Livestock Production

Animal Nutrition

Handout 3

Feed Tables

CIN: 12602 Version: 001 Date: 2021/04/09

Feed Tables

Table 1:

Daily nutritional requirements of sheep, NRC standards (1975)

Body Mass (Kg)	Increase or Decrease (g/d)	Dry Material Intake (kg)	Crude Protein (%)	TDN (%)	Metabolizable Energy (ME)(MJ/kg)
Ewes Maintenance					
50	10	1.0	8.9	55	8.2
60	10	1.1	8.9	55	8.2
70	10	1.2	8.9	55	8.2
80	10	1.3	8.9	55	8.2
Non-lactating and first 15 weeks of pregnancy					
50	30	1.1	9.0	55	8.2
60	30	1.3	9.0	55	8.2
70	30	1.4	9.0	55	8.2
80	30	1.5	9.0	55	8.2
Last 6 weeks of pregnancy or last 8 weeks of lactation of ewes with one lamb (1)					

50	175 (+45)	1.7	9.3	58	8.7
60	180 (+45)	1.9	9.3	58	8.7
70	185 (+45)	2.1	9.3	58	8.7
80	190 (+45)	2.2	9.3	58	8.7
First 8 weeks of lactation of single lamb ewes or last 8 weeks of lactation for ewes with multiple lambs (2)					
50	-25 (+80)	2.1	10.4	65	9.7
60	-25 (+80)	2.3	10.4	65	9.7
70	-25 (+80)	2.5	10.4	65	9.7
80	-25 (+80)	2.6	10.4	65	9.7
First 8 weeks of lactation for ewes with multiple lambs					
50	-60	2.4	11.5	65	9.7
60	-60	2.6	11.5	65	9.7
70	-60	2.8	11.5	65	9.7
80	-60	3.0	11.5	65	9.7

In brackets is applicable to last 8 weeks of lactation of single lamb ewes.

In brackets is applicable to last 8 weeks of lactation for multiple lamb ewes.

Table 2: Feed Composition Tables

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Alfalfa cubes	91	57	18	29	46	2
Alfalfa dehydrated 17% CP	92	61	19	26	45	3
Alfalfa fresh	24	61	19	27	46	3
Alfalfa hay early bloom	90	59	19	28	45	2.5
Alfalfa hay midbloom	89	58	17	30	47	2.3
Alfalfa hay full bloom	88	54	16	34	52	2
Alfalfa hay mature	88	50	13	38	59	1.3
Alfalfa seed screenings	91	84	34	13		10.7
Alfalfa silage	30	55	18	28	49	3
Alfalfa silage wilted	39	58	18	28	49	3
Alfalfa leaf meal	89	60	26	16	34	3

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Alfalfa stems	89	47	11	44	68	1.3
Almond hulls	89	56	3	16	36	3.1
Ammonium chloride	99	0	163	0	0	0
Ammonium sulfate	99	0	132	0	0	0
Apples	17	70	3	7	25	2.2
Apple pomace wet	20	68	5	18	36	5.2
Apple pomace dried	89	67	5	18	38	5.2
Artichoke tops (Jerusalem)	27	61	6	18	41	1.1
Avocado seed meal	91	52	20	19		1.2
Bahiagrass hay	90	53	6	32	72	1.8
Bakery product dried	90	90	11	3	30	11.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Bananas	24	84	4	4		0.8
Barley hay	90	57	9	28	65	2.1
Barley silage	35	59	12	34	58	3
Barley silage mature	35	58	12	30	50	3.5
Barley straw	90	44	4	42	78	1.9
Barley grain	89	84	12	5	20	2.1
Barley grain, steam-flaked	85	90	12	5	20	2.1
Barley grain steam-rolled	86	84	12	5	20	2.1
Barley grain 2-row	88	84	12	5	20	2.2
Barley grain 6-row	87	84	11	6	20	2.2
Barley grain lt.wt. (42-44 lb/bu)	88	78	13	9	30	2.3

