

Assuring Quality: A program for youth livestock producers -- Animal Handling & Carcass/Product Quality Activities

Year Two Activities

Animal Handling Activity 1: Blind Spots and Flight Zones

Resources Needed:

- Masking Tape
- Yardsticks or tape measures
- String (will take a few yards)

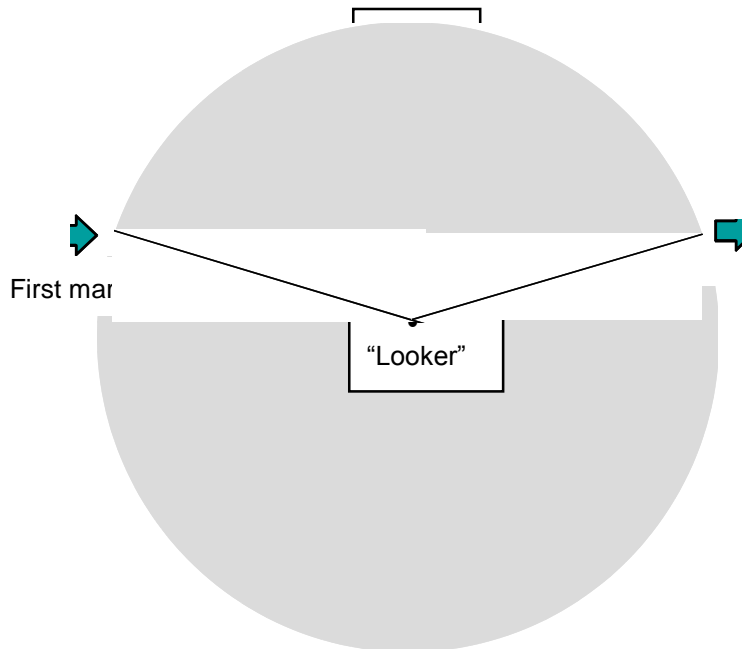
Background Information:

All animals, domestic and wild, behave in certain ways to protect themselves. Understanding animal behavior and using proper handling techniques can help prevent injury, stress and undue physical exertion for both the animals and the producers, thus resulting in a higher quality product for the consumer.

One key to safe handling is being aware of, and respecting, an animal's flight, or comfort zone. When a person enters the animal's flight zone, the animal becomes tense. The deeper a person enters the zone without allowing the animal time to adapt, the more severe the animal's reaction may become. It is also important to understand where an animal's "blind spot" is. Moving from the blind spot into the area where an animal can see you can startle the animal and cause it to kick or run.

Procedure - Blind Spots:

- A. Divide youth into groups of 4.
- B. Have youth stand in an open area and have one youth stand looking (the "looker") at a second youth directly across from him/her (the "sitter"). Make the "looker" stare only at that person. It is important their head or eyes DO NOT move to watch the rest of this process. Both of these people will remain in these position for the rest of the activity.
- C. Have a third youth designated as the "marker" and mark the area where the "looker" is standing.
- D. Have the fourth youth (the "walker") stand directly behind the "sitter" and then move slowly out in a large fluid circle. The circle should be large enough so that the looker would be in the exact center of the circle. (See diagram.) Have the "looker" indicate when he can no longer see the person moving. Have the "marker" mark this spot with tape.
- E. Have the "walker" return to behind the youth being looked at and again move from behind the "sitter", this time in the opposite direction. Again indicate and mark when they are past the "looker's" line of vision.
- F. Run string from each of the "walkers" endpoints to each other and to where the "looker" was standing. This will make a triangle connecting the three points.



- G. Have youth guess how many degrees are in the semi-circle of the youth's (looker's) area of vision. Remind youth of these guidelines
- A straight line is 180° .
 - A right angle on a square is 90° .

