

**Αξιοποίηση Φυσικών Αντιοξειδωτικών στην Εκτροφή των Αγροτικών Ζώων για Παραγωγή Προϊόντων Ποιότητας**

*Γεωπονικό Πανεπιστήμιο Αθηνών*

*Εργαστήριο Ζωοτεχνίας*

MIS 380231

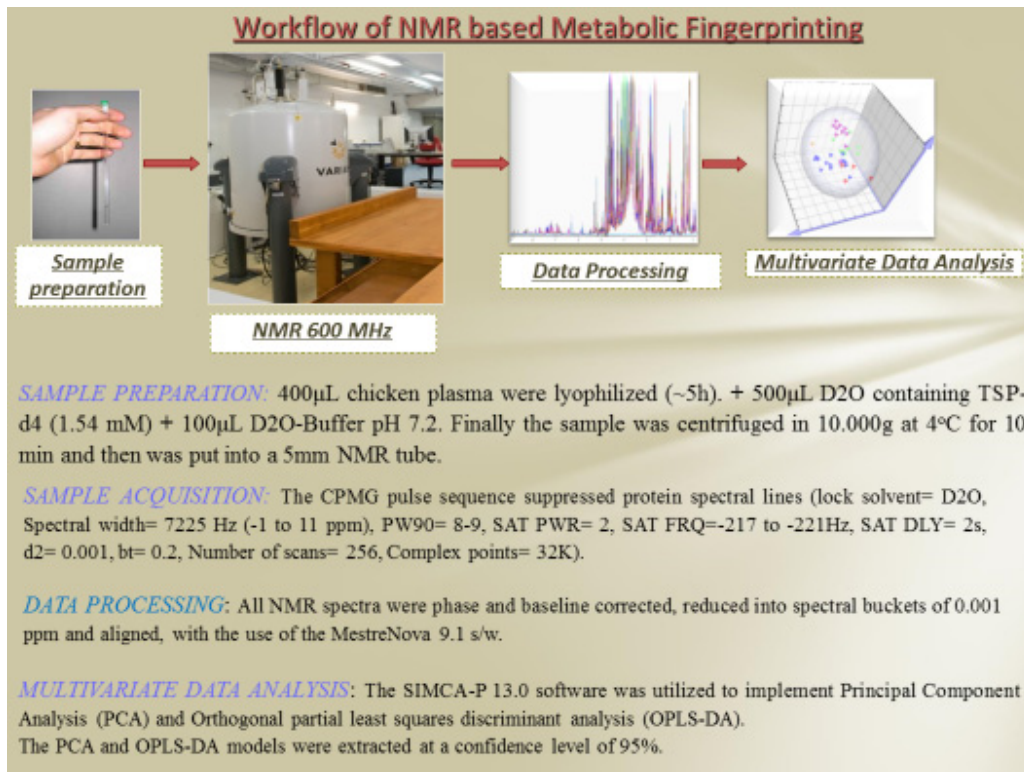
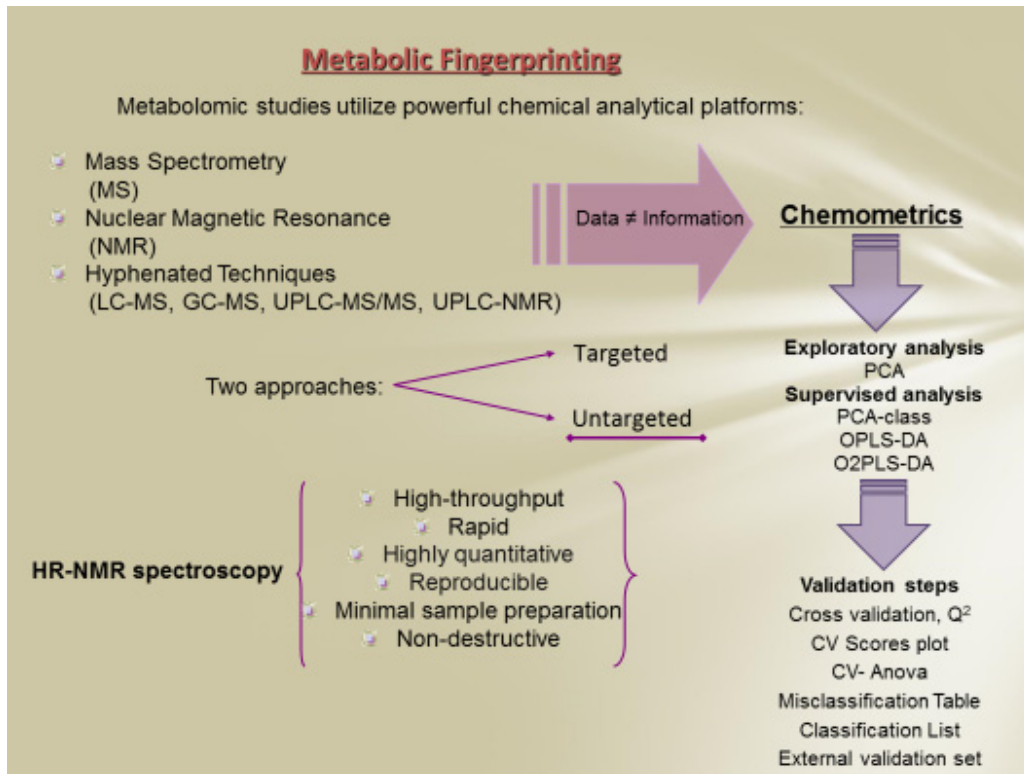
*Δράση 1<sup>η</sup> : Μεθοδολογία ανάλυσης βιολογικών δειγμάτων*

