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EFFECT OF USING YEA-SACC ON PERFORMANCE OF SHEEP AND GOATS IN SINAI

Afaf M. Fayed

Animal and Poultry nutrition department, Desert Research Center, Mataria, Cairo, Egypt.

SUMMARY

This work was carried out on Ras Sudr Research station (Desert Research Center) on two animal species (sheep and goats) to determine the effect of Yea sacc addition on digestibility , rumen and blood metabolites, average daily gain, feed efficiency and carcass characteristics. The experiment lasted approximately six months. The animals within each species were divided into two treatments (12 animals each) the first treatment fed the control diet and the second one fed the control diet with Yea-sacc. (2and 3gm/head/day for goats and sheep , respectively).

Yea-sacc significantly increased ($P < 0.05$) DM, OM, CP and EE digestibility coefficients and non significantly increased total volatile fatty acids, propionic acid, serum total protein, albumin, urea, average daily gain, feed and economic efficiency .Yea-sacc significantly decreased ($P<0.05$) ruminal ammonia concentration, percentage of carcass total fatty tissues and pelt and non significantly decreased serum cholesterol and percentage of carcass flank cut.

Sheep had significantly ($P<0.05$) higher values of serum creatinine, urea and percentage of carcass leg, tail cuts than goats. However DM, CP, NFE, and OM digestibility coefficient, ruminal ammonia concentration, serum cholesterol, albumin, average daily gain, feed and economic efficiency, and carcass measurements (Rack and shoulder cuts and total fatty tissue) increased non significantly for sheep compared to goats.

Goats had higher values of digested nutrient intakes expressed as DM/kg gain TDN/kg gain and DCP g/kg gain and individual volatile fatty acids than sheep.

*Keywords: **Yea-sacc- sheep – goats – nutrient digestibility-nutritive value – rumen parameters – blood metabolites carcass characteristics.***

INTRODUCTION

Saccharomyces cerevisiae yeast culture (Yea-sacc) is considered a non hormonal growth promoter that increased average daily gain and feed efficiency for ruminants Yadav *et al.* (1994a), digestibility (El-Basiony, *et al.* 1998), and changes the proportion of ruminal volatile fatty acids (Mutsvangwa *et al.* 1992, Pestevsek *et al.* 1998). The increased feed efficiency appears related to energy savings from changes in ruminal volatile fatty acids proportions. (Leng *et al.*1967) .

The purpose of this study was to determine the influence of Yea-sacc on digestibility, digested nutrient intakes, rumen parameters, blood metabolites, average daily gain, feed and economic efficiency and carcass characteristics when fed to sheep and goats.

MATERIALS AND METHODS

The present study was carried out in Ras Sudr Research Station (Desert Research Center) in south Sinai Governorate to study the effect of

inclusion of Yea-sacc (feed additives) in the diet of two animal species on performance, rumen and blood metabolites and carcass characteristics. Twenty four growing male Barki sheep with an average live weight of 31.2 ± 1.52 kg and twenty four growing goats with an average live weight of 15.5 ± 1.28 were divided equally into four groups (two species X two treatments). The animal groups were fed on berseem hay (40%) and a concentrate mixture (60%) with or without Yea-sacc (*Saccharomyces cerevisiae*) with levels of 2 gm/head/day for goats and 3 gm yea-sacc/head/day for sheep) . Chemical composition of the experimental concentrate feed mixture (CFM) and berseem hay are presented in Table (1) .

Table 1. Chemical composition of the experimental concentrate feed mixture (CFM) and berseem hay (% on DM basis).

Feed stuffs	DM	OM	CP	CF	EE	NFE	Ash
Concentrate feed mixture	90.2	85.9	15.3	10.9	2.2	57.5	14.1
Berseem hay	92.1	86.8	11.0	25.5	2.4	47.9	13.2

The animals were fed their nutrient requirements according to Kearl (1982). Drinking water was available to the animals twice daily.

