



Use of non-traditional feed ingredients in goats diet

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Objective

This work was done to study effect of use:

- Date seed
- Olive pulp
- Radicel
- Poultry litter
- an-aerobically digested manure

as non-traditional feed ingredients

on

goats performance.

Materials and Methods

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- Twenty-four kids weighed 18.7 Kg in average were divided into four groups and fed four different experimental diets:
- D1 as a control diet (100% concentrate feed mixture).
- and from D2 to D4 contained 35% date seeds, 27% olive pulp from total concentrate and contained 30% radice, poultry litter and an-aerobically digested manure in D2, D3 and D4, respectively.
- Animal were fed in the previous mixture to cover the maintenance requirements and were allowed to graze natural vegetation mixture of Atriplex (*Atriplex nummlaria*) and Acacia (*Acacia saligna*).

Materials and Methods

Table1: Feed formulation of the concentrate mixture for the experimental diets.

Item	Experimental diets			
	D1	D2	D3	D4
Ingredient, %				
Concentrate feed mixture	100	-	-	-
Date seeds	-	35	35	35
Olive pulp	-	27	27	27
Radical	-	30	-	-
Poultry litter	-	-	30	-
An-aerobically digested manure	-	-	-	30
Molasses	-	8	8	8

Materials and Methods

Table 2: Chemical composition of *Atriplex nummlaria* and *Acacia saligna* the experimental diets.

Item	The experimental diets				Atriplex	Acasia
	D1	D2	D3	D4		
Nutrient components, %						
Dry matter	90.74	90.72	92.41	91.33	38.50	43.00
Crude protein	12.98	13.03	13.08	12.96	12.50	10.50
Crude fiber	14.50	14.20	18.37	18.85	28.70	26.40
Ether extract	4.12	6.10	6.11	6.49	3.40	4.80
N free extract	58.11	57.57	48.19	47.98	30.50	44.40
Ash	10.29	9.10	14.25	13.72	24.90	13.90
Cell wall constituents, %						
NDF	64.90	67.40	69.30	59.70	59.60	57.70
ADF	40.30	42.60	44.80	40.40	36.50	30.80
ADL	1.89	4.72	6.93	4.93	8.33	9.11

Results

Results

Table 3: Voluntary feed intake of the experimental groups.

Item	The experimental diets				SE
	D1	D2	D3	D4	
Live body weight, Kg	19.00	18.70	18.50	18.70	0.16
Feed intake, g/Kg weight					
Roughage*	17.20	17.90	17.00	19.30	0.28
Concentrate feed mixture	20.70	20.90	20.10	17.20	0.45
Total	37.90	38.80	37.10	36.50	0.26
% of body weight	3.79	3.88	3.71	3.65	-
Drinking water					
ml/Kg Weight	77.80	66.40	58.30	54.40	2.71
ml/ g DM intake	2.07	1.75	1.62	1.49	0.07

*: Consists of 30% *Atriplex nummlaria* and 70% *Acacia saligna*.

Results

Table 4: Nutrients digestibility of the experimental groups.

Item	The experimental diets				SE
	D1	D2	D3	D4	
Apparent digestibility,%					
Dry matter	63.00a	64.30a	60.90b	58.40c	0.68
Crude protein	61.20a	59.40b	56.40c	57.30c	0.56
Crude fiber	60.10b	64.80a	61.20b	64.20a	0.60
Ether extract	51.20b	50.70b	53.10a	48.70c	0.48
Nitrogen free extract	64.90a	63.30b	58.10	54.90c	1.22
Neutral detergent fiber	74.30a	70.70b	69.30b	65.80c	0.92
Acid detergent fiber	67.60a	65.10b	63.30b	60.20c	0.82
Total digestible nutrients					
g/Kg weight	22.6a	23.6a	21.3b	20.0b	0.41
% of maintenance requir.*	109.3	114.2	103.1	96.80	-

*: According to Kearn (1982).

Results

Table 5: Nitrogen utilization of the experimental groups.

Item	The experimental diets				SE
	D1	D2	D3	D4	
Nitrogen intake, mg/Kg W	735.0ab	754.0a	723.0b	699.0c	
Fecal nitrogen					
mg/ Kg W	285.0c	306.0ab	315.0a	298.0b	3.33
% of N intake	38.7c	40.6a	43.6a	42.6a	0.58
Urinary nitrogen					
mg/ Kg W	332.0a	321.0b	310.0c	306.0c	3.10
% of N intake	45.1a	42.5c	42.8bc	43.7b	0.32
Retained nitrogen					
mg/ Kg W	118.0a	127.0a	98.0b	95.0b	4.11
% of N intake	16.0a	16.8a	13.5b	13.6b	0.44
% of absorbed N	26.2b	28.3a	24.0c	23.7c	0.57
Digested crude protein					
g/ Kg W	2.81a	2.80a	2.60b	2.51b	0.04
% of maintenance requir.	127.7	127.3	118.2	114.1	-

Results

Table 6: Rumen liquor parameters of the experimental groups.

Item	The experimental diets				SE
	D1	D2	D3	D4	
pH	6.66a	6.06b	6.09b	6.59a	0.09
Total protein N, mg/100	180.61b	175.22b	190.70a	163.71c	3.10
Ammonia N, mg/100	22.93a	18.94c	20.31b	19.92bc	0.44
Non-protein nitrogen					
mg	99.19c	106.89b	113.62a	110.87ab	1.73
%	54.92	61.00	59.58	67.72	0.70
True protein nitrogen					
mg	81.02a	68.33b	77.08ab	52.84c	1.50
%	45.08	39.00	40.42	32.28	0.55
Total VFA's, meq/100	5.78b	6.84a	6.43a	5.76b	0.14

Results

Table 7: Blood parameters of the experimental groups.

Item	The experimental diets				SE
	D1	D2	D3	D4	
Total protein, mg/100	7.05b	7.86a	7.58b	7.41b	0.06
Urea, mg/100	37.63a	35.90a	31.60b	33.50b	0.79
Creatinine, mg/100	1.57a	1.30b	1.67a	1.33b	0.05
Albumin, g/100	4.57a	4.86a	4.61a	3.60b	0.14
Globulin, g/100	2.88b	3.00b	2.97b	3.81a	0.11
A/G ratio	1.60	1.65	1.56	0.95	-
ALT, u/100	27.87c	30.30bc	31.40b	37.23a	1.04
AST, u/100	102.90b	102.60b	107.70a	98.03c	1.04
Cholesterol, mg/100	60.50c	74.77a	66.77b	67.80b	1.63

Conclusion

From the previous results it can be concluded that, can be use the non-traditional feed ingredients, especially radice in goats diets up to 30% of concentrate feed mixture.