Discussion Questions:

1. Show diagram of cattle's area of vision. How does cattle's range of vision compare to that of humans? What is the range of vision for cattle?
A: Much larger range, generally 300° or more, this is known as wide-angle vision (see diagram – entire area that is not the blind spot is the range of vision).
2. When riding in or driving a car, are there certain points when you can't see that a car is driving next you, without turning around and looking? What is this area called?
A: Blind spot
3. If you were driving down the Interstate and pulled out to pass someone after having checked your rearview mirror, but all of a sudden heard someone honking at you, because they were in your blind spot and you pulled out right in front of them, how would you react?
4. Cattle also have a **blind spot**, but it is slightly different. Based on the range of vision described above ($> 300^\circ$), where do you think a steer's blind spot is located?
A: Immediately behind them.
5. What will happen if you stand directly in the blind spot of a steer or heifer?
A: Probably nothing - they don't know you are there.

6. How do you think the calf would react if you quickly moved from the blind spot to a place where the calf could see you?

A: Startled - they will probably run or kick.

Procedure - Flight Zones:

- A. Divide youth into pairs. It is best to pair youth together that do not know each other very well. Each pair needs a measuring device (yardstick or tape).
- B. Have each pair face each other with about four to five feet between them. One youth should remain standing in the same place while the other youth moves towards him/he, one foot at a time, pausing after each movement. Movements should be slow and deliberate.
- C. The standing youth should indicate when they begin to feel uncomfortable with the nearness of the other youth.
- D. Now have the youth move one step closer and observe how they react.
- E. Once completed have them start over; facing each other with four to five feet between them.
- F. Gather the youth that will be doing the moving and instruct them to do so rapidly, with no pauses and the person should be yelling as he/she comes right up next to the standing youth. The standing youth should not know what to expect. Observe how the standing youth reacts.

Discussion Questions:

1. How far apart were you when at least one person felt the other was too close?
2. What did you (that were the standing youth) do when the other person came too close? Was there anything else you thought about or felt like doing?
3. Would an animal's flight zone be larger or smaller?
A. Generally larger
4. Do the size of flight zones vary among animals? Can you think of any examples?
A: Yes. One example: show steer vs range cow
5. Was there any difference in how the standing person reacted when the other person movements were slow, as compared to when the other person moved quickly? In which situation were you calmer?
6. What are two simple, common-sense rules to follow when working with any kind of livestock? Following these rules will help the animals remain calm.
A: Slow movements and no yelling

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Year Two Activities

Animal Handling Activity 2: Humane and Inhumane Practices

Resources Needed:

Animal handling tools: canes, slappers, prods

Background Information (to present to youth)

Members of the public, many of whom do not have a livestock background, observe the way animals are handled at fairs and shows. For many people, this may be the only contact they have with livestock. We do many things correctly that we can be proud of. But, do we ALWAYS treat our animals humanely? Humane is defined as “that which is marked by compassion and/or consideration of others”; thus humane treatment of animals includes not causing unnecessary pain or stress. Are there things we do that might be considered inhumane?

Procedure -Humane Treatment:

- A. Group youth into pairs. Explain that they are going to role play being show animals and handlers. One member of the pair is the animal, and the other will be the handler.
- B. Have all the youth construct obstacles for the “animals” to go through. Examples could be a loading chute constructed from chairs, a gate made from cardboard, or a pen that consists of a large box or closet.
- C. After the obstacles have been constructed, explain that the animal and the handler cannot communicate by talking. The handler must use the tools that are available (canes, slappers, prods, hands, yelling, etc) to guide the animal.
- D. The leader may privately instruct some “animals” to be stubborn, uncontrollable, or others to be very cooperative and docile. Or, this may be left up to the youth playing the animals. The leader may also privately instruct some handlers to use inappropriate handling practices.
- E. The leader will serve as the judge for the handlers animal handling skills. Given the obstacles available, the “judge” should have the handlers move the “animals”. For example, the handler/animal pair might be asked to walk out of a pen, into a loading area and onto a truck; or a show may be simulated.
- F. After 5 -10 minutes, stop the role play and lead a discussion about handling practices and humane and inhumane treatment.

