

 **Activity 5.3.3 It's All on the Label****Purpose**

A nutritional label lists the calories, calories from fat, total fat, saturated fat, cholesterol, total carbohydrates, dietary fiber, sugar, protein, and many other nutrients. The amount of information on nutritional labels can be overwhelming. Feed labels found on livestock feedstuffs contain food information as well as use different wording with which you may not be familiar. How can you select the best feed for your animals?

The most accurate method of determining the nutritional value of a feed or feedstuff is through feed analysis. To analyze a feed, a producer sends samples to a chemical laboratory. At the lab, the feed sample undergoes a series of tests to determine the dry matter, protein, fiber, fat, energy, and mineral contents. Due to costs and time, many people use the *NRC Feed Composition Tables* for a base feed analysis to compute rations.

Commercially prepared feeds are required to have a feed label with guaranteed levels of nutrients. It is up to the producer to understand how to read the feed label. Is the feed label on a sack of livestock feed similar to nutrition labels found on the foods you eat?

Materials**Per student:**

- Pencil
- *Agriscience Notebook*

Procedure

In this activity, you will learn how to read a feed label and how it relates to the labels on your food. As your teacher presents the PowerPoint® *Reading Labels* complete Part One. Complete Part Two and Part Three as directed by your teacher.

Part One – Reading Feed Labels

During the PowerPoint presentation, *Reading Labels*, complete Table 1 in *Activity 5.3.3 Student Worksheet* by filling in the abbreviation and definition of the following terms.

- Crude Fiber
- Crude Protein
- Dry Matter
- Metabolizable Energy
- Total Digestible Nutrients

Part Two – Label Comparisons

Compare the labels shown in the figures on the following page. One is from a package of frozen corn for human consumption and the other is from a sack of feed corn. Use the information from these labels, to determine which feed categories most closely align to food labels and record in Table 2. Then answer the analysis questions on *Activity 5.3.3 Student Worksheet*



Nutrition Facts

Serving Size: 2/3 cup (90g)

Servings Per Container:

16 oz. Package: 5



Amount Per Serving

Calories: 90 **Calories From Fat:** 10

% Daily Value*

Total Fat 1.0g 2%

Saturated Fat 0.0g 0%

Trans Fat 0.0g

Cholesterol 0.00mg 0%

Sodium 0mg 0%

Total Carbohydrates 16g 5%

Dietary Fiber 4.00g 16%

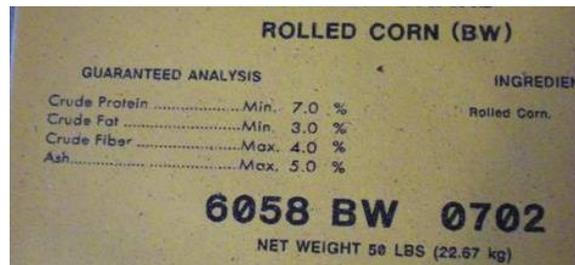
Sugars 6.00g

Protein 3.00g

Vitamin A 0% **Vitamin C** 25%

Calcium 0% **Iron** 8%

Figure 1. Food Label



NRC Feed Composition Data:

Corn, grain:

Dry Matter: 89%

Crude Protein: 9.6%

Crude Fat: 3.8%

Crude Fiber: 2.6%

Metabolizable

Energy: 3.03 Mcal/kg

Figure 2. Feed Label

Part Three – Feed Selection

A traveling feed salesman comes to town promoting a new feed that “fights the rising cost of grain”. Power Gro Plus is half the cost of the feed at the local cooperative and the guaranteed analysis shows it meets all nutrient requirements for your pigs. Evaluate the label below and use the information to answer question 4 on *Activity 5.3.3 Student Worksheet*.

Power Gro Plus – The Producer’s Choice	
Crude Protein	18.9%
Crude Fat	4.5%
Crude Fiber	9.8%
DE (kcal/kg)	3440
Ingredients: Sawdust, motor oil, ground leather, ground rubber, and molasses.	

HOMEWORK: Part Four – Breakfast Nutrition

At home, locate a label from your favorite breakfast cereal and convert the nutritional information on the label to the format used on feed labels. Use Table 3 in *Activity 5.3.3 Student Worksheet* to record your conversions. If you do not have a breakfast cereal at home, use the Internet to find the nutritional information of a cereal you may like. Refer to your notes from the *Reading Labels* presentation for help completing the nutritional conversions.

Your conversions and the printed label are due during the next class period.

Conclusion

1. Why is crude protein guaranteed at a minimum level and crude fiber guaranteed at a maximum level?
2. What is the difference in how nutrients are measured on human food compared to animal feed?
3. Why is reading the nutritional information on feed labels important?

Name: _____

Activity 5.3.3 Student Worksheet

Table 1. Nutrition Label Terminology

Feed Analysis Term	Abbreviation	Definition
Crude Fiber		
Crude Protein		
Dry Matter		
Metabolizable Energy		
Total Digestible Nutrients		

Table 2. Label Comparisons

Calories	
Fat	
Dietary Fiber	
Protein	

Analysis Questions

1. Describe three differences between feed and food labels.

2. How many megacalories (Mcal) per kilogram does the frozen corn have? (**HINT:** Refer to your notes from *Reading Labels PowerPoint*® for the formula to convert calories to Mcals.)

3. Why might there be a difference in the Mcal content of frozen corn when compared to feed corn?

4. Should you purchase the feed from Part Three? Explain your choice.

Once you have a breakfast cereal label, complete the chart below. Show your work in the space provided.

Table 3. Breakfast Conversions

Cereal Name:				
Serving Size:		Grams per serving:		
Cereal Label:	Amount/ serving	Amount/ gram	Feed Conversion	
Calories:			ME (Mcal/kg):	
Total Fat:			Crude Fat (%):	
Dietary Fiber:			Crude Fiber (%):	
Protein:			Crude Protein (%):	