

Milk composition of dairy goat fed with de-stoned olive cake silages

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BACKGROUND

- Increasing production of olive cake (OC)
 - over 0.5 million t
 - Production level has a big potential to increase
- Detrimental effects of OC on environment
 - Both soil and water
- Widespread feed shortages
 - Over 15 million t
- It's potential of increasing quality of animal production
 - Antioxidant capacity
 - fatty acid composition

BACKGROUND

Constraints of OC for its using on ruminant nutrition = Nutritive value

Nutritive value of olive cake									
Nutrient, g/kg KM	Crude olive cake				Sieved olive cake				
	X	X-Sx	X-Sx	Range	X	X-Sx	X-Sx	Range	
Organic matter	925	882	968	807-986	945	911	979	864-981	
Crude protein	62	52	72	38-79	75	56	93	33-101	
Crude oil	90	42	138	33-227	126	68	184	33-221	
NDF	657	585	729	541-783	571	443	700	320-707	
ADF	520	457	583	371-642	433	332	544	255-590	
Lignin	321	297	345	285-367	222	174	269	145-308	
Hemicellulose	137	107	167	77-182	143	100	187	65-198	
Cellulose	199	159	240	143-288	207	122	292	80-350	
Non fiber carbohydrates	112	55	169	28-242	141	55	227	26-269	

(Keles, 2015)

BACKGROUND

Constrains of OC for its using on ruminant nutrition = Preservation



Composition of OC produced from 3 or 2 stage olive oil extraction (g/kg KM)

	3 ^a		2 ^b
	OC	V. water	OC
DM, g/kg	498±19	64±24	360±26
Total sugar	20±0.2	253±93	96±48
Total phenolic	6.6±0.7	168±64	14.2±6

^a: Vlyssides ve ark. 2004
^B: Alburquergue ve ark. 2004

Aim



Determination two-phase de-stoned OC silage on dairy goat performance to optimize its using

Pheonol component of milk after feeding the olive cake



Material and Methods

Control
% 10 OC
% 20 OC

Ad libitum as
TMR, daily



- 6 goat each, late lactation
- 12 d adaptation
- 3 w data collection
- 14-18 and 29-33 DMI and yield
- 18. and 33. d milk sampling
- 29-33 feed, refusals and feces collection



Material and Methods

Çizelge 1.Araştırma rasyonları ve besin değeri

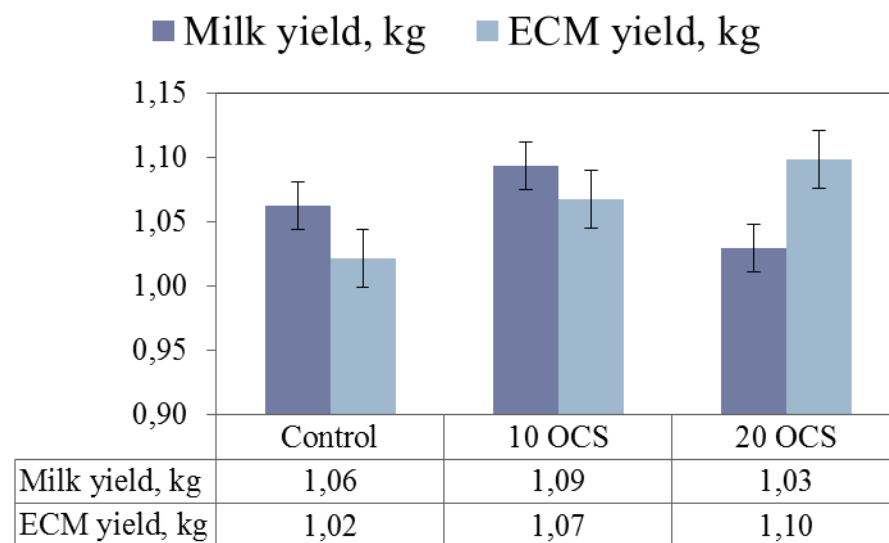
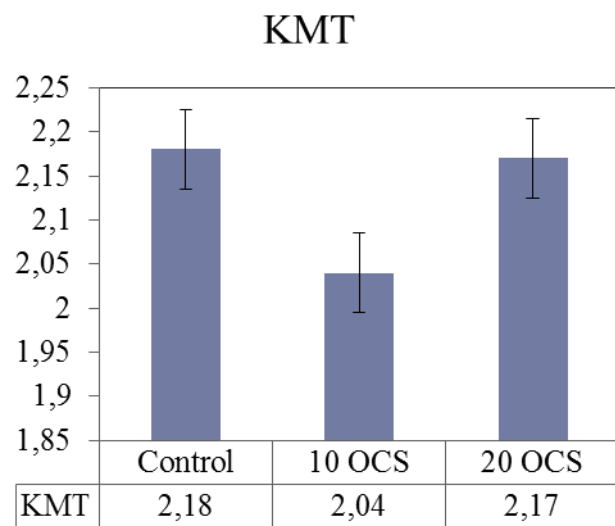
Ingredients, %	Control	AS10	AS20
Maize silage	25,0	25,0	25,0
Alfalfa hay	30,0	30,0	30,0
Wheat straw	15,0	5,0	15,0
Olive cake	0,0	10,0	20,0
Barley	20,4	11,4	2,4
Soybean meal	1,00	3,00	5,00
Cotton seed	7,00	4,00	1,00
Urea	0,14	0,16	0,19
Quicklime	0,30	0,15	0,00
DCP	0,60	0,70	0,80
Salt	0,40	0,40	0,40
Vit Min	0,20	0,20	0,20
Water, g	860	430	-

