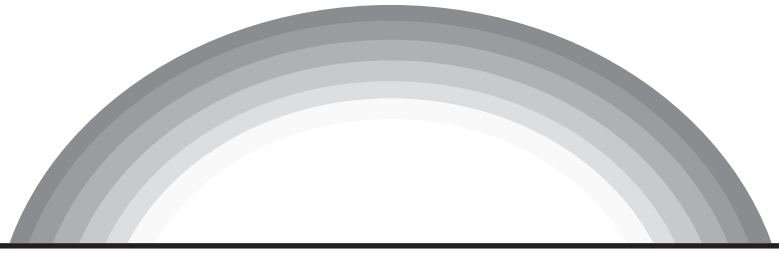
Disaster Recovery



Livestock

Relative value of feeds for livestock

With the current adverse weather affecting Iowa and surrounding states, livestock producers are concerned about the availability and price of feed. Many questions relate to determining the relative value of alternative feedstuffs that could serve as a substitute to corn, soybean meal, alfalfa or other forages. Table 1 contains factors to use to evaluate various feedstuffs and estimate their feeding value for dairy and beef cattle. The nutrient values that the constants are based on are included in Table 2.

Dairy

The dairy factors are based on shelled corn as the standard energy source; 44 percent soybean meal as the standard protein source; and in the case of forage, using mid-bloom alfalfa as the standard fiber source. The relative value of a feedstuff is calculated by first multiplying each of the factors times the current price of the respective standard feed, then summing the results. For example, if corn is $2.10/bu. ($75/ton), 44 percent soybean meal is $12.00/cwt. ($240/ton) and mid-bloom alfalfa hay is $100/ton, then the relative value of mature oat hay can be calculated below.

Thus, if mature oat hay could be purchased for less than $62.90/ton, it would be a more economical feed source than the amounts of corn, soybean meal and alfalfa that would provide the same amount of protein, energy and fiber. If mature oat hay cost $65/ton, then it would not be an economical feed buy.

The procedure to estimate the relative value of grains and other by-product feeds is similar, the difference is that only energy and protein are considered. For example, if corn and 44 percent soybean meal prices are $2.10/bu. and $12.00/cwt. respectively, then the value of a ton of wheat mids can be calculated.

Thus, if wheat mids could be purchased for $100/ton they would be an economical feed buy, if the price was $125/ton, then corn and 44 percent soybean meal would be more economical.

This approach works well to estimate the feeding value of most feedstuffs. However, some oilseeds (cottonseed, soybeans, etc) may have a higher energy value than the factors give credit for due to the oil content. Thus, the true relative value of these feeds is higher than the value calculated with these factors.

Beef

The most critical nutrient need will be energy for beef cattle. This is particularly true for wintering beef cows. Pricing feeds relative to their energy value will be appropriate in most cases.

Two separate factors, one for energy and one for protein, are provided for calculating the relative value of a feed for beef cattle. The energy factor uses mid-bloom alfalfa hay at a cost of $100/ton, then the value of mature oat hay as an energy source for beef cattle would be: $100 x 109% = $109.

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If mature oat hay could be purchased for less than $109/ton, it would be a more economical energy source for beef cows than mid-bloom alfalfa hay costing $100/ton.

Adjustments should be made for waste when pricing forages. For example, oat hay may have 25 percent waste when fed free-choice as big bales. The alfalfa reference feed may have only 5-10 percent waste. Therefore, the value of oat hay should be decreased 10-20 percent for price comparison purposes.

Growing beef cattle and lactating cows fed low quality forages may require protein supplementation. In this case, feedstuffs are compared to soybean meal that is typically an economic source. If we use wheat mids as an example, and if 44 percent soybean meal costs $240/ton, then the relative value of wheat mids as a protein source for beef cattle could be calculated: $240 x 38% = $91.20.

Thus, if wheat mids could be purchased for less than $91.20/ton, then it would be a more economical protein source for beef cattle than would 44 percent soybean meal costing $240/ton.

Shelled corn feed

	Factor	x	Cost of standard feed	=	$
Energy	0.221	x	75	=	16.58
Protein	-0.187	x	240	=	-44.88
Fiber	0.912	x	100	=	91.20
					62.90

Other by-product feeds

	Factor	x	Cost of standard feed	=	$
Energy	0.667	x	75	=	50.02
Protein	0.251	x	240	=	60.24
					$110.26

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Nutrient content of feedstuffs.

