

# WOODEN BREAST

## 23<sup>RD</sup> OF JANUARY 2018

# DAGSORDEN

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1. Projektaktiviteter
2. Præsentation af resultater
3. Status
4. Planlægning af 2018 forsøg
5. Eventuelt
6. Næste møde

# PROJECT ACTIVITIES 2018

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## Project design

4 houses:

2 new with CO<sub>2</sub> sensors

2 older without CO<sub>2</sub> sensors

Sampling:

Day 7, 14, 21, 28 and 34

## Measurements

CO<sub>2</sub> measurements in 4 houses throughout the production period (1/year)

Frequency of wooden breast

All 4 houses (determined at slaughter plant)

Wooden breast markers throughout the production period (gene/protein regulation)

# PRODUKTIONSFORHOLD

Blå stalde (1 og 4): nye fra 2014

Ventilationssystemet er frekvensstyret og bl.a. baseret på staldenes CO<sub>2</sub> koncentration

Lyse stalde (2 og 3): ældre stalde

Ventilation styres automatisk, men er ikke baseret på staldenes CO<sub>2</sub>



# RESULTS – OVER ALL (WB%)

DIFFERENTIATED AND BIOFUNCTIONAL FOODS  
INTERFACE BETWEEN NUTRITION,  
FOOD QUALITY AND HEALTH

House	Hen age	Broiler age	No WB	Mild WB	Sever WB	WB total
1	33	23	82,5	17,5	0	17,5
		29	60	37,5	2,5	40
		36	60	32,5	7,5	40
2 Highest CO <sub>2</sub>	27	21	95	5	0	5
		28	67,5	30	2,5	32,5
		34	25	35	40	75
3	31/47	21	85	15	0	15
		28	72,5	22,5	5	27,5
		34	10	67,5	22,5	90
4	53/58	21	82,5	17,5	0	17,5
		28	45	45	10	55
		34	75	22,5	2,5	25

# STATUS – 2017 FORSØG

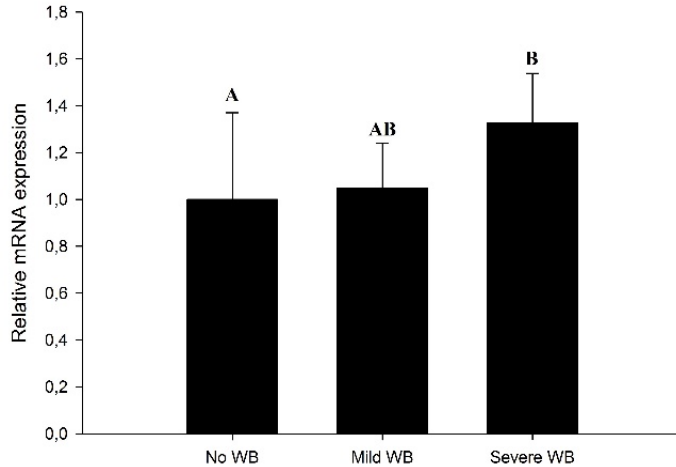
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- ✓ Delmål 1: Indkøring af analysemetoder til bestemmelse af biomarkører
- ✓ Delmål 2: Indsamling af væv og blodprøver fra kyllinger gennem hele opvæksten
- ✓ Delmål 2: Analyse af væv og blodprøver
  - RNA analyser er gennemført for hus 2 for 6 gener
  - Plasmaprøver er analyseret for metabolitter (data under opgørelse)
  - Glycogen og bufferkapacitet er analyseret
- ✓ Delmål 3: Træbrystfrekvens sammenholdt med beregnede O<sub>2</sub> og målte CO<sub>2</sub> niveauer i stalde
- ✓ Delmål 4: Afrapportering af resultater (præliminær databehandling)

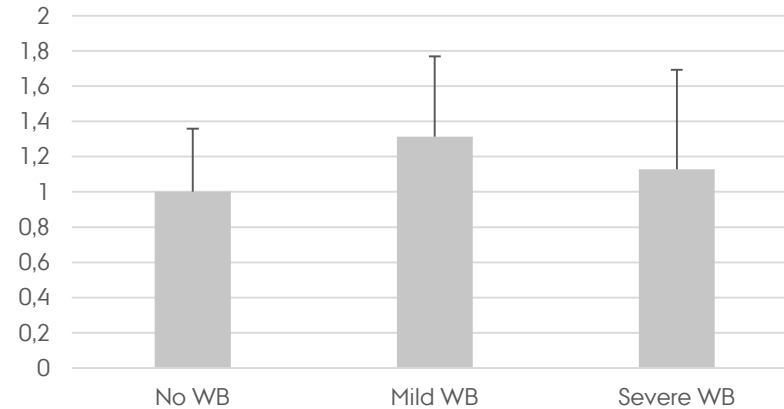
Tl rapport  
Frekvens tabeller  
Effektvurdering