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Barley feed pearl byproduct	90	74	15	12		3.9
Barley bran	91	59	12	21	36	4.3
Barley grain screenings	89	71	12	9		2.6
Beans navy cull	90	84	24	5	20	1.4
Beans pinto	90	75	25	5	7	1.5
Beet pulp wet	17	77	9	20	45	0.7
Beet pulp dried	91	76	9	21	46	0.7
Beet pulp wet with molasses	24	77	11	16	39	0.6
Beet pulp dried with molasses	92	77	11	17	40	0.6
Beet foot (sugar)	23	80	4	5	16	0.4
Beet tops (sugar)	19	58	14	11	25	1.3

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Beet top silage	25	52	12	12		2
Bermudagrass coastal dehydrated	90	62	16	26	40	3.8
Bermudagrass coastal hay	89	56	10	30	73	2.1
Bermudagrass hay	89	53	10	29	72	1.9
Bermudagrass silage	26	50	10	28	71	1.9
Birdsfoot trefoil fresh	22	66	21	21	47	4.4
Birdsfoot trefoil hay	89	57	16	31	50	2.2
Biuret	99	0	248	0	0	0
Blood meal, wwine/poultry	91	66	92	1	10	1.4
Bluegrass KY fresh early bloom	36	69	15	27	60	3.9
Bluegrass straw	93	45	6	40	78	1.1

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Bluestem fresh mature	61	50	6	34		2.5
Bone meal steamed, swine/poultry	95	16	13	1	0	11.6
Bread byproduct	68	90	14	1	3	3
Brewers grains wet	23	85	26	13	45	7.5
Brewers grains dried	92	84	25	14	49	7.5
Brewers yeast dried	94	79	48	3		1
Bromegrass fresh immature	30	64	15	28	54	4.1
Bromegrass hay	89	55	10	35	66	2.3
Bromegrass haylage	35	57	11	36	69	2.5
Buckwheat grain	88	75	12	13		2.8
Buttermilk dried	92	88	34	5	0	5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Cactus, prickly pear	23	61	5	16	28	2.1
Calcium carbonate	99	0	0	0	0	0
Canarygrass hay	91	53	9	32	67	2.7
Canola meal, solv. ext.	91	71	40	12	27	2.7
Carrot pulp	14	62	6	19	40	7.8
Carrot root fresh	12	83	10	9	20	1.4
Carrot tops	16	73	13	18	45	3.8
Cattle manure dried	92	38	15	35	55	2.5
Cheatgrass fresh immature	21	68	16	23		2.7
Citrus pulp dried	90	78	7	13	21	2.9
Clover ladino fresh	19	69	25	14	35	4.8

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Clover ladino hay	90	61	21	22	36	2
Clover red fresh	24	64	18	24	44	4
Clover red hay	88	55	15	30	51	2.5
Clover sweet hay	91	53	16	30	50	2.4
Coconut meal, mech. ext.	92	76	21	13	56	6.8
Coffee grounds	88	20	13	41	77	15
Corn whole plant pelleted	91	63	9	21	40	2.4
Corn fodder	80	65	9	25	48	2.4
Corn stover mature (stalks)	80	54	5	35	70	1.3
Corn silage milk stage	26	65	8	26	54	2.8
Corn silage mature well-eared	34	72	8	21	46	3.1

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Corn silage sweet corn	24	65	11	20	57	5
Corn grain whole	88	88	9	2	10	4.2
Corn grain rolled	88	88	9	2	10	4.2
Corn grain, steam-flaked	85	93	9	2	9	4.1
Corn grain high moisture	74	93	10	2	9	4
Corn gGrain, high oil	88	91	8	2	8	6.9
Corn grain hi-lysine	92	87	12	4	11	4.4
Corn and cob meal	87	82	9	9	26	3.7
Corn cobs	90	48	3	36	88	0.6
Corn screenings	87	87	9	3	10	3.8
Corn bran	91	76	11	10	51	6.3