***Note:** This activity may also be adapted by having older members perform a skit, rather than having all members role play. The audience can then identify the appropriate and inappropriate practices which are displayed.

Discussion Questions:

1. For handlers:
 - a. How did you get your animal to go where you wanted it to?
 - b. Did you notice how any of the others treated their animals?
2. For “animals”:
 - a. Was it difficult to understand what your handler wanted?
 - b. Did you notice how any of the other animals were being treated?
3. For everyone:
 - a. Were there any inhumane practices done?
 - b. Were any animals handled more roughly than they needed to be?
 - c. What practices were humane? Why do you consider them to be humane?
 - d. What are some other practices that we do with show animals that may be considered humane? Inhumane? Think about not only the show and not only about moving or handling your animals, but from the start of your project on and things you do on a regular basis with your animals.
4. For each individual to think or talk about:
 - a. Are there any of the things you do with your own animals that could be improved? What kinds of changes will you make?

Suggestions of Humane and Inhumane Practices to Discuss:

Humane:

- Provide plenty of clean, fresh drinking water
- Feed a balanced ration
- Prepare facilities before getting animals – look for loose boards, protruding nails, etc.
- Keep facility a comfortable warm, dry and well-bedded
- Start training early.
- Do not isolate animals - pen two or more together (especially sheep)
- Follow a planned health, vaccination and parasite control program.
- Castrate, dock and dehorn animals when young and according to industry recommended procedures.
- Observe animals daily for signs of illness.
- Provide adequate feed, water and bedding at the show, as well as fans during extremely hot weather.
- Learn and accept that most of our project cattle, lambs and hogs are raised to produce meat and will be slaughtered; or else don't show.

Inhumane:

- Pulling animals behind a vehicle to train them to lead.
- Leaving animals tied for unreasonably long times, especially in direct sun.
- Withholding feed and/or water.
- Slapping, beating animals, kicking or jerking animals in the showing or any other time.
- Leaving an animal unattended on a clipping stand (sheep).
- Lack of grooming after the show (ie, failure to wash out adhesives)
- Using hotshots, whips, canes, etc to beat animals when unloading, moving to/from pens or when loading.

Adapted from *Quality Assurance and Animal Care Youth Education Program*, 1994; Ohio Agricultural Education Curriculum Materials Service.

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Year Two Activities

Animal Handling Activity 3: Handling Tag

Procedure:

- A. Divide youth into two equal groups. Have the two groups stand facing each other on either side of a dividing line. On each side of the dividing line there should also be a “safe” area designated, either by marking with tape, or some other means.
- B. Instruct the youth as follows:
 1. Designate the one side as the “True team/side” and one side as the “False team/side”.
 2. When a true statement is read, the youth on the True team chase and try to tag the ones on the False team before the ones on the False team can get to the “safe” zone on the true side (because it is a true statement).
 3. Those that reach the safe zone without being tagged return to their original side before the next question is read and remain members of the “False team”.
 4. Those that are tagged before they reach the safe zone become “True team” members and go to the true side of the line before the next question is read.
 5. When a false statement is read, the system is the same, only the False team members chase the True team members and try to tag them before they reach the safe zone on the False side.
- C. Read the questions below and play the game.
- D. Discuss the questions at the end.