# HSP70 (STRESS, PROTEIN FOLDING)

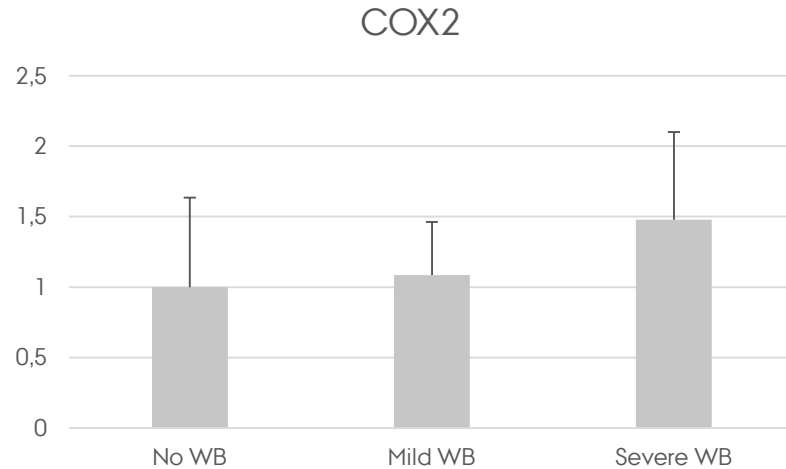
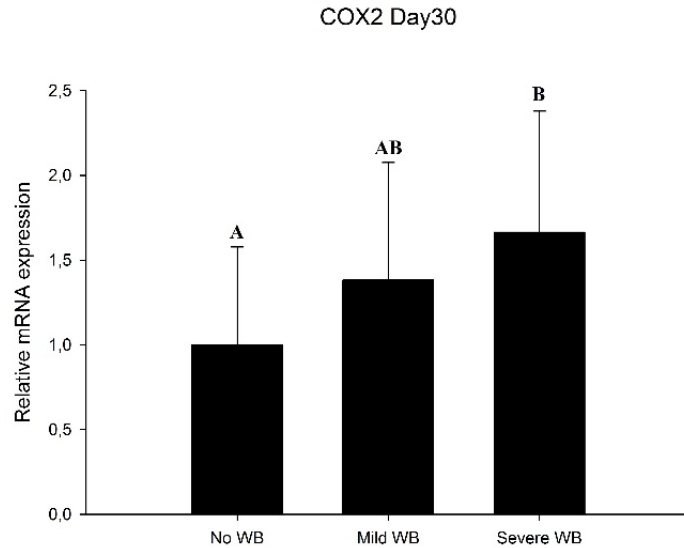
HSP70 Day30



HSP70

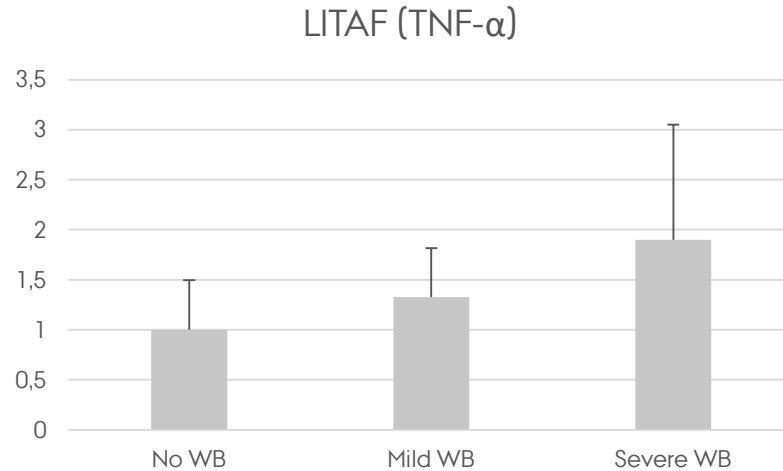
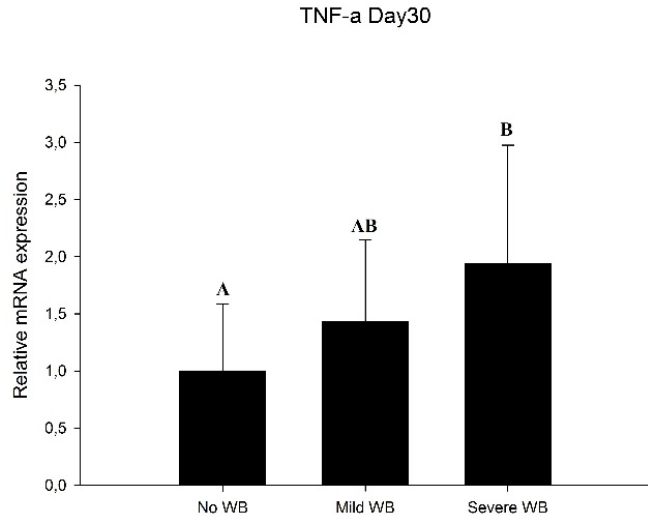


