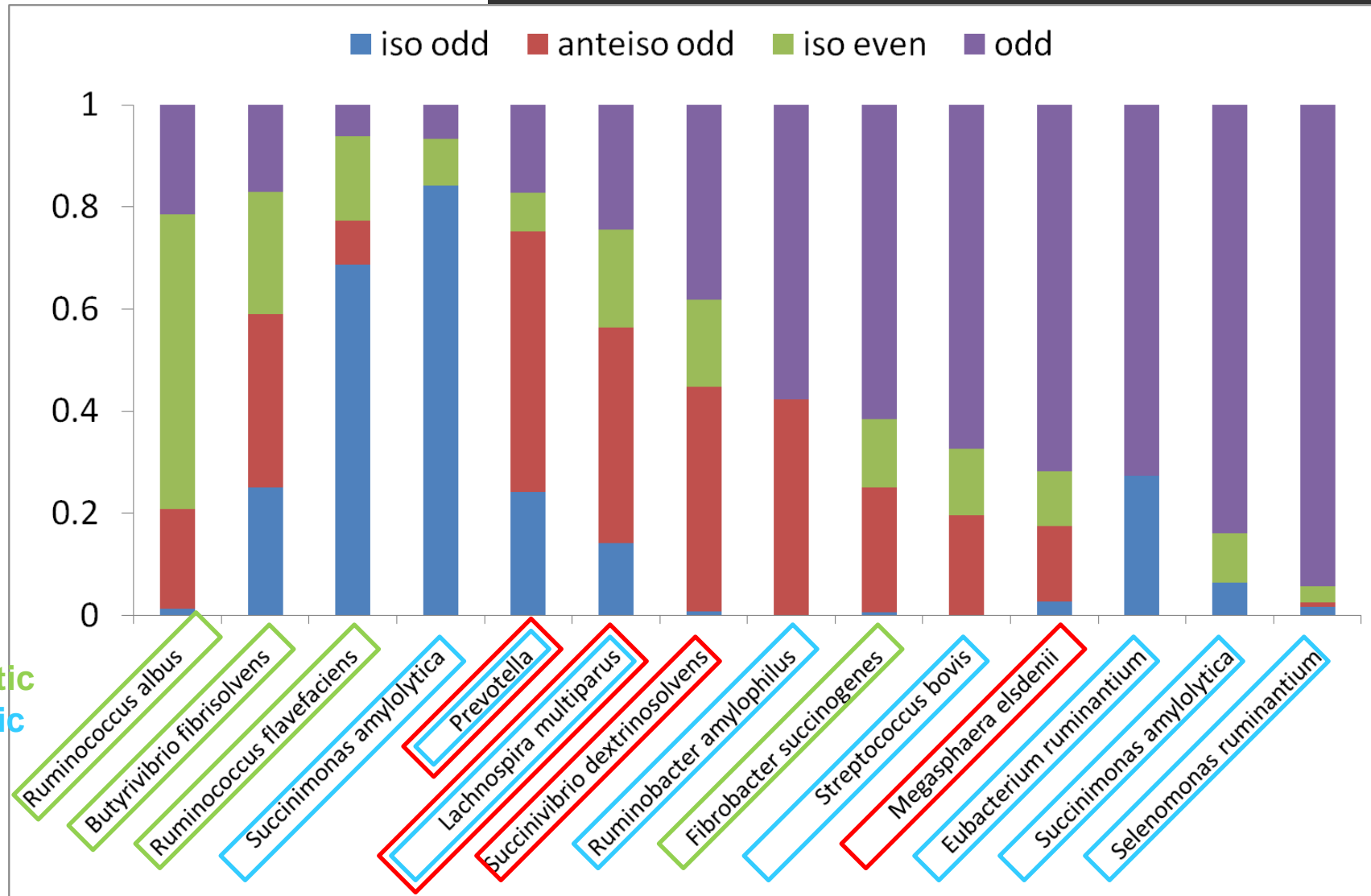
Milk OBCFA: microbial origin



OBCFA: precursors



OBCFA: bacterial types



Cellulolytic
Amylytic
Sugar
Pectin

Monitoring in Cuba - context



Limited resources
No external inputs
Self-sufficiency through utilisation of pasture,
protein rich fodder trees, sugar cane,...