Ration properties, %	C	AS10	AS20	OC
Forage ratio	70,0	70,0	70,0	
Dry matter,	51,1	51,1	51,1	38,0
OM	91,7	91,7	91,6	96,3
Crude protein	12,0	12,0	12,0	8,0
NDIN, % TN	5,7	6,8	8,0	5,1
ADIN, % TN	3,1	4,1	5,1	4,1
Ether extract	2,1	2,8	3,5	9,9
NDF	49,2	52,9	56,5	70,9
ADF	35,9	39,6	43,4	59,0
ADL	7,1	9,4	11,6	23,9
Hemicellulose	13,3	13,2	13,1	35,1
Cellulose	28,8	30,3	31,8	11,7
NFC	28,8	24,5	20,2	7,7
ME, Mcal/kg	2,0	1,9	1,8	1,5
Potal phenols, %	1,3	1,5	1,6	2,0

Results

Performance of dairy goat

There was no effect of sampling time (period) and interaction between period and feed

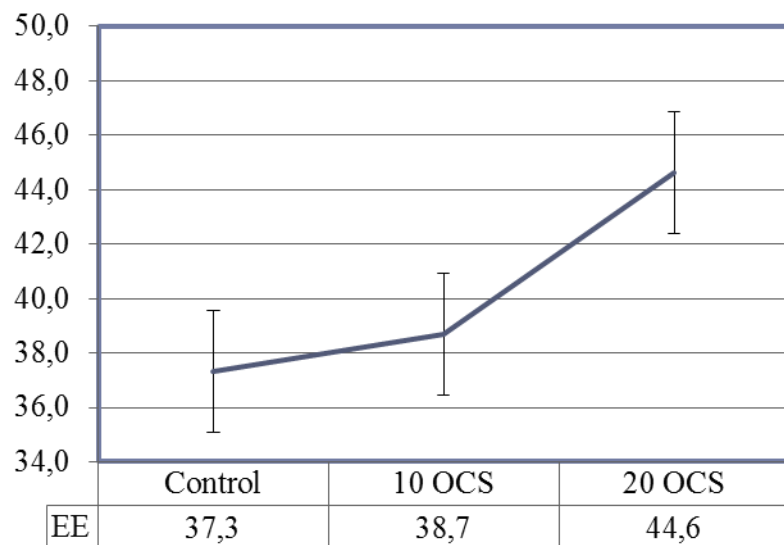


Results

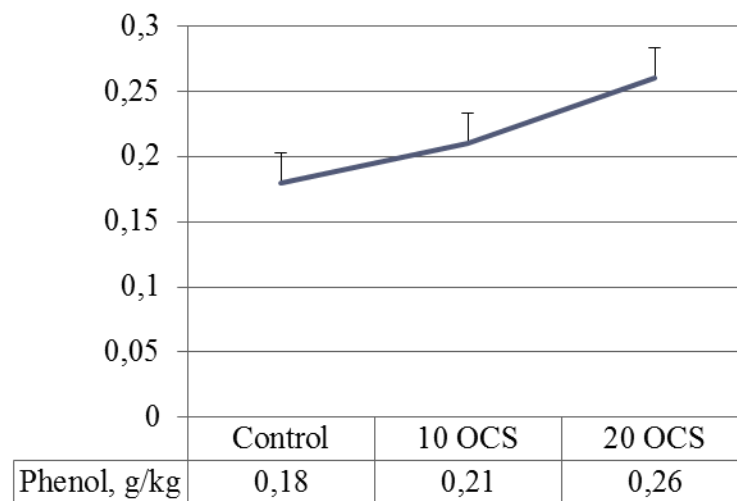
Milk composition of dairy goat

There was no effect of sampling time (period) and interaction between period and feed

Fat, g/kg



Phenol, g/kg



$P < 0.001$

Conclusion

- Olive cake silage offers a good source of feed after de-stoned,
- Its high fiber content do not suppress the DMI of dairy goat at late lactation,
- Olive cake with its high oil and phenol content has also increase the milk quality,
- Proper technologies to ensilage olive cake is required.

Thank you for your attention

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