The experimental period was approximately six months in length . The animals were weighed every two weeks. At the middle of the experimental period three animals from each group were used in the digestibility trials for a 14 day preliminary period followed by a 7- day collection period . At the end of the collection period CFM, Berseem hay . feed refused and feces samples were analysed according to A.O.A.C. (1990).Rumen liquor samples were taken monthly at zero, and 4 hours post feeding by stomach tube to determine ammonia nitrogen (NH3-N) (A.O.A.C., 1990) and total volatile fatty acids (T.V.F.A,s) (Warner, 1964) .Acetic, propionic and butyric acids were determined in rumen liquor according to Erwin *et al.* (1961) . Blood samples were taken monthly before feeding from jugular vein to determine total protein by (Armstrong and Carr 1964), albumin (Doumas *et al.* 1971) urea (Patton and Crouch, 1977). Determination of serum creatinine(Henry 1965), cholesterol (Watson, 1960). Globulin was also measured by the difference.

Four animals were slaughtered from each group at the end of the experiment. Hot carcass, body offals and internal organs were separately weighed. The contents of the digestive tract were removed and their weights were subtracted from the slaughter body weight to get the empty body weight. The whole carcass was then cut to neck, shoulder, rack, loin, flank and legs.

Rib eye area was measured by calk paper placed over the cut surface and measured by planometer. Data was statistically analyzed by analysis of variance as a factorial design (2 x 2) according to Winer (1971).

RESULTS AND DISCUSSION

Digestibility coefficients and digested nutrient intake of sheep and goats fed Yea-sacc are presented in Table (2). The data showed that digestibility coefficients of all nutrients (DM, OM, CP, CF, EE, NFE) of sheep and goats fed concentrate feed mixture (CFM) with Yea-sacc (T2) were higher than those of control animals T_1 (fed on CFM without Yea-sacc). The differences were significant ($P < 0.05$) except NFE was non significant. Similar results were obtained by Moloney and Drennan (1994), El-Basioney *et al* (1998) These findings may be related to improve animal health by increasing enzymatic

Table 2. Digested nutrient intake and digestibility coefficients of sheep and goats fed yea-sacc and its control.

Item	T1		T2		Treatment		Species		±S.E.	F-test		
	Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
No. of animals	3	3	3	3	6	6	6	6				
Digestibility coefficients %												
DM	66.40^{b}	69.67^{b}	74.00^{a}	70.05^{ab}	68.04	72.05	70.2	69.88	1.00	*	n.s	*
CP	68.90^{b}	72.36^{b}	77.15^{a}	73.26^{a}	70.63	75.20	73.03	72.81	1.09	*	n.s	*
CF	54.89	59.38	65.05	60.36	57.14	62.71	59.97	59.87	1.43	*	n.s	ns.
EE	74.64	76.11	82.69	80.00	75.38	81.35	78.67	78.06	1.28	*	n.s	n.s
NFE	73.31	71.69	77.77	73.78	72.50	75.78	75.54	72.74	0.92	n.s	n.s	n.s
OM	67.94^{b}	70.40^{b}	75.18^{a}	70.80^{b}	69.17	72.99	71.56	70.60	0.97	*	n.s	*
Digested nutrient intakes												
TDN I g/kg B.W.$^{0.75}$	22.84	24.15	23.02	25.97	23.50	24.50	22.93	25.06	0.45	n.s	*	n.s
TDN I g/kg B.W.	62.68	55.10	61.07	59.70	58.89	60.39	61.88	57.40	1.14	n.s	*	n.s
DCP g/kg B.W.$^{0.75}$	3.82	4.10	4.11	4.42	3.96	4.25	3.97	4.25	0.08	n.s	*	n.s
DCP g/kg B.W.	10.48	9.44	10.96	10.14	9.96	10.55	10.72	9.79	0.19	n.s	*	n.s

a, b values with different letters on the same row differ at 5%.

T_1 control T_2 yea sacc.

activities of the microflora in the gastrointestinal (Golden and Gorbach 1977) However Mutsvangwa *et al.* (1992). found that apparent digestibility of DM, OM and CP were unaffected by adding Yea-sacc.

Regardless treatments effect all nutrients digestibility coefficients of sheep was slightly higher than those of goats (Table 2).

