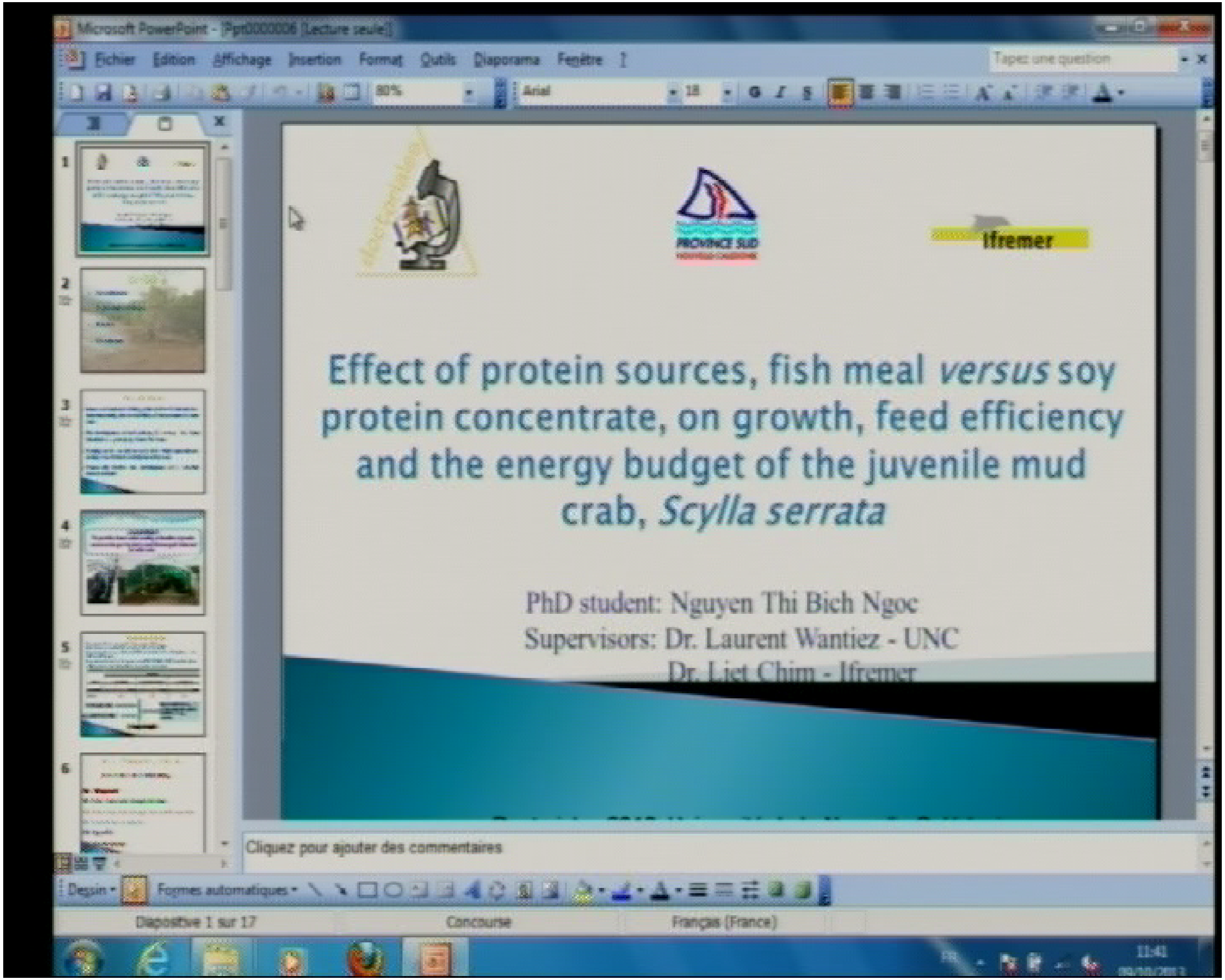
Microsoft PowerPoint - [Ppt0000006 [Lecture seule]]
Fichier Edition Affichage Insertion Format Outils Diaporama Fenêtre ?
Tapez une question
PROVINCE SUD
Ifremer
Effect of protein sources, fish meal versus soy protein concentrate, on growth, feed efficiency and the energy budget of the juvenile mud crab, Scylla serrata
PhD student: Nguyen Thi Bich Ngoc
Supervisors: Dr. Laurent Wantiez - UNC
Dr. Liet Chim - Ifremer
Cliquez pour ajouter des commentaires
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Concourse
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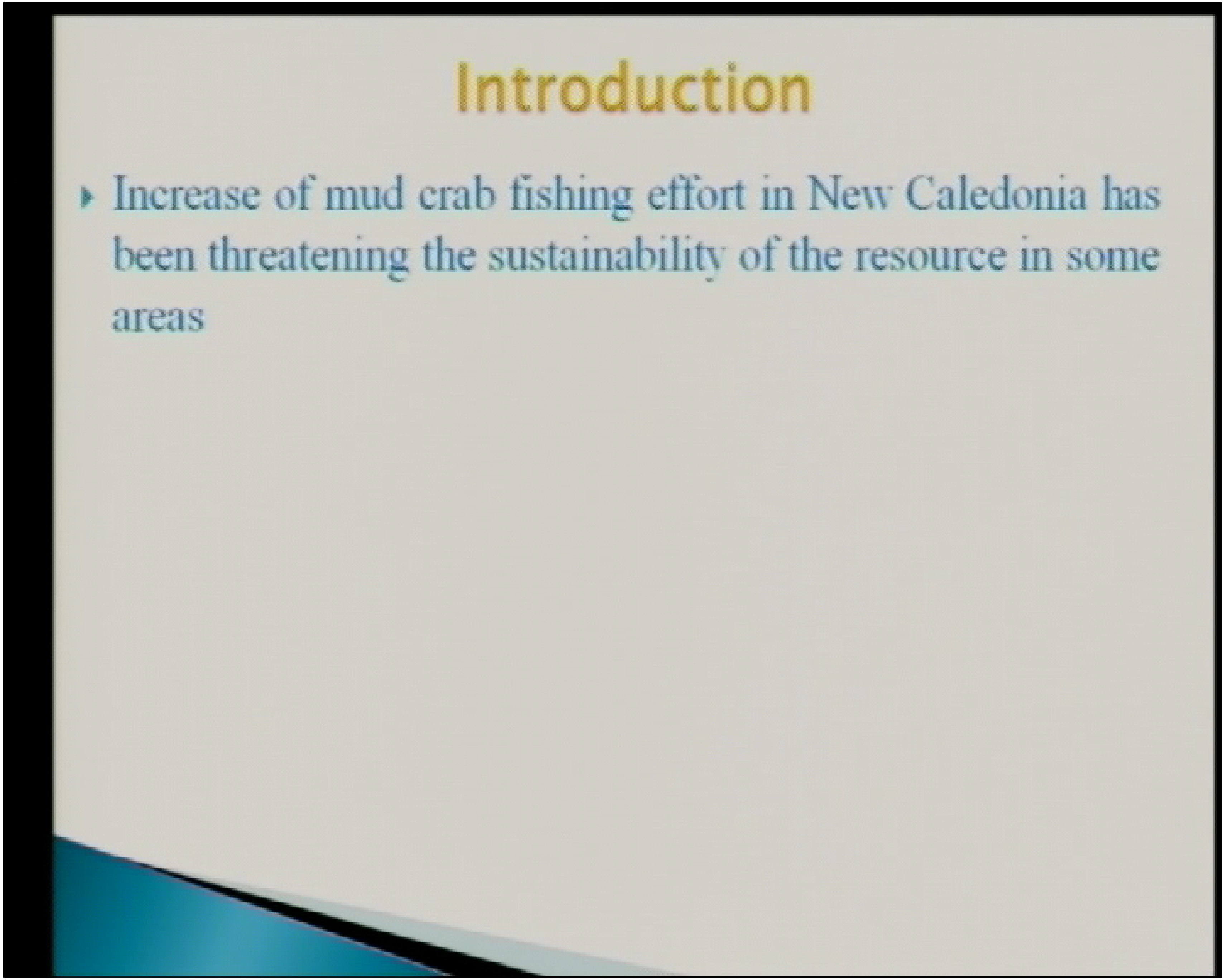
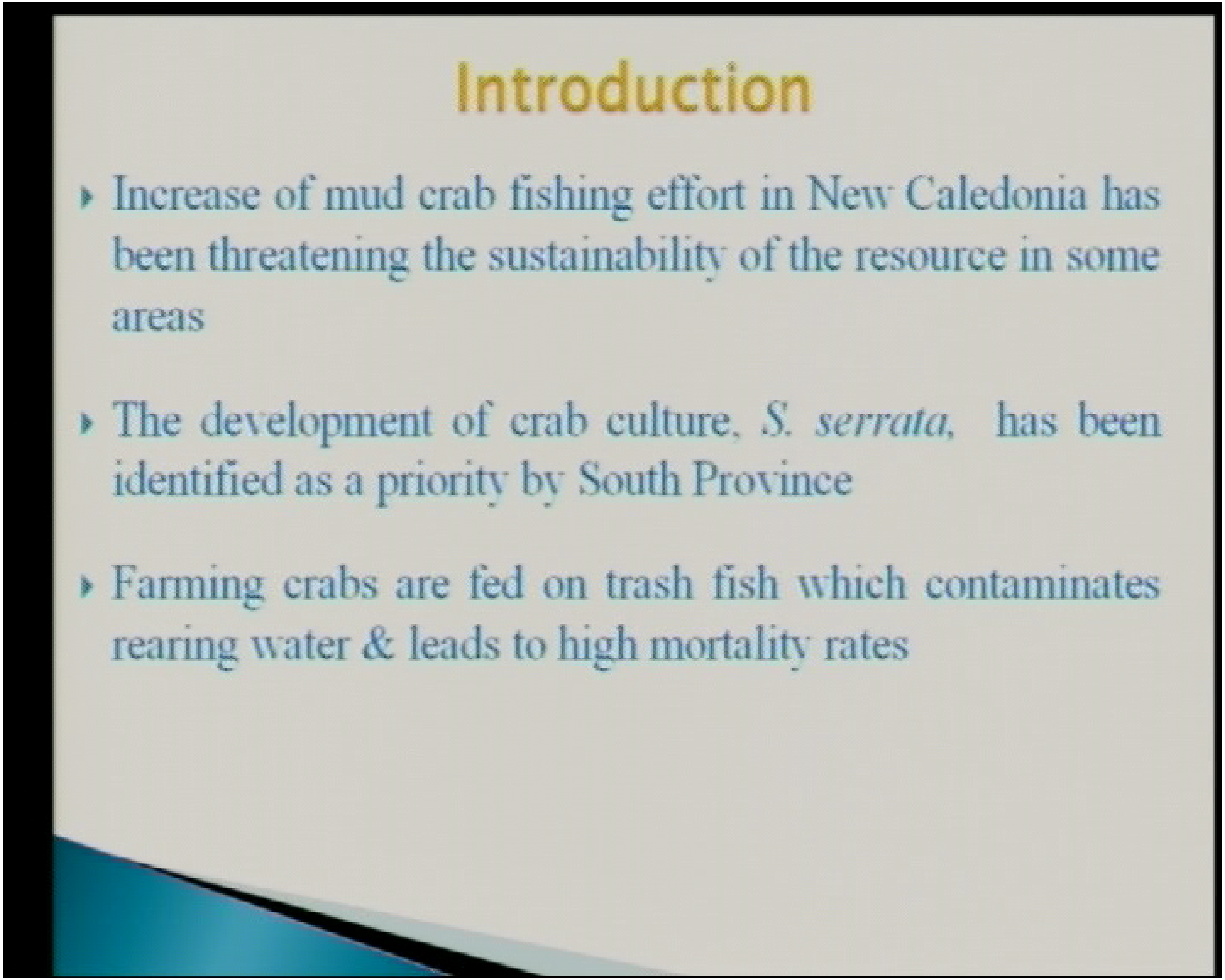
00002 - 00:01:40