Monitoring in Cuba – materials & methods

Sampling:

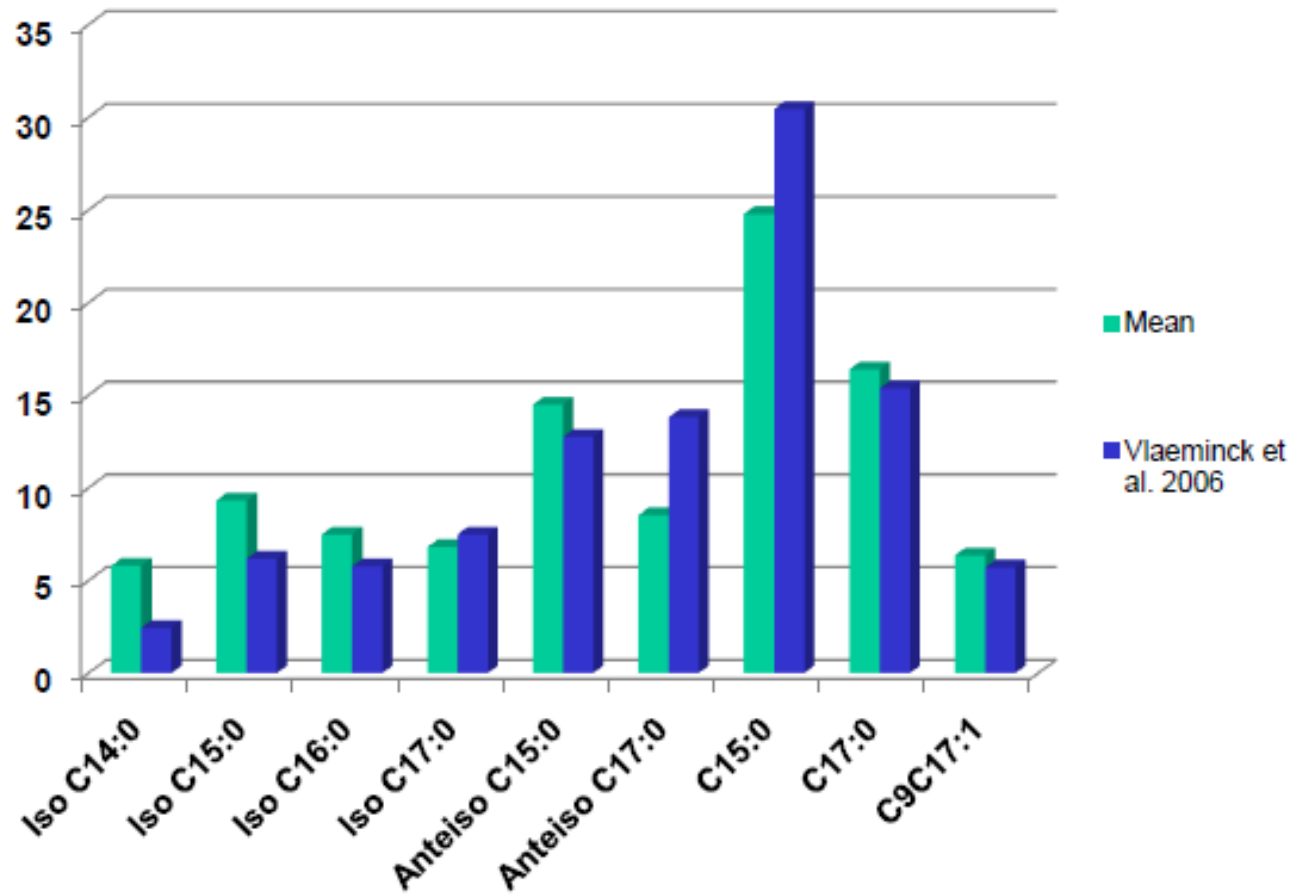
- 6 dairy farms – “Desembarco del Granma” cooperative, Santa Clara
- July & August 2010
- Weekly (5 weeks)