**Παραδοτέα: D1\_PUBL\_1**




**Impact of flavonoid enriched Ration on the metabolic fingerprint of chicken plasma. An NMR-Based Metabolomic Study**

**Υποβλήθηκε για παρουσίαση στο 9th Aegean Analytical Chemistry Days (AACD2014) που διοργανώθηκε από 29 Σεπτεμβρίου έως 3 Οκτωβρίου 2014 στη Χίο**



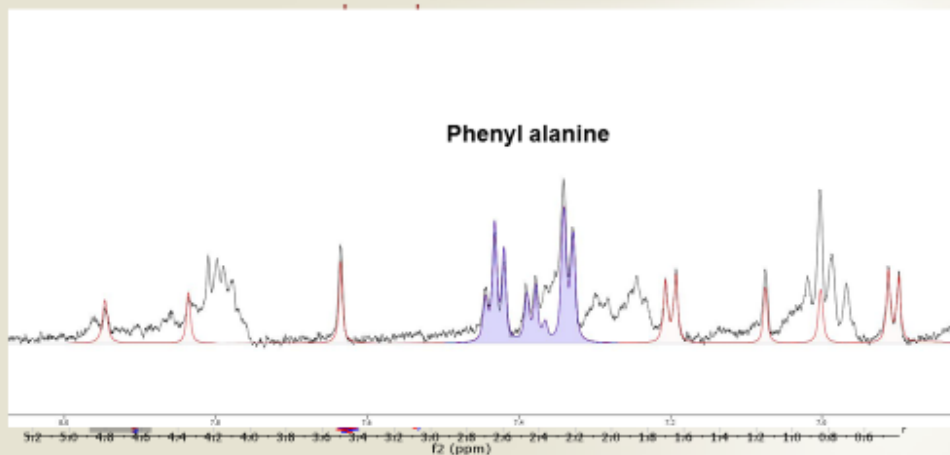


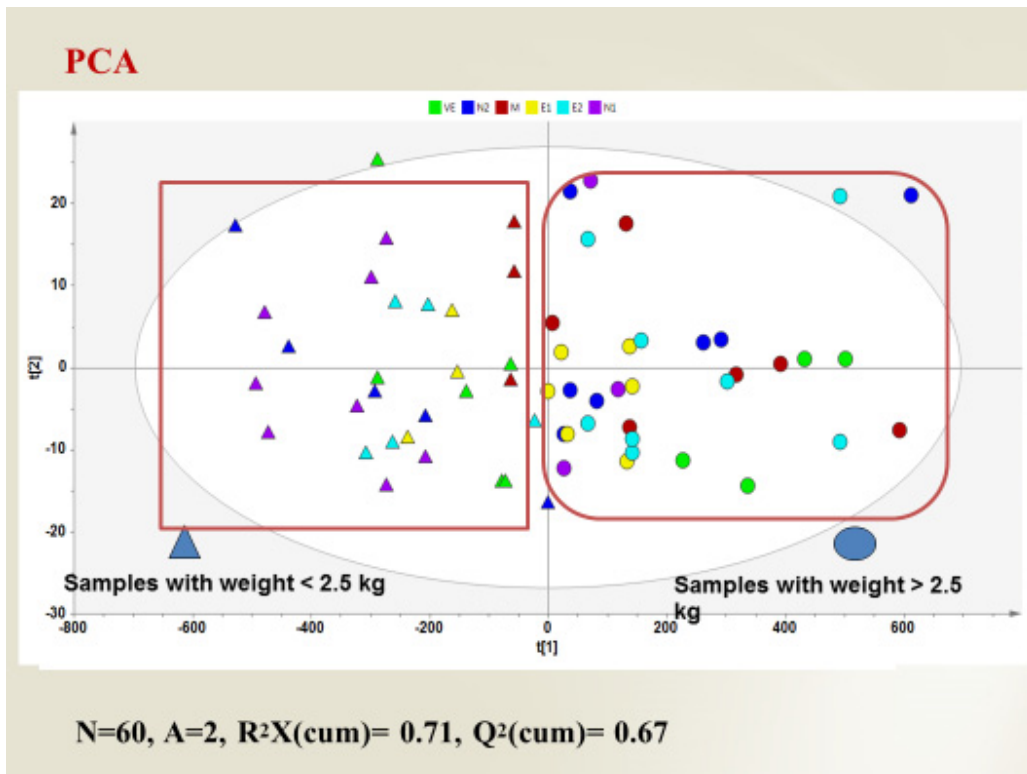
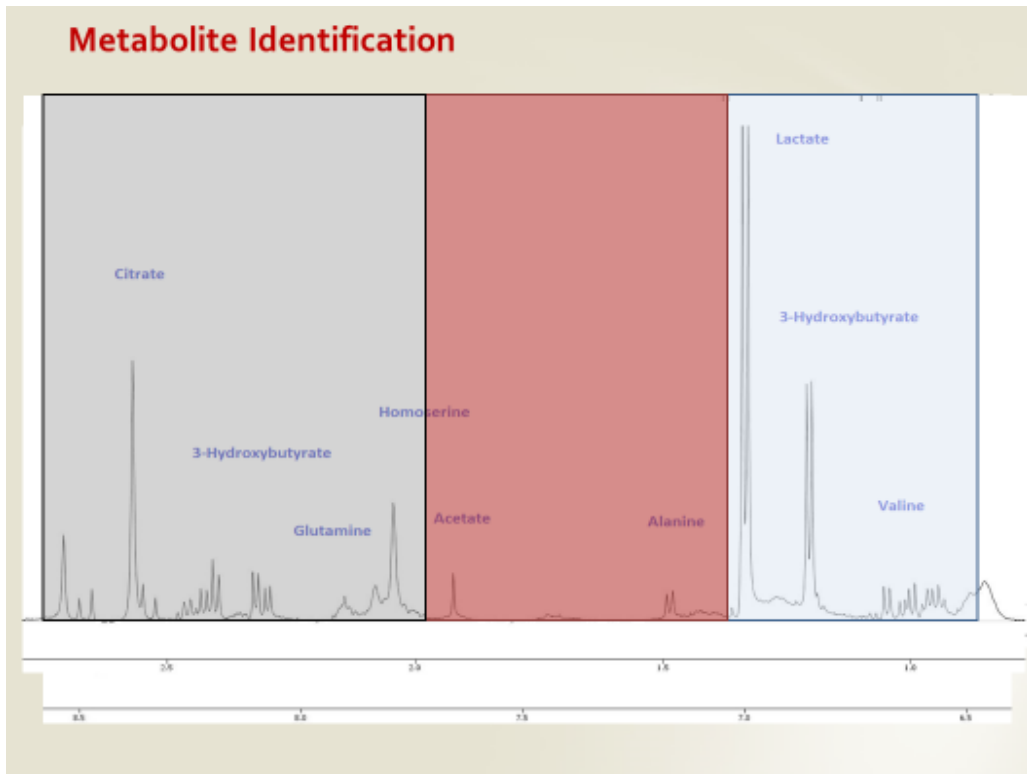
## Sample pool