# COX2 (PROSTAGLANDIN, INFLAMMATION)



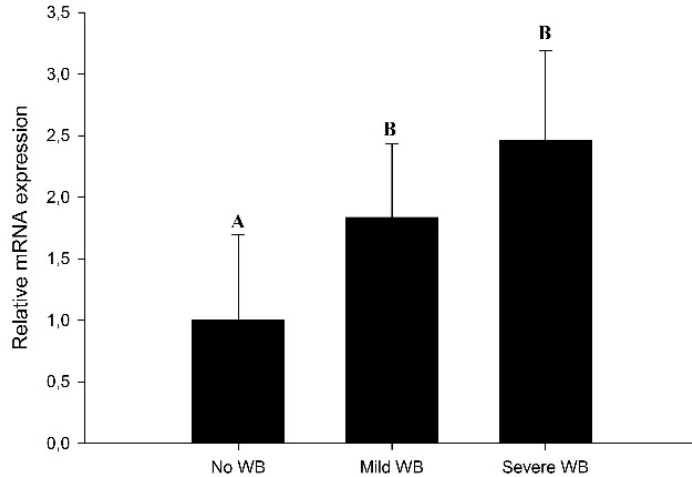


# TNF-A (CYTOKINE, INFLAMMATION)

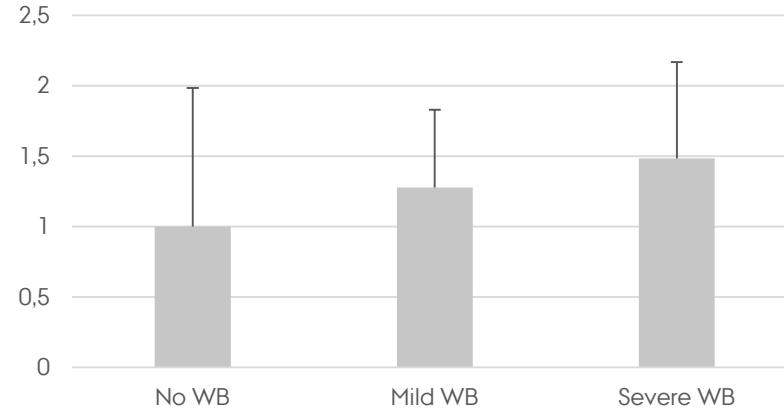


# HMOX1 (STRESS, INFLAMMATION)

HMOX1 Day30