Game Questions:

1. Animals have a tendency to move towards shadows? (False)
2. All animals have a flight zone? (True)
3. Using slow movements and giving animals time to adapt to your presence will help prevent animals from getting scared and running. (True)
4. Livestock have a narrower range of vision than humans? (False)
5. Sheep are herd animals and have a tendency to follow others. (True)
6. Entering an animal’s flight zone will cause it to move. (True)
7. Cattle, sheep and swine have good depth perception, meaning they can easily tell how far away an object is? (False)

8. Standing in the blind spot of an animal will cause the animal to move forward. (False)
9. To get an animal to move forward, you should be behind the animal's point of balance. The point of balance is usually around the shoulder. (True)
10. When all else fails to get animals to move, use a hotshot. (False)
11. Animals that are stressed may have poorer quality meat? (True)
12. Calm animals are less likely to hurt themselves or you. (True)

Discussion Questions:

- A. How can we make the five false statements true?
 1. Animals have a tendency to move towards shadows?
A: Animals have a tendency to balk at shadows, OR
 Animals prefer the light, as long as it is not a blinding light or direct sun.
 2. Livestock have a narrower range of vision than humans?
A: Livestock have a broader range of vision than humans. Animals have "wide-angle" vision, meaning they can usually see an area of about 300° around them (a full circle is 360°.), with only the area directly behind them being a blind spot. In comparison, people have a range of vision usually less than 180°.
 3. Cattle, sheep and swine have good depth perception, meaning they can easily tell how far away an object is?
A: Cattle, sheep and swine have poor depth perception
 To partially compensate for this, animals raise and lower their heads to focus on objects. Giving animals enough freedom and time to move its head will help it remain calm.
 4. Standing in the blind spot of an animal will cause the animal to move forward.
A: Standing in the blind spot will cause the animal to do nothing, as long as you are standing still. OR Moving from the blind spot of animal will cause the animal to move, although it may be startled and run.
 5. When all else fails to get animals to move, use a hotshot.
A: When all else fails – remain calm and patient. Although there are situations where very limited use of a prod may be warranted, as a general rule, hotshots should not be used.
- B. How can using proper handling procedures affect carcass quality?
A: Animals that are handled using proper procedures are less likely to be stressed. Stress can cause dark cutters in cattle or PSE (pale, soft and exudative) meat in hogs. Some improper handling procedures, such as hitting animals with a piece of wood, cause direct carcass damage in the form of bruises.

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Year Two Activities

Animal Handling and Carcass Quality Activity 4: Matching Game

Resources Needed:

Activity cards
Large open space
Prize for winners

Procedure:

- A. Explain to youth that there are four designated areas that they are to run to, based on the practice or activity that you read. Some practices may have more than one answer that seems correct, but choose the one best answer based on all the information given. The four areas are:
 1. **Good** handling practices
 2. **Inappropriate** handling practices, but not likely to cause carcass quality problems
 3. Practices that could cause **bruising** on animals and carcasses
 4. Practices that could cause other **carcass quality** problems besides bruising.
- B. The leader will read aloud the practices listed below.
- C. Instruct youth to run to the area that applies to the practice that is read.
- D. Have a "safe" zone designated with masking tape on the floor (or other means) that the youth must reach.
- E. If all youth go to the correct area, the last youth (or last 2 or 3, depending on size of group) to reach the correct area safe zone is eliminated and must watch the remainder of the game.
- F. Any youth that go to an incorrect area are eliminated from the game.
- G. Before reading the next practice, ask someone from the group to explain why they chose the answer they did. Ask one or more others if they agree with the reason or if they have anything to add to it. Give or review the full correct reason before reading the next practice.
- H. The last youth remaining is (are) the winners of the game.
- I. Discuss the questions at the end.

Practice

Hitting animals to move them

Providing plenty of clean drinking water

Pulling animals behind vehicle to train to lead

Providing clean, dry bedding for animals

Group

Bruising

Good

Inappropriate

Good

Slapping animals to show them at a terminal show	Bruising
Training animals at young age	Good
Withholding water from animals	Carcass Quality
Giving injections in the ham, leg or rump	Carcass Quality
Yelling as loudly as possible to move animals	Inappropriate
Use of hot-shots or electric prods at any time	Carcass Quality
Keeping overly aggressive, horned animals in pens with others	Bruising
Using oil on hogs	Carcass Quality
Giving animals plenty of space	Good
Not exercising or allowing animals to exercise	Inappropriate
Using clean needles to give injections in the neck	Good
Leaving nails sticking out of pens	Bruising
Use of hot-shots or electric prods just prior to slaughter	Carcass Quality
Grabbing fleece to move or handle lambs	Bruising
Castrating, docking, and dehorning animals when young	Good
Hauling to a terminal show in heat of day on hot days	Carcass Quality
Leaving in sun until burnt (white pigs)	Inappropriate
Providing a rest time during long hauls	Good