00003 - 00:02:10

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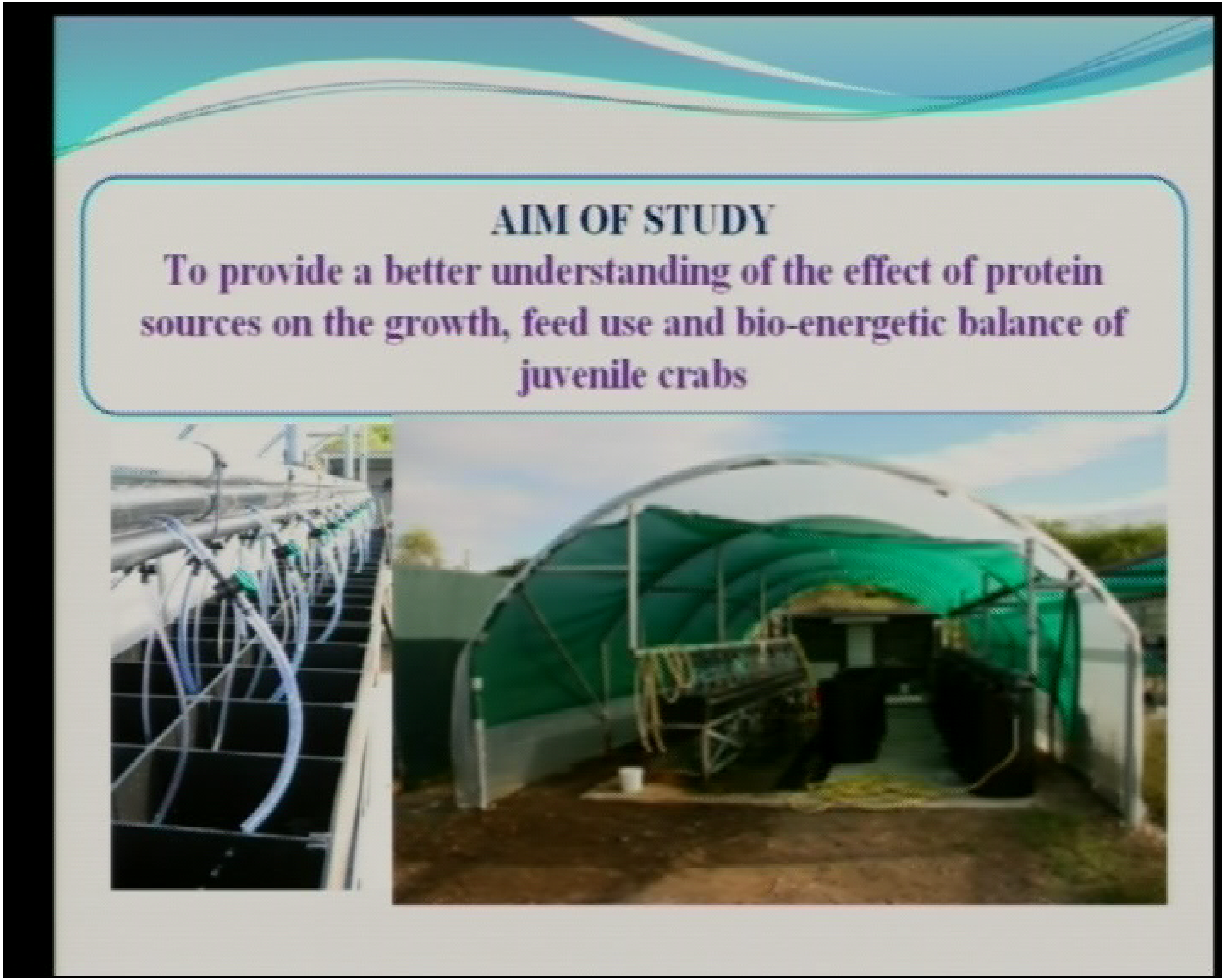
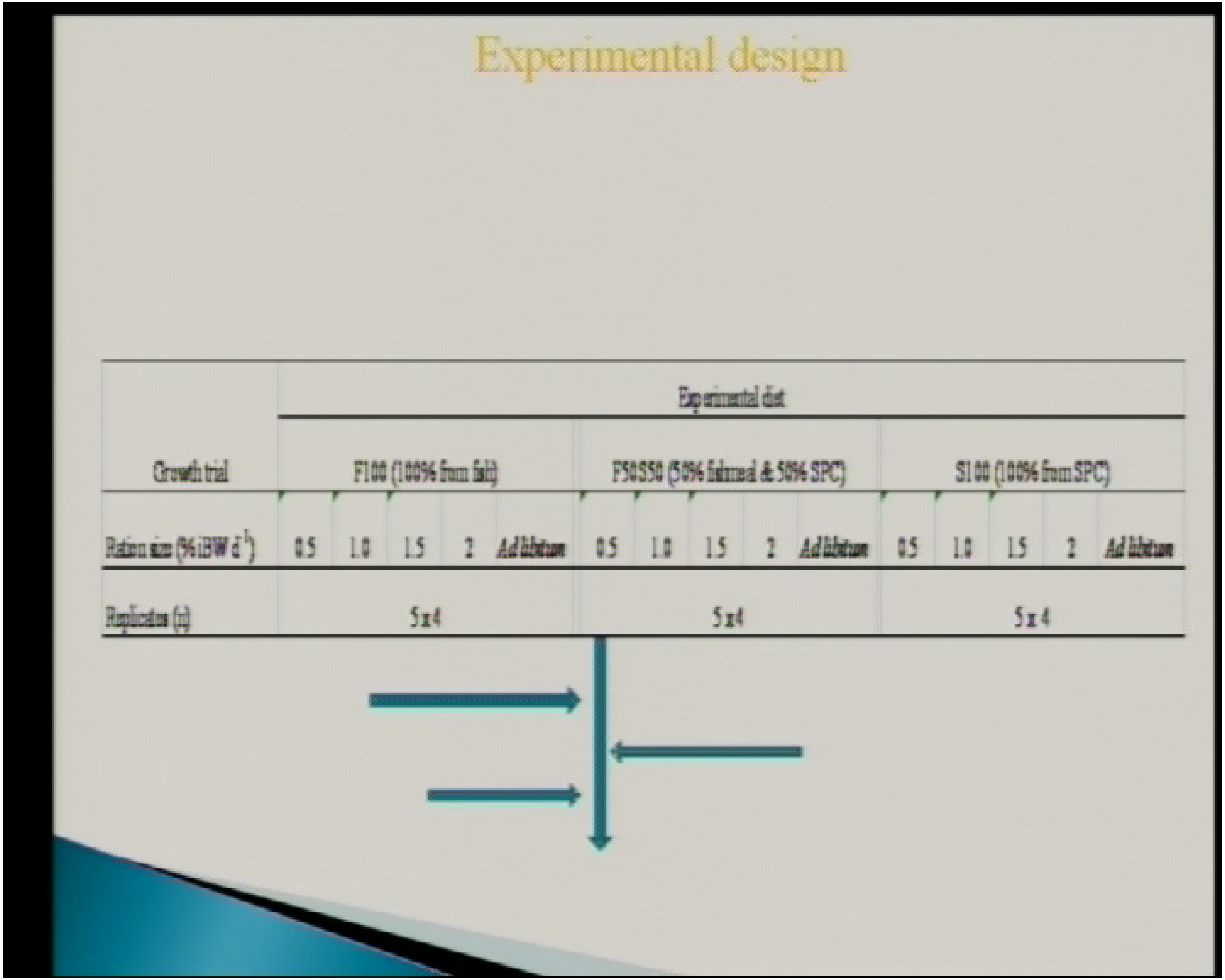
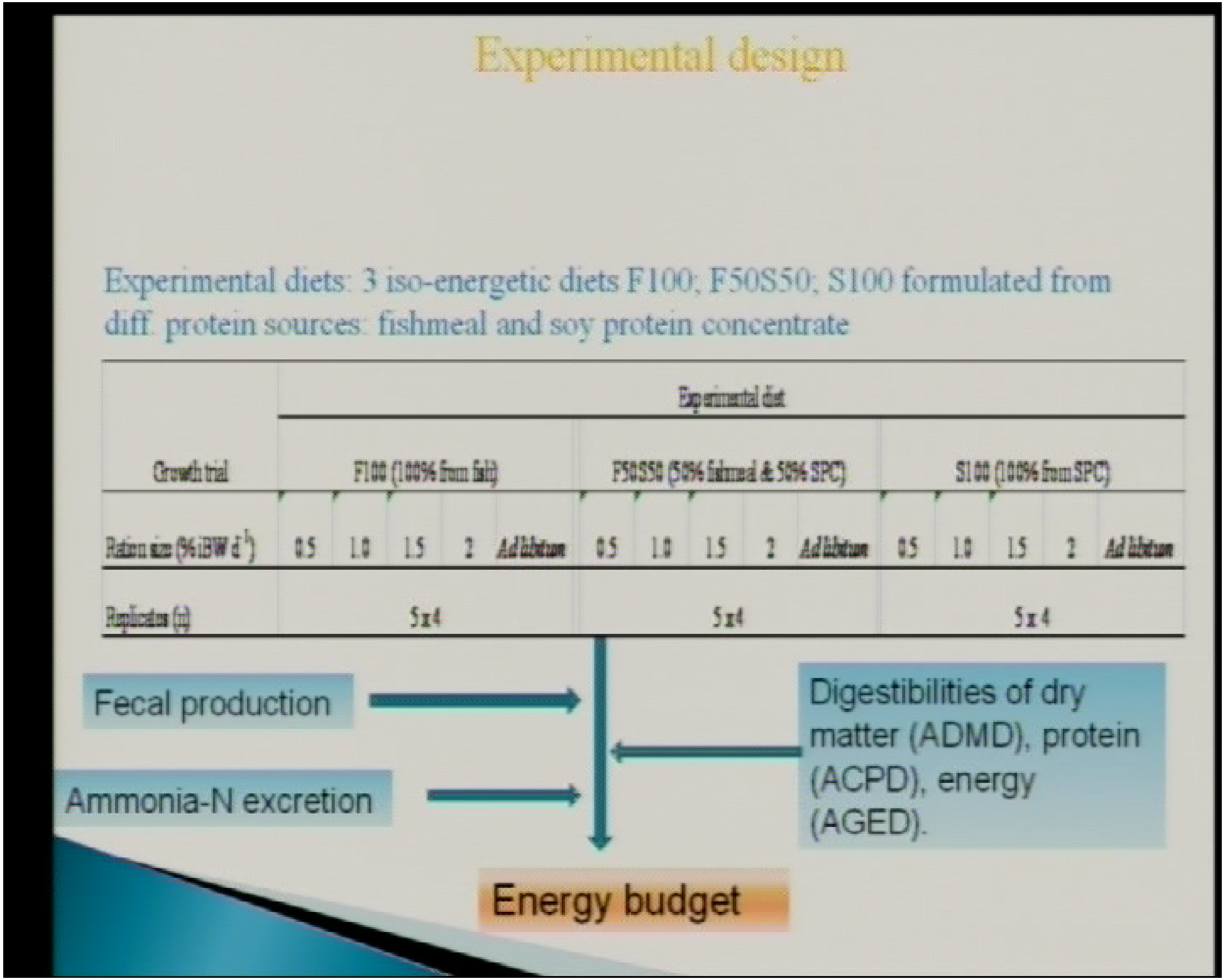
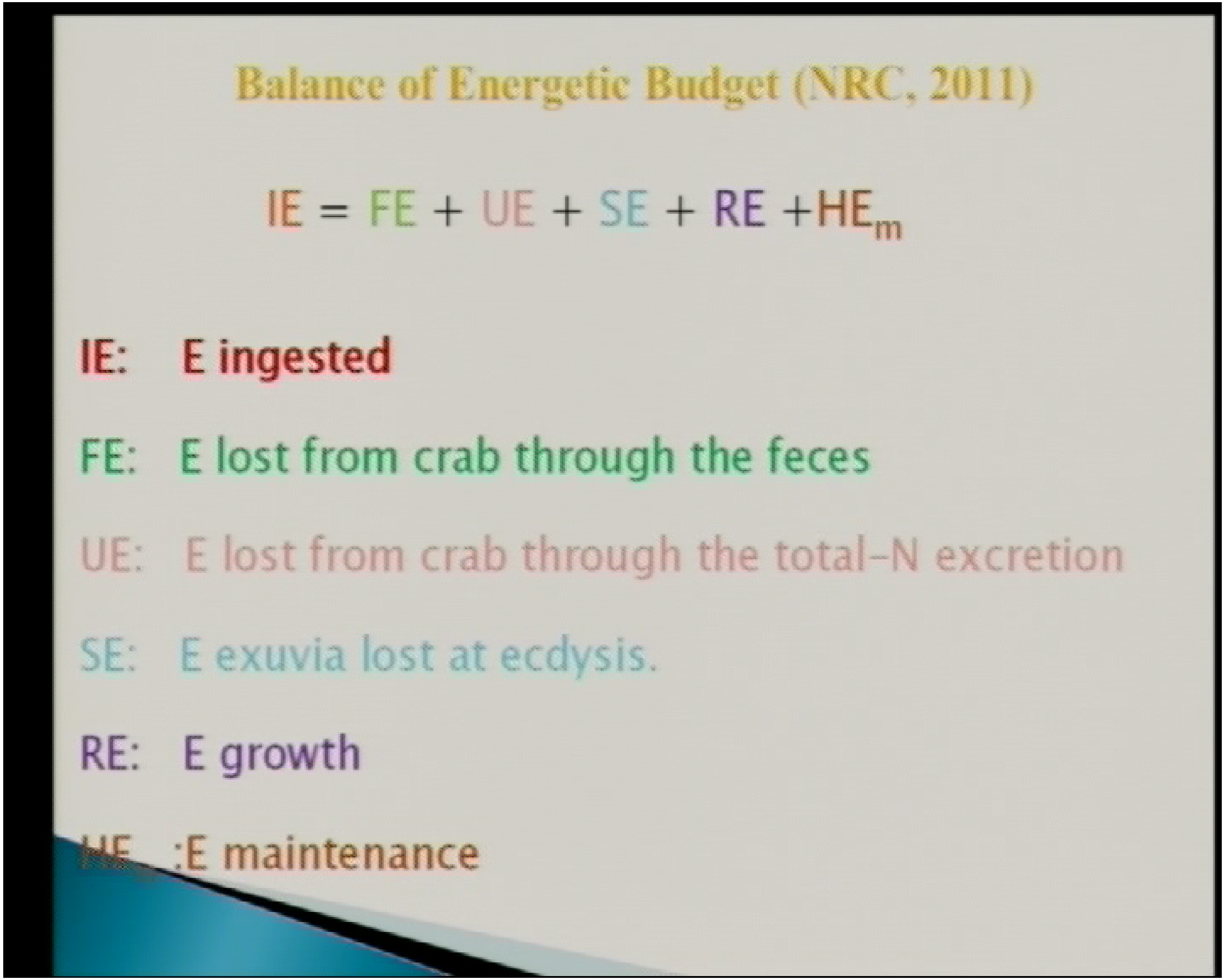



00005 - 00:03:20


Experimental design
Experimental diet
Growth trial
F100 (100% from fish)
F50S50 (50% fishmeal & 50% SPC)
S100 (100% from SPC)
Ration size (% iBW d-1)
0.5
1.0
1.5
2
Ad libitum
0.5
1.0
1.5
2
Ad libitum
0.5
1.0
1.5
2
Ad libitum
Replicates (n)
5 x 4
5 x 4
5 x 4