Analysis:

- Milk fatty acid analysis
- Protein, fat, lactose by FT-IRS



Monitoring in Cuba – results



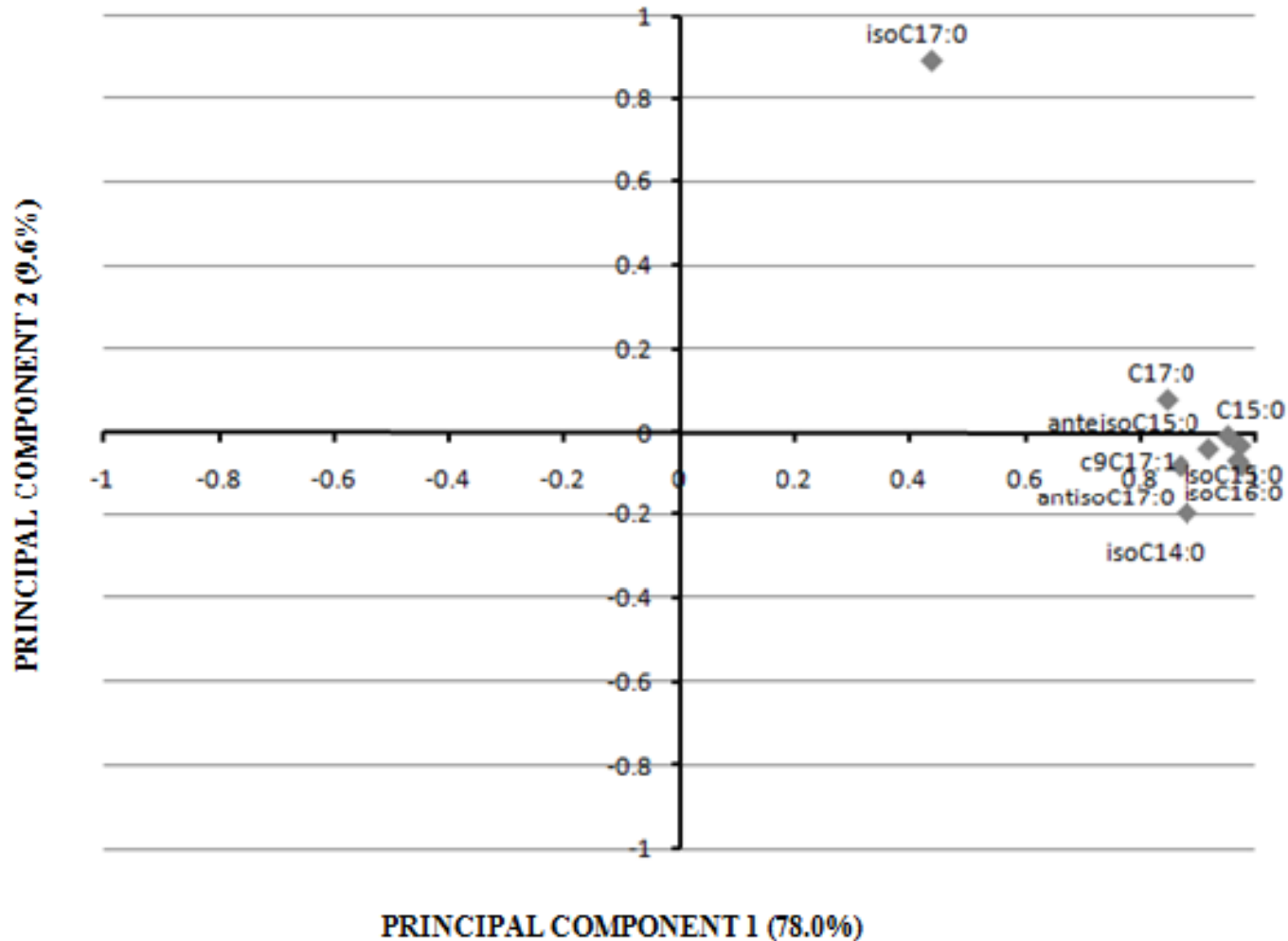
g/ 100 g OBCFA

