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Evaluation of On-farm Goat Fattening Using Cowpea Hay with Concentrate in North-Western Dry Lands of Ethiopia

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Objective

- To evaluate fattening potential of castrated goats fed on cowpea hay with concentrate
- To develop forage based feeding strategy for fattening purpose

Methods

- Feed cultivation and preparation
- Animal management
- Feed and feeding management
- Data management and analysis

Results

Table 1: Initial weight (kg), final weight (kg), total weight gain (kg) and average daily weight gain (g)

Treatments	Initial weight	Final weight	Total weight gain	Average daily weight gain
Browsing alone	28.03	29.30^{c}	0.93^{c}	10.37^{c}
100% concentrate	27.3	35.33^{a}	8.03^{a}	89.26^{a}
100% Cow pea hay	28.7	32.87^{b}	4.17^{b}	46.3^{b}
50%con[1]+50%Cow pea hay	29.5	34.76^{ab}	5.27b	58.52^{b}
75%con[1]+25%Cow pea hay	27.23	36.8^{a}	9.56^{a}	106.3^{a}
25%con[1]+75%Cow pea hay	28.53	34.51^{ab}	5.98^{b}	66.48^{b}
Overall	28.2	33.88	5.65	62.87
LSD	4.7	4.69	2.02	22.46
CV	14.13	11.56	19.56	19.52

[1] con = concentrate (50%,49% &1% wheat bran, noug cake and salt)
Figures in a column with different superscripts are significantly different at P<0.0001

Table 2: Average DM intake and feed conversion efficiency

Treatments	Average daily drymatter intake, g	Feed conversion efficiency, Gain, g/ feed, g
100% concentrate (T2)	392.82±1.01^{c}	0.24±0.01^{a}
100% Cow pea (T3)	409.65±14.56^{c}	0.11±0.02^{b}
50%con +50%Cowpea (T4)	529.03±11.15^{a}	0.09±0.004^{b}
75%con+25%Cow pea (T5)	500.68±0.16^{bb}	0.26±0.004^{a}
25%con+75%Cowpea (T6)	522.03±3.33^{b}	0.12±0.01^{b}

[1]conc. (50% wheat bran 49% noug cake and 1% salt maize-grass pea grain mixture)
Figures in a column with different superscripts are significantly different at p<0.05.

Table 3: Partial budget analysis

Parameter	Treatments					
	1	2	3	4	5	6
Purchase price of bucks	608.33	608.33	608.33	608.33	608.33	608.33
Cost of concentrate for (90 days/head)	0.00	126.00	0.00	63.00	94.50	31.50
Cost of cow pea hay (90 days)	0.00	0.00	200.00	100.00	100.00	150.00
Labor + feed cost	133.20	309.20	325.00	288.00	327.70	306.50
Gross income	811.67	1368.33	1315.00	1570.00	1696.67	1615.00
Total return	210.67	633.33	706.67	961.67	1033.67	1006.67
Net return	70.14	550.30	381.67	673.67	818.84	700.17
Change net income		480.16	311.53	603.53	748.70	630.03
Change TVC	-	126.00	191.80	154.80	194.50	173.30
MRR(ratio)	-	3.81	1.62	3.89	3.85	3.62
MRR(%)	-	381.00	162.00	389.00	385.00	362.50

Conclusion(s)

- T5 was effective both economically and biologically
- T6 also recommended to reduce the level of concentrate
- Farmers can effectively fatten their goats by planting cowpea with under sowing

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