User Manual for UK - AA Limiting Order Excel Spreadsheet

- 1. Macro activation
- 2. Getting started
- 3. Price change
- 4. Amino acids composition of feedstuff or requirement for production stages

1. Macro activation

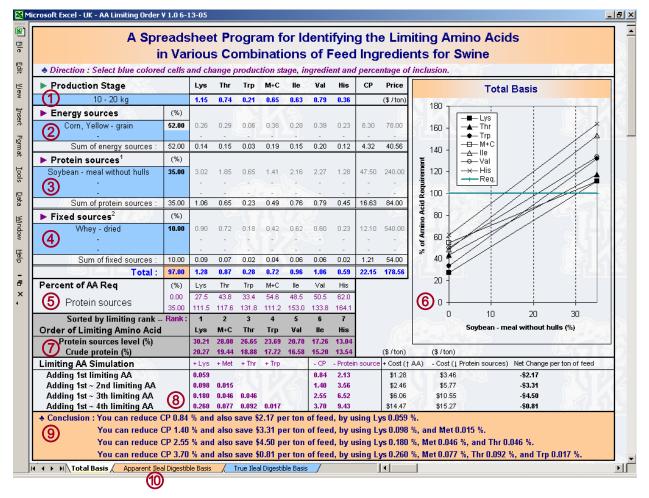
When you open the Excel file,

- If a dialog box opens automatically with a message about macros, choose to "enable macros."
- If this dialog box does not open, you can change the default setting of macro security by the followings:
 - 1) Open Excel and click on the "Tools" menu.
 - 2) Choose "Macro."
 - 3) Click on the "Security". A window will open.
 - 4) Click on the "Security Level" tab.
 - 5) Check your security to "MEDIUM" which will allow you to choose between "enable" and "disable" every time you open a file containing macros.
 - 6) Close the Excel program and open an Excel file containing macro.
 - 7) A dialog box will open automatically with a message about macros. Choose to "enable macros."

2. Getting started

- ① Users can choose a production stage including growth and reproduction.
- ②~④ Users can select feedstuff for energy, protein, and fixed sources, and input the inclusion levels. First energy source = Total - Sum of the others

- ⑤ Amino acids of feed are calculated as percents of the requirements. The inclusion level protein source is zero or input percentage (35%). The balance of the feed is energy source (corn), the inclusion level of fixed source stays the same (10%).
- ⑥ The ratio of feed AA (%) to AA requirement (%) is linearly related to the protein source inclusion level. The percentage of the pig's requirement is plotted for the seven most limiting AA. The green horizontal line gives the AA requirement. The order that the AA intersect the requirement line, going from right to left, determines the order of limitation.
- ⑦ Calculated are protein sources and crude protein level at which the AA lines intersect the horizontal line. Amino acids are horizontally sorted by the limiting order.
- (8)~(9) Low protein diet scenarios (by the addition of limiting AA) are given in costwise evaluations and the interpretations.



1 User can move to the other basis tabs.

3. Price change

If you want to input or change the price of feedstuff or crystalline amino acid,

- 1) Select "Total Basis" sheet tab (price input in this sheet will be applied to the other sheets).
- 2) Scroll down below the main screen.
- 3) You will find "Price Input" box.
- 4) Input or change the price as one of the units provided.
- 5) The price will be converted automatically.