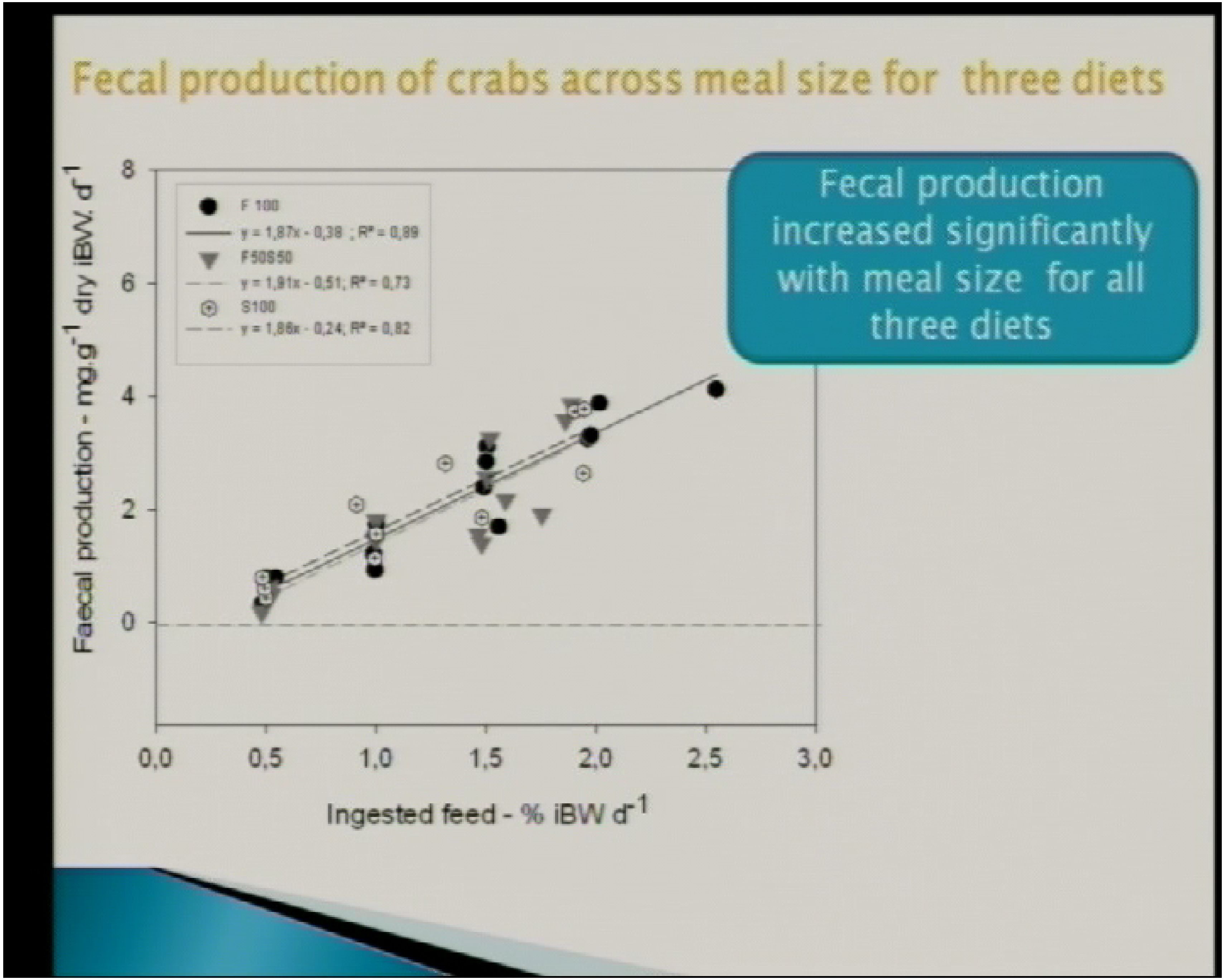


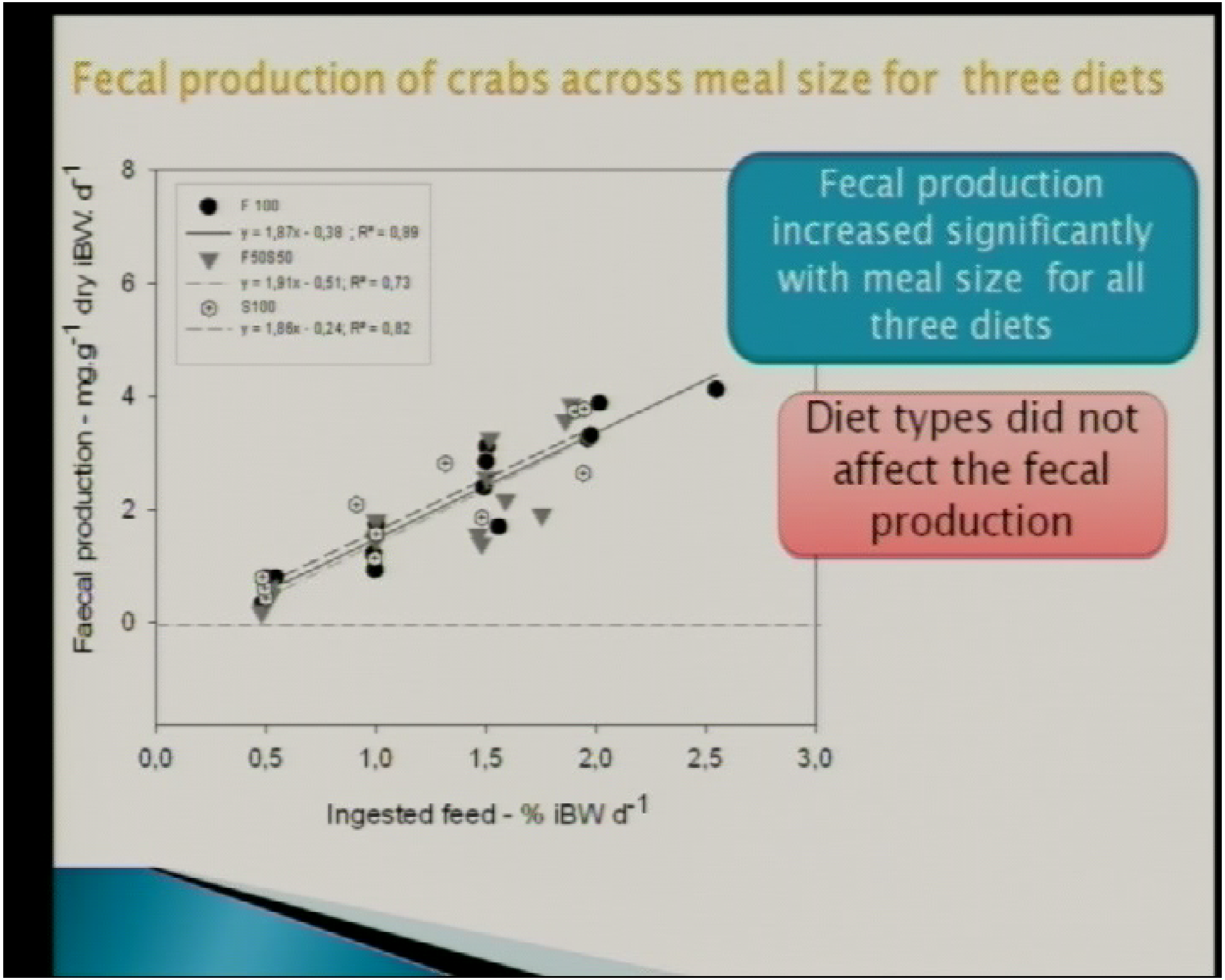

**00007 - 00:05:20**


Balance of Energetic Budget (NRC, 2011)
$IE = FE + UE + SE + RE + HE_m$
IE: E ingested
FE: E lost from crab through the feces
UE: E lost from crab through the total-N excretion
SE: E exuvia lost at ecdysis.
RE: E growth
$HE_m$ :E maintenance


00009 - 00:09:30

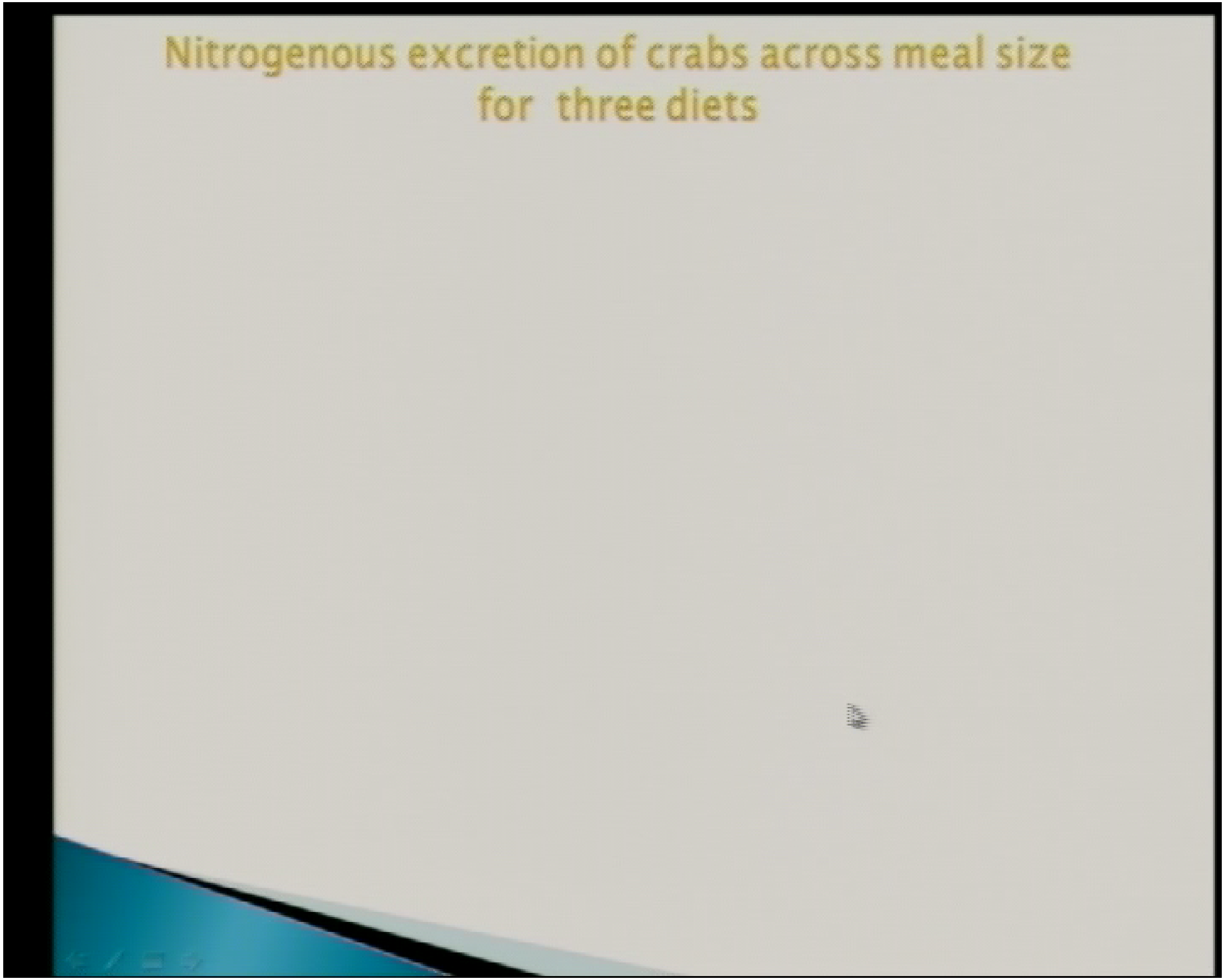

00010 - 00:09:40

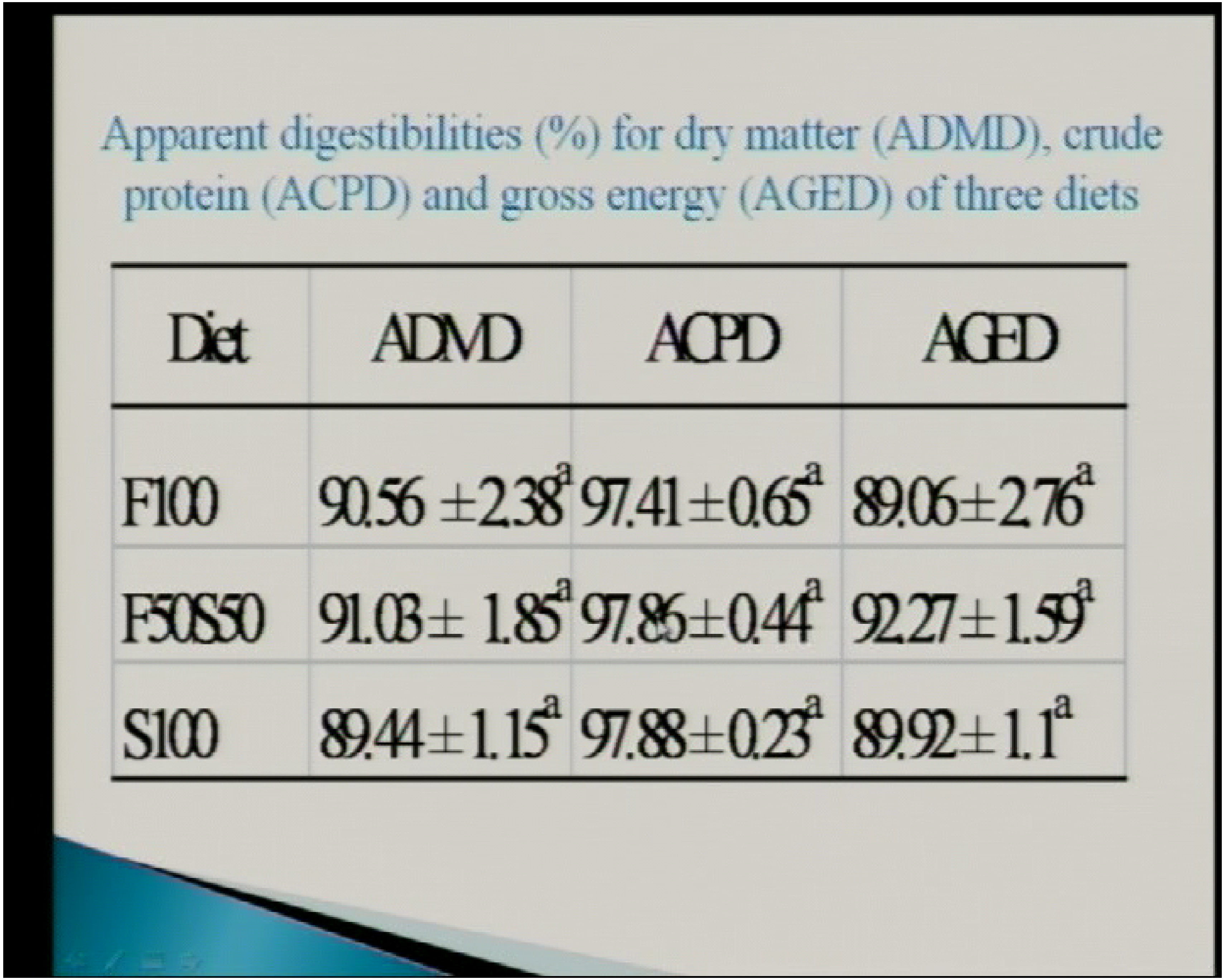

Fecal production of crabs across meal size for three diets
Fecal production increased significantly with meal size for all three diets
F 100
y = 1,87x - 0,38 ; R² = 0,89
F50S50
y = 1,91x - 0,51; R² = 0,73
S100
y = 1,86x - 0,24; R² = 0,82
Faecal production - mg.g⁻¹ dry iBW. d⁻¹
8
6
4
2
0
0,0
0,5
1,0
1,5
2,0
2,5
3,0
Ingested feed - % iBW d⁻¹


Fecal production of crabs across meal size for three diets
F 100
y = 1,87x - 0,38 ; R² = 0,89
F50S50
y = 1,91x - 0,51; R² = 0,73
S100
y = 1,86x - 0,24; R² = 0,82
Faecal production - mg.g⁻¹ dry iBW. d⁻¹
8
6
4
2
0
0,0
0,5
1,0
1,5
2,0
2,5
3,0
Ingested feed - % iBW d⁻¹
Fecal production increased significantly with meal size for all three diets
Diet types did not affect the fecal production

Apparent digestibilities (%) for dry matter (ADMD), crude protein (ACPD) and gross energy (AGED) of three diets

| Diet | ADMD | ACPD | AGED |
|---|---|---|---|
| F100 | 90.56 ± 2.38[a] | 97.41 ± 0.65[a] | 89.06 ± 2.76[a] |
| F50S50 | 91.03 ± 1.85[a] | 97.86 ± 0.44[a] | 92.27 ± 1.59[a] |
| S100 | 89.44 ± 1.15[a] | 97.88 ± 0.23[a] | 89.92 ± 1.1[a] |


