

Effect of two-phases olive cake on diet digestibility and productive parameters in Bísara breed pigs

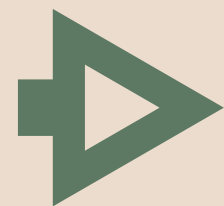
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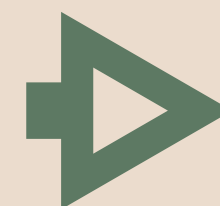
Project Code: NORTE-01-0247-FEDER-
072234

Introduction

The olive oil industry produces large quantities of olive by-products (olive cake/pomace)

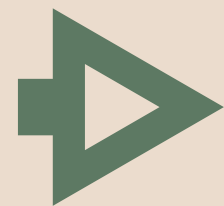


The valorisation of this by-product in animal feed could be of economic and environmental interest

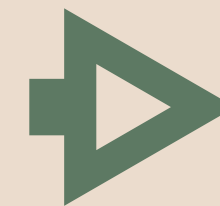


**BIS + OLIVE
Project**

Recovery of the olive oil by-product



Improvement of circular economy, in the context of proximity between the Bísaro breed and Olive oil production



The incorporation of olive cake into an animal's diet can influence the performances?

OBJECTIVES



**COMPOSITION OF THE
OLIVE OIL BY-PRODUCT**



**PERFORMANCES OF
THE BÍSARA BREED**



**VALORISATION THE BÍSARA
BREED AND PRODUCTS**

OLIVE OIL BY PRODUCT



Olives: 90%
Leaves: 10%

TPOC
Pomace
30%
(MS $\cong$ 40%)

Olive Mill
Wastewater
50%



Virgin Olive Oil
20%

Composition (%DM)	Olive cakes		
	COC	TPOC	EOC
Dry matter	98.0	97.8	97.9
Organic matter	97.0	91.2	93.5
Neutral detergent fiber	67.7	57.4	65.1
Acid detergente fiber	52.3	51.2	52.4
Acid detergent lignin	26.2	23.3	25.6
Crude protein	5.4	6.8	7.3
Crude fat	14.5	10.0	1.5



METODOLOGY

3 DIETS – 3 Levels of TPOC Olive Cake



TPOC 0%



TPOC 15%



TPOC 25%



Growth trial (24 animals/12pens)
and after
Digestibility trial (12 animals/12pens)

Animals:
Castrated males and females, ± 1 year old, 91.6kg inicial BW
Duration:
56days of growth + 4 days of digestibility trial



Weekly intake control

Weekly weighings



Apparent total tract digestibility (ATTD)
4 collection days; full faeces collection

Chemical composition of diets

Ingredients (%, MS)	Diets		
	TPOC 0	TPOC 15	TPOC 25
Olive cake	0	15	25
DM	87.6	88.8	90.8
OM	93.8	94.0	95.0
NDF	17.2	23.8	36.6
ADF	9.1	14.5	23.7
ADL	2.5	5.6	9.6
CP	18.6	16.8	13.8
CF	4.5	5.1	5.5





RESULTS

Effect of TPOC level on production parameters (N=24)

	TPOC 0	TPOC 15	TPOC 25	SEM	<i>p</i> value
BW initial	91.4	92.1	91.4	3.29	0.985
BW Final	122.4	128.9	121.6	2.19	0.056
ADG	0.527	0.629	0.515	0.07	0.488
ADFI (n=12pens)	2.835 b	3.458 a	3.640 a	0.19	0.036
FCR (n=12pens)	5.3	5.6	7.1	0.87	0.295

Effect of TPOC level on Total Intake, digestibility and digestible intake

	TPOC 0		TPOC 15		TPOC 25		SEM	<i>p</i> Value
Total Intake (g/day)								
DM	2680		3403		3511		188	0.144
OM	2559		3218		3341		177	0.153
CP	393		503		467		26	0.230
CF	91	a	171	b	169	b	13	0.002
NDF	587	a	897	b	1115	b	75	0.002
Digestibility (%)								
DM	83.7	b	78.2	ab	71.9	a	1.7	0.003
OM	85.8	b	79.5	ab	72.8	a	1.8	0.002
CP	85.5	b	84.5	ab	79.3	a	1.1	0.030
CF	91.2	b	89.5	b	82.6	a	1.3	0.002
NDF	61.4	b	46.9	ab	37.4	a	3.8	0.016
Dig. Intake (g/day)								
DM	2247		2670		2531		148	0.536
OM	2199		2565		2437		141	0.606
CP	333		425		371		23	0.298
CF	83	a	154	b	140	b	11	0.005
NDF	364		429		422		38	0.785

CONCLUSIONS

- Incorporation of 15 percent olive cake into the animals' diet may improve final body weight
- The feed conversion ratio gets worse as the proportion of olive cake in the diet increased
- The negative effect on digestibility is accompanied by an increase in feed intake in TPOC15 and TPOC25
- Incorporation of two-phases olive cake at 25% of the diet resulted in a decrease in the digestibility of its constituents (DM, OM, CP, CF and NDF)

Thank you for your attention!

Projects UIDB/00772/2020 funded by the Portuguese Foundation for Science and Technology (FCT)



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