CELLULOLYTIC

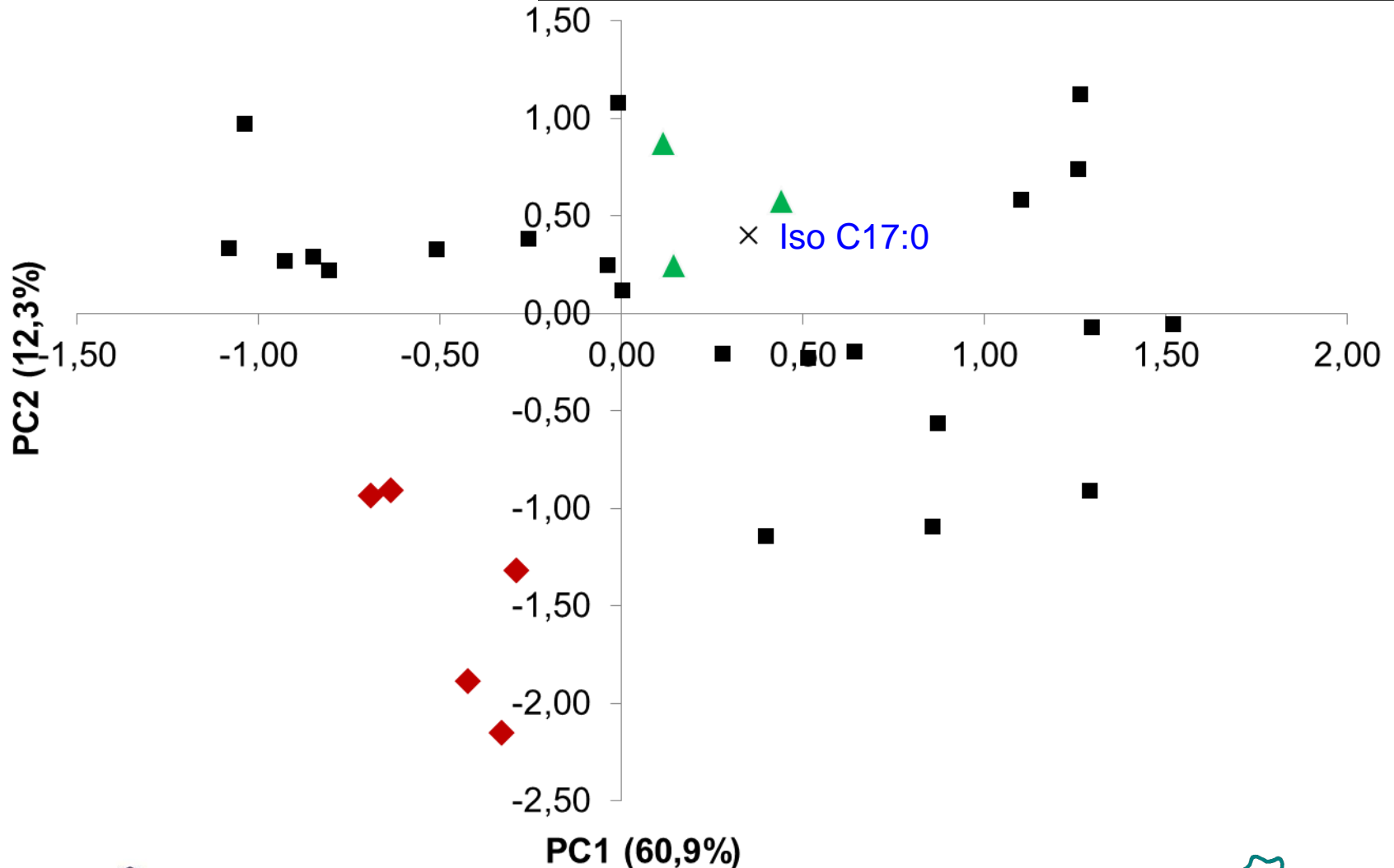


AMYLOLYTIC

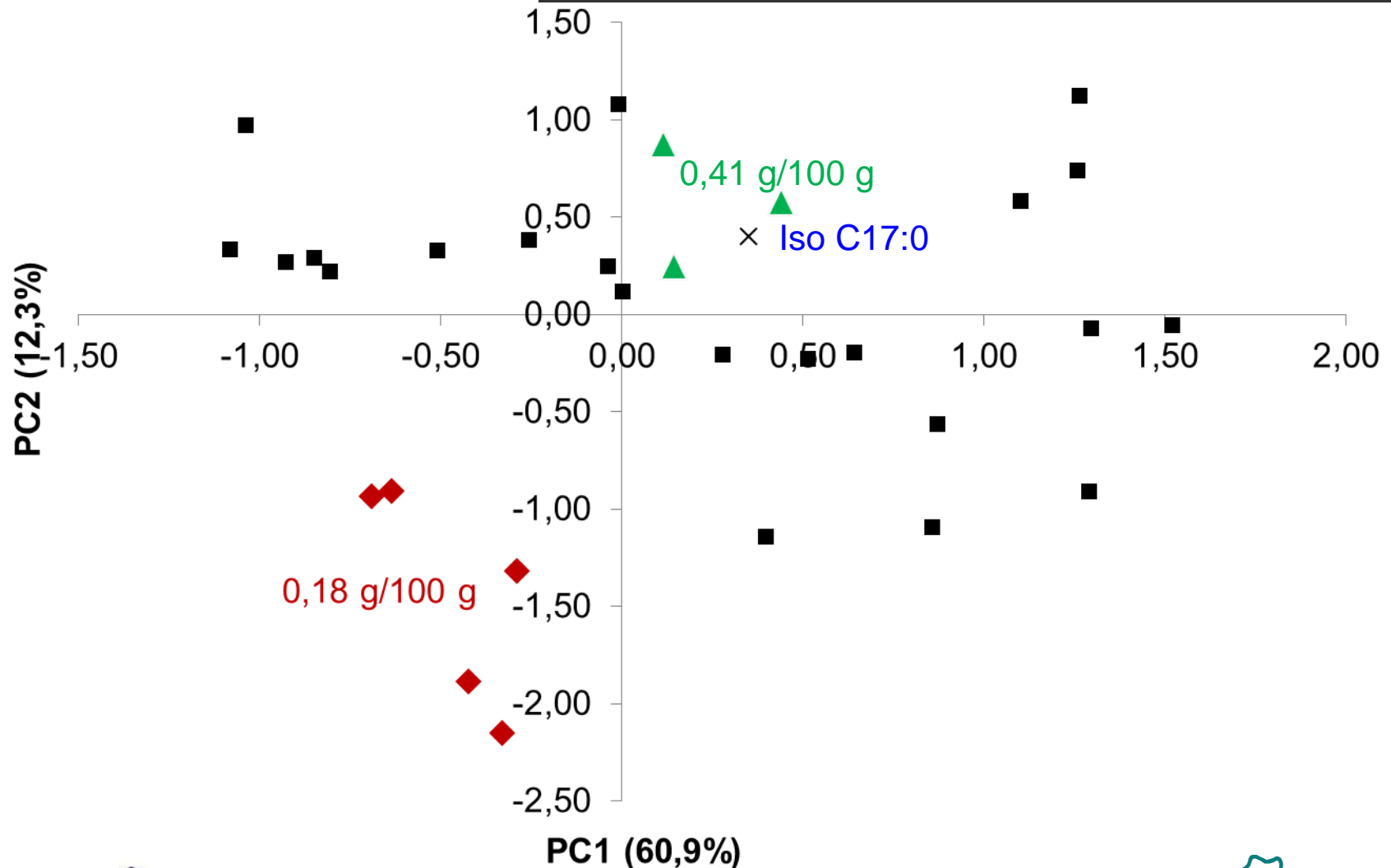
Monitoring in Cuba – results



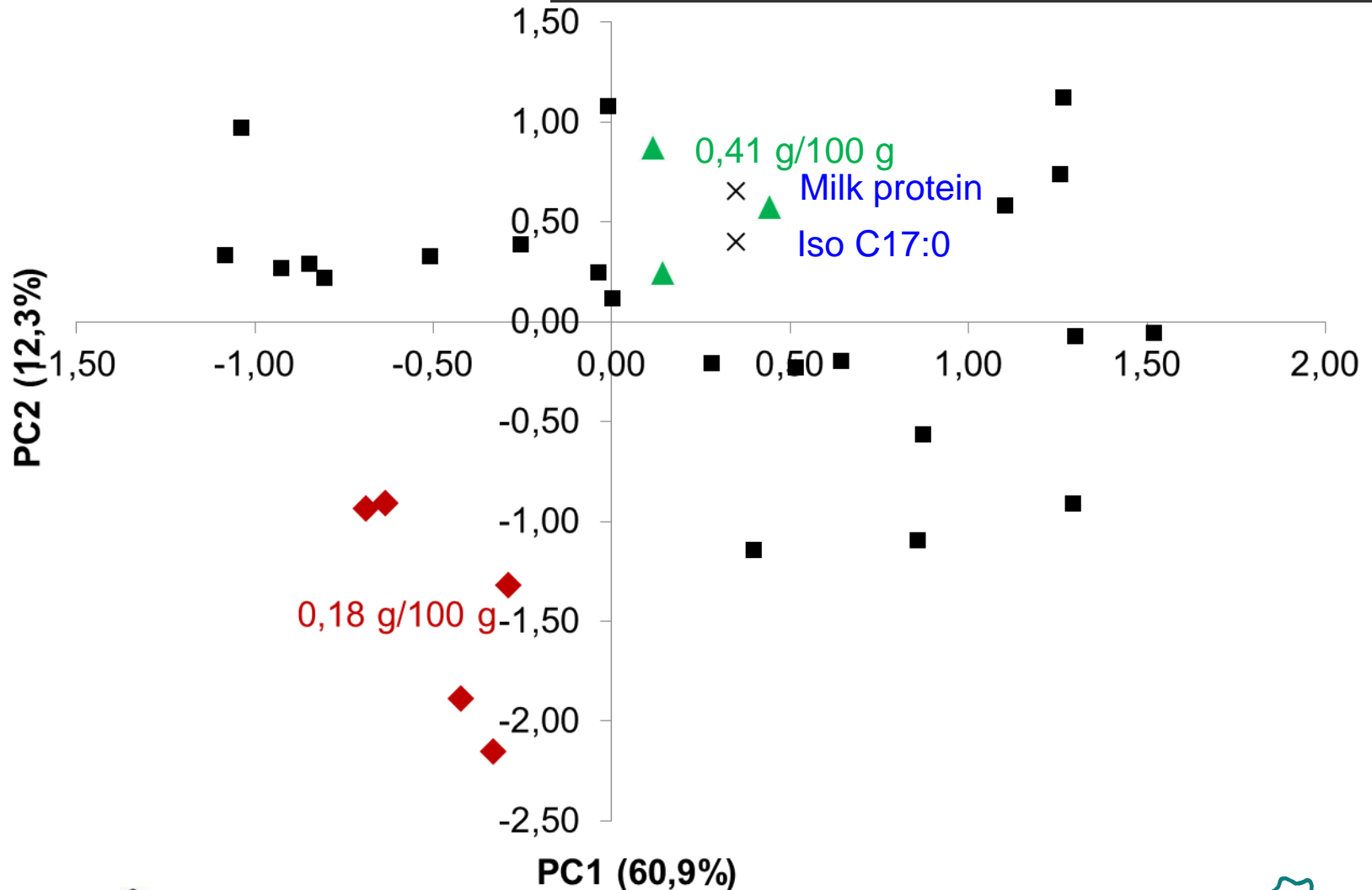