TDN intake (g/kgB.W$^{0.75}$) was not higher ($P>0.05$) with animals fed Yea-sacc (T_2) compared to the control group (T_1). This result agree with those reported by El Basiony *et al.* (1998). Goats had numerically higher values of TDN/kg B.W.$0^{.75}$ ($P>0.05$) than sheep. These findings are in accordance with those of Fahmy and Fayed (2000). The differences were not significant between two treatments and animal species.

Data of Table (2) indicated that neither treatments nor animal species had significant effect on DCP g/kg B.W.$^{0.75}$

Rumen liquor and blood parameters:

Results of Table (3) clearly indicated that Yea-sacc group had lower values ($P<0.01$) of ruminal ammonia concentration than that of the control group. This finding is in agreement with that reported by Moloney and Drennan (1994) on a high quality diet. Strzetelski *et al.* (1996b), Umesh-Kumar *et al.* (1997) and Vaneeta-Koul *et al.* (1998) found that ammonia nitrogen concentration decreased when Yea-sacc was included in the diet. Moloney and Drennan (1994) on low quality diet found that ammonia production was not affected when yeast culture was included in diet. Data of Table (3) indicated that ammonia concentration was non significantly higher for sheep than goats for 0h but significant for 4h .

Values of ruminal TVFA's indicated that T_2 (Yea-sacc treatments) was non significantly higher than T_1 (control) before and 4h post feeding. These findings are in accordance with those of Mutsvangwa *et al.* (1992), Moloney and Drennan (1994), Strzetelski *et al.* (1996-b) and Pestevsek *et al.* (1998).

The differences among species were not significant for TVFA,s. Values of TVFA's in rumen increased by 30% 4 h post feeding than before feeding. This observation agree with that reported by Moloney and Drennan (1994).

Mean values of individual volatile fatty acids (%) are presented in Table (3). The data showed that proportion of acetic acid was non significantly lower with Yea-sacc group than control one before and 4 h post feeding . Values of acetic proportions were higher by 6.5% 4h post feeding than before feeding.

Goats had non significantly higher values of acetic acid than sheep this finding may be due to the goats had higher TDN intake than sheep. Molar proportion of propionic acid was higher by about 10% before feeding, and 6% 4 h post feeding for Yea sacc group than that of control group, these results are in accordance with Mutsvangwa *et al.* (1992). Moloney and Drennan (1994), Pestevsek *et al.* (1998) found that yea-sacc increased rumen concentration of propionate. Statistical analysis showed non significant difference between treatments , animal species and interaction (T*S) for acetic and propionic acids proportion .

The values of A/P ratio indicated an improvement of propionate production with Yea-sacc treatment than that of control. Such increase in propionate production is favorable in growth promotion since it acts as a major precursor of hepatic gluconeogenesis . This finding is close with those reported by Moloney and Drennan (1994) who found that Yea-sacc treatments at 10 g/head daily decreased A/P ratio in steers.

Table (3) Rumen liquor and blood parameters for sheep and goats fed yea sacc.