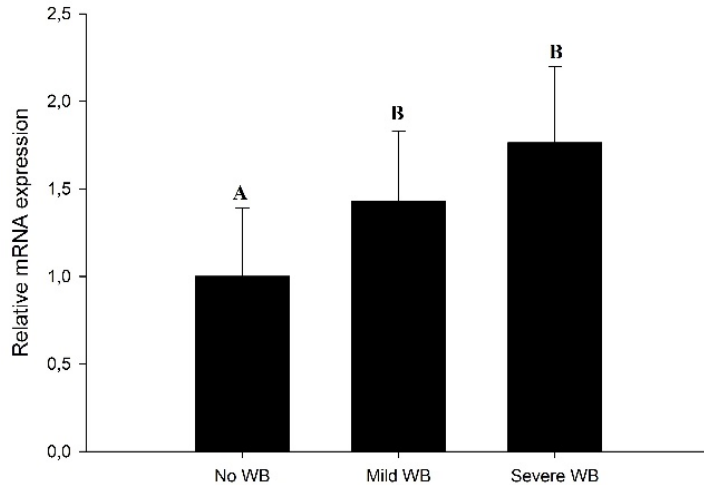


HMOX1

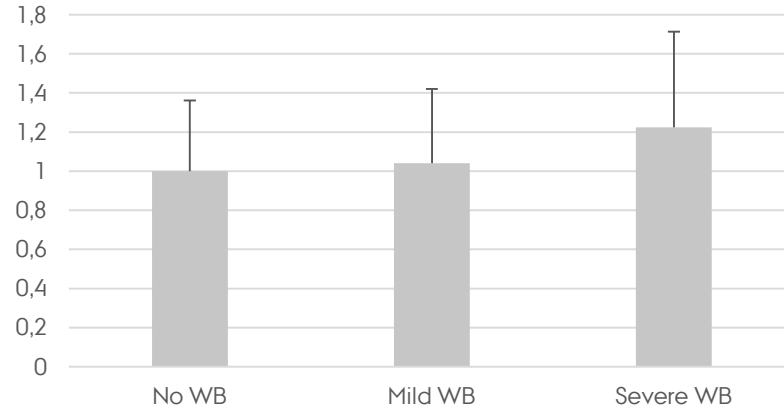


# HIF (HYPOXIA, LOW CELLULAR OXYGEN)

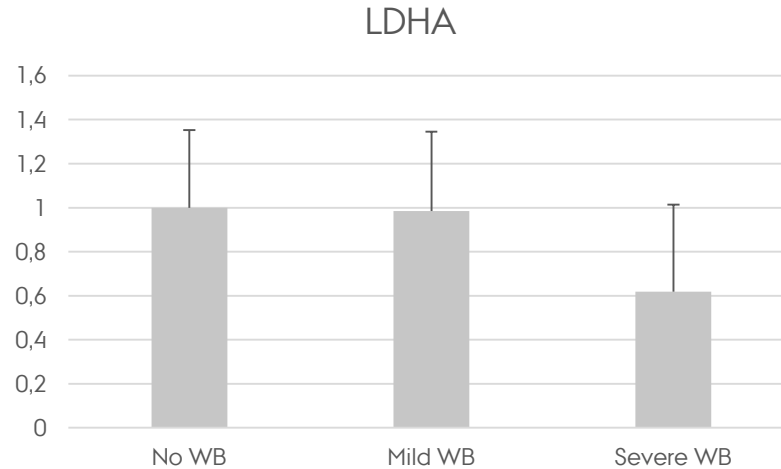
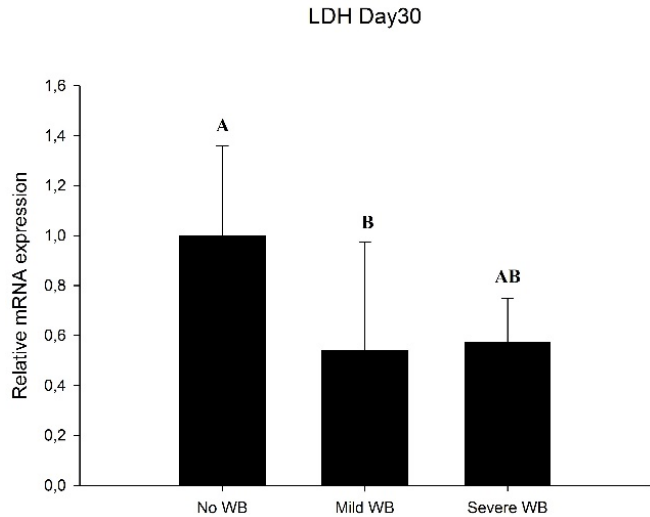
HIF Day30