Monitoring in Cuba – results



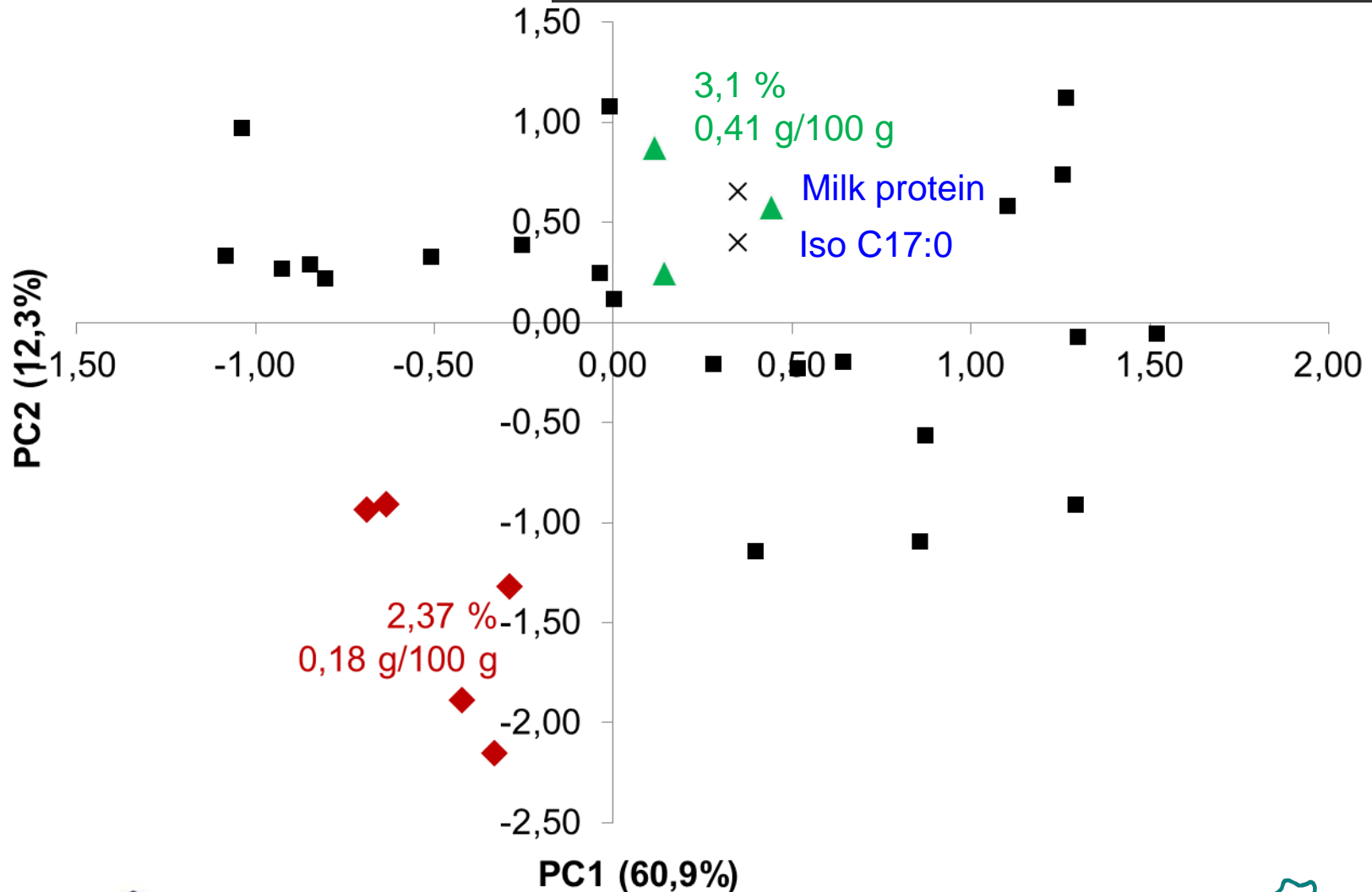
Monitoring in Cuba – results



Monitoring in Cuba – results

