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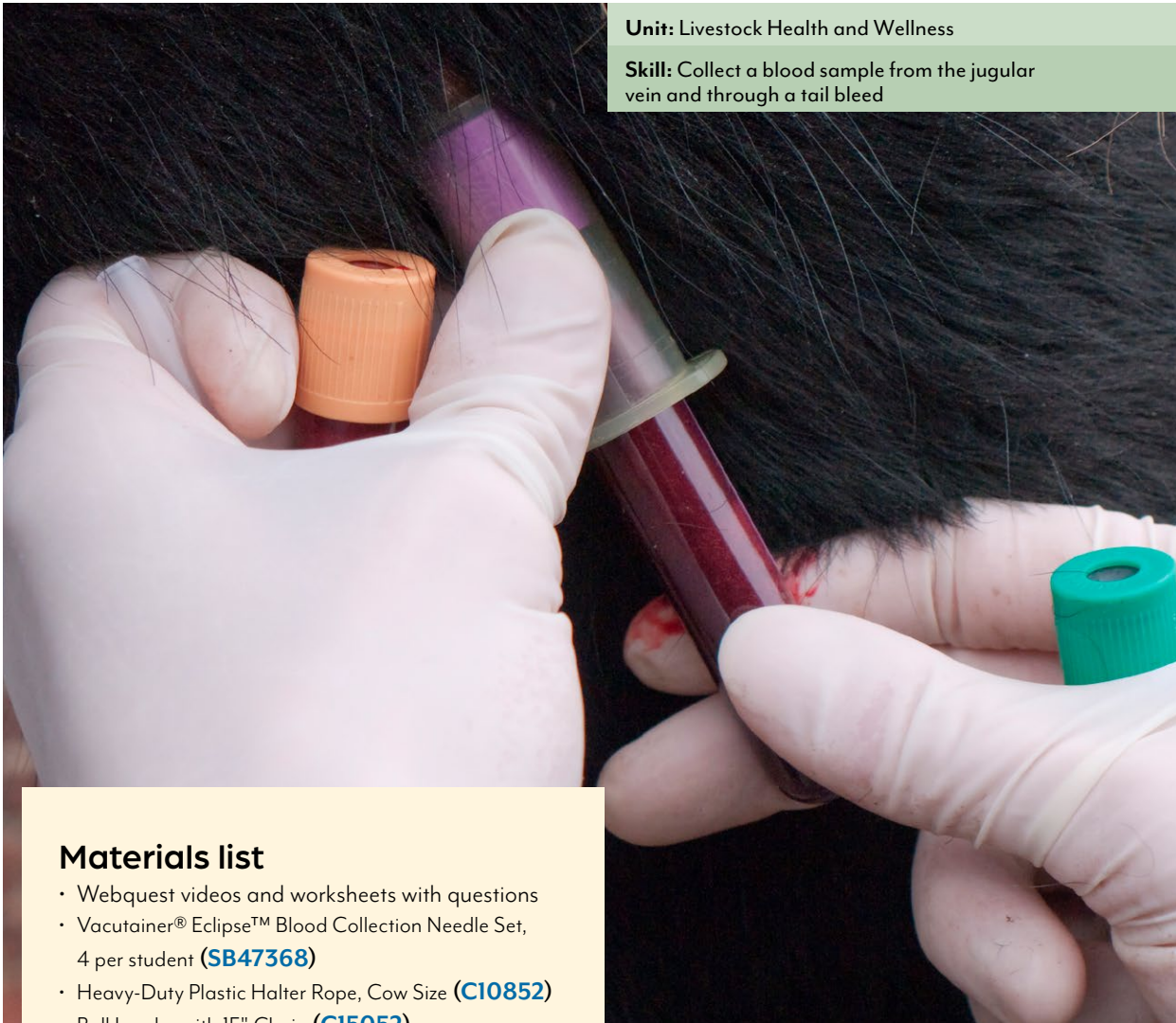
How to draw blood from cattle

Volume 19 | Gr. 9-12

Time: 90 min. Hands-On
30 min. Classroom

Unit: Livestock Health and Wellness

Skill: Collect a blood sample from the jugular vein and through a tail bleed



Materials list

- Webquest videos and worksheets with questions
- Vacutainer® Eclipse™ Blood Collection Needle Set, 4 per student ([SB47368](#))
- Heavy-Duty Plastic Halter Rope, Cow Size ([CI0852](#))
- Bull Leader with 15" Chain ([CI5052](#))
- Sharpie® Fine-Point Markers, Black, Box of 12 ([9717997\(A\)](#))
- Latex-Free Econo-Blue Nitrile Glove, Small ([C20030](#))
- Isopropyl Alcohol (Rubbing Alcohol), 500 ml ([KM00635](#))
- Sponge Gauze, 100 % cotton ([C28573](#))
- Students should have regular biosecurity gear of boots and coveralls
- Cattle and headgates in the facility also required

AS.07.01.01.b.