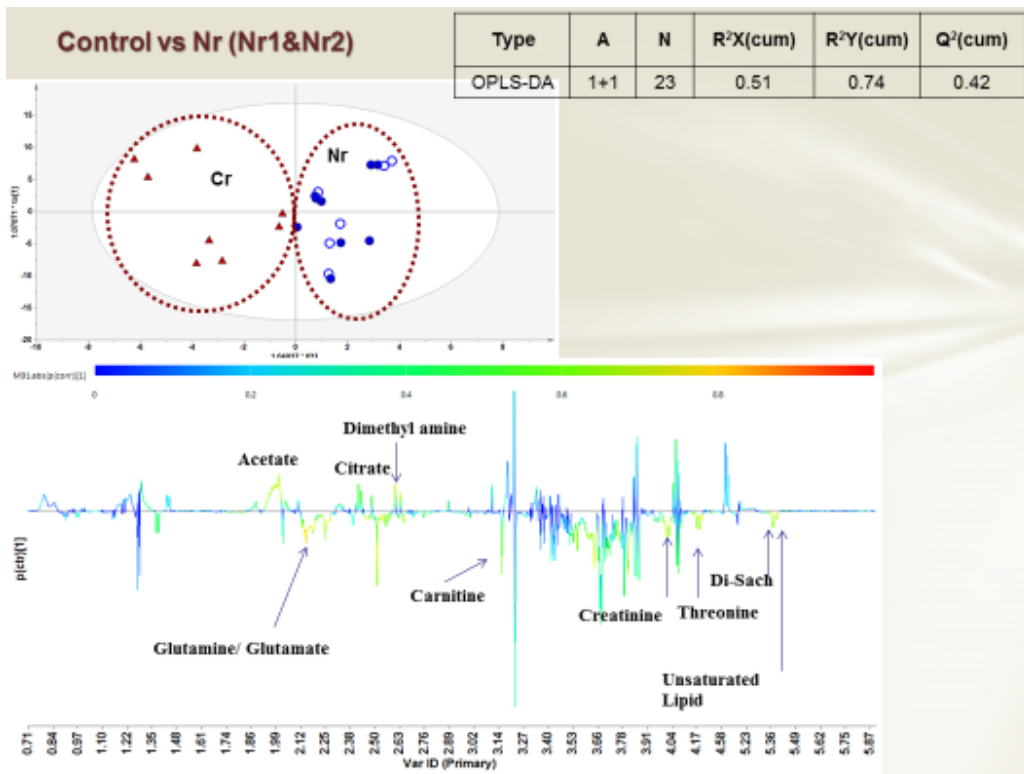
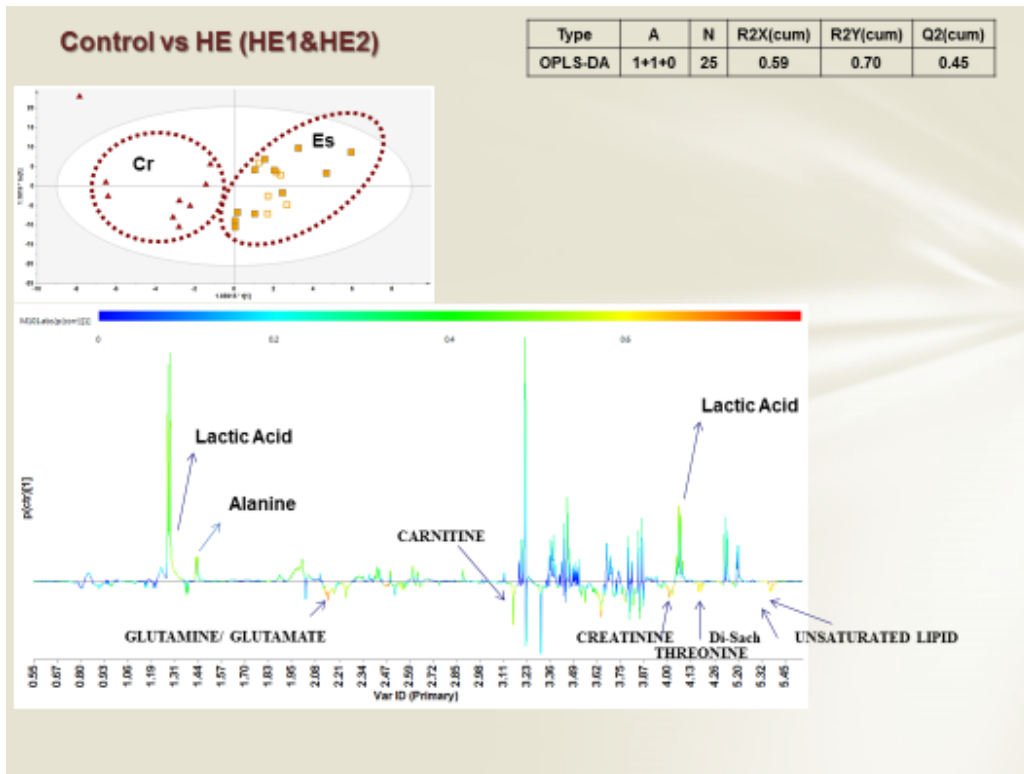
- 60 samples 
- 12 pens Divided to 24 blocks 
- treatment 
  - 10 control samples,
  - 10 were fed ration enriched with Vitamin E (VE),
  - 20 were fed with ration enriched with Naringin (Nr) low (750mg/kg) or high (1500mg/kg)
  - 20 were fed ration enriched with Hesperidin (He) low (750mg/kg) or high (1500mg/kg)
- weight 1.5 kg – 3.0 kg