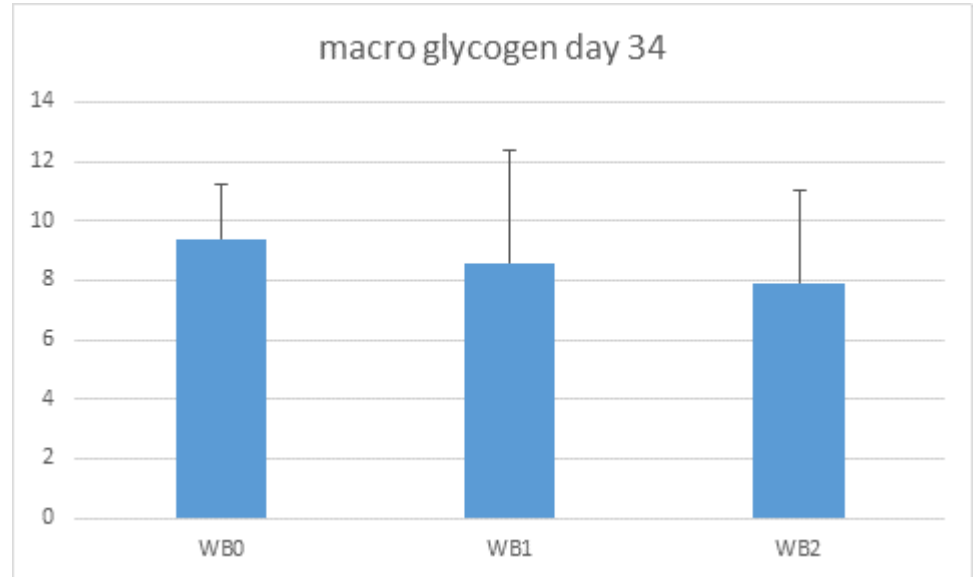
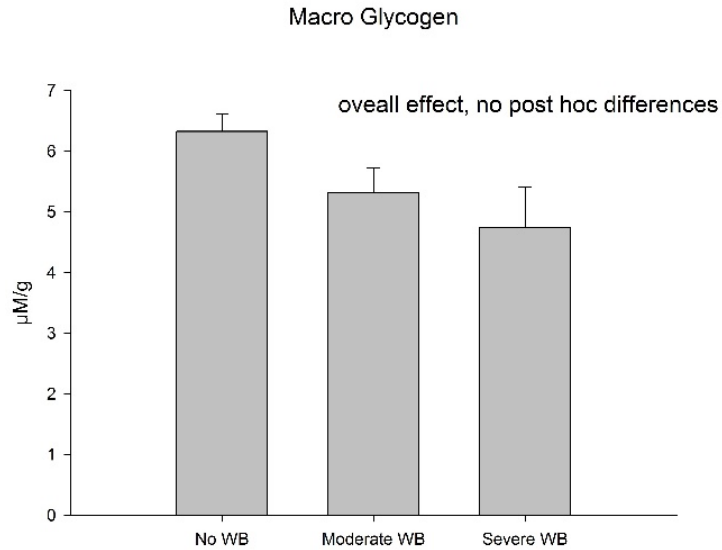
HIF



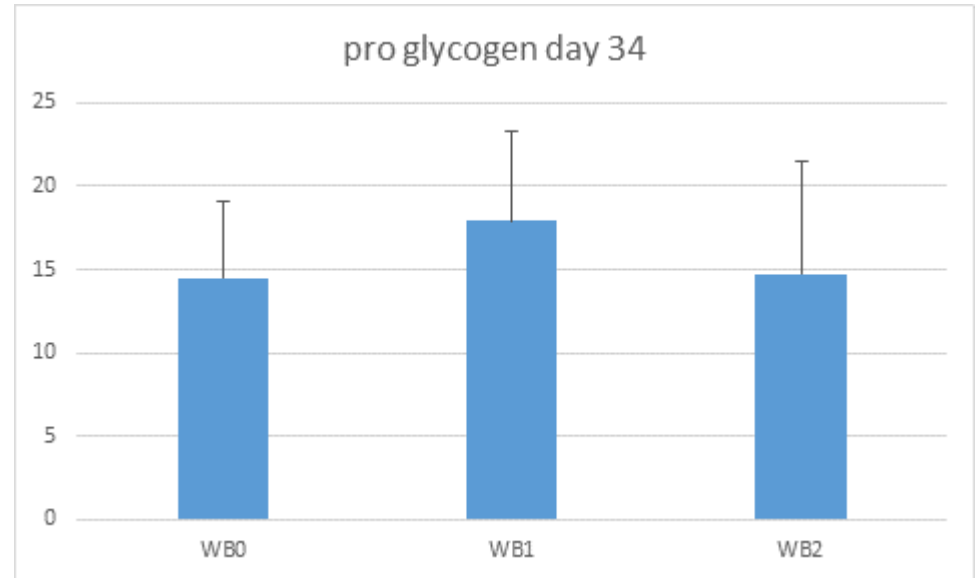
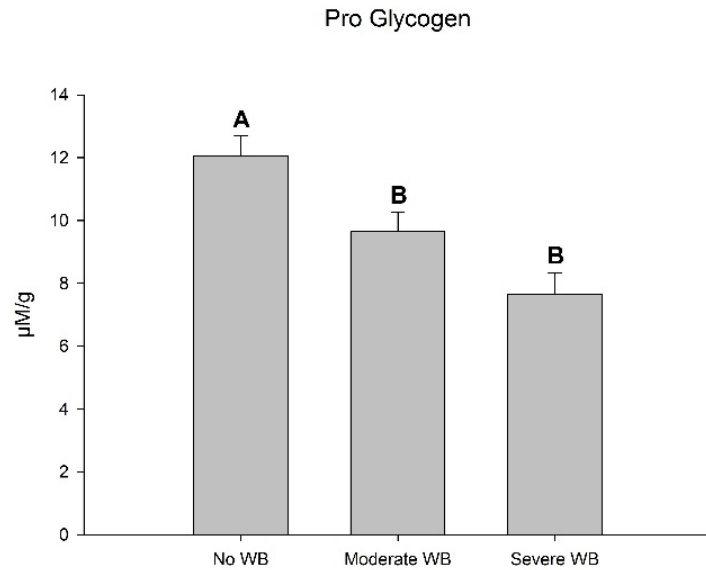
# LDH (LACTATE TO PYRUVIC ACID)