Discussion Questions:

1. What were some of the practices that were easiest for everyone to decide on?
A: Answers will vary, but typically many of the “good” practices will be named.
2. Some of the good handling practices have been named, can you think of others that were part of the game that we haven’t talked about yet, or others that weren’t even part of the game?
A: Some additional ones are using slow movements, giving animals time to adjust to someone being there, not yelling, not approaching animals from their blind spot.
3. What were some of the practices that almost seemed like they had two possible right answers, if you didn’t listen to the details:
A: (1) Using hot shots: at any time it is inappropriate handling; but if used near slaughter, it has the potential to cause undue stress on the animal which can result in

meat quality problems – either dark cutters in cattle or PSE (pale, soft and exudative) meat in hogs.

(2) Hitting or slapping animals: at any time it is inappropriate and can be considered inhumane, but at a terminal show, it can cause bruising on the carcass

(3) Withholding water: at any time this is inappropriate; but if done for an extended time, close to slaughter, it may also cause undue stress on animals and result in meat quality problems.

(4) Hauling animals in the heat of the day: at any time this is inappropriate; but if done close to slaughter, it may also result in meat quality problems, or even dead animals.

4. Why is it important to be aware of good and poor animal handling practices?

A: Knowing good practices should make it easier for you to work with animals, and will make it less stressful for the animals. Many handling practices also relate to carcass quality, and thus using those good practices and avoiding the bad will help ensure the production of a quality product. At shows and fairs, using good handling practices and avoiding the use of practices that could be considered inhumane will also help present a positive image of the 4-H livestock program to the public.

5. Are there any of the practices we discussed that could result in you getting less money for your animals when you sell them?

A: (1) Any of the practices that cause bruising, as bruises must be cut out and discarded from the carcass; thus if the animals are sold on a carcass weight basis, you (the seller) is not paid for that weight that is thrown away.

(2) Practices that result in a lot of stress on the animals just prior to slaughter, including withholding water, using hot shots, hauling in heat of the day. These could result in dark cutters in cattle, which are significantly discounted (usually \$10 - \$20 per cwt) when cattle are sold on a grade and yield or grid basis.

(3) Using oil on hogs: This practice results in problems with the dehairing process in hog slaughter and could result in significant trim loss on the carcasses.

(4) Giving injections in the ham, leg or rump: These are the high value parts of the carcass and if the injections result in any sort of lesion or abscess, there will be discounts and those individuals may not be allowed to sell animals to that packer anymore.

(5) Withholding water and hauling in the heat of the day: Both of these can easily result in DEAD animals when the weather is hot.

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Carcass Quality Activity 5: Carcass Quality Surprises!

Resources Needed:

Large can of pudding
Cake sprinkles (small, round, silver ones are best)
Uncooked spaghetti (2 -3 pieces)
Canned peas
Old dry marshmallows, gumdrops or similar candy
Bowls and spoons

Procedure:

- A. Before youth are present, prepare a dish for each of them (or for each pair or small group, dependent on how many will participate). The dishes they will receive are to represent different carcass quality problems. Types of dishes to prepare include:
 1. No carcass quality problems: Plain pudding
 2. Birdshot or buckshot in meat: Put a small amount of pudding in a bowl and then mix in a small amount of the cake sprinkles. Cover with more pudding that you don't mix into the lower layer.
 3. Embedded needle: Put a short piece of uncooked spaghetti into the middle of the pudding. Smooth over top, so it is not evident that anything has been put into the pudding.
 4. Abscess: Put one or two canned peas in the center of some of the bowls of pudding and smooth over top, so it not evident.
 5. Toughness due to scar tissue: Flatten out a marshmallow or gumdrop and hide it in the pudding, as with other defects.