Nitrogenous excretion of crabs across meal size
for three diets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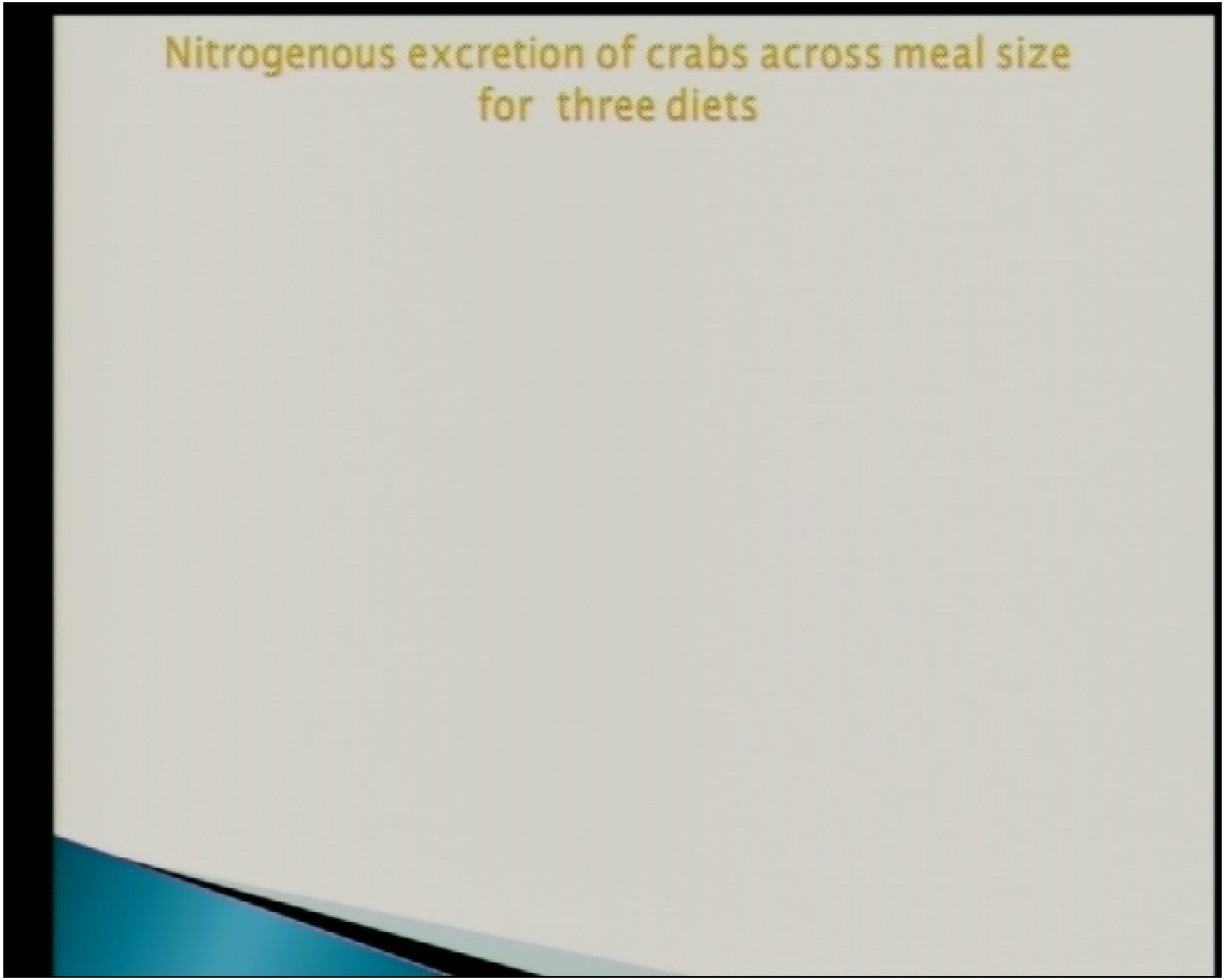
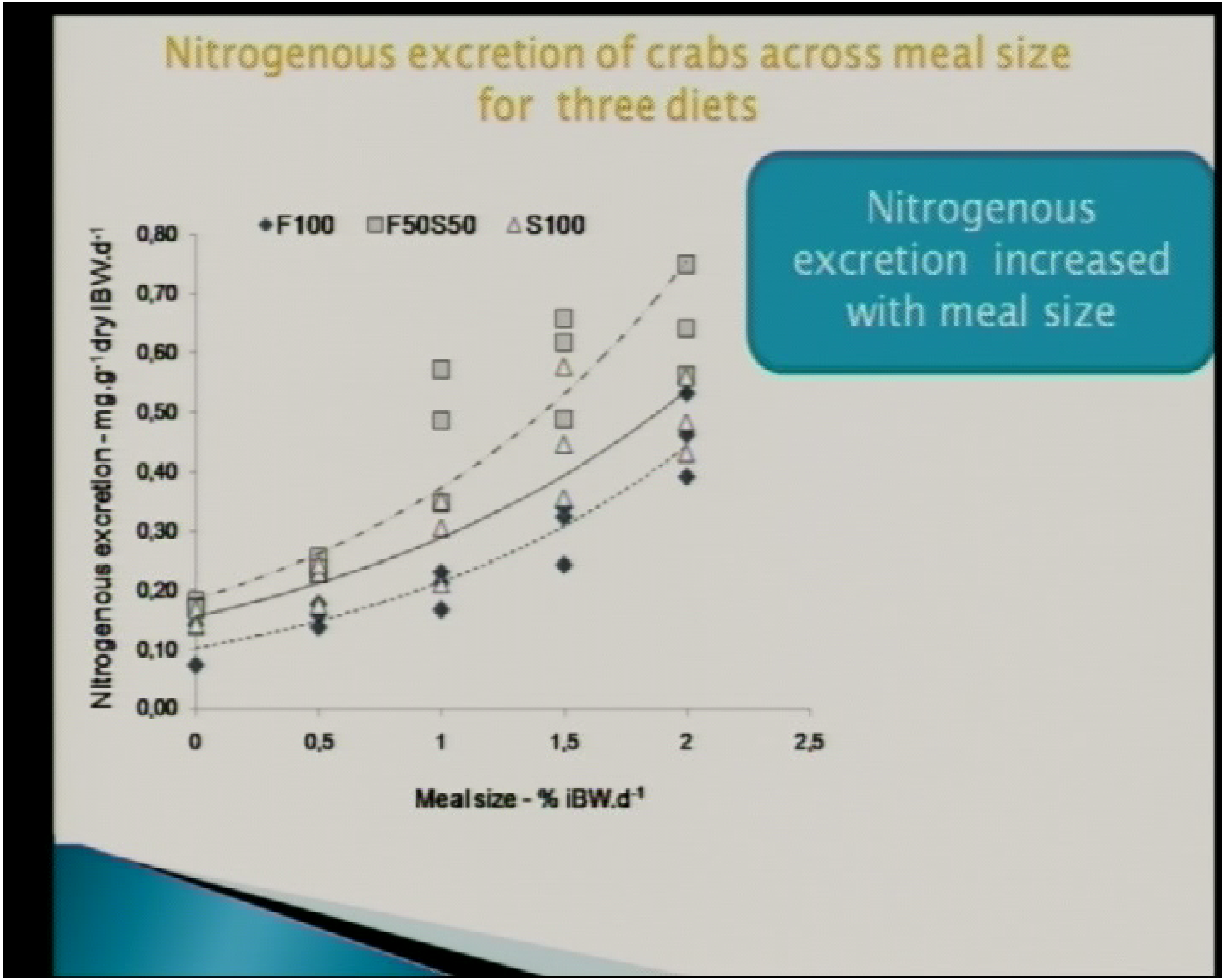
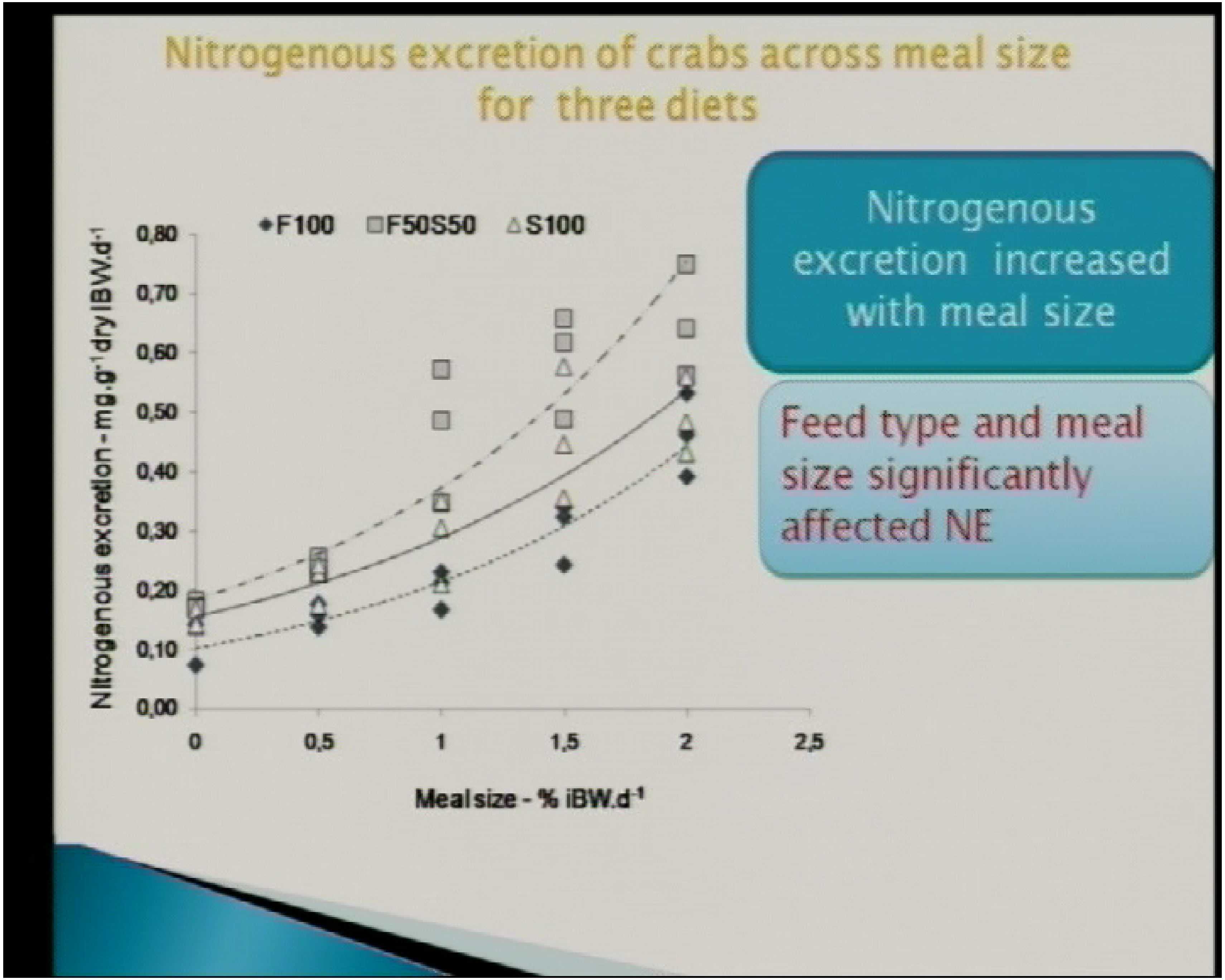
| S100 | 89.44 ± 1.15[a] | 97.88 ± 0.23[a] | 89.92 ± 1.1[a] |

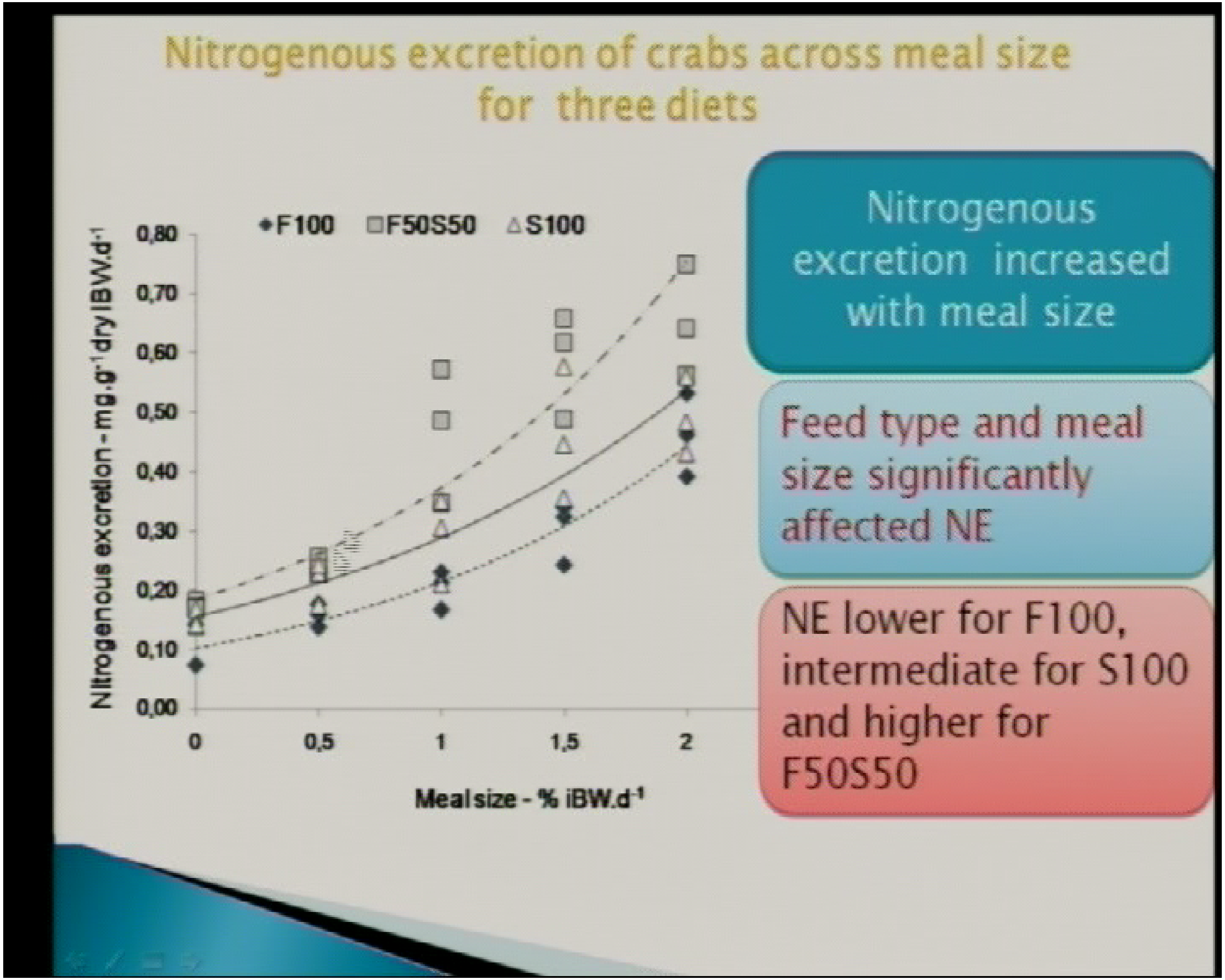



00016 - 00:11:30


Nitrogenous excretion of crabs across meal size for three diets
Nitrogenous excretion increased with meal size
F100
F50S50
S100
Nitrogenous excretion - mg.g⁻¹ dry IBW.d⁻¹
0,80
0,70
0,60
0,50
0,40
0,30
0,20
0,10
0,00
0
0,5
1
1,5
2
2,5
Meal size - % iBW.d⁻¹