# MACRO GLYCOGEN

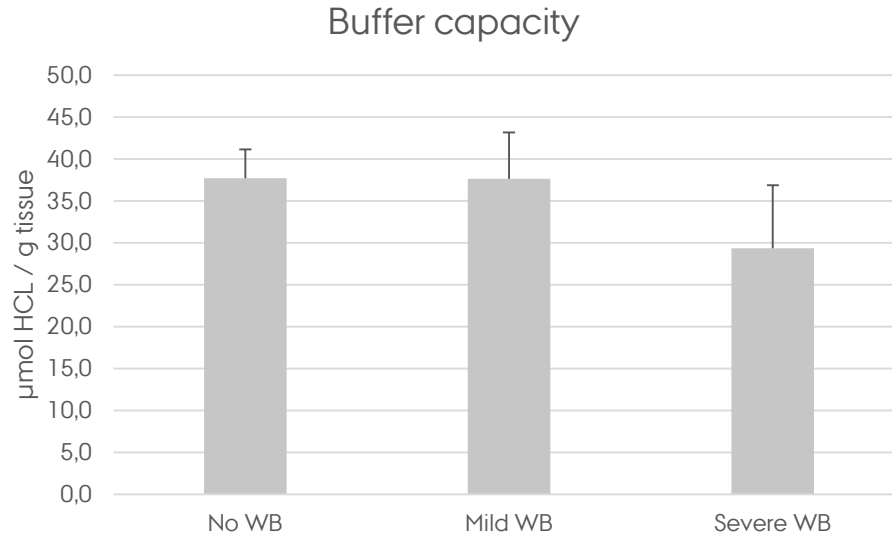


# PRO GLYCOGEN



# BUFFER CAPACITY

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# FORELØBIGE KONKLUSIONER

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- Større frekvens af svær træbryst i hus 2 hvor CO<sub>2</sub> niveauet var let forøget – signifikans?
- Ingen forskelle i genregulering ved de unge dyr men samme tendenser ved dag 30/34 som ved 2015 forsøg = øget stress/inflammation
- Reduceret buffer kapacitet (stemmer med reduceret carnocin og anserin – dipeptider der fungerer som buffere og antioxidanter i musklen) – signifikans? Muskelmasse?



# FORSØG 2018

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Delmål 1: Indsamling af væv og blodprøver fra kyllinger gennem hele opvæksten

Delmål 2: Analyse af væv og blodprøver

Stressede kyllinger danner fedt i leveren ->  
centrale gener og fedtsyrer i leveren? ->  
ændret fedtsyre profil i plasma som markør?

Delmål 3: Træbrystfrekvens sammenholdt med beregnede  $O_2$  og målte  $CO_2$  niveauer i stalde

Delmål 4: Afrapportering af resultater for 2017+2018 samlet

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## Project design

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21, 28 and 34 ?

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**Blood, liver, muscle**



AARHUS  
UNIVERSITY