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Corn germ meal	90	74	27	11	50	3
Corn germ, full-fat	93	135	12	6	36	44.9
Corn gluten feed	90	80	23	10	37	3.2
Corn gluten meal 41% CP	86	56	46	5	30	3.2
Corn gluten meal 60% CP	91	89	67	3	10	2.4
Corn cannery waste	29	68	8	28	59	3
Cottonseed, whole	91	93	23	26	47	19.8
Cottonseed, whole, delinted	90	95	24	19	40	22.9
Cottonseed, whole, extruded	92	87	26	32	53	9.5
Cotton gin trash (burrs)	91	42	9	35	70	2
Cottonseed hulls	90	45	4	48	89	1.7

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Cottonseed meal, solv. ext. 41% CP	90	77	46	13	28	1.6
Cottonseed meal, mech. ext. 41% CP	92	79	46	13	31	5
Crab waste meal	91	29	32	11		3
Crambe meal, solv. ext.	91	81	31	25	47	1.4
Crambe meal, mech. ext.	92	88	28	24	42	17
Cranberry pulp meal	88	49	7	26	54	15.7
Crawfish waste meal	94	25	35	12		
Curacao phosphate	99	0	0	0	0	0
Defluorinated phosphate	99	0	0	0	0	0
Diammonium phosphate	98	0	115	0	0	0
Dicalcium phosphate	96	0	0	0	0	0

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Distillers grain, barley	90	75	30	16	44	8.5
Distillers grain, corn, dry	91	95	30	8	44	9.5
Distillers grain, corn, wet	36	96	30	8	44	9.5
Distillers grain, corn with solubles	91	96	31	9	30	10.8
Distillers grain, corn with solubles, low oil	90	92	31	10	31	7.4
Distillers dried solubles	93	87	32	4	22	13
Distillers corn stillage	7	92	22	8	21	8.1
Distillers grain, sorghum, dry	91	84	33	13	44	10
Distillers grain, sorghum, wet	35	86	33	13	43	10
Distillers grain, sorghum with solubles	92	85	33	12	42	10
Elephant (napier) grass hay, chopped	92	55	9	24	63	2

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Fat, animal, poultry, vegetable	99	195	0	0	0	99
Feather meal hydrolyzed	93	67	87	1	42	7
Fescue KY 31 fresh	29	64	15	25	64	5.5
Fescue KY 31 hay early bloom	88	60	18	25	64	6.6
Fescue KY 31 hay mature	88	52	11	30	73	5
Fescue (red) straw	94	43	4	41		1.1
Fish meal	90	74	66	1	12	9
Flax seed hulls	91	38	9	32	50	1.5
Garbage municipal cooked	23	80	16	9	59	20
Glycerol (glycerin)	88	90	0	0	0	0
Grain screenings	90	65	14	14		5.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Grain dust	92	73	10	11		2.2
Grape pomace stemless	91	40	12	32	54	7.6
Grass hay	88	58	10	33	63	3
Grass silage	30	61	11	32	60	3.4
Guar meal	90	72	39	16		3.9
Hominy feed	89	89	11	6	19	5.8
Hop leaves	37	49	15	15		3.6
Hop vine silage	30	53	15	21		3.1
Hops spent	89	35	23	26		4.6
Kelp dried	91	32	7	7		0.5
Kenaf hay	92	48	10	31	56	2.9

