

Putting Science into Animal Science Projects

Area: Medication Labels

Activity: Reading Medication Labels and Medication Inserts

Goals:

To help members understand their responsibilities as producers of food entering the food chain.

To help members learn how to read and comprehend critical information on labels of veterinary medications.

To help members increase their understanding about drug residues and withdrawal times of all medications administered to their market animals.

Materials Needed:

A copy each of the medication label, medication insert, and the medicated feed label for every member.

One set of the Jeopardy Label questions: separate each question/answer and fold or place each question/answer in an envelope to be drawn one-at-a-time for the members (or contestants) to consider.

How to do the activity:

The activity will be presented in a TV game show format. The members can be put into two teams or can play as individuals. While the members have access to the labels, the advisor will read an “answer” and the members will respond with the appropriate “question.” The first member to raise their hand and be recognized by the moderator will have the opportunity to respond. A point is earned for each correct “question” provided. If the member who first responds to “answer” provides an incorrect response, then the moderator will allow one more person to respond to that same “answer.”

Unlike the true game shows, 4-H members will not lose points in this game for inaccurate responses.

Background information:

Often times, 4-H members are so focused on raising their market animals that they may lose sight of the fact that the animal will be entering the food chain, to be consumed by others. The members want to be sure their animals meet eligibility standards for showing and selling, but they may not realize that how they raise their animals can affect the health and well-being of humans, once the animal is slaughtered and consumed. Therefore this lesson helps members strengthen their skills in understanding information found on medication labels.

As members are involved with production, instruct them about veterinary care and practices that avoid cross contamination of their market animals with residues of medication, whether administered by injection, feed or water. They can also gain from an understanding of proper methods to inject

medications to maximize the drug's effectiveness and to minimize the damage to the high quality cuts of meat.

Review with the members the different kinds of information included on the labels and inserts: name of drug, active ingredient, cautions and warnings, withholding times, quantity of contents, how the drug should be stored, the name of distributor, the lot number of the drug, the expiration date, the type of animal the drug is intended for, what are the approved uses, the recommended dosage and method of administration, and quantity or sizes in which the medicine can be purchased.

Discuss the importance of withholding times, using your own county sale date as the time by which their market animal would need to be drug free.

- If the date of sale is September 1, what would be the last day/date a drug could be administered to their animal if the drug had a 30-day withdrawal time? *Answer: 31 days before September 1 is August 1.*
- If the date of sale is July 1, what would be the last day/date a drug could be administered to the animal if the drug had a 2-week withdrawal time? *Answer: 15 days before the sale, June 16.*
- The date of the sale is August 15. Members with dairy cows can sell milk from their project animal. If a cow has been treated with omnibiotic August 1 –August 7, what is the first day that milk from that animal can be safe for consumption without the worry of the drug in the milk? *Answer: Milk taken from the animal during treatment and for 48 hours after the last treatment must not be used. So milk collecting on August 10 would be safe for consumption.*

Discuss the importance of recommended dosage.

- 4-H'er Chris has a market steer that has bronchitis. The animal weighs 800 pounds. How much Omnibiotic should be administered to the animal and for how many days? *Answer: Dosage is 2ml per 100 lb body weight, with a maximum dosage of 15 ml/day. So Chris should administer 15 ml/day until the animal exhibits no symptoms for 2 days.*
- 4-H'er Brenda has a lamb that has pneumonia. The animal weighs 80 pounds. How much Omnibiotic should be administered to the animal and for how many days? *Answer: Dosage is 2ml per 100 lb body weight, with a maximum dosage of 15 ml/day. So Brenda should administer $2\text{ml} \times 80\text{ lbs}/100\text{lb} = 1.6\text{ ml/day}$ until the animal exhibits no symptoms for 2 days.*

Discuss the importance of expiration dates.

- Drugs should be discarded once the expiration date has been reached. The effectiveness of drugs is not guaranteed after the expiration date, and is not a recommended management practice.

Using the following materials, have fun with your club as you play the game!

Medication Label Jeopardy

Before beginning the game, separate these answers/questions from each other. Either fold them and put in a basket or put each Answer/Question in an envelope to prevent the participants from seeing the Answer/Question.

Moderator must insert a date which will be the Expiration Date for the product. Then provide each participant with a copy of the medication label and medication insert label. Additional labels for additional products can be sought from a veterinarian to increase the playtime of the game, and to reinforce the learning.

When the game begins, the moderator will draw one folded paper or envelope. The moderator will read the Answer. If a participant wants to respond, s/he will raise their hand, and the first hand up will be recognized by the moderator. The participant will then respond to the Answer posed by the moderator with a Question. If the correct information is shared, in the form of a question, then the participant earns 1 point.

Use the Answers/Questions sheets that are included in this activity.

Conclusion

By completing this activity, 4-H members have been able to explore some concepts of science. They have asked questions, answered questions, gained some factual knowledge, and have hopefully been encouraged to ask more questions. *How else might this ___? What if ___ were done? Why did I get these results?* As they expand their knowledge with Inquiry Based Learning, they are learning life skills that they will use again and again as capable adults.