Feed	CP[a]	NE-1[b] mcal/lb	NE-m[c]	NE-g[d] %	TDN[e] %	ADF[f] g/lb	MP[g] g/lb	UFP[h] % %
Dry forages:								
Alfalfa-early veg	22.0	0.67	0.67	0.40	65	30.0	28.2	-21.1
early bloom	17.0	0.63	0.56	0.31	58	34.0	26.9	-13.6
mid bloom	16.0	0.60	0.56	0.31	58	38.0	26.3	-12.2
full bloom	14.0	0.55	0.55	0.29	57	42.7	24.7	-9.6
mature	11.7	0.46	0.44	0.19	50	40.0	20.7	-7.7
Bromegrass								
late veg.	11.0	0.63	0.71	0.44	68	35.0	24.8	-4.5
late bloom	7.0	0.50	0.45	0.21	51	48.8	18.2	-1.0
mature	5.4	0.52	0.41	0.16	48	42.0	14.5	0.7
Clover-red-avg.	15.0	0.61	0.59	0.34	60	36.6	26.5	-10.5
mature	9.6	0.54	0.49	0.24	53	35.0	20.5	-4.3
Corn -cobs	3.2	0.47	0.39	0.15	47	35.0	6.5	4.8
-stover	4.0	0.47	0.41	0.16	48	39.0	9.5	3.3
Oat hay-heading	9.2	0.59	0.61	0.35	61	36.0	23.3	-2.4
-dough	8.5	0.58	0.59	0.34	60	34.5	22.5	-1.6
Oat hay-mature	7.3	0.57	0.62	0.36	62	33.0	21.5	0.4
Orchardgrass-avg	10.0	0.56	0.50	0.25	54	41.5	21.1	-4.6
Sorghum-sudan 3'	15.0	0.58	0.67	0.40	65	45.0	28.4	-9.7
-dough	10.0	0.57	0.52	0.27	55	42.0	21.5	-4.5
Soybean stover	4.3	0.44	0.27	0.04	40	54.0	10.6	1.5
Straw-oat/wheat	4.0	0.46	0.36	0.12	45	50.0	9.3	2.1
Sweetclover hay	13.7	0.48	0.50	0.25	54	34.0	23.4	-9.7
Timothy								
-immature	12.0	0.61	0.59	0.34	60	35.0	24.6	-6.4
-mature	8.0	0.52	0.41	0.16	48	45.0	17.6	-2.9
Wheat hay	7.0	0.61	0.56	0.31	58	34.1	20.4	0.2 0.15
Silages								
Corn-well eared	8.0	0.71	0.74	0.47	70	25.6	25.1	2.9
40/60 bu/a	8.0	0.65	0.68	0.42	66	26.0	24.5	1.5
5/20 bu/a	8.0	0.58	0.58	0.32	59	27.0	24.7	1.2
stunted	8.0	0.54	0.47	0.22	52	27.0	24.7	0.0
NPN added	12.0	0.67	0.74	0.47	70	29.0	31.7	-5.0
Forage sorghum	6.0	0.59	0.56	0.31	58	40.0	18.0	3.3
Oats-boot	14.0	0.58	0.67	0.40	65	37.0	27.8	-8.3
-dough	9.0	0.53	0.55	0.29	57	43.9	21.7	-2.8
Sorghum-sudan 3'	15.0	0.58	0.67	0.40	65	45.0	28.4	-9.7
-dough	10.0	0.57	0.52	0.27	55	42.0	21.5	-4.5
Grains and byproducts								
Barley	14.0	0.87	0.93	0.64	84	7.3	43.0	-1.1
Brewers grains								
-dry	26.0	0.70	0.68	0.42	66	19.5	54.8	-17.5
-wet	26.0	0.70	0.68	0.42	66	19.5	54.8	-17.5
Corn	10.0	0.92	1.01	0.71	90	3.0	33.0	5.1
Corn and cob meal	9.0	0.83	0.92	0.63	83	11.0	29.9	5.3
Corn gluten feed								
-dry	21.5	0.82	0.88	0.59	80	16.0	46.8	-12.6
-wet	21.5	0.86	0.95	0.65	85	16.0	48.7	-11.8
Corn screenings	16.0	0.80	0.85	0.57	78	12.0	43.7	-5.0
Cottonseeds	23.0	1.03	1.09	0.77	96	36.0	54.4	-11.7
Cottonseed meal	45.0	0.78	0.83	0.54	76	15.9	69.3	-41.8
Distillers-dry								
gr/sol	30.0	0.92	0.99	0.68	88	12.2	68.7	-9.4
Linseed meal	39.0	0.79	0.85	0.56	78	12.2	63.9	-34.2
Molasses, cane								
-dry	4.0	0.74	0.77	0.49	72	0.0	10.4	9.1
-wet	4.0	0.74	0.77	0.49	72	0.0	10.4	9.1
Oats	13.0	0.79	0.84	0.55	77	14.6	40.0	-2.0
Sorghum/milo	12.0	0.85	0.92	0.63	83	2.4	42.7	3.5
Soy hulls	12.0	0.81	0.65	0.39	64	46.0	31.1	-3.8
Soybean seed	42.0	0.99	1.03	0.72	91	7.3	64.0	-40.1
Soybean meal-44%	50.0	0.90	0.93	0.64	84	8.5	77.3	-46.4
Sunflower meal	50.0	0.67	0.67	0.40	65	14.6	77.4	-46.5
Wheat-grain	14.0	0.88	0.99	0.68	88	3.7	45.5	-1.3
-bran	18.0	0.77	0.74	0.47	70	20.0	39.4	-10.0
-mids	19.0	0.83	0.92	0.63	83	15.0	45.4	-9.0