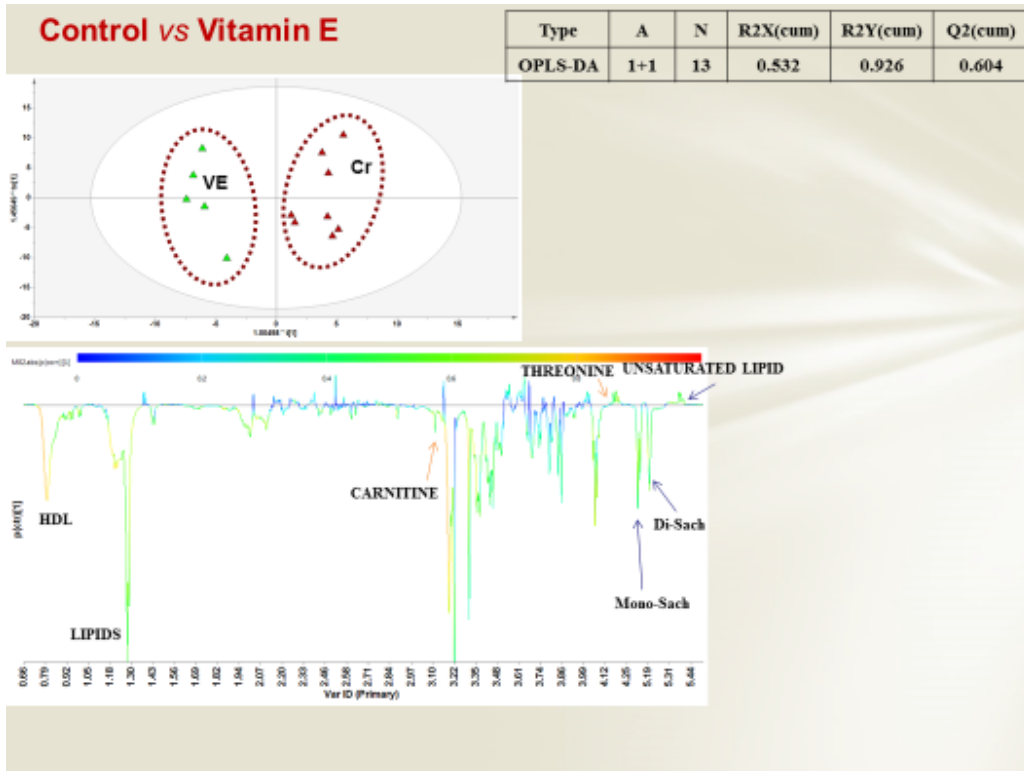
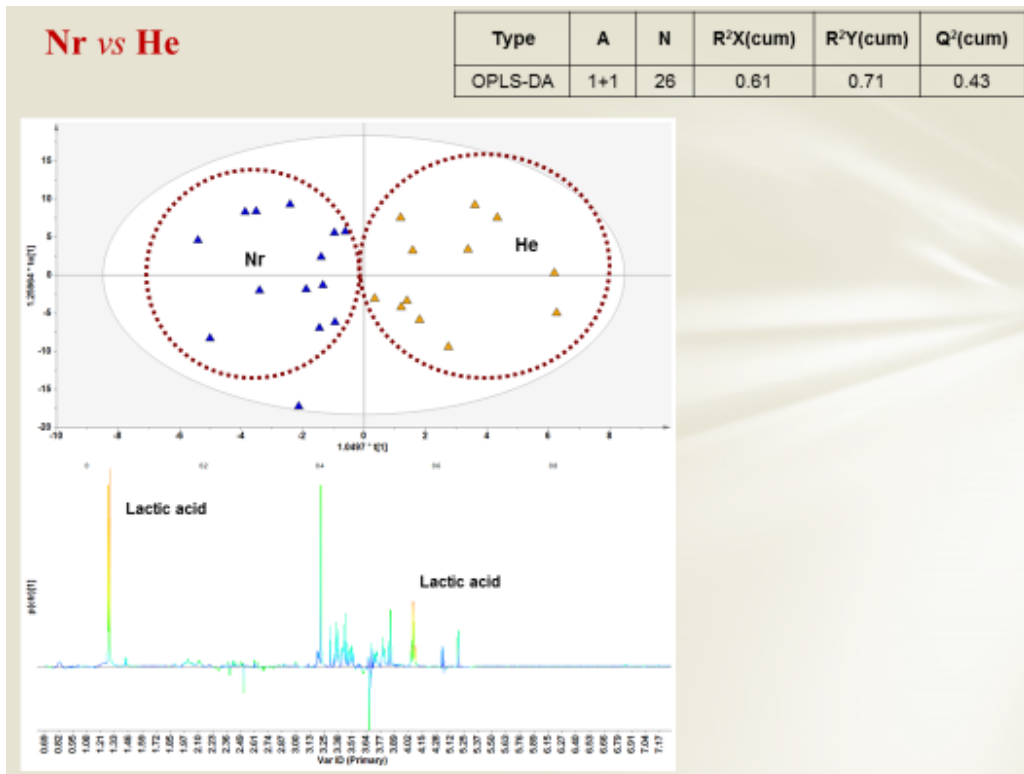
### Metabolite Identification & Quantification