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Kochia fresh	29	55	16	23		1.2
Kochia hay	90	53	14	27		1.7
Kudzu hay	90	54	16	33		2.6
Lespedeza fresh early bloom	25	60	16	32		2
Lespedeza hay	92	54	14	30		3
Limestone ground	98	0	0	0	0	0
Limestone dolomitic ground	99	0	0	0	0	0
Linseed meal, solv. ext.	91	77	39	10	26	1.9
Linseed meal, mech. ext.	91	82	37	10	24	6
Meadow hay	90	50	7	33	70	2.5
Meat meal, wwine/poultry	93	71	56	2	48	10.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Meat and bone meal, swine/poultry	93	72	56	1	34	10
Milk, dry, skim	94	87	36	0	0	0.9
Mint slug silage	27	55	14	24		1.8
Molasses beet	77	75	8	0	0	0.2
Molasses cane	77	74	6	0	0	0.5
Molasses cane dried	94	74	9	2	7	0.3
Molasses, cond. fermentation solubles	43	69	16	0	0	1
Molasses citrus	65	75	9	0	0	0.3
Molasses wood, hemicellulose	61	70	1	1	4	0.6
Monoammonium phosphate	98	0	70	0	0	0
Mono-dicalcium phosphate	97	0	0	0	0	0

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Oat hay	90	54	10	31	63	2.3
Oat silage	35	60	12	31	59	3.2
Oat straw	91	48	4	41	73	2.3
Oat grain	89	76	13	11	28	5
Oat grain, steam-flaked	84	88	13	11	30	4.9
Oat groats	91	91	18	3		6.6
Oat middlings	90	91	16	4		6
Oat mill byproduct	89	33	7	27		2.4
Oat hHulls	93	38	4	33	75	1.6
Orange pulp dried	89	79	9	9	20	1.8
Orchardgrass fresh early bloom	24	65	14	30	54	4

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Orchardgrass hay	88	59	10	34	67	3.3
Pea vine hay	89	59	11	32	62	2
Pea vine silage	25	58	16	29	55	3.3
Pea vine straw	89	51	7	41	72	1.4
Peas cull	88	85	23	7	12	1.4
Peanut hulls	91	22	7	63	74	1.5
Peanut meal, solv. ext.	91	77	51	9	27	2.5
Peanut skins	92	0	17	13	28	22
Pearl millet grain	87	82	13	2	18	4.5
Pineapple greenchop	17	47	8	24	64	2.4
Pineapple bran	89	71	5	20	66	1.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Pineapple presscake	21	71	5	24	69	0.8
Potato vine silage	15	59	15	26		3.7
Potatoes cull	21	80	10	2	4	0.4
Potato waste wet	14	82	7	9	18	1.5
Potato waste dried	89	85	8	7	15	0.5
Potato waste wet with lime	17	80	5	10	16	0.3
Potato waste filter cake	14	77	5	2		7.7
Poultry byproduct meal	93	79	62	2		14.5
Poultry manure dried	89	38	28	13	35	2.1
Prairie hay	91	50	7	34	67	2
Pumpkins, cull	11	80	15	14	30	8.9

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Rice straw	91	40	4	38	72	1.4
Rice straw ammoniated	87	45	9	39	68	1.3
Rice grain	89	79	8	10	16	1.9
Rice polishings	90	90	14	4		14
Rice bran	91	71	14	13	24	16
Rice hulls	92	13	3	44	81	0.9
Rice mill byproduct	91	39	7	32	60	5.7
Rye grass hay	90	58	10	33	65	3.3
Rye grass silage	32	59	14	22	59	3.3
Rye straw	89	44	4	44	71	1.5
Rye grain	89	80	14	3	19	2.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Safflower meal, solv. ext.	91	56	24	33	57	1.3
Safflower meal dehulled, solv. ext.	91	75	47	11	27	0.8
Safflower hulls	91	14	4	58	90	3.7
Sagebrush fresh	50	50	13	25	38	9.2
Sanfoin hay	88	61	14	24		3.1
Shrimp waste meal	90	48	50	11		5.5
Sodium tripolyphosphate	96	0	0	0	0	0
Sorghum stover	87	54	5	33	65	1.8
Sorghum silage	32	59	9	27	59	2.7
Sorghum grain (milo) ground	89	82	11	3	17	3.1
Sorhum grain (milo) flaked	82	90	11	3	17	3.1