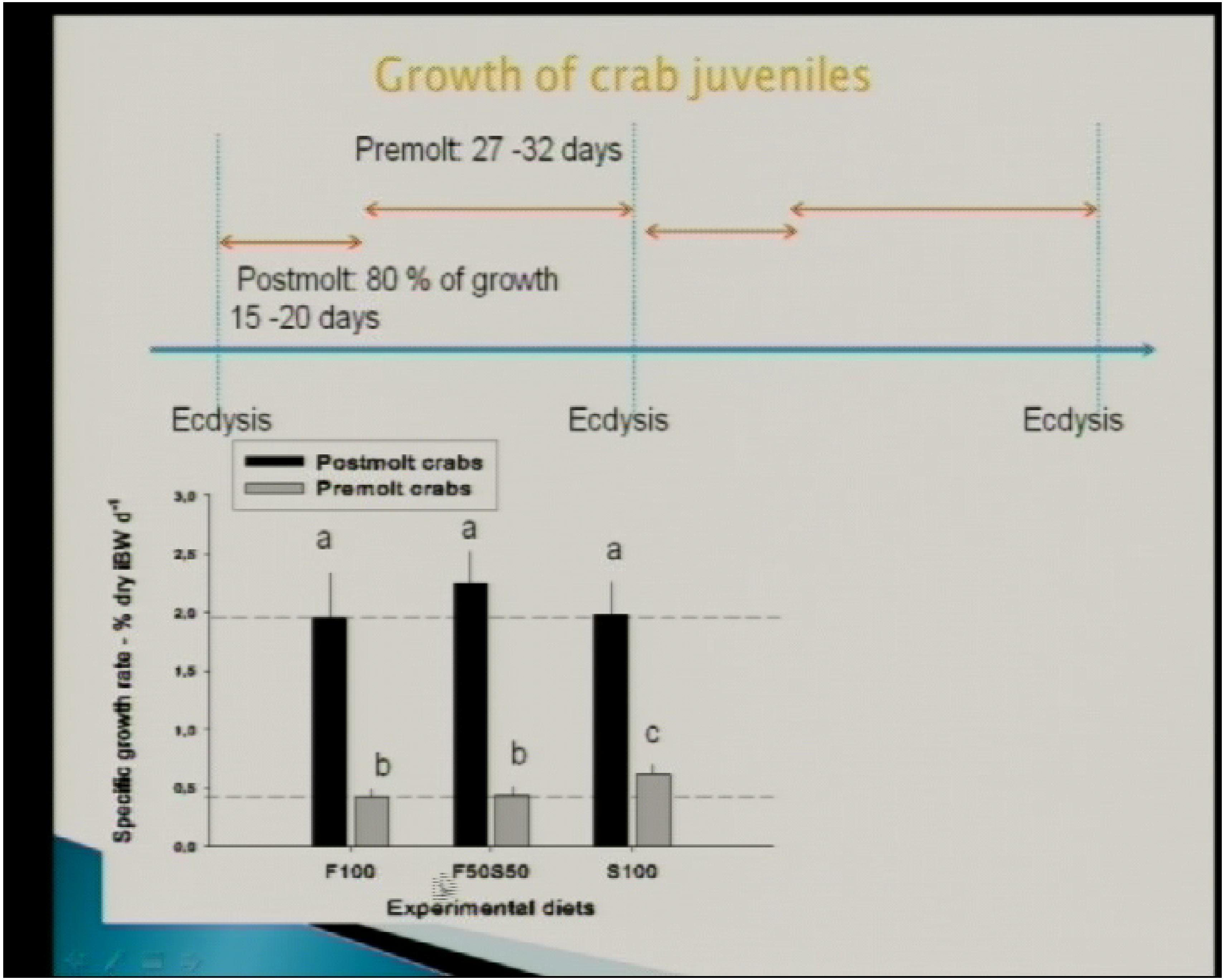


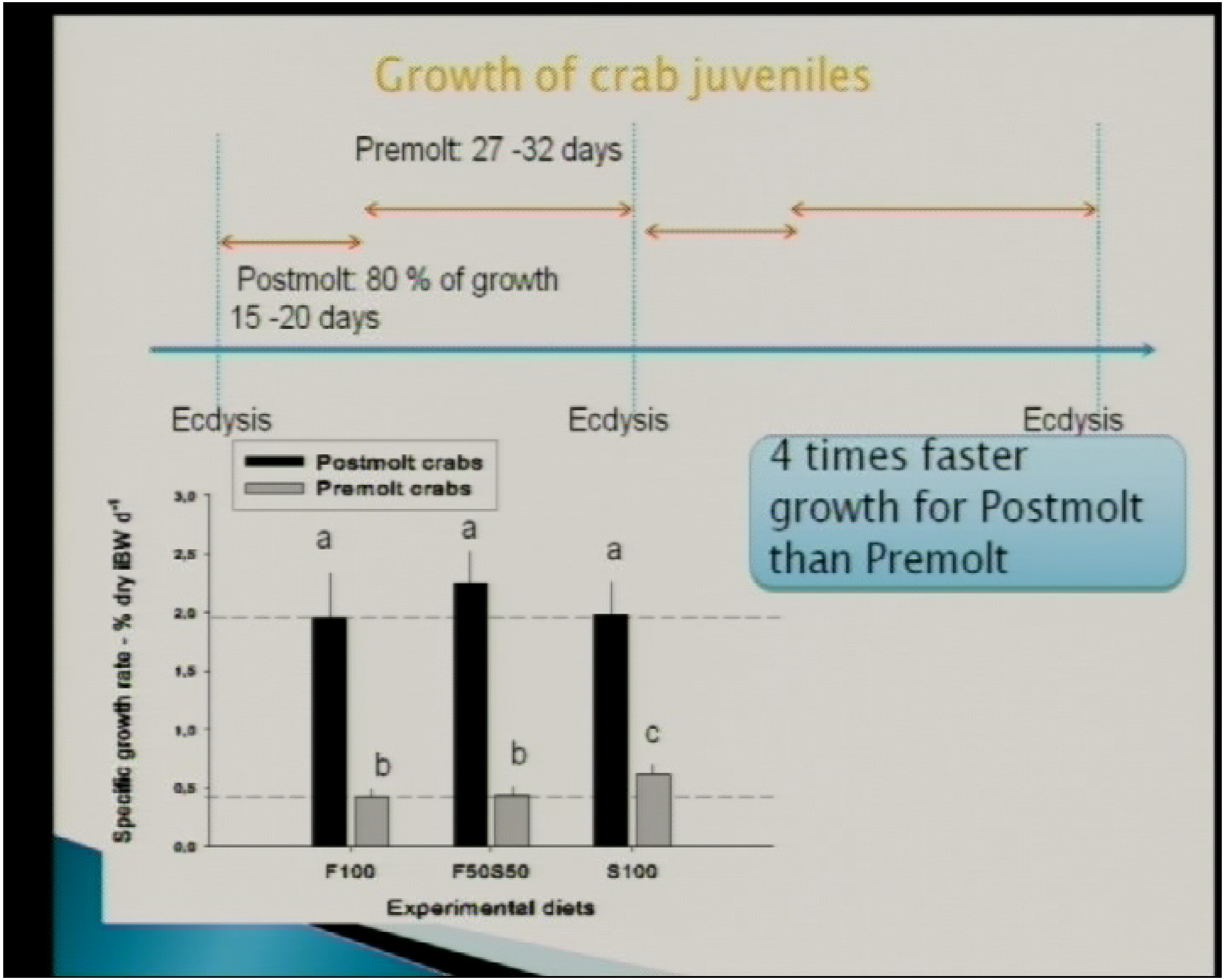

00018 - 00:11:50

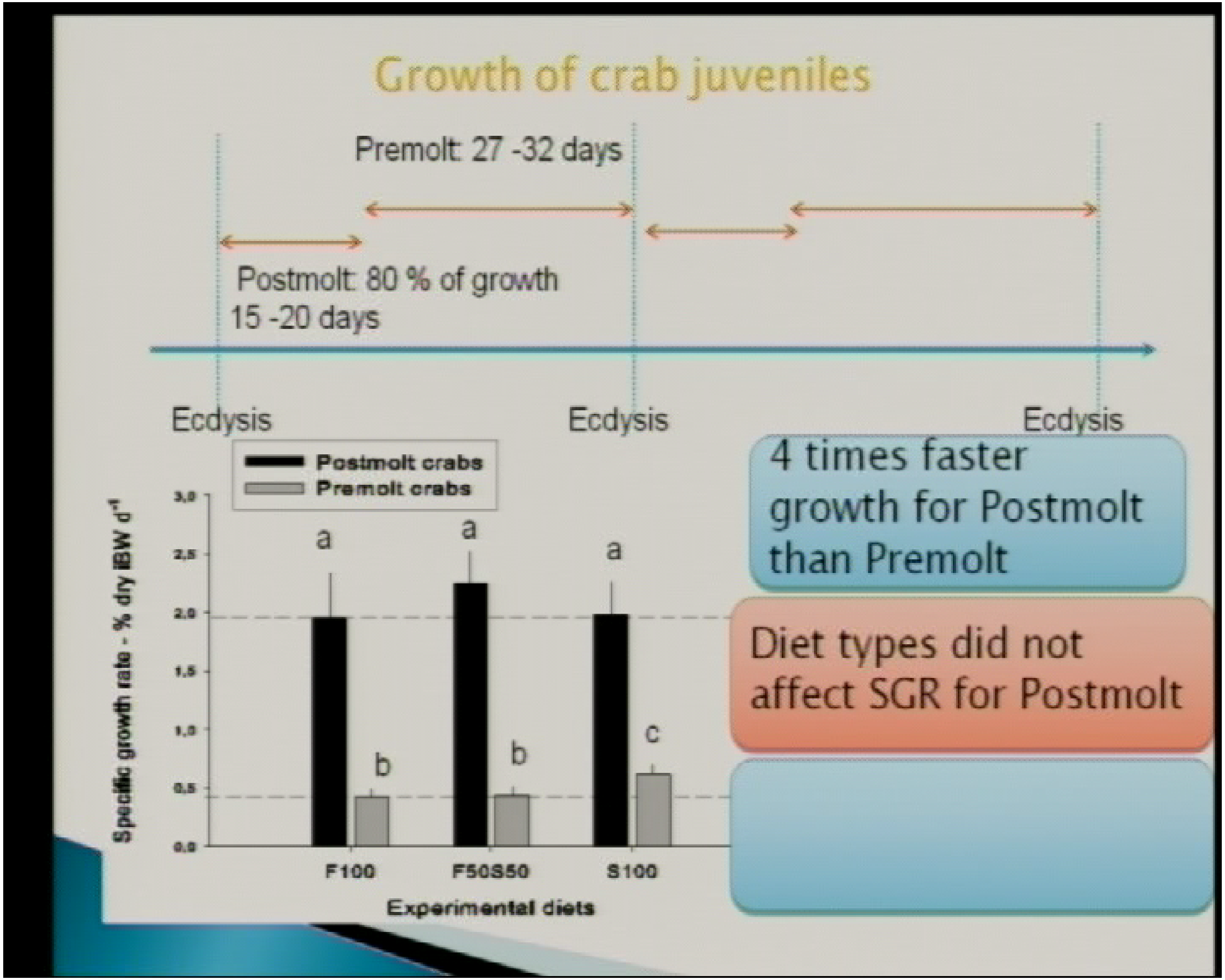



00019 - 00:12:00

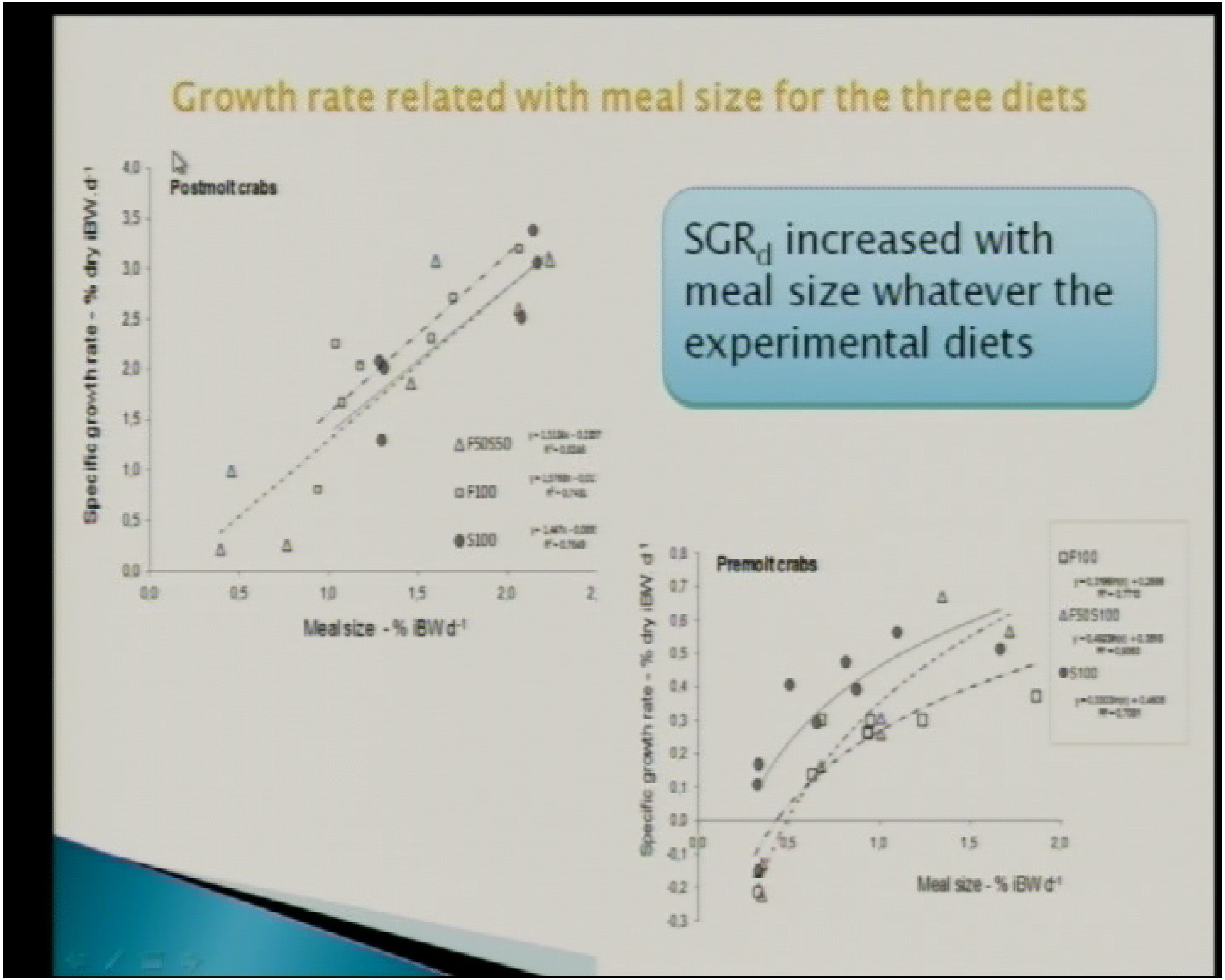

00020 - 00:12:30

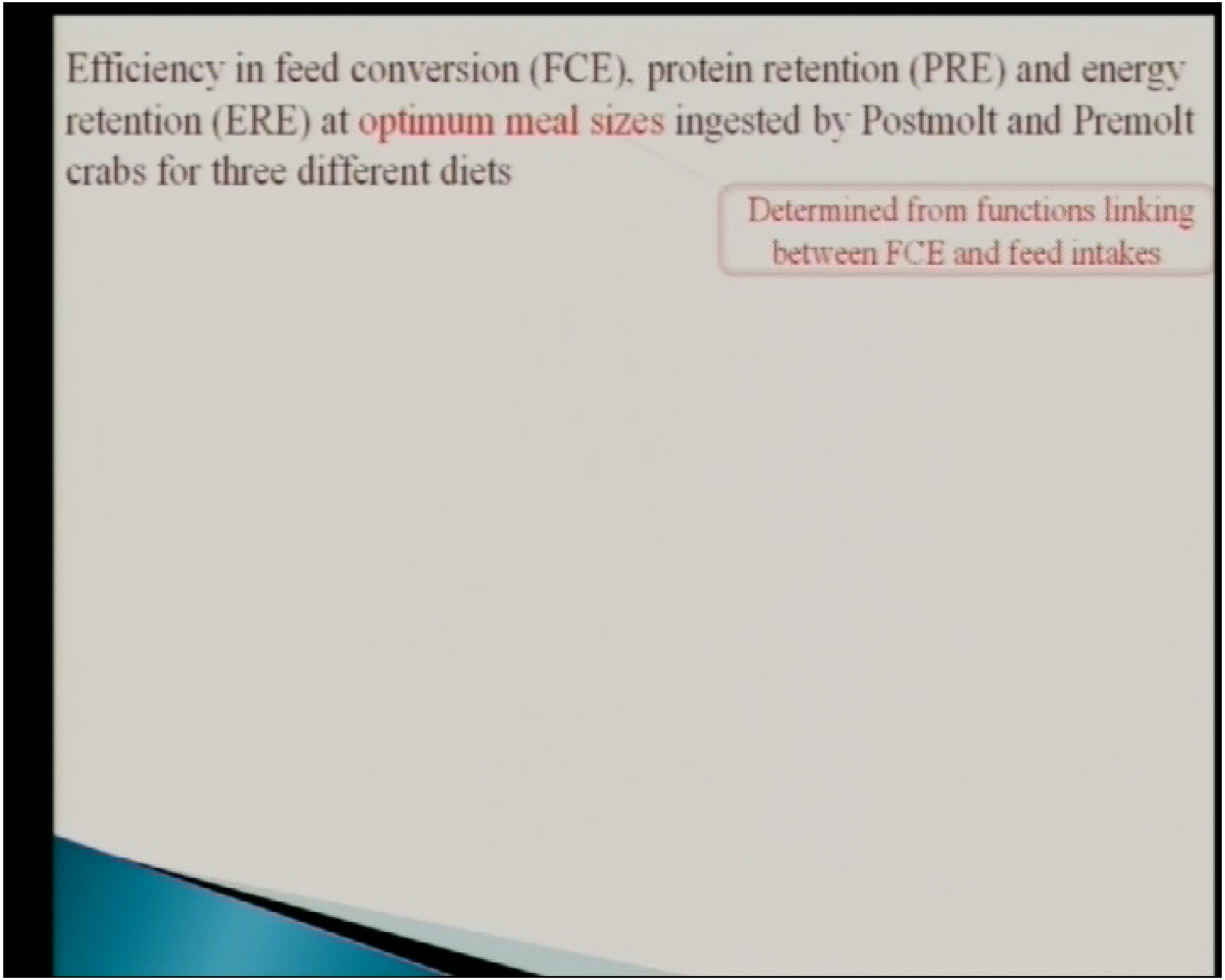

Growth of crab juveniles
Premolt: 27 -32 days
Postmolt: 80 % of growth
15 -20 days
Ecdysis
Ecdysis
Ecdysis
Postmolt crabs
Premolt crabs
Specific growth rate - % dry IBW d-1
3,0
2,5
2,0
1,5
1,0
0,5
0,0
a
a
a
b
b
c
F100
F50S50
S100
Experimental diets


Growth of crab juveniles
Premolt 27 -32 days
Postmolt 80 % of growth
15 -20 days
Ecdysis
Ecdysis
Ecdysis
4 times faster growth for Postmolt than Premolt
Postmolt crabs
Premolt crabs
Specific growth rate - % dry IBW d-1
3,0
2,5
2,0
1,5
1,0
0,5
0,0
a
a
a
b
b
c
F100
F50S50
S100
Experimental diets



Growth of crab juveniles
Premolt 27 -32 days
Postmolt 80 % of growth
15 -20 days
Ecdysis
Ecdysis
Ecdysis
Postmolt crabs
Premolt crabs
Specific growth rate - % dry IBW d-1
3,0
2,5
2,0
1,5
1,0
0,5
0,0
a
a
a
b
b
c
F100
F50S50
S100
Experimental diets
4 times faster growth for Postmolt than Premolt
Diet types did not affect SGR for Postmolt


Growth rate related with meal size for the three diets
Postmolt crabs
Specific growth rate - % dry iBW.d-1
Meal size - % iBW d-1
F50S50
F100
S100
SGRd increased with meal size whatever the experimental diets
Premolt crabs
Specific growth rate - % dry iBW.d-1
Meal size - % iBW d-1
F100
F50S100
S100




00025 - 00:16:40

Efficiency in feed conversion (FCE), protein retention (PRE) and energy retention (ERE) at optimum meal sizes ingested by Postmolt and Premolt crabs for three different diets

Determined from functions linking between FCE and feed intakes