Item		T1		T2		Treatment		Species		± S.E.	F-test		
		Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
Ammonia,	mg/100 ml 0h	33.49	23.78	16.18	21.00	28.59	18.59	24.79	22.39	2.46	*	n.s	n.s
	mg/100 ml 4h	49.34^{a}	33.07^{b}	29.50^{bc}	25.47^{c}	41.21	27.49	39.42	29.27	1.84	*	*	*
TVFA,S													
(ml equivalent oh/100 ml)	0h	6.63	7.50	7.77	8.32	7.07	8.05	7.20	7.91	0.36	n.s	n.s	n.s
	4h	10.82	9.33	11.15	11.3	10.08	11.23	11.00	10.32	0.75	n.s	n.s	n.s
Molar proportion of Individual VFA,s %													
Acetic	0 h	43.14	45.88	40.69	44.00	44.51	42.35	41.92	44.94	1.81	n.s	n.s	n.s
	4 h	47.05	48.17	43.85	45.67	47.61	44.76	45.45	46.92	1.06	n.s	n.s	n.s
Propionic	0 h	22.61	23.12	24.36	26.31	22.87	25.34	23.49	24.72	0.90	n.s	n.s	n.s
	4 h	25.43	25.11	28.83	29.70	25.27	29.27	27.13	27.41	0.26	n.s	n.s	n.s
Butyric	0 h	15.53	16.10	15.98	16.45	15.82	16.22	15.76	16.28	0.64	n.s	n.s	n.s
	4 h	17.43	17.07	18.00	17.56	17.25	17.78	17.72	17.32	0.55	n.s	n.s	n.s
A/P ratio	0 h	1.91	1.98	1.67	1.67	1.95	1.67	1.79	1.83	0.22	n.s	n.s	n.s
	4 h	1.85	1.92	1.52	1.54	1.89	1.53	1.69	1.73	0.16	n.s	n.s	n.s
Blood Parameters													
Total Protein gm/100 ml		6.71	6.93	8.02	7.89	6.82	7.96	7.37	7.41	0.23	n.s	n.s	n.s
Albumin gm/100 ml		3.43	3.67	4.18	4.56	3.55	4.34	3.81	4.16	0.15	n.s	n.s	n.s
Globulin gm/100 ml		3.28	3.126	3.84	3.33	3.27	3.30	3.56	3.30	0.12	n.s	*	n.s
Creatinine mg/100 ml		1.55	1.85	1.60	1.89	1.70	1.75	1.58	1.87	0.09	*	*	*
Urea mg/100 ml		27.05^{ab}	20.53^{b}	34.17^{a}	25.88^{ab}	23.79	30.03	30.61	23.21	1.02	*	n.s	n.s
Choelsterol mg/100 m		75.91	60.41	67.40	58.87	68.16	63.14	71.66	59.64	1.30	n.s	n.s	n.s

a, b values with different letters on the same row differ at 5%.

T_1 control T_2 yea sacc.

Table (4) Average values of weights, gains and feed efficiency of sheep and goats.

Item	T1		T2		Treatment		Species		± S.E.	F-test		
	Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
No. of animals	12	12	12	12	24	24	24	24				
Av. initial weight (kg)	31.1[a]	15.8[b]	31.3[a]	15.1[b]	23.5	23.2	31.2	15.5	1.40	n.s	*	*
Av. Final weight (kg)	53.8[a]	31.5[b]	57.2[a]	33.4[b]	42.7	45.3	55.5	32.5	2.30	n.s	*	*
Av. total weight gains (kg)	22.7	16.4	25.8	18.3	19.55	22.05	24.3	17.35	1.26	n.s	*	n.s
Av. daily gain (kg)/day	0.126	0.091	0.143	0.102	0.109	0.123	134.5	96.5	1.00	n.s	*	n.s
Feed efficiency												
Kg DM/kg gain	13.8	19.0	10.9	13.8	16.4	12.35	12.35	16.4	0.90	n.s	n.s	n.s
kg TDN/ kg gain	7.2	10.3	6.7	8.1	8.75	7.40	6.95	9.2	0.23	n.s	n.s	n.s
kg DCP/kg gain	1.3	1.7	1.1	1.5	1.5	1.30	1.2	1.6	0.34	n.s	n.s	n.s
Economic efficiency	1.81	1.6	2.1	1.7	1.7	1.9	2.0	1.7	0.06			

a, b values with different letters on the same row differ at 5%.

T_1 control T_2 yea sacc.

Mean proportions of butyric acid were nearly similar for both treated animals and control) The obtained results differ with those reported by Kar *et al.* (1994).

Results of Table (3) showed that blood serum total protein and albumin were increased non significantly with Yea-sacc group than the control group. The obtained results are close to those reported by Yadav *et al.* (1994a) and Kar *et al.* (1994). Also the differences between sheep and goats were not significant.

The data indicated that blood serum urea was significantly ($P<0.05$) higher (30.03)mg/100ml for treated animals than that of control (23.79)mg/100ml. However lower value ($P < 0.05$) of cholesterol was detected for treated than non-treated animals. Regardless treatments effect sheep had significant ($P<0.05$) higher values of blood serum urea and cholesterol (30.61,71.66 mg/100ml) than that of goats (23.21, 59.64mg/100ml, respectively).