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Soybean hay	89	52	16	33	55	3.5
Soybean straw	88	42	5	44	70	1.4
Soybeans whole	88	92	41	8	15	18.8
Soybeans whole, extruded	88	93	40	9	15	18.8
Soybeans whole, roasted	88	93	40	9	15	18.8
Soybean hulls	89	74	12	40	65	1.7
Soybean meal, solv. ext. 44% CP	89	84	49	7	15	1.5
Soybean meal, solv. ext. 49% CP	89	87	54	4	10	1.1
Soybean mill feed	90	50	15	36		1.9
Spelt grain	88	75	13	10	21	2.1
Sudangrass fresh immature	18	70	17	23	55	3.9

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Sudangrass hay	88	57	9	36	67	1.8
Sudangrass silage	31	58	10	30	64	3.1
Sunflower meal, solv. ext.	91	64	39	20	36	2
Sunflower meal with hulls	91	57	32	27	45	1.9
Sunflower seed hulls	90	40	4	52	73	2.2
Sugar cane bagasse	91	39	1	49	86	0.6
Tapioca meal, cassava byproduct	89	82	1	5	34	0.8
Timothy fresh pre-bloom	26	64	11	31	59	3.8
Timothy hay early bloom	88	59	11	32	63	2.7
Timothy hay full bloom	88	57	8	34	65	2.6
Timothy silage	34	59	10	34	70	3.4

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Tomatoes	6	69	16	9		4
Tomato pomace dried	92	64	23	26	55	10.6
Triticale hay	90	56	10	34	69	
Triticale silage	34	58	14	30	56	3.6
Triticale grain	89	85	14	4	22	2.4
Turnip tops (purple)	18	68	18	10		2.6
Turnip roots	9	86	12	11	44	1.6
Urea 46%N	99	0	288	0	0	0
Vetch hay	89	58	18	30	48	1.8
Wheat fresh, pasture	21	71	20	18	50	4
Wheat hay	90	57	9	29	66	2

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Wheat silage	33	59	12	28	62	3.2
Wheat straw	91	43	3	43	81	1.8
Wheat sraw ammoniated	85	50	9	40	76	1.5
Wheat grain	89	88	15	3	14	2.8
Wheat grain hard	89	88	14	3	14	2
Wheat grain soft	89	88	12	3	12	2
Wheat grain, steam-flaked	85	91	14	3	12	2.3
Wheat grain sprouted	86	88	12	3	13	2
Wheat bran	89	70	17	11	46	4.4
Wheat middlings	89	75	17	9	38	4.7
Wheat mill run	90	76	17	9	37	4.5

FEEDSTUFF	DRY MATTER %	ENERGY TDN %	PROTEIN CP %	FIBER CF %	NDF %	EE %
Wheat shorts	89	78	19	8	30	5.3
Wheatgrass crested fresh early bloom	37	60	11	26	50	1.6
Wheatgrass crested fresh full bloom	50	55	10	33	65	1.6
Wheatgrass crested hay	92	54	10	33	65	2.4
Whey dried	94	82	14	0	0	0.9
Yeast, brewer's	92	79	47	3		0.9

Source: http://beefmagazine.com/nutrition/2015-feed-composition-tables-know-nutritional-value-your-feed

Table 3: Maximum percentage low energy roughage (7.5 MJ/Kg ME) in ration when the ration more or less provides in the energy requirements.

Energy Requirement		
ME MJ/KG	**PERCENTAGE ROUGHAGE**	
7.5	100	
7.75	95	
8.0	90	
8.25	85	
8.5	80	
8.75	75	
9.0	70	
9.25	65	
9.5	60	
9.75	55	
10.0	50	

N.B. When HPC 60 is used, use 5% less roughage in ration. When using higher energy roughage e.g. Eragrostis hay, use 5% more roughage in the ration.

10.25	45	
10.5	40	
10.75	35	
11.0	30	
11.25	25	
11.5	20	