Eile Edit View Insert Format Io	ools <u>D</u> ata	<u>W</u> indo	w <u>H</u> el	Р										Туре	a question for help	• -
1 Totem sources 35	5.00 105.2	109.8	124.6	105.8	145.8	127.9	159.1				0 T		10	20	30	
Sorted by limiting rank Ra	ink: 1	2	3	4	5	6	7				U			20		
Order of Limiting Amino Acid	Lys	M+C	Thr	Trp	Val	lle	His		600			Soybe	an - mea	al without	hulls (%)	(HA)
Protein sources level (%)	32.82	31.41	30.37	26.24	23.28	19.65	14.75		Ale				5		All and	
Crude protein (%)	20.47	19.91	19.50	17.89	16.73	15.30	13.38		(\$ / ton)	(\$	/ton)					70%
Limiting AA Simulation	+ Lys	+ Met	+ Thr	+ Trp		- CP	- Protein	n source	+ Cost († A	A) - (Cost (1 l	Protein s	ources)	Net Chang	e per ton of feed	522
Adding 1st limiting AA	0.039		CI.			0.55	1.41		\$0.85		\$2.28	See.		-\$1.44	CI.I.	
Adding 1st ~ 2nd limiting AA	0.068	0.011			25	0.96	2.45		\$1.71		\$3.97			-\$2.27		125
Adding 1st ~ 3th limiting AA	0.182	0.054	0.064			2.58	6.58		\$6.74	3	10.66			-\$3.92		4 183
Adding 1st ~ 4th limiting AA	0.263	0.085	0.111	0.017		3.74	9.54		\$15.27	\$	15.45			-\$0.18		
Fixed sources will not be changed by the leve	el of protein s	ources												Univ	ersity of Kentuci	ky
	lvs	Thr	Trn	M+C	lle	Val	His		Price	ſ		Price	nnut	_	ton = 2.00	IO lhs
ngredient Database	Lys	Thr	Trp	M+C	lle	Val	His	СР	Price	Ç		Price		USS	ton = 2,00 tonne = 1	
ngredient Database	Lys	Thr	Trp	M+C	lle	Val	His	СР	Price \$/ton		JS\$	US\$	US\$	US\$ /ka	ton = 2,00 tonne = 1,	
	Lys - 0.74	Thr - 0.70	<u>Trp</u>	M+C	lle 	Val - 0.86	-	CP _ 17.00		L				US\$ /kg 0.165		
- Ifalfa - meal dehydrated, 17% CP	-	. (85 (4. J.	<u> </u>	-	_ 0.37	-	\$ / ton -	1	JS\$ /ton 50.0	US\$ /tonne	US\$ /b	/kg		
lfalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP	0.74	- 0.70	0.24	- 0.43	0.68	- 0.86	0.37 0.38	- 17.00	\$ / ton - 150.0	1	JS\$ /ton 50.0 60.0	US\$ /tonne 165.0	US\$ //b 0.075	/kg 0.165		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP Jakery Waste - dried bakery product	0.74	0.70 0.82	0.24	0.43 0.60	0.68 0.89	0.86 1.05	- 0.37 0.38 0.24	- 17.00 19.60	\$ / ton - 150.0 160.0	1 1 1	JS\$ /ton 50.0 60.0 20.0	US\$ /tonne 165.0 176.0	US\$ /lb 0.075 0.080	/kg 0.165 0.176		
slfalfa - meal dehydrated, 17% CP slfalfa - meal dehydrated, 20% CP slakery Waste - dried bakery product sarley - grain, hulless	0.74 0.90 0.27	- 0.70 0.82 0.33	0.24 0.35 0.10	0.43 0.60 0.41	0.68 0.89 0.38	0.86 1.05 0.46	0.37 0.38 0.24 0.23	- 17.00 19.60 10.80	\$/ton - 150.0 160.0 120.0	1 1 1 1 1 1 1	JS\$ /ton 50.0 60.0 20.0	US\$ /tonne 165.0 176.0 132.0	US\$ <i>I</i> b 0.075 0.080 0.060	/kg 0.165 0.176 0.132		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row	0.74 0.90 0.27 0.44	0.70 0.82 0.33 0.40	0.24 0.35 0.10 0.13	0.43 0.60 0.41 0.40	0.68 0.89 0.38 0.41	0.86 1.05 0.46 0.55	0.37 0.38 0.24 0.23 0.22	17.00 19.60 10.80 14.90	\$ / ton - 150.0 160.0 120.0 100.0	1 1 1 1 1	JS\$ /ton 50.0 60.0 20.0 20.0 00.0	US\$ /tonne 165.0 176.0 132.0 110.0	US\$ <i>I</i> b 0.075 0.080 0.060 0.050	/kg 0.165 0.176 0.132 0.110		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52	0.70 0.82 0.33 0.40 0.34 0.35 0.38	0.24 0.35 0.10 0.13 0.13 0.11 0.11	0.43 0.60 0.41 0.40 0.37 0.48 0.13	0.68 0.89 0.38 0.41 0.37 0.39 0.31	0.86 1.05 0.46 0.55 0.49 0.52 0.45	0.37 0.38 0.24 0.23 0.22 0.25 0.23	17.00 19.60 10.80 14.90 10.50 11.30 8.60	\$ / ton - 150.0 160.0 120.0 100.0 100.0	1 1 1 1 1 1 1	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 00.0 25.0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5	US\$ <i>I</i> b 0.075 0.080 0.060 0.050 0.050 0.050 0.063	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.138		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49	- 0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00	\$ / ton 150.0 160.0 120.0 100.0 100.0 100.0 125.0 600.0	1 1 1 1 1 1 1 1 6	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 00.0 25.0 00.0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0	US\$ /b 0.075 0.080 0.060 0.050 0.050 0.053 0.063 0.300	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.138 0.660		
ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akkery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, conventional	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37 1.08	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00 77.10	\$ / ton - 150.0 160.0 120.0 100.0 100.0 100.0 125.0 600.0 500.0	1 1 1 1 1 1 1 6 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 00.0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0	US\$ /b 0.075 0.080 0.060 0.050 0.050 0.050 0.063 0.300 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.138 0.660 0.550		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulles arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, conventional lood - meal, flash dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37 1.08 1.06	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08 2.15	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06 4.57	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00 77.10 87.60	\$ / ton - 150.0 160.0 120.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0	1 1 1 1 1 1 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 00.0 25.0 00.0 00.0 0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0	US\$ /b 0.075 0.080 0.050 0.050 0.050 0.050 0.063 0.300 0.250 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.138 0.660 0.550 0.550		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, flash dried lood - meal, flash dried lood - meal, spray or ring dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56 7.45	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37 1.08 1.06 1.48	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08 2.15 2.03	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.03	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06 4.57 5.30	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00 77.10 87.60 88.80	\$ / ton - 150.0 160.0 120.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0	1 1 1 1 1 1 1 5 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 00.0 00.0 0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0	US\$ Ab 0.075 0.080 0.050 0.050 0.050 0.053 0.300 0.250 0.250 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.138 0.660 0.550 0.550 0.550		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, flash dried lood - meal, spray or ring dried lood - plasma, spray dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56 7.45 6.84	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78 4.72	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37 1.08 1.06 1.48 1.36	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08 2.15 2.03 3.38	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03 2.71	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.03 4.94	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06 4.57 5.30 2.55	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00 77.10 87.60 88.80 78.00	\$ / ton - 150.0 160.0 120.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0 500.0 1500.0	1 1 1 1 1 1 1 1 1 5 5 5 5 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 00.0 00.0 0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0 1650.0	US\$ Ab 0.075 0.080 0.050 0.050 0.050 0.050 0.250 0.250 0.250 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.138 0.660 0.550 0.550 0.550 1.650		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akkery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, conventional lood - meal, flash dried lood - meal, flash dried lood - meal, spray dried rewers' Grains - dried	0.74 0.90 0.41 0.36 0.41 0.52 8.51 7.04 7.56 7.45 6.84 1.08	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78 4.72 0.95	0.24 0.35 0.10 0.13 0.13 0.11 0.10 1.37 1.08 1.06 1.48 1.36 0.26	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08 2.15 2.03 3.38 0.94	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03 2.71 1.02	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.03 4.94 1.26	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06 4.57 5.30 2.55 0.53	17.00 19.60 10.80 14.90 11.30 8.60 92.00 77.10 87.60 88.80 78.00 26.50	\$ / ton - 150.0 180.0 100.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0 500.0 500.0 1500.0 80.0	1 1 1 1 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 00.0 00.0 0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0 1650.0 88.0	US\$ /b 0.075 0.080 0.050 0.050 0.050 0.050 0.063 0.300 0.250 0.250 0.250 0.250 0.250 0.250 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.110 0.680 0.550 0.550 0.550 0.550 0.550 0.550		