[a] Crude protein; [b] Net energy-lactation; [c] Net energy-maintenance; [d] Net energy-gain; [e] Total digestible nutrients; [f] Acid detergent fiber; [g] Metabolizable protein; [h] Urea fermentation potential.

Feed	Dairy DM	Protein Factor	Energy Factor	Beef Fiber Factor	Relative Energy	Value Protein
Dry forages						
Alfalfa-early veg	89.0	0.191	0.057	0.742	112	44
early bloom	89.0	0.045	0.067	0.879	100	34
mid bloom	89.0	0.000	0.000	1.000	100	32
full bloom	89.0	-0.071	-0.080	1.146	98	32
mature	91.0	-0.090	-0.122	1.106	88	24
Bromegrass-late veg	89.0	-0.116	0.191	0.932	117	22
late bloom	89.0	-0.280	-0.065	1.352	88	14
mature	93.0	-0.293	0.085	1.214	86	11
Clover-red-average	89.0	-0.019	0.053	0.963	103	30
-mature	91.0	-0.132	0.101	0.963	93	20
Corn-cobs	90.0	-0.279	0.149	0.982	82	6
-stover	87.0	-0.276	0.079	1.059	81	8
Oat hay-heading	90.0	-0.161	0.166	0.981	106	19
-dough	90.0	-0.166	0.187	0.941	105	17
Oat hay-mature	91.0	-0.187	0.221	0.912	109	15
Orchardgrass-average	89.0	-0.168	0.038	1.127	93	20
Sorghum-sudan 3'	89.0	-0.068	-0.090	1.207	112	30
-dough	89.0	-0.174	0.046	1.141	95	20
Soybean stover	88.0	-0.365	-0.147	1.498	68	9
Straw-oat/wheat	89.0	-0.355	-0.066	1.400	78	8
Sweetclover hay	87.0	-0.001	-0.063	0.880	91	27
Timothy-immature	89.0	-0.085	0.141	0.929	103	24
-mature	89.0	-0.233	-0.014	1.237	83	16
Wheat hay	89.0	-0.208	0.265	0.923	100	14
Silages						
Corn-well eared	35.0	-0.059	0.190	0.263	47	6
avg. 40-60 bu/a	35.0	-0.054	0.156	0.269	45	6
few ears 5-20 bu/a	35.0	-0.050	0.113	0.282	40	6
stunted	35.0	-0.046	0.091	0.282	35	6
NPN added	35.0	-0.024	0.116	0.296	47	9
Forage sorghum	6.0	-0.079	0.055	0.321	29	4
Oats-boot	30.0	-0.013	0.010	0.330	38	9
-dough	32.0	-0.073	-0.003	0.432	35	6
Sorghum-sudan 3'	30.0	-0.023	-0.030	0.407	38	10
-dough	30.0	-0.059	0.016	0.384	32	7
Grains and byproducts						
Barley	89.0	0.113	0.835		145	28
Brewers grains-dry	92.0	0.473	0.324		118	54
-wet	24.0	0.123	0.085		31	14
Corn	89.0	0.000	1.000		155	20
Corn and cob meal	87.0	-0.001	0.882		140	18
Corn gluten feed-dry	90.0	0.316	0.592		139	43
-wet	43.0	0.146	0.309		71	21
Corn screenings	90.0	0.184	0.700		136	32
Cottonseeds	93.0	0.307	0.870		173	48
Cottonseed meal	93.0	0.949	-0.042		137	94
Distillers-dry gr/sol	92.0	0.514	0.531		157	62
Linseed meal	91.0	0.773	0.122		138	80
Molasses, cane-dry	96.0	-0.108	0.974		134	9
-wet	75.0	-0.085	0.761		105	7
Oats	89.0	0.110	0.751		133	26
Sorghum/milo	88.0	0.068	0.847		141	24
Soy hulls	91.0	0.081	0.821		113	25
Soybean seed	90.0	0.785	0.320		159	85
Soybean meal-44%	89.0	1.000	0.000		145	100
Sunflower meal	93.0	1.110	-0.325		117	104
Wheat-grain	89.0	0.110	0.849		152	28
-bran	89.0	0.239	0.603		121	36
-mids	90.0	0.251	0.667		145	38