| Crab's group | Experimental diet | Feed Efficiency (%) | | |
|---|---|---|---|---|
| | | (i)FCE | (ii)PRE | (iii)ERE |
| Postmolt | F100 (n = 7) | $47.57 \pm 7.97^{a}$ | $37.49 \pm 6.28^{a}$ | $34.29 \pm 4.31^{a}$ |
| | F50S50 (n = 7) | $50.39 \pm 5.29^{a}$ | $39.72 \pm 4.17^{a}$ | $33.03 \pm 3.4^{a}$ |
| | S100 (n = 7) | $51.61 \pm 7.77^{a}$ | $40.68 \pm 6.13^{a}$ | $38.70 \pm 5.10^{a}$ |
| Premolt | F100 (n = 5) | $7.55 \pm 0.87^{b}$ | $6.04 \pm 0.70^{b}$ | $5.21 \pm 0.60^{b}$ |
| | F50S50 (n=5) | $10.15 \pm 3.38^{b}$ | $8.12 \pm 2.70^{b}$ | $7.00 \pm 2.33^{b}$ |
| | S100 (n=6) | $16.43 \pm 1.29^{c}$ | $13.14 \pm 1.03^{c}$ | $11.33 \pm 0.89^{c}$ |

Between crab groups: averaged values of FCE, PRE,ERE for Postmolt were 4 – 5 times higher than Premolt crabs

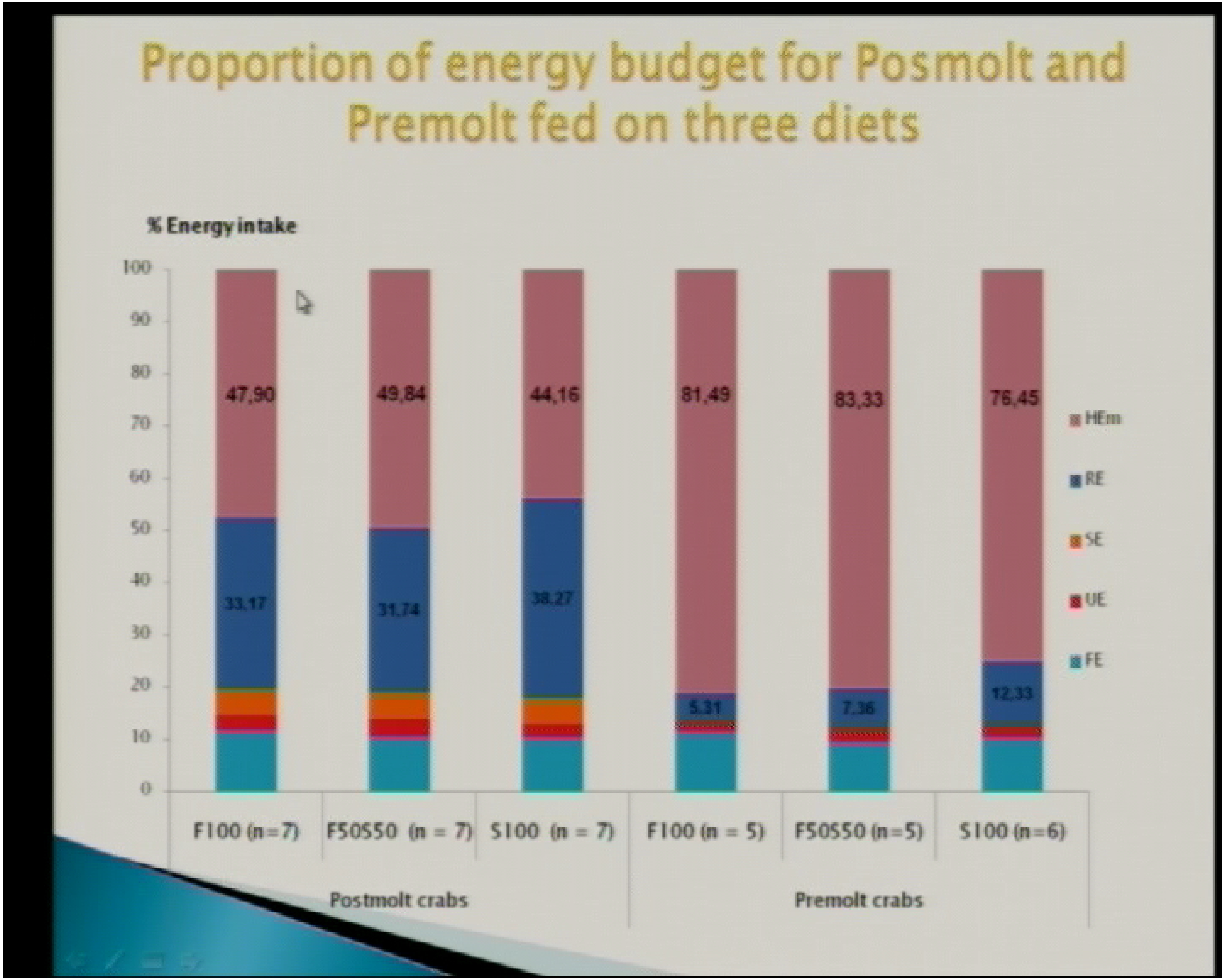
## Efficiency in feed conversion (FCE), protein retention (PRE) and energy retention (ERE) at optimum meal sizes ingested by Postmolt and Premolt crabs for three different diets

Determined from functions linking between FCE and feed intakes

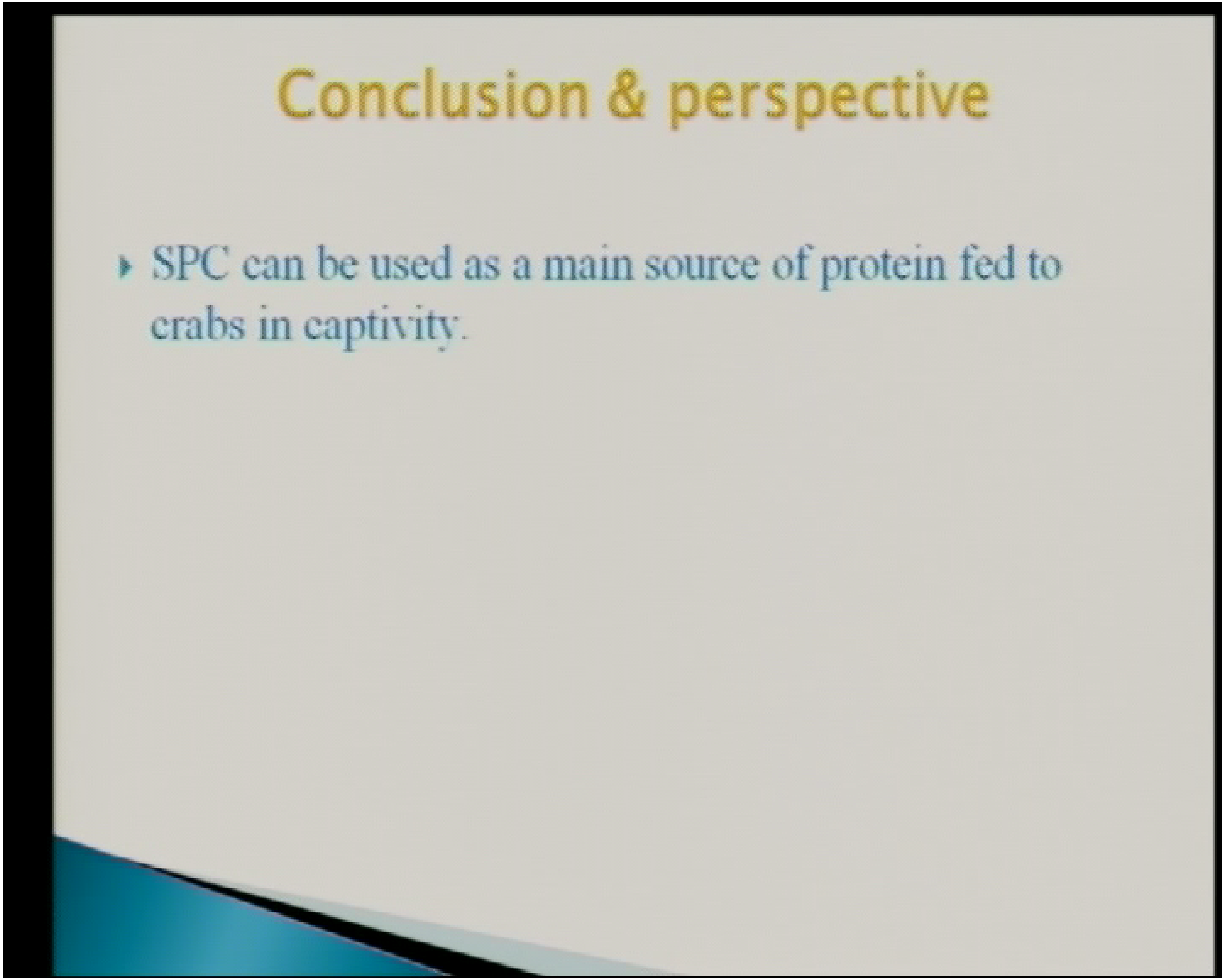
| Crab's group | Experimental diet | Feed Efficiency (%) | | |
|---|---|---|---|---|
| | | (i)FCE | (ii)PRE | (iii)ERE |
| Postmolt | F100 (n = 7) | 47.57 ± 7.97[a] | 37.49 ± 6.28[a] | 34.29 ± 4.31[a] |
| | F50S50 (n = 7) | 50.39 ± 5.29[a] | 39.72 ± 4.17[a] | 33.03 ± 3.4[a] |
| | S100 (n = 7) | 51.61 ± 7.77[a] | 40.68 ± 6.13[a] | 38.70 ± 5.10[a] |
| Premolt | F100 (n = 5) | 7.55 ± 0.87[b] | 6.04 ± 0.70[b] | 5.21 ± 0.60[b] |
| | F50S50 (n=5) | 10.15 ± 3.38[b] | 8.12 ± 2.70[b] | 7.00 ± 2.33[b] |
| | S100 (n=6) | 16.43 ± 1.29[c] | 13.14 ± 1.03[c] | 11.33 ± 0.89[c] |