- B. Tell youth that you are going to have a snack before you discuss carcass quality problems and give each a bowl of pudding, some with problems as described above. A suggested mix for a group of 20 youth would be:
 1. Two with buckshot (cake sprinkles)
 2. One with an embedded needle (uncooked spaghetti)
 3. Two with abscesses (canned peas)
 4. Three with toughness (old, flattened marshmallow)
 5. 12 with no defects.

- C. Give youth long enough to eat that some discover the problems in their pudding; then discuss questions.

Discussion Questions:

1. How was your pudding?
2. Did any of you not want to eat the rest of your pudding after you saw what happened to one of your neighbor's? Why?

A: Some should respond that they didn't want to finish their pudding; because if someone else bit into a pea (or other problem), it could easily happen to them also. After youth have shared their personal responses, explain that the different things they found in their pudding represented various carcass quality problems. Ask youth to name some carcass quality problems and list them on the board.

3. Which types of pudding represented which carcass quality problems?

A: See previous page.

4. What happens when a consumer buys a meat cut that has one of these problems present?

A: Probably a very negative reaction, similar to what some of youth experienced with the pudding. Possible longer term consequences are:

- (1) May not buy meat any more, or not that kind/species of meat.
- (2) May tell others about their experience and discourage them from eating meat.
- (3) In severe cases, such as the needle, may bring legal charges against those responsible.
- (4) Any or all of this may be shown in the media – newspapers, radio or TV.
- (5) Overall result in a loss of consumer confidence in meat supply.

5. Who's responsibility is it to prevent these problems in meat products?

A: Everyone involved in the meat and livestock industry, from producers to packers to retailers.

6. How were these problems caused in the first place?

A: Most of these problems probably originated at the producer level. From injections (abscess, toughness, needle). The buckshot has two possible origins – from hunters, or in some cases from producers who use this method to “scare” cattle out of thick brush or to change their direction when herding cattle from the air. Although the packing plants can take some measures to prevent these problems from reaching the consumer, the responsibility starts with the producer.

7. What steps can be taken to make sure that none of these problems happen in the meat we produce?

A: First, use quality assurance guidelines for all injections; including

- (1) Give all injections only in the approved injection zone in front of the shoulder;
- (2) Never give more than 10 cc in one place on cattle. On pigs and sheep, you should not give more than 5 cc in one place.
- (3) Use only clean, sharp needles of the appropriate size; and
- (4) Use the SQ route of injection whenever possible (as compared to IM, which is more likely to cause abscesses)

Secondly, for the buckshot, post “No Hunting” signs, know who comes onto your property, remove cattle from the areas hunting will occur; and never use shotguns for herding cattle.

Third, you may discuss what can be done at other levels – packing plants and retailers. Items to discuss here include:

- (1) Trimming the carcass if the abscess or needle is visible.
- (2) Trimming the retail cut if a problem is visible.
- (3) Discuss that often these problems are not visible. Needles migrate through tissue and may end up deep in a muscle, which means they could end up in a roast. Metal detectors will not detect these. Abscesses can easily be far enough under the carcass surface that they cannot be seen either. Scar tissue is often not visible, and the resulting decrease in tenderness will almost certainly not be trimmed, as there is no visible defect for this.

8. Are there any specific things you can do on your farm/acreage to help make sure none of these problems occur?

A: Answers will vary, but some easy to implement ones would be making sure needles are clean and the right size, using proper restraint for animals if an injection is needed, and knowing who is hunting on their ground (if hunting is allowed).