Ifalfa - meal dehydrated, 17% CP Ifalfa - meal dehydrated, 20% CP akkery Waste - dried bakery product arley - grain, hulless arley - grain, six row arley - grain, two row eet, Sugar - pulp, dried lood - cells, spray dried lood - meal, conventional lood - meal, flash dried lood - meal, spray or ring dried lood - meal, spray dried rewers' Grains - dried uckwheat, Common - grain	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56 7.04 7.56 7.45 6.84 1.08 0.57	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78 4.72 0.95 0.41	0.24 0.35 0.10 0.13 0.11 0.10 1.37 1.08 1.06 1.48 1.36 0.26 0.17	0.43 0.60 0.41 0.37 0.48 0.13 1.42 2.08 2.15 2.03 3.38 0.94 0.42	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03 2.71 1.02 0.40	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.03 4.94 1.26 0.56	0.37 0.38 0.24 0.23 0.25 0.25 0.23 6.99 5.06 4.57 5.30 2.55 0.53 0.25	17.00 19.60 10.80 14.90 11.30 8.60 92.00 77.10 87.60 88.80 78.00 26.50 11.10	\$ / ton - 150.0 180.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0 500.0 1500.0 80.0 90.0	1 1 1 1 1 1 6 5 5 5 5 5 5 5 5 5 5 5 5 5	/ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 25.0 00.0 00	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0 550.0 1650.0 88.0 99.0	US\$ /b 0.075 0.080 0.050 0.050 0.050 0.050 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.110 0.550 0.550 0.550 0.550 0.688 0.099		
Ifalfa - meal dehydrated, 17% CP Ilafafa - meal dehydrated, 20% CP akery Waste - dried bakery product arley - grain, six row arley - grain, six row arley - grain, two row teet, Sugar - pulp, dried lood - cells, spray dried lood - meal, conventional lood - meal, flash dried lood - meal, flash dried lood - meal, spray or ring dried lood - plasma, spray dried rewers' Grains - dried uckwheat, Common - grain canola (Rapeseed) - meal, sol. extr.	0.74 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56 7.45 6.84 1.08 0.57 2.08	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78 4.72 0.95 0.41 1.59	0.24 0.35 0.10 0.13 0.11 0.10 1.37 1.08 1.06 1.48 1.36 0.26 0.17 0.45	0.43 0.60 0.41 0.40 0.37 0.48 0.13 1.42 2.08 2.15 2.03 3.38 0.94 0.42 1.65	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03 2.71 1.02 0.40 1.43	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.05 8.03 7.03 4.94 1.26 0.56 1.82	0.37 0.38 0.24 0.23 0.22 0.25 0.23 6.99 5.06 4.57 5.30 2.55 0.53 0.25 0.96	17.00 19.60 10.80 14.90 10.50 11.30 8.60 92.00 77.10 87.60 88.80 78.00 26.50 11.10 35.60	\$ / ton - 150.0 120.0 100.0 100.0 100.0 100.0 500.0 500.0 500.0 500.0 500.0 500.0 500.0 500.0 1500.0 80.0 90.0 180.0	1 1 1 1 1 1 6 5 5 5 5 5 5 5 5 5 5 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 25.0 00.0 00	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0 550.0 1650.0 88.0 99.0 198.0	US\$ //b 0.075 0.080 0.050 0.050 0.050 0.063 0.300 0.250	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.110 0.138 0.660 0.550 0.550 0.550 0.650 0.088 0.099 0.198		
Ingredient Database Alfalfa - meal dehydrated, 17% CP Alfalfa - meal dehydrated, 20% CP Bakery Waste - dried bakery product Barley - grain, hulless Barley - grain, six row Barley - grain, two row Beet, Sugar - pulp, dried Blood - cells, spray dried Blood - meal, conventional Blood - meal, spray y or ring dried Blood - meal, spray or ring dried	0.74 0.90 0.27 0.44 0.36 0.41 0.52 8.51 7.04 7.56 7.04 7.56 7.45 6.84 1.08 0.57	0.70 0.82 0.33 0.40 0.34 0.35 0.38 3.38 4.05 4.07 3.78 4.72 0.95 0.41	0.24 0.35 0.10 0.13 0.11 0.10 1.37 1.08 1.06 1.48 1.36 0.26 0.17	0.43 0.60 0.41 0.37 0.48 0.13 1.42 2.08 2.15 2.03 3.38 0.94 0.42	0.68 0.89 0.38 0.41 0.37 0.39 0.31 0.49 0.91 0.88 1.03 2.71 1.02 0.40	0.86 1.05 0.46 0.55 0.49 0.52 0.45 8.50 7.05 8.03 7.03 4.94 1.26 0.56	0.37 0.38 0.24 0.23 0.25 0.25 0.23 6.99 5.06 4.57 5.30 2.55 0.53 0.25	17.00 19.60 10.80 14.90 11.30 8.60 92.00 77.10 87.60 88.80 78.00 26.50 11.10	\$ / ton - 150.0 180.0 100.0 100.0 100.0 125.0 600.0 500.0 500.0 500.0 1500.0 80.0 90.0	1 1 1 1 1 1 1 1 1 5 5 5 5 5 5 5 5 5 5 5	JS\$ /ton 50.0 60.0 20.0 00.0 00.0 25.0 00.0 00.0 00.0 0	US\$ /tonne 165.0 176.0 132.0 110.0 110.0 110.0 137.5 660.0 550.0 550.0 550.0 550.0 1650.0 88.0 99.0	US\$ /b 0.075 0.080 0.050 0.050 0.050 0.050 0.250 0.250 0.250 0.750 0.750 0.040 0.045 0.090 1.000	/kg 0.165 0.176 0.132 0.110 0.110 0.110 0.110 0.550 0.550 0.550 0.550 0.688 0.099		

4. Amino acids composition of feedstuff or requirement for production stages

Current amino acids profiles of feedstuff and amino acids requirements are based upon NRC (1998). If you want to change amino acids composition or amino acids requirements,

- 1) Activate (click) the sheet that you want to change amino acids composition. Make sure to be at the desired sheet tab.
- 2) Click on the "Tools" menu.
- 3) Choose "Protection."
- 4) Click on the "Unprotect sheet."
- 5) Change the amino acids composition or amino acids requirements below the main screen and left of the price input box.
- 6) Click on the "Tools" menu.
- 7) Choose "Protection."
- 8) Click on the "Protect sheet."
- 9) Click "OK" in a dialog box.

Contact Information

Gary Cromwell	859-257-7534	gcromwel@uky.edu
Beob Gyun Kim	859-257-9074	beobgyun@uky.edu