No differences were obtained between T_1 and T_2 concerning blood serum content of globulin and creatinine

Weights, gains, feed and economic efficiency:

Average values of weights, gains, feed and economic efficiency are illustrated in Table (4) . Average daily gain was numerically higher for sheep and goats fed Yea-sacc (123g) than that of control (109g). These results are in accordance with those obtained by Deaville and Galbraith (1992), Drennan and Moloney (1993), Yadav et al. (1994a),Yadav *et al.*(1994b), Strzetelski *et al.*(1996a), El Basiony *et al.*(1998).

Growth promoting activity may be related to increase propionate formation which provide more metabolizable energy to the animal and the protein sparing effects of propionate (Leng *et al.*1967) and the ability of propionate to stimulate body protein synthesis (Potter *et al.* 1968). Sheep had significant higher values ($P<0.05$) of average daily gain (134.5g) than that of goats (96.5g).

Data of feed efficiency indicated that Yea-sacc group was efficient in converting DM, TDN and DCP to gain than control group. The differences were nonsignificant between treatments, species and the interaction . The present results are in agreements with many investigators worked on Yea-sacc (Mutsvangwa *et al.* 1992,. Yadav *et al.* 1994, Strzetelsk 1996 and El-Basiony *et al.* 1998). Sheep had lower values ($P<0.05$) of kg DM, TDN and DCP/kg gain than goats this observation was close to the findings of Fahmy and Fayed (2000). The improvement in feed efficiency may be attributed to the significant increase in apparent digestibility of DM and fiber as a result of Yea-sacc addition to increase cellulolytic bacteria (Umesh-Kumar 1997) and may be related to shifts in efficiency of fermentation by increasing ruminal propionate and decreasing acetate concentrations (Mutsvangwa *et al.* 1992 and Molony and Dernnan 1994).

Data of Table (4) clearly indicated that Yea-sacc group was more economic by 11% than the control group. Also sheep had non significant higher values (2.0) of economic efficiency than that of goats (1.7).

Slaughter traits and carcass characteristics:

Data in Table (5) showed that the average empty body weight of animals fed Yea-sacc was non significantly higher than that of the control animals.

The mean values of empty body weight was significantly higher ($P<0.01$) for sheep than that of goats.

Yea-sacc group had higher value of head percentage (9.25%) than the control

Table (5) Carcass and non carcass components percentages (calculated from empty body weights) for sheep and goats.

Item		T1		T2		Treatment		Species		± S.E.	F-test		
		Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
No. of Animals		4	4	4	4	8	8	8	8				
Empty body weight		47.39[a]	25.05[b]	49.67[a]	25.95[b]	36.22	37.81	48.53	25.50	2.170	n.s	*	*
Total edible offals %		2.10	2.50	1.7	2.50	2.30	2.100	1.90b	2.50	0.050	*	n.s	n.s
Total internal Fat %		3.70	2.90	0.551	2.40	3.30	1.48	2.13	2.65	0.120	*	n.s	n.s
Organs %	Head	6.26	9.50	8.76	9.73	7.88	9.25	7.5	9.62	0.230	*	**	n.s
	Pelt	16.90[a]	11.18[b]	12.58[b]	12.04[b]	14.04	12.31	14.74	11.61	0.560	*	*	*
	Feet	2.45	3.19	2.01	3.19	2.82	2.60	2.23	3.19	0.050	n.s	*	n.s
Edible offals %	Heart	0.371	0.418	0.326	0.417	0.395	0.372	0.349	0.417	0.009	n.s	n.s	n.s
	Liver	1.463	1.792	1.101	1.700	1.628	1.401	1.282	1.746	0.350	n.s	**	n.s
	Kidney	0.294	0.349	0.230	0.391	0.322	0.310	0.262	0.370	0.090	n.s	n.s	n.s
Other offals %	Lungs	1.342	1.624	1.109	1.517	1.483	1.313	1.226	1.571	0.036	n.s	n.s	n.s
	Spleen	0.135[a]	0.143[a]	0.102[b]	0.146[a]	0.139	0.124	0.119	0.145	0.290	n.s	n.s	*
	Testis	0.780	1.009	0.709	0.968	0.895	0.339	0.745	0.989	0.020	*	n.s	n.s
Internal fat %	Omental	2.59[a]	2.04[a]	0.149[c]	1.53[b]	2.315	0.840	1.370	1.785	0.060	*	n.s	*
	Kidney	1.07	0.906	0.402	0.875	0.988	0.639	0.736	0.891	0.090	n.s	n.s	n.s

A, b values with different letters on the same row differ at 5%.

