

# SHIPPING CATTLE FEED BASED ON LOCAL RESOURCES IN NUSA TENGGARA TIMUR REGION

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# Feeding Problem on Cattle Shipping

- Bulky
- Fermentation
- Forage based
- Bad feed quality



## SOLUTIONS

- Compacted feed production based on forage local resources



# Feed Production Based on Local Resources



Hay straw



Elephant grass



Leucaena leaf  
(lamtoro)



Indigofera leaf



Cassava dregs  
(Onggok)



Molasses

Bahan Pakan	BK	Abu	PK	LK	SK	Pati	TDN	Ca	P
Rumput Gajah	22,2	12,0	8,69	2,71	32,3	43,7	52,4	0,475	0,347
Jerami Padi	40,0	16,9	4,15	1,47	32,5	45,0	43,2	0,413	0,292
Tetes	75,0	11,0	3,94	0,30	0,4	84,4	70,7	0,882	0,141
Indigofera	22,0	11,0	24,17	1,32	24,0	39,1	67,0	1,500	0,900
Lamtoro	24,8	7,5	24,20	3,72	21,5	43,1	74,4	1,680	0,210
Onggok	79,8	2,4	1,87	0,324	8,9	86,5	78,3	0,26	0,16

## Usage percentage of each formulations

	R1 (%)	R2 (%)	R3 (%)	R4 (%)	R5 (%)	R6 (%)
Leucaena	35	34	0	0	0	24
Indigofera	0	0	35	34	24	0
Elephant Grass	0	13	0	13	68	68
Straw	65	53	65	53	0	0
Cassava Dregs	0	0	0	0	8	8

R1&R2 without indigofera  
 R3&R4 without leucaena  
 R5&R6 without straw  
 + cassava dregs  
 All treatments were added  
 molasses as binder

## Nutrient content of each formulations

Formulation	Abu	PK	LK	SK	Pati	TDN	Ca	P
1	14,54	10,135	0,912	26,74	47,182	53,09	0,786	0,4593
2	14,05	10,589	1,036	26,72	47,052	54,01	0,7922	0,4648
3	13,49	10,144	2,028	25,99	48,37	55,31	0,84	0,2523
4	13	10,598	2,152	25,97	48,24	56,23	0,8462	0,2578
5	11,22	10,97	1,8077	26,28	48,998	58,445	0,70995	0,42765
6	10,52	10,976	2,5517	25,78	49,79	59,925	0,74595	0,28965

## Nutrient requirements for shipping cattle (MLA 2011)

Nutrient	TDN	Protein	Starch	Ca	p
Requirements	59,62	10,5-12	< 20%	> 0.55%	> 0.25%

# PRODUCTION

Cutting

Chopping

Drying

Grinding

Mixing



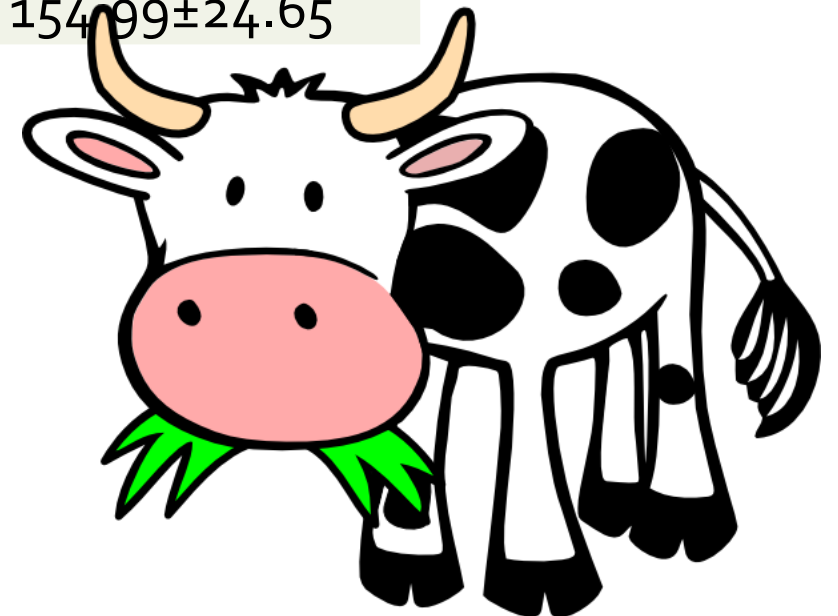
## Feed adaptability on cattle consumption

Formulation	Consumption (g/hour)	Duration (hour)	Duration (minutes)
1	387.0±63.8	2.64±0.45	158.58±27.04
2	372.6±106.3	2.90±0.99	174.17±59.17
3	323.0±83.3	3.30±1.03	198.27±61.68
4	326.8±78.9	3.20±0.71	191.82±42.55
5	419.4±58.1	2.42±0.33	145.22±19.60
6	394.8±60.9	2.58±0.41	154.99±24.65

- No significant difference
- Desired formulation (1,3,5)

Next step

- Forming to pellet, dried pellet, wafer, and cube



### Total consumption on feed treatments

Treatment	Total consumption (gram)
s	
1	1533.33±755.35b
2	1583.33±1953.47b
3	1350.00±736.55b
4	3950.00±369.61c
5	4416.67±2577.35c
6	4633.33±498.88c
7	0±0a
8	0±0a
9	0±0a
10	2205.00±67.06bc
11	3168.00±864.29bc
12	2845.84±177.05bc

### Density of various feed types

Types	Density (kg/m <sup>3</sup> )
Mash	5.14±0.05
Pellet	10.15±0.13
Wafer	8.43±0.09
Dried pellet	8.29±0.12
Cube	7.27±0.09



- Higher consumption on wafer treatment (4,5,6)
- Best treatment 5 (high consumption, cheap, easy to provide)