

CALCULATION OF ECONOMIC VALUE OF INGREDIENTS

Least cost feed formulation has largely depending on the economic value of individual ingredients. Corn and soybean meal are usually the major energy and protein sources in poultry diets, they can be used as a basis for comparison. If knows the current price of corn and soybean meal and their contributions of protein and energy, can evaluate the relative worth of any other ingredient.

The solution to this question is resolved by solving simultaneous equations:

- If corn contains 8.6% crude protein and 3300 kcal/kg ME. Then 1 tons of corn provides 86 kg protein and 3300000 kcal or 3300 Mcal metabolizable energy. With price 150\$
- If soybean meal contains 48% crude protein and 2550 kcal/kg ME. Then 1 tons of soybean meal provides 480 kg protein and 2550000 kcal or 2550 Mcal metabolizable energy. With price 300\$

$$a) 86x + 3300y = 150$$

$$b) 480x + 2550y = 300$$

$$a) X = (150 - 3300y) / 86$$

$$X = 1.74 - 38.37 y$$

$$b) 480(1.74 - 38.37 y) + 2550y = 300$$

$$b) 835.2 - 18417.6y + 2550y = 300$$

$$b) - 18417.6y + 2550y = 300 - 835.2$$

$$-15867y = -535.2$$

$$Y = -535.2 / -15867 = \mathbf{0.033 \$ \text{ cost of 1 Mcal energy.}}$$

Substituting y into equation a:

$$a) 86x + 3300(0.033) = 150$$

$$a) 86x + 108.9 = 150$$

$$a) 86x = 150 - 108.9$$

$$X = 41.1 / 86 = \mathbf{0.477 \$ \text{ cost of 1 kg protein.}}$$

- EXP./ If wheat contains 13% crude protein and 3150 kcal/kg ME. Then 1 tons of wheat provides 130 kg protein and 3150000 kcal or 3150 Mcal metabolizable energy and price 180\$, evaluate the relative worth of this ingredient?

The relative worth is $130 * 0.477 = 62.01$

$$3150 * 0.033 = \underline{103.95}$$

165.96 \$ Not Approved

- EXP. / If corn contains 7.5% crude protein and 3300 kcal/kg ME with price 350 \$. Also Soybean meal contains 46% crude protein and 2300 kcal/kg ME with price 750 \$. Evaluate the relative worth of wheat and wheat bran if you know: The wheat contains 13% crude protein and 3300 kcal/kg ME with price 220 \$. The wheat bran contains 15% crude protein and 1750 kcal/kg ME with price 350 \$
- EXP: / Corn crude protein contains 7% and ME 3350 kcal/kg with price 335 \$. Soybean meal crude protein contains 47.5 % and ME 2250 kcal/kg with price 610 \$. Evaluate the relative worth of wheat if you know: The wheat crude protein contains 13% and ME 3300 kcal/kg with price 350 \$.