T_1 control T_2 yea sacc.

Table (6) Whole –sale cuts (%) in carcasses of sheep and goats.

Item	T1		T2		Treatment		Species		± S.E.	F-test		
	Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
No. of animals	4	4	4	4	8	8	8	8				
Hot carcass weight Kg*	33.00	17.20	38.00	17.80	25.10	27.90	35.50	17.50	2.00	n.s	*	n.s
Hot carcass weight kg **	25.55	12.50	27.33	12.95	19.03	20.14	26.44	12.73	1.99	n.s	n.s	n.s
Empty body weight	47.39	25.05	49.67	25.95	36.22	37.81	48.53	25.50	2.17	n.s	*	n.s
Dressing % on empty body weight	53.91	49.90	55.02	49.90	52.54	53.27	54.48	49.92	1.14	n.s	*	n.s
Whole sale cuts												
Neck %	4.21	4.97	4.50	4.66	4.59	4.58	4.36	4.82	0.16	n.s	*	n.s
Shoulder %	4.60	4.52	4.90	5.61	4.56	5.26	4.75	5.07	0.13	n.s	*	n.s
Rack %	5.20	6.42	6.12	6.25	5.81	6.19	5.66	6.34	0.18	n.s	*	n.s
Loin %	2.85	2.85	3.13	3.00	2.85	3.10	2.99	2.93	0.12	n.s	n.s	n.s
Flank %	1.72	2.32	1.34	1.70	2.02	1.52	1.53	2.01	0.06	n.s	*	n.s
Legs %	7.30	5.06	7.80	7.03	6.18	7.42	7.55	6.05	0.28	n.s	*	n.s
Tail %	5.67	0.25	4.47	0.23	2.96	2.35	5.07	0.24	0.42	n.s	*	n.s

a, b values with different letters on the same row differ at 5%.
T_1 control T_2 yea sacc.
*** Carcass weight including offals**
**** Carcass weight excluding offals**

Table (7) Eye muscle area of growing sheep and goats fed yea sacc

Item	T1		T2		Treatment		Species		+ S.E.	F-test		
	Sheep	Goats	Sheep	Goats	T1	T2	Sheep	Goats		T	S	T*S
Eye muscle area cm^2	16.60	6.90	16.70	6.90	11.75	11.80	16.65	6.90	1.44	n.s	*	n.s
Hot carcass weight / kg	33.00	17.20	38.00	17.80	25.10	27.90	35.50	17.50	2.00	n.s	*	n.s
Kg carcass /cm^2 L.D.	2.00	2.50	2.3	2.60	2.25	2.45	2.15	2.55	0.03	n.s	n.s	n.s
Total fatty tissues kg	1.146^{a}	0.550^{b}	0.319^{c}	0.402^{bc}	0.886	0.333	0.733	0.486	0.09	*	*	*
Gm Fat / cm^2 L.D.	69.00^{ab}	79.7^{a}	19.10^{c}	58.30^{b}	74.35	38.7	44.05	69.0	3.01	*	*	*

a, b values with different letters on the same row differ at 5%.
T_1 control T_2 yea sacc.
L.D. : longesmuse dorsi.

animals (7.88%). The differences were significant (P<0.05). Also goats had higher value of head percentage than sheep. However pelt percentage was significant lower (P<0.05) for treated animals than non treated animals. Heart and kidney were not different between treatments but liver percentage showed a numerically lower value for animals fed Yea sacc this finding agree with that reported by El-Basiony *et al.* (1998). Lungs, spleen and testis percentages did not show remarkable change between treatments. This finding is supported by a similar one reported by El-Basiony *et al.* (1998) but they were numerically higher for goats than sheep. Data in Table (5) indicated that omental and kidney fat was significantly lower (P<0.05) by using Yea Sacc with sheep and goats than without Yea sacc.

