

UTILIZING THE “SQUARE” METHOD TO BALANCE RATIONS

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A convenient way to calculate proportions of two feed ingredients to achieve a desired nutrient percentage is to use the Pearson Square. The process is simple and easy to use. An example on how to use the Pearson Square follows:

In the following example, two feeds are "combined" in the square to achieve a desired crude protein (CP) percentage, but the same procedure can be used for Total Digestible Nutrients (TDN), fiber or any ingredient which is expressed as a percentage.

To use the Pearson's Square method, first draw a square. Then follow the directions as outlined. In this example, the percentage of protein was determined (12%), but the proportion of other nutrients can also be calculated.

1. Draw a square, place the desired ration protein percent (12) in center.
2. Select feeds to use, in this case corn with 8 percent crude protein and a supplement that contains 36 percent crude protein. Write protein percentages in upper left corner (36) and lower left corner (8).
3. Subtract diagonally, always subtracting the smaller number from the larger number.
 $36 - 12 = 24$ (write in lower right corner). $12 - 8 = 4$ (write in upper right corner).

This means that you will mix 24 parts of corn with 4 parts of protein supplement to get a 12 percent protein ration. (This may be simplified to 6 parts corn: 1 part protein.).

% protein in supplement	36	4
	12	
% protein in corn	8	<u>24</u> 28

4. To convert this to a percentage basis, add the numbers on the right side ($4+24 = 28$) and calculate

$$\frac{4}{28} \times 100 = 14.3 \text{ percent supplement}$$

$$\frac{24}{28} \times 100 = 85.7 \text{ percent corn}$$

5. Now try it yourself:

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Additional information on using the Pearson Square and additional information on beef cattle nutrition can be obtained by contacting your local Extension office.