Describe and demonstrate the proper use and function of specific tools and technology related to animal health management.

AS.07.01.01.c.

Select and use tools and technology to meet specific animal health management goals.

AS.07.01.05.a.

Explain the clinical significance of common veterinary methods and treatment (e.g. aseptic techniques, antibiotic use, wound management, etc.).

AS.07.01.05.b.

Assess the safety and effectiveness of facilities and equipment used for surgical and nonsurgical veterinary treatments and procedures.

AS.07.01.05.c.

Identify and describe surgical and nonsurgical veterinary treatments and procedures to meet specific animal healthcare objectives.

Performance objective

Students will be able to safely restrain a cow and demonstrate how to draw blood from the jugular vein. Students will identify the appropriate safety restraints as well as the correct tools for collecting blood. Students will then utilize a tail jack restraint and collect a blood sample from the tail of the cow.

Teaching methods:

Direct instruction, "I do-we do-you do," observing multimedia resources, reflection on the activity

Activity:

1. Prior to the hands-on lesson, students go through a “webquest” in the classroom, watching instructional videos selected by the teacher and answering questions about the procedures observed therein.
2. Teacher reviews responses from the “webquest” and leads a class discussion on safety, techniques and tools for drawing blood from cattle.
 - a. Why do we draw blood from the jugular? When do we draw from the tail?
 - b. How else can we extend this skill — is this only for drawing blood out of the animal?
 - c. What are the tools we need to draw the blood from the animal?
* Students identify the vacutainer, needle, syringe, and collection tube.
3. Practicing proper biosecurity, students get into coveralls and boots and bring all necessary tools and equipment to the cattle-handling area.
4. Students begin to restrain their cattle as assigned by the teacher. Teacher reviews haltering and headlock usage and nose lead.
5. The teacher selects one cow and, with students watching, demonstrates how to restrain the head to one side in order to expose the jugular groove (furrow) and jugular vein. Cow’s head can be pulled right or left, and should be kept somewhat level (not pulled too high or low).
6. Teacher reviews the tools needed to draw blood (vacutainer and collection tube) and demonstrates how to locate the vein using soft touch in the jugular groove, how to hold off the vein, and how to stick with the vacutainer. Teacher reinforces the need for safety in this instance. Teacher reviews biosecurity with gloves, and using rubbing alcohol to clean the area from which blood will be drawn.
7. Once the vein has been located and the vacutainer is successfully dripping blood, the collection tube is attached and the teacher explains how a vacuum is created which fills the tube very quickly. The tube is then removed from the vacutainer and then the vacutainer removed from the animal, maintain pressure to stop bleeding. Area can also be aggressively rubbed to stop the bleeding.
8. Teacher demonstrates using a Sharpie® to note the animal ID and the date on the collection tube. Teacher reviews with students the reasons for collecting blood and practices for keeping blood samples safe in transit.
 - a. Also ask students to explain the importance of labeling the sample.
9. Next, students restrain their cattle, teacher checks to make sure heads are tied back securely.
10. Students practice on their own cattle while working in partner pairs with teacher watching each student and assisting as needed.
11. Students mark the collection tube if successfully collected blood from the cattle.
12. Once the students have finished practicing and untied their cattle, teacher moves the class to the backside of the cattle.
13. While students observe, teacher demonstrates the tail jack method of picking the tail straight up in the air and exposing the underside of the tail. This is a restraint method and stops the animal from being able to kick while working on her back end.
14. Teacher points out how to locate the webbed skin on either side of the tail and insert the vacutainer into the center of the space “between the webbies”. Once blood drips from the vacutainer, the collection tube can be attached and blood collected. The goal is to draw blood from the coccygeal vein.
15. Students once again work in pairs, one student per cow, but working as a team to help maintain safety and remember all the steps in drawing blood.
16. Once all blood samples collected, teacher leads the class in a verbal reflection on how to draw blood and safely store the blood for its intended use.