Results in Table (6) showed that the average value of dressing percentages based on empty body weight did not vary among treatment. This observation was similar to the findings of Drennan and Moloney (1993) Sheep had higher (p< 0.05) value of dressing percentage than goats Whole sale cuts percentages of empty body weight presented in Table (6) indicated that neck shoulder-rack loin and tail was not affect by treatments or animals species . The result obtained is supported by a similar one observed by El Basiony *et al.* (1998) while flank and legs varied non significantly between treatments and animals species.

Data on eye muscle area, kg carcass per cm^2 L.D (*Longesmuse dorsi*), total fatty tissue are presented in Table (7). Average values of eye muscle area were not affected by treatments while goats had higher value (2.55) of kg carcass/cm^2 L.D. than that of sheep (2.15).

Yea sacc group had significantly lower (P <0.05) value of total fatty tissues kg (0.333) than that of control one (0.886). Also, goats had significantly lower (P<0.05) value of total fatty tissues than of sheep.

The lower values of gram fat / cm^2 L.D.(*Longesmuse dorsi*) were recorded for sheep and goats fed Yea sacc, However, the higher value was demonstrated for control animals.

In conclusion, Yea sacc increased (P<0.05) digestibility coefficients and significantly (p<0.05) decreased ruminal ammonia concentration, percentage of carcass total fatty tissues, and pelt .

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تأثير استخدام منشط النمو يى ساك على أداء الأغنام والماعز فى سيناء

عفاف محمود فايد

قسم تغذية الحيوان مركز بحوث الصحراء المطرية القاهرة مصر

تمت الدراسة بمحطة بحوث راس سدر التابعة لمركز بحوث الصحراء لدراسة تأثير إضافة الـ يى ساك لعلائق الأغنام والماعز وتأثير ذلك على الهضم والكفاءة التحويلية للغذاء وبعض قياسات الكرش والدم وكذلك معدلات النمو وصفات الذبيحة.

واستخدم فى الدراسة عدد ٢٤ ذكرمن الأغنام النامية بمتوسط وزن ٣١كم ,عدد ٢٤ذكرمن الماعز النامية بمتوسط وزن ١٥ كم وقسمت الحيوانات داخل كل نوع حيوانى إلى مجموعتين بكل مجموعة ١٢ حيوان .المجموعة الأولى المقارنة تم تغذيتها على العلف المركز ودريس البرسيم . المجموعة الثانية تناولت نفس غذاء المقارنة مع إضافة الـ يى ساك بمعدل ٣ جم/ رأس غنم و ٢جم/رأس ماعز . وكان لإضافة الـ يى ساك تأثير إيجابى معنوى على زيادة معاملات هضم كلا من المادة الجافة والمادة العضوية والبروتين الخام ومستخلص الأثير وكذلك زيادة وزن الرأس بالذبيحة .بينما كانت هناك زيادة غير معنوية فى معدلات النمو وكفاءة تحويل الغذاء والكفاءة الأقتصادية والأحماض الدهنية الطيارة بسائل الكرش والبروتين الكلى والألبيومين بسيرم الدم .بينما خفض الـ يى ساك معنويا الأمونيا المنتجة بالكرش وكذلك الأنسجة الدهنية والجلد بالذبيحة . وكان الإنخفاض غير معنوى فى كولسترول الدم والنسبة المئوية للحم البطن فى بالذبيحة . وعند مقارنة الأغنام بالماعز زاد معنويا كرياتنين ويوريا الدم وكذلك لحم الفخذ والذيل فى الأغنام عن الماعز بينما كانت الزيادة غير معنوية فى معدلات النمو اليومى والكفاءة التحويلية والأقتصادية للغذاء وكذلك معاملات هضم المادة الجافة والبروتين الخام والمادة العضوية والمستخلص الخالى من النتروجين وتركيز امونيا الكرش وكولسترول وألبيومين السيرم وقطعيات الضلوع والكتف والأنسجة الدهنية .وتفوقت الماعز عن الأغنام فى هضم البروتين الخام ومجموع المركبات الكلية المهضومة اللازمة لكل كيلو جرام نمو وكذلك الأحماض الدهنية الطيارة منفردة .