Between crab groups: averaged values of FCE, PRE,ERE for Postmolt were 4 – 5 times higher than Premolt crabs

For Posmolt crabs: diets did not affect FCE, PRE and ERE



Proportion of energy budget for Posmolt and Premolt fed on three diets
% Energy intake
100
90
80
70
60
50
40
30
20
10
0
47,90
49,84
44,16
81,49
83,33
76,45
33,17
31,74
38,27
5,31
7,36
12,33
HEm
RE
SE
UE
FE
F100 (n=7)
F50S50 (n = 7)
S100 (n = 7)
F100 (n = 5)
F50S50 (n=5)
S100 (n=6)
Postmolt crabs
Premolt crabs

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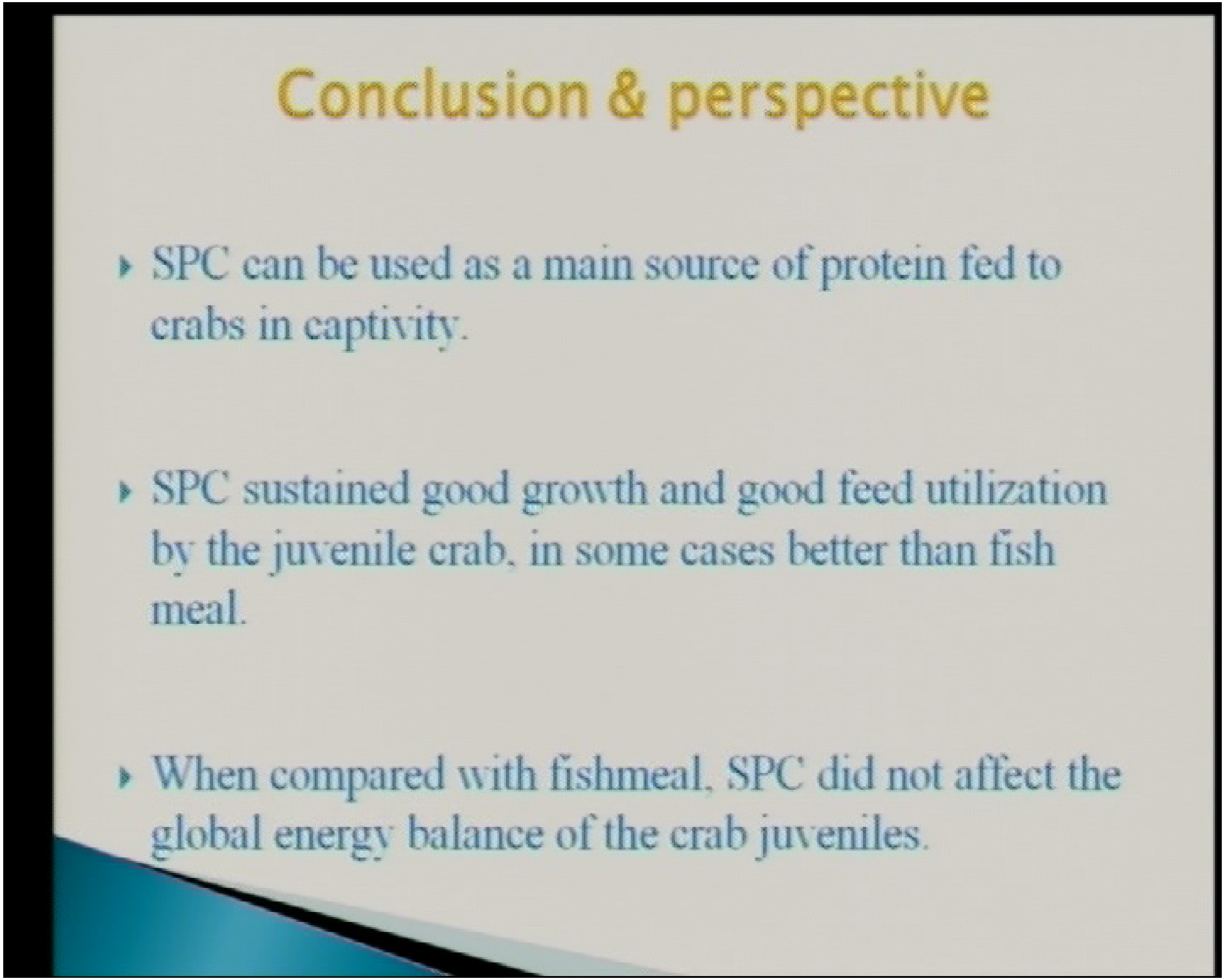
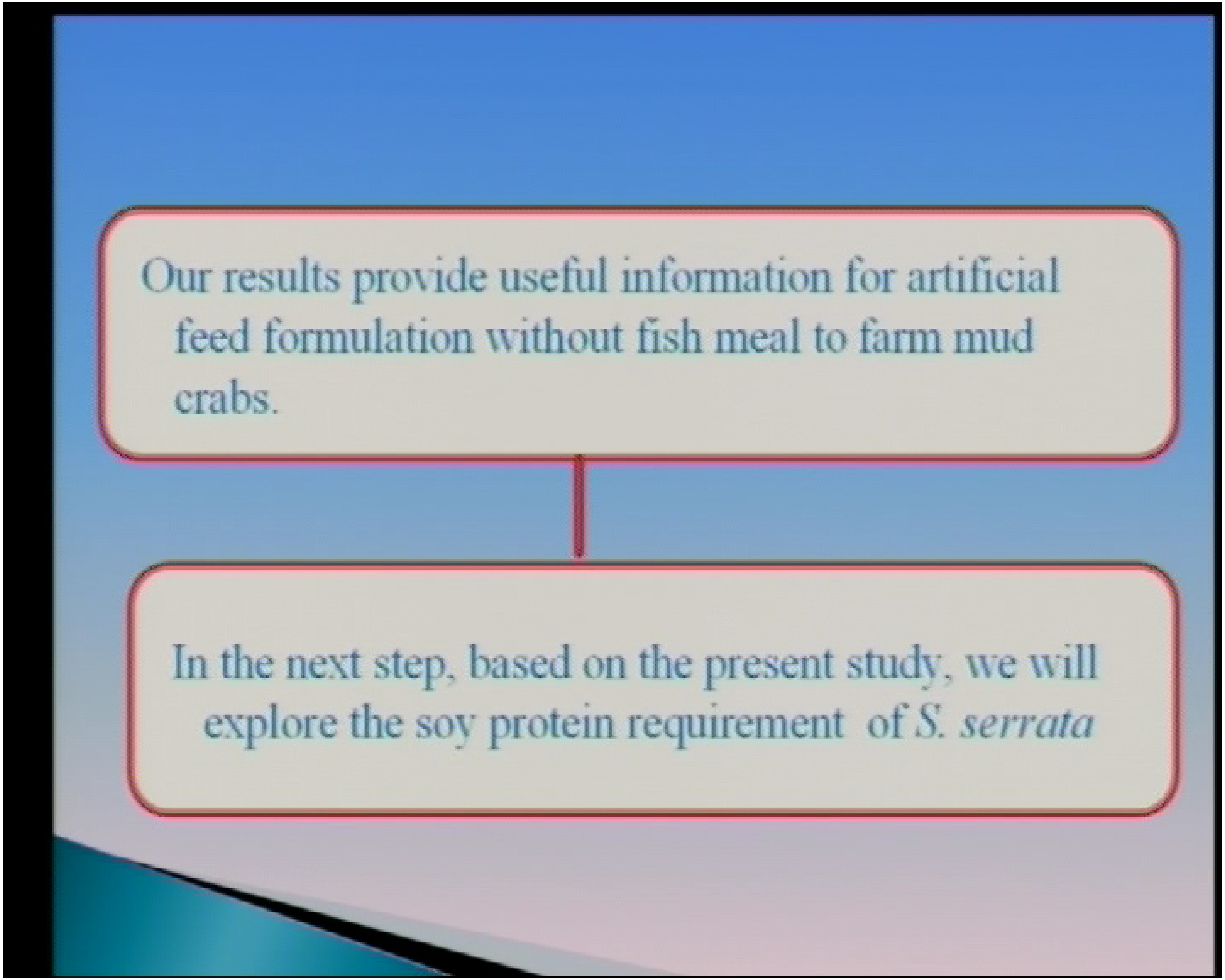
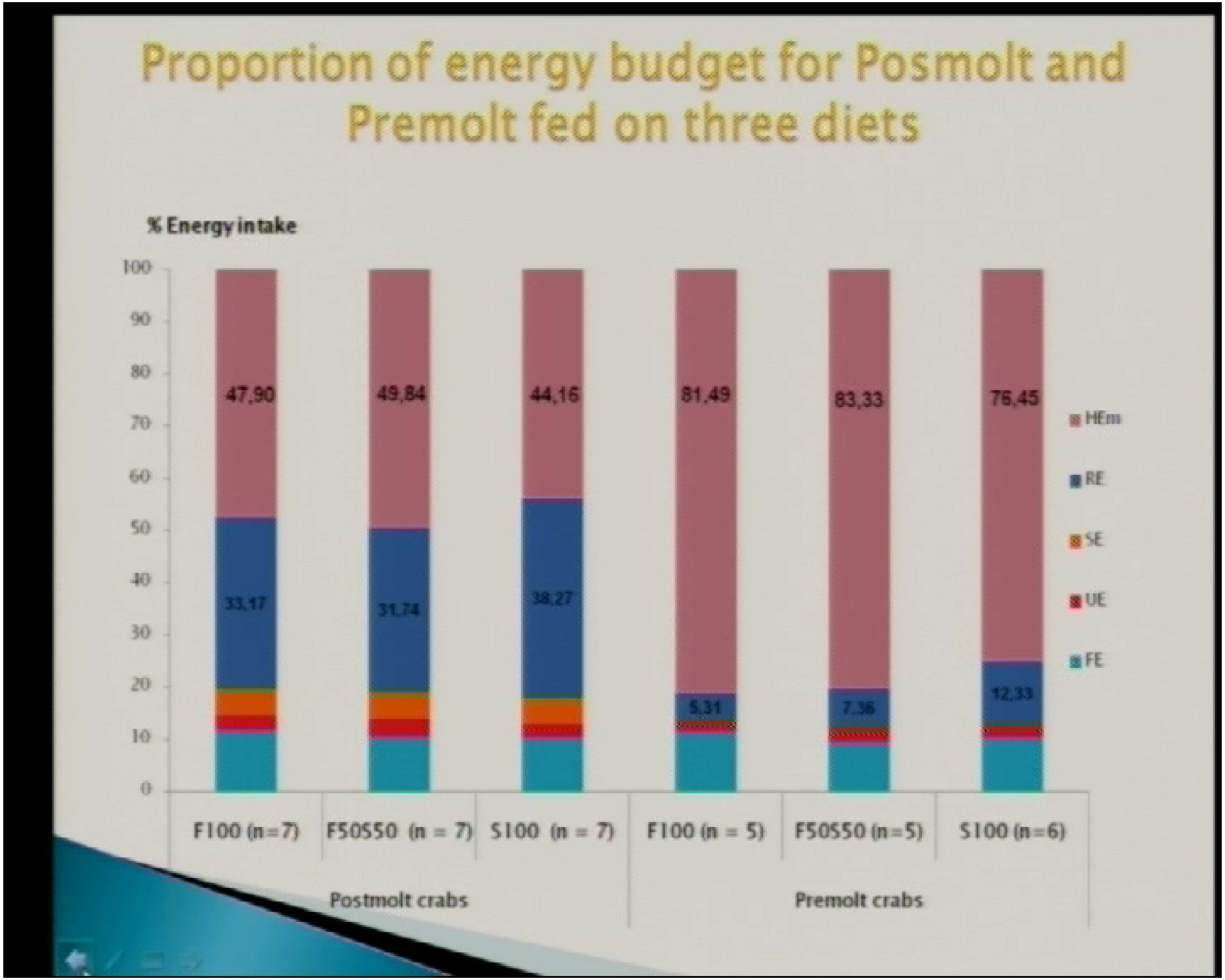