References

Forquer, A., Kuber, P., and Wright, J. (Rev.Ed. 2011). *Beef Project and Record Book, Ohio 4-H Project 117*. The Ohio State University. Columbus, Ohio.

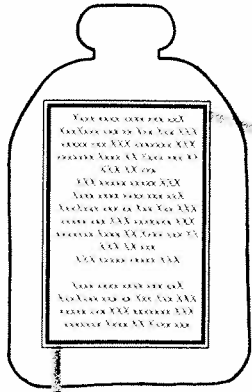
Forquer, A., (Rev.Ed.2011). *Beef Resource Handbook for Market, Breeding, and Feeder Calf Projects, Ohio 4-H Project 117R*. The Ohio State University. Columbus, Ohio.

<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: Omnibiotic</p> <p>Question: What is the name of the drug?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Omnibiotic</p> <p>Question: What is the name of the drug?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: May 17, 20__</p> <p>Question: What is the expiration date?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine, and Sheep</p> <p>Question: For which species and for what type of animal is product approved?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: Hydrocillin</p> <p>Question: What is the active ingredient?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Cattle – bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections</p> <p>Question: For what uses is this product approved?</p>

<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: USA Animal Health, Inc.</p> <p>Question: What is the name of the distributor of this product?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Swine – erysipelas, pneumonia</p> <p>Question: For what uses is this product approved?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: Customers are advised to keep the product between 2 ° and 8° Centigrade.</p> <p>Question: What storage directions are included?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Sheep – foot rot, pneumonia, mastitis, and other infections in these species caused by or associated with hydrocillin-susceptible organisms.</p> <p>Question: For what uses is this product approved?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Keep refrigerated when not in use</p> <p>Question: What storage directions are indicated?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: 2ml per 100 lb of body weight given once daily. Maximum dose is 15 ml/day.</p> <p>Question: What is the proper dosage</p>

<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Hydrocillin</p> <p>Question: What is the active ingredient?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Omnibiotic should be injected deep in the fleshy muscle of the neck.</p> <p>Question: How should the medication be administered?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.</p> <p>Question: What is the withholding period?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert</p> <p>Answer: Do not inject this material into the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage.</p> <p>Question: How should the medication be administered?</p>
<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Label:</p> <p>Answer: Exceeding the highest recommended dosage level may result in antibiotic residues in meat or milk beyond the withdrawal time.</p> <p>Question: Is there a withholding period?</p>	<p style="text-align: center;">Label Jeopardy</p> <p>On the Medication Insert:</p> <p>Answer: For 750 lb or more, it should be 15 ml per day.</p> <p>Question: What is the proper dosage?</p>

Medication Label



Before administering any drug to an animal, you must have a knowledge of the information found on the drug label and insert. Make sure you are able to identify the parts of the medication label and medication insert.

Name of Drug OMNIBIOTIC
(hydrocillin) **Active Ingredient(s)**

Directions for use:
See package insert

Cautions and Warnings **Warning:** Milk that has been taken from animals during treatment and for 48 hours after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food. Exceeding the highest recommended dosage level may result in antibiotic residues in meat or milk beyond the withdrawal time. **Withholding Times**

Store between 2° and 8°C (36° and 46°F)
Keep dry and away from light **Storage**

Quantity of Contents **Net contents:** 100 ml

Distributed by
USA Animal Health, Inc. **Name of Distributor**

Lot Number **Lot #** 0009900-Q123

Expiration Date 05/17/XX **Date of Expiration**



This activity adapted from information found in the *Quality Assurance and Animal Care: Youth Education Program* (Figure 12.03) – based upon work supported by the Extension Service, United State Department of Agriculture, under special project number 93-EFSQ-4096

Medication Insert

OMNIBIOTIC

Name of Drug

(Hydrocillin in Aqueous Suspension) Active Ingredient(s)

For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine and Sheep Species and Animal Class

*Read Entire Brochure Carefully
Before Using This Product*

For Intramuscular Use Only

Active Ingredient(s): Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.

Approved Uses

Indications: Cattle – bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. **Swine** – erysipelas, pneumonia. **Sheep** – foot rot, pneumonia, mastitis and other infections in these species caused by or associated with hydrocillin-susceptible organisms.

Recommended Daily Dosage

*The usual dose is 2 ml per 100 lb of body weight given once daily.
Maximum dose is 15 ml/day.*

Dosage	}	<i>Body Weight</i>	<i>Dosage</i>
		100 lb	2 ml
		300 lb	6 ml
		500 lb	10 ml
		750 lb or more	15 ml

Continue treatment for 1 to 2 days after symptoms disappear.

Route of Administration

Cautions and Warnings

Caution: 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material into the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animals should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines.

Storage Requirements

4. Omnibiotic must be stored between 2° and 8°C (36° to 46°F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

Withholding Time

Warning: Milk that has been taken from animals during treatment and for 48 hours after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food

Sizes Available

How Supplied: Omnibiotic is available in vials of 100 ml.



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(Figure 12.04)