Assessments:

Students will receive a check plus (100%) for successfully filling the collection tube and not hurting themselves or the animal; a check (80%) for going through the activity without hurting themselves or the animal, but not collecting blood in the tube; a check minus (60%) for explaining the skill but not participating in the activity OR engaging in behaviors that leave the animal and/or the student injured. See included rubric for guidance.

Name: _____ Class: _____

Livestock and Poultry Health

	No information or practice has been provided and complete training is required.
	The student has only been exposed to the topic in a theoretical setting.
	The student has demonstrated the ability to perform this skill only when supervised and/or with assistance and must continue training.
	The student has demonstrated the ability to perform this skill with minimal supervision and/or reinforcement and is close to attaining proficiency.
	The student has consistently demonstrated independent performance of this skill on a level required to obtain and maintain successful employment in this occupation.

Using the rating scale 0–4, rate the student on each step completed.
Average the scores for total.

Before Bleeding Activity Can Begin

- _____ Student is aware of and is properly using the appropriate PPE for the activity (coveralls, work boots, nitrile gloves).
- _____ Student has obtained the appropriate restraint tools and has restrained the animal based on the situation. In this context, the cow is in the headlocks, locked, with a halter, and the head is tied to one side, level.

Steps to Jugular Draw

- _____ Student ties the head hard to one side, with the head level for access to the vein.
- _____ Student uses alcohol and gauze to clean the surface of the skin to be poked.
- _____ Using a fist with the non-dominant hand, the student identifies the jugular furrow and applies pressure half-way between the corner of the jaw and the point of shoulder.
- _____ Student identifies the jugular vein pooling with blood and can identify the pulse.
- _____ Student inserts the needle perpendicular OR at a 30 degree angle to the cow's neck, while still holding the jugular vein. Blood is dripping from the end of the needle.
- _____ While still holding the vein with the non-dominant hand, the student attaches the collection tube and it fills with blood.
- _____ Student detaches the blood tube, pulls out the needle, and applies pressure to the tail.

Student was able to articulate the next step if we were to provide intravenous fluids to the animal.

_____ Yes _____ No

Steps to Tail Bleed

- _____ Student uses alcohol and gauze to clean the surface of the skin to be poked.
- _____ Student places the cow into a tail jacked position, using the non-dominant hand.
- _____ Student identifies "the webbies" and feels for the coccygeal groove.
- _____ Student uncaps the vacutainer needle, positions the needle perpendicular to the tail.
- _____ Student inserts the needle, between vertebrae, in the groove and blood drips through.
- _____ While still holding the tail, the student attaches the collection tube and it fills with blood.
- _____ Student detaches the blood tube, pulls out the needle, and applies pressure to the tail.

Student was able to articulate the circumstances in which we would need to draw blood from a cow's tail?

_____ Yes _____ No

Notes for feedback/Next steps for improvement:

How to Draw Blood from Cattle

Classwork

Introduction to Drawing Blood

Objectives

I will be able to:

1. safely restrain a cow and demonstrate how to draw blood from the jugular vein.
2. identify the appropriate safety restraints as well as the correct tools for collecting blood.
3. Utilize a tail jack restraint technique and collect a blood sample from the tail of the cow.

Essential Questions

How, and why, will I draw blood samples from cattle? How do I maintain my own, and the animal's safety?

Pre-Work - *Watch the videos and be prepared to answer these questions*

<https://www.youtube.com/watch?v=luNbsTMrlul>

Dr. Anderson, University of Kentucky

<https://www.youtube.com/watch?v=8VoqUOfzW0Y>

BioPryn

<https://www.youtube.com/watch?v=NzTr845fLy0>

Video posted by Sabrina Fester

Questions to consider

(be prepared to share in class)

1. Why do we draw blood from the jugular?
When do we draw from the tail?
2. How else can we extend this skill - is this only for drawing blood out of the animal?
3. What are the tools we need to draw the blood from the animal?
4. What can I do to be safe, and to keep the animal safe? (hint: safety from pathogens, too!)



What are these, and how do we use them?

Post Activity Reflection

On separate paper, answer the following questions:

What aspect of the activity was most challenging for you?

What aspect of the activity did you feel most confident about?

How would you teach someone else how to do this? (explain in 1 paragraph)

Why do we need rubbing alcohol?

List two safety precautions for each drawing method.

List at least one reason for drawing blood using each method