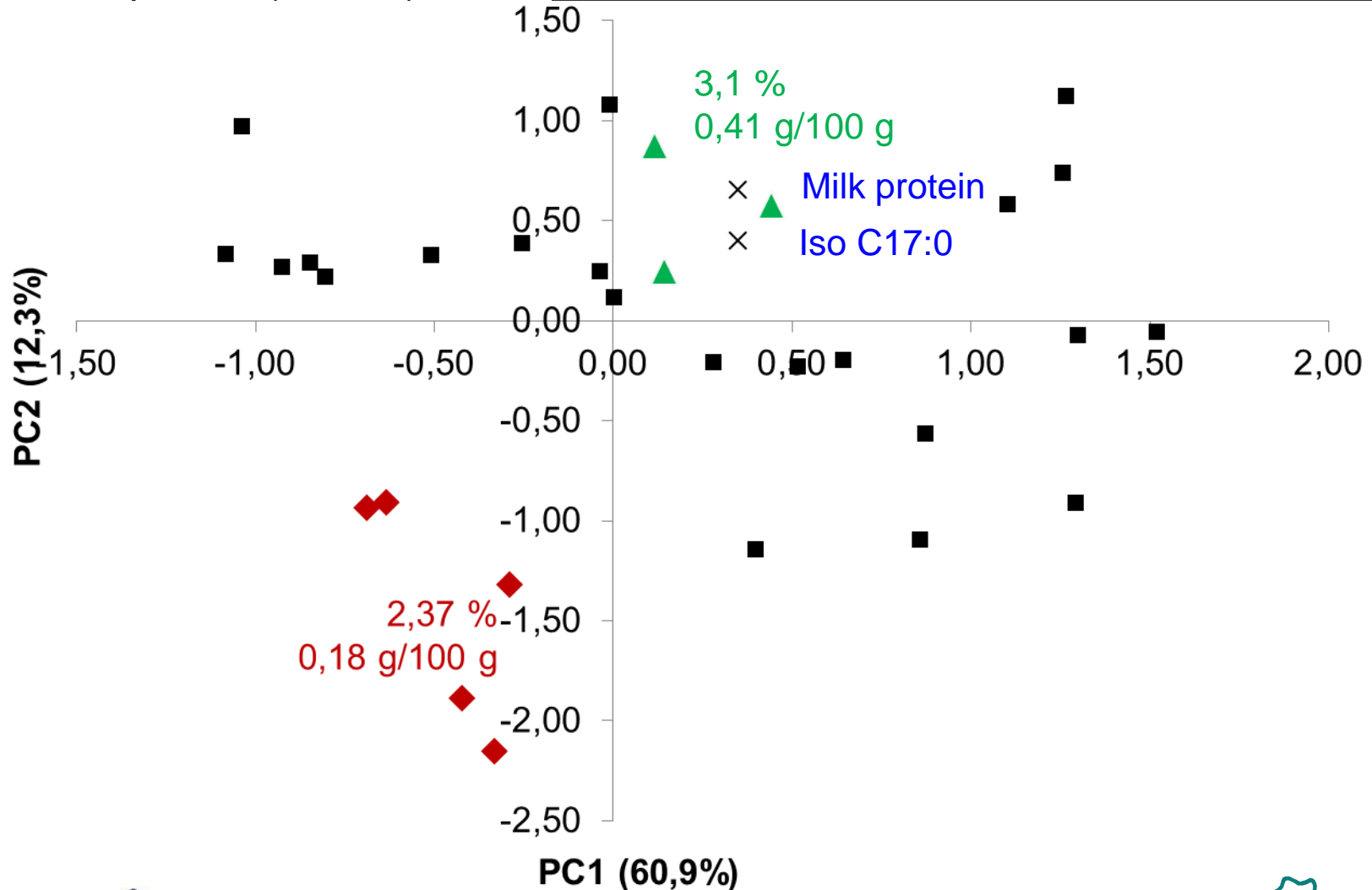


Monitoring in Cuba – results



Monitoring in Cuba – results

Impairment of milk protein production due to lack of rumen fermentable protein (leucine)?



Monitoring in Cuba – conclusions

- Greater milk OBCFA proportions in milk from native Cuban cows on traditional Cuban diet as compared with milk from Holstein-Friesian cows in temperate regions,
- Lower proportions of milk iso C17:0 were associated with lower milk protein and could indicate lack of rumen fermentable protein.