



## Mid-term Seminar

# Understanding trade-offs between health and efficiency to improve competitiveness and sustainability of animal production by breeding and management (SusTradeOff)

**Partners** INRA-GABI, IDELE & ITAVI, **FR**; WUR, HendrixG, Cobb, **NL**; AU & Økologisk, **DK**; MRI & UEDIN, **UK**

**Problem addressed in the project** Selection for weight gain & egg/milk yield resulted in resources allocated to production at the expense of other physiol. processes like immune function = TradeOffs

**Objectives** Understand in sheep & poultry how protein diets, genetics, production stage, disease/vaccination affect protein allocation between production & immune function

### Interim research findings

- Assessment of D2O protocols for sheep & chicken
- SWATH-MS platform developed for sheep muscle (400 unique proteins quantified)
- Sheep resource allocation model experiment
- Resilience indicators based on BW variation and its relation with natural antibody levels in layers

### Future research and activities

- Chicken resource allocation model experiment
- Proteomic analysis, Integration of all heterogeneous omics data & Epidemiogenetic modeling of trade-offs
- Field investigation for sustainable systems, stakeholder interviews
- Eco/Environmental impact evaluation

### Funding



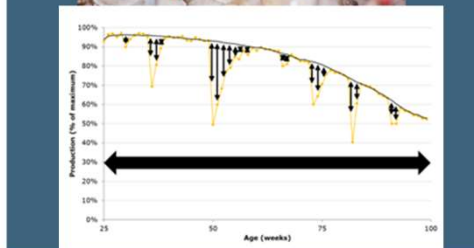
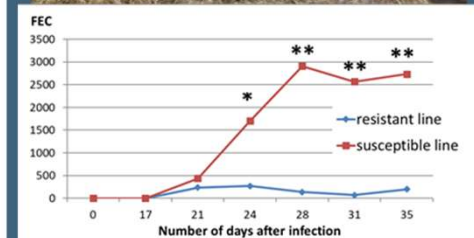
## SHEEP & POULTRY



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Protein pool & study phase	Grazed Mean % per day	Grazed SD	Housed Mean % per day	Housed SD
CD4+ cells 1 <sup>st</sup>	21.37	11.62	26.86	17.94
CD4+ cells 2 <sup>nd</sup>	17.99	7.18	29.79	9.09
PBMC 1 <sup>st</sup>	21.68	5.05	16.54	1.17
PBMC 2 <sup>nd</sup>	19.38	4.86	23.10	8.09
Albumin 1 <sup>st</sup>	10.88	0.33	8.31	0.86
Albumin 2 <sup>nd</sup>	8.08	2.77	10.58	5.93
IgG 1 <sup>st</sup>	16.37	4.11	11.29	2.01
IgG 2 <sup>nd</sup>	7.85	1.66	8.05	1.32
Myofibrillar 1 <sup>st</sup>	4.70	1.08	4.01	1.25
Myofibrillar 2 <sup>nd</sup>	1.99	0.81	2.68	0.69



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