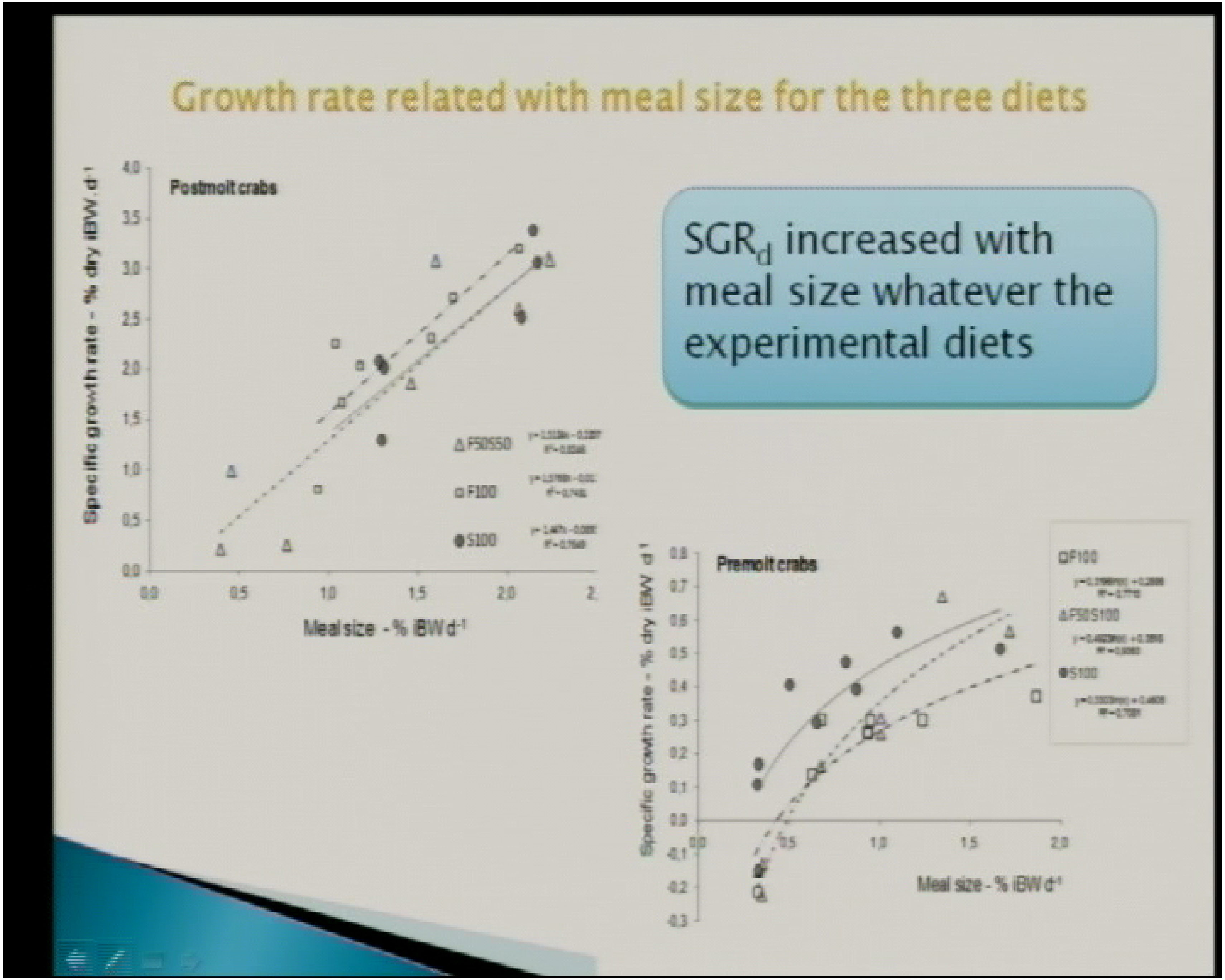

00030 - 00:22:20

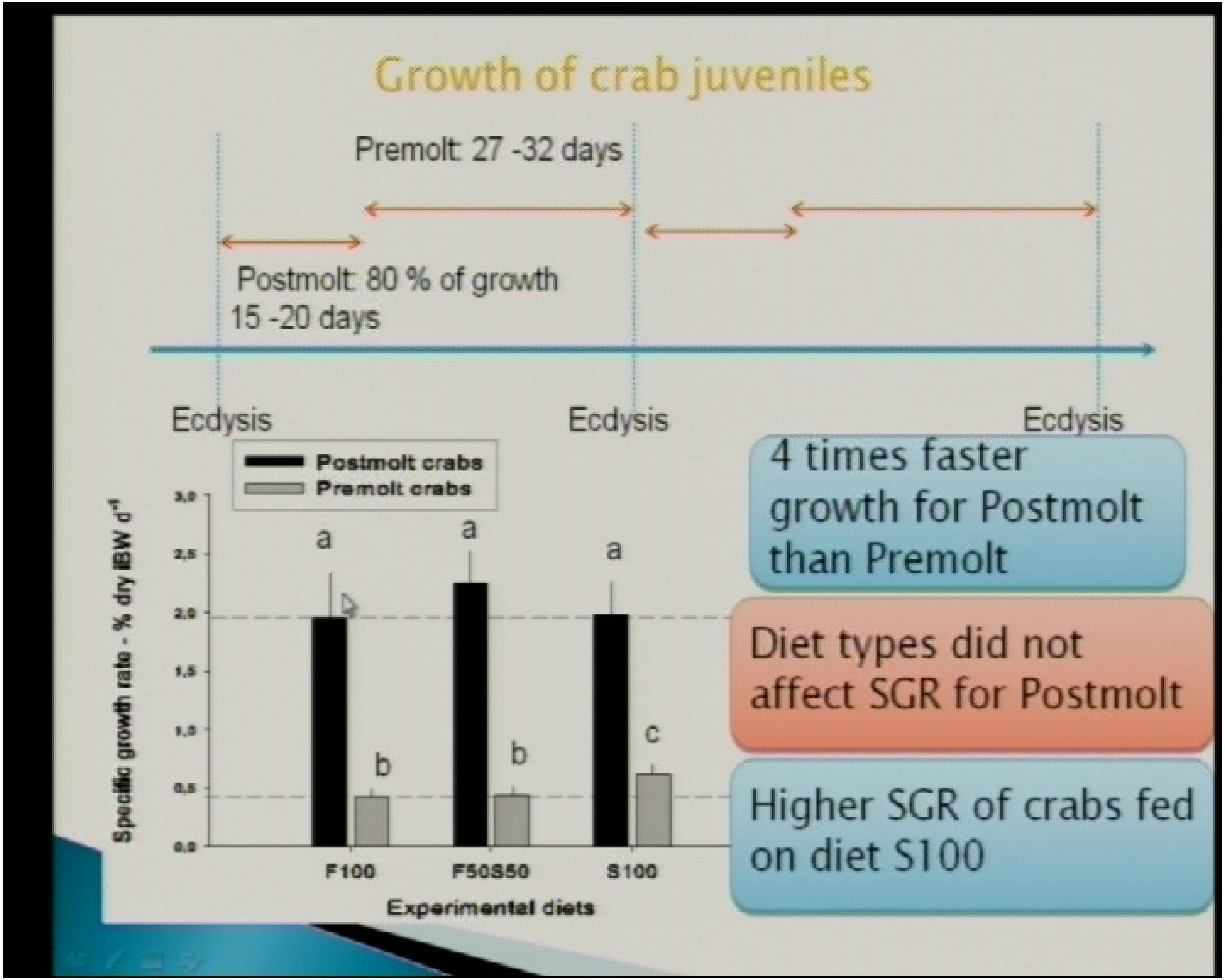



**00031 - 00:22:30**

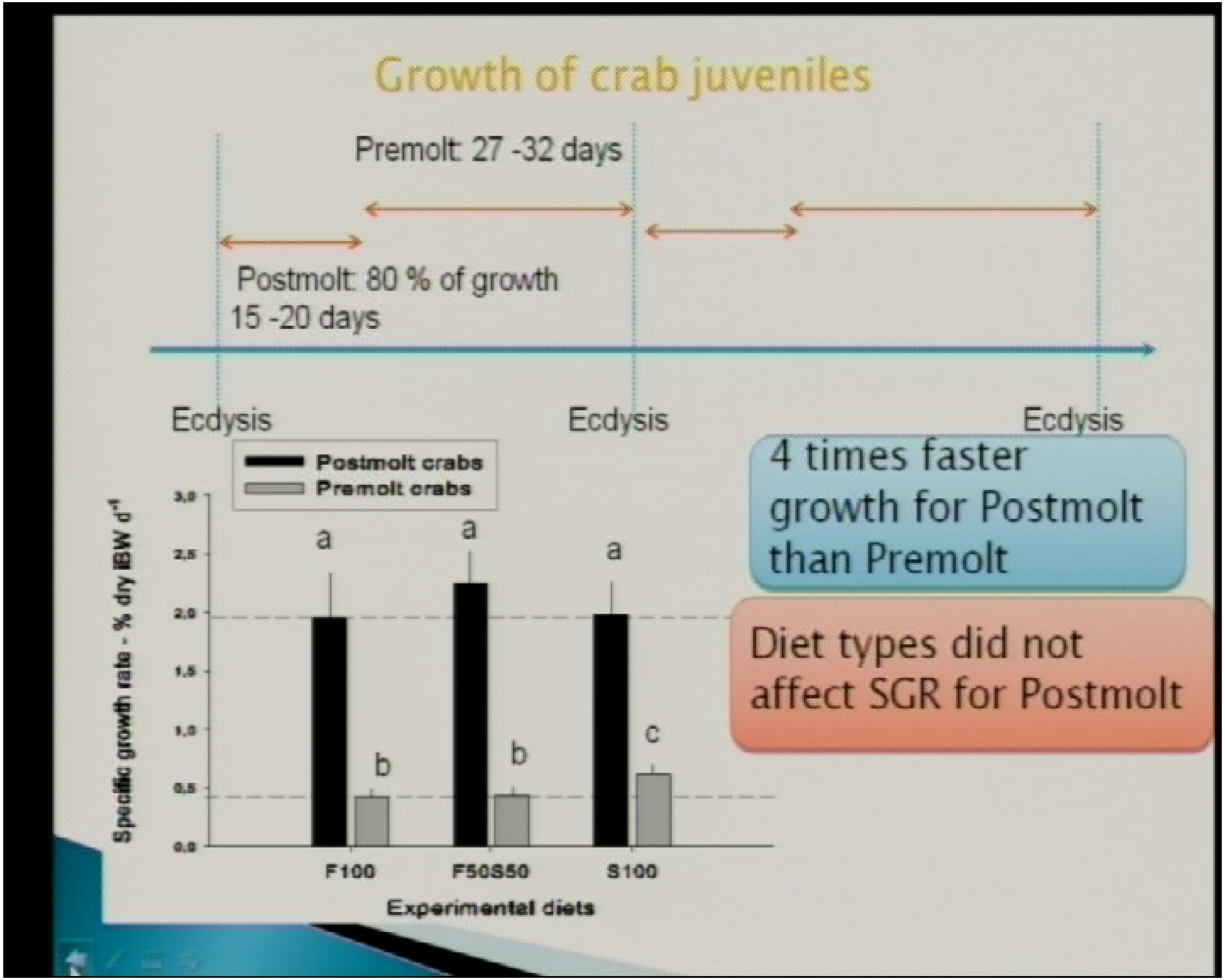

00032 - 00:22:50


Proportion of energy budget for Posmolt and Premolt fed on three diets
% Energy intake
100
90
80
70
60
50
40
30
20
10
0
47,90
49,84
44,16
81,49
83,33
76,45
33,17
31,74
38,27
5,31
7,36
12,33
HEm
RE
SE
UE
FE
F100 (n=7)
F50S50 (n = 7)
S100 (n = 7)
F100 (n = 5)
F50S50 (n=5)
S100 (n=6)
Postmolt crabs
Premolt crabs


Growth rate related with meal size for the three diets
Postmolt crabs
Specific growth rate - % dry iBW d-1
Meal size - % iBW d-1
F50S50
F100
S100
SGRd increased with meal size whatever the experimental diets
Premolt crabs
Specific growth rate - % dry iBW d-1
Meal size - % iBW d-1
F100
F50S100
S100




00035 - 00:24:30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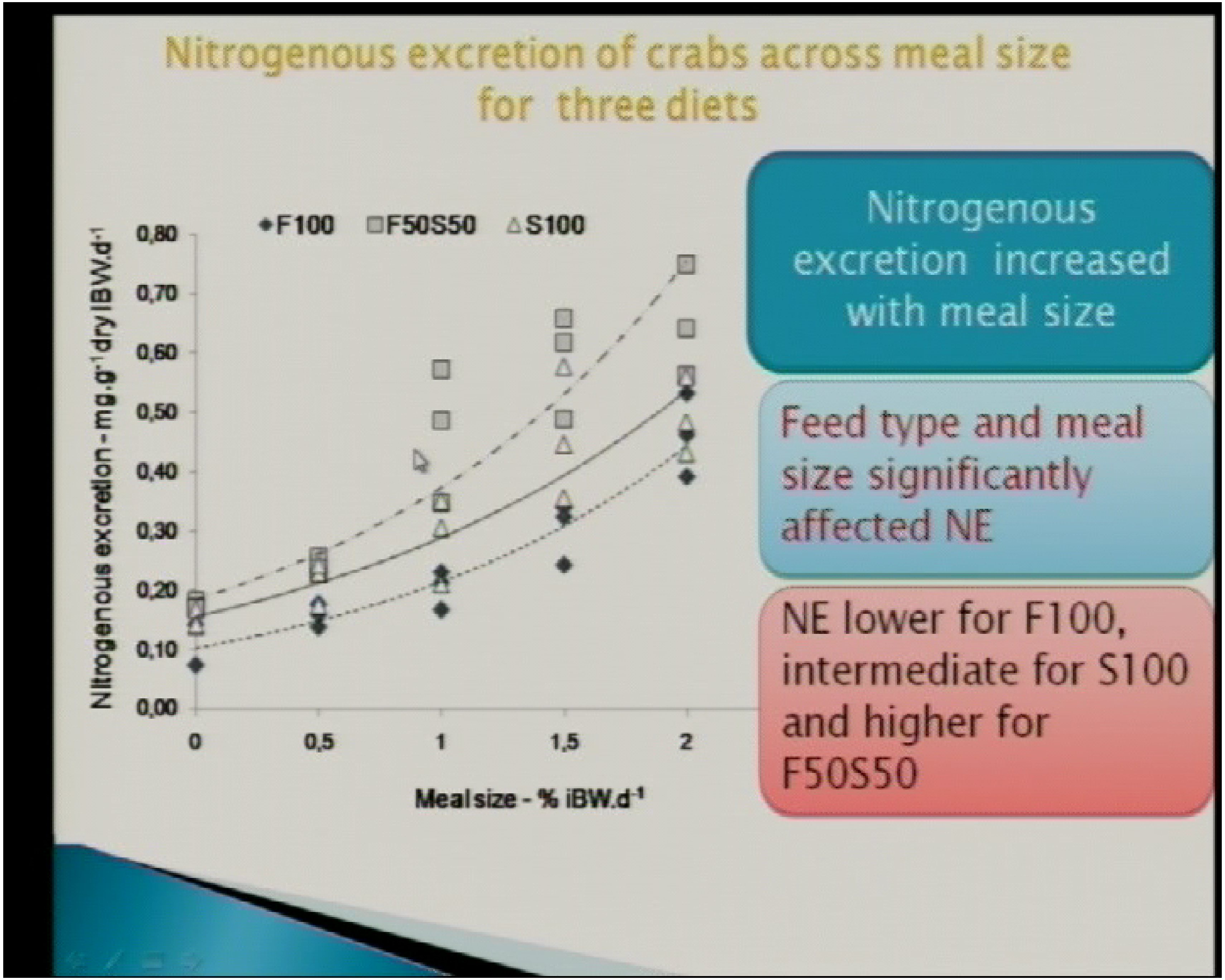
Postmolt 80 % of growth
15 -20 days
Ecdysis
Ecdysis
Ecdysis
Postmolt crabs
Premolt crabs
Specific growth rate - % dry IBW d-1
3,0
2,5
2,0
1,5
1,0
0,5
0,0
a
a
a
b
b
c
F100
F50S50
S100
Experimental diets
4 times faster growth for Postmolt than Premolt
Diet types did not affect SGR for Postmolt




00037 - 00:25:10