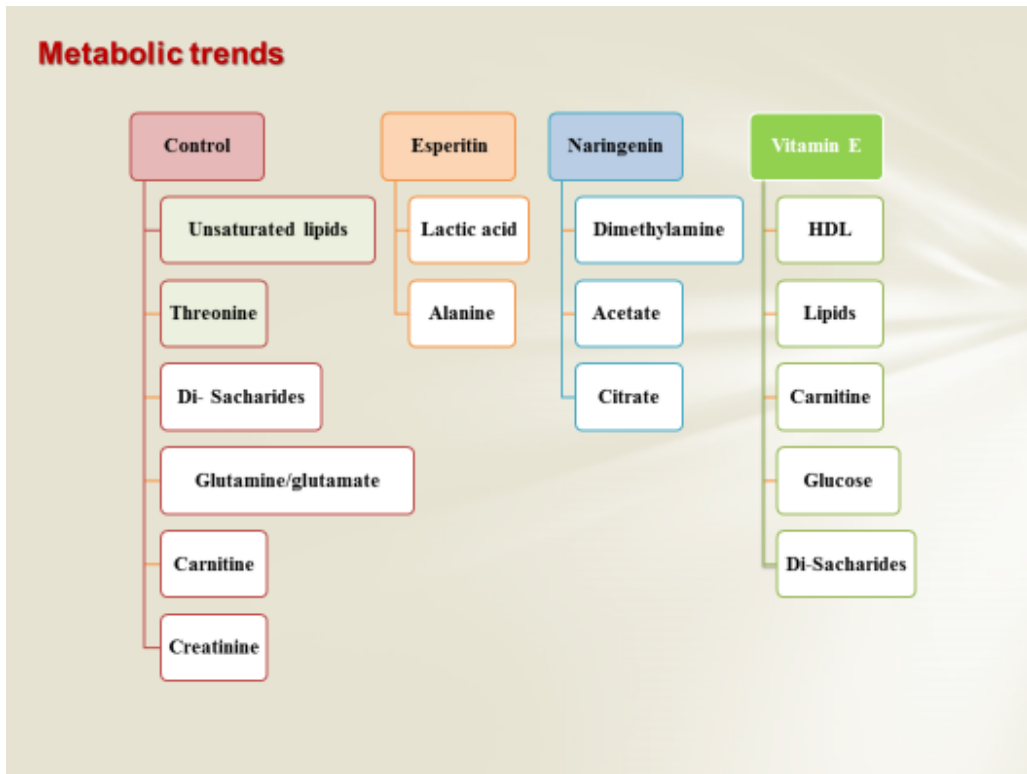
- Reference databases : Chemomx NMR suite 7.7
  - NMR based studies on animal plasma
  - 2D NMR-spectra: zTOCSY, gCOSY, gHSQCad, gHMBCad
- Quantification of selected metabolites:** leucine, isoleucine, valine, alanine, citrate, dimethylglycine, glutamine, lactate, threonine, glucose, fumarate, tyrosine, phenylalanine, formate.











### Conclusions

Utilized NMR –omics to investigate:

**Impact of flavonoid enriched Ration on the metabolic fingerprint of chicken plasma**

- ✓ Monitored metabolic trends
  - attributed to each class specific metabolites
  - different profile was assessed for either bioflavonoid
- ✓ Predictive models classify samples according to their sustenance
  - Discrimination of the samples was achieved independent of the bioflavonoid dose
- ✓ Relation of weight to bioflavonoid consumption has been highlighted

**Bioflavonoids as additives in different concentrations in poultry rations result in products of better quality**



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