HANDLING & TRANSPORTATION
FOR ALL AGES AND STAGES OF SWINE
Handling and Transportation
Introduction - Information for Leaders

Suggestions to Begin this Section:
- Give the members a Roll Call Question and answer if you choose at the start of the meeting.
- Discuss moving weanlings
- Discuss range of sight of the swine and do activity if time allows.

Answers to the 5 major stressors the pig may face when being moved (on page 4, Introduction):

1. Bright or blinking lights.
2. Loud noises.
3. Breezes blowing at them.
4. Moving objects e.g. a cloth or paper blowing in the breeze.
5. Human being out of their line of vision.

Answer - to the question, what will handlers do when they try to move the pig by standing in its blind spot are (on page 5):
- they will slow forward movement and even cause the animals to turn back into the protection of the herd.

Activity: Animal Handling Demonstration (Leader’s instructions on page 3, Member’s worksheet on page 6)

Supplies Needed
A calm trained animal.
A leader or senior member Knowledge of animal behavior and animal handling techniques.
ACTIVITY - ANIMAL HANDLING DEMONSTRATION
(Member’s version of this activity on page #6)

You will need:
A calm trained animal.
A leader or senior member to demonstrate moving an animal from one
place to another.
Knowledge of animal behavior and animal handling techniques.
(Refer to agriculture cards “Animal Handling and Animal Safety”- Ag.
Awareness CD)

WHAT TO DO:
Have the animal handler demonstrate how to move and handle an
animal. Show where the point of balance, the blind spot and flight zone
are on the animal. Talk about whether the animal is a “fight” or “flight”
animal and how you can tell. (Read the Animal Safety and Animal
Handling agriculture cards for more information- Ag. Awareness CD).

After watching the demonstration, ask members, “have you learned
anything? Will your knowledge of animal handling change how you
approach and move animals?”

From this demonstration, have members list eight important factors to
remember when working with an animal.
1. Never come up behind an animal, especially in its blind spot. This
may cause the animal to turn toward you.
2. Move among the animals quietly and calmly at all times. Always
leave yourself a safe escape route if needed.
3. Always wear appropriate clothing and footwear when handling
animals.
4. Be aware of what makes the animals “fight” or “flight” response kick
in.
5. With the pig it was loud noises, flapping things, bright lights,
inappropriate chutes or ramps.
6. Rely on the animal’s sense of herd instinct as you quietly move them
to the place you want them to go.
7. Use proper handling equipment that is appropriate for the animal
being moved. With pigs it may be a chase board or cane if it is only
one animal.
8. The best place for the handler to stand is on the edge of the flight
zone of the animal, that way they can step into it if they need to and
effectively turn the animal in the direction they want it to go.
HANDLING AND TRANSPORTATION

Introduction

Handling
Everyone involved in the handling and transportation of pigs should be properly instructed and knowledgeable about the basic facts of animal welfare and behavior. Pigs that are used to having people around them experience less stress when loading or being moved to a new environment than those pigs that have had limited contact with humans. It has been proven in many studies across Canada that animals regularly handled by humans are easier to lead, remain calmer, and show less signs of stress when faced with new situations.

Name 5 stressors the pig may face when being moved:
1.
2.
3.
4.
5.

Handling Weanlings
When moving weaned piglets to another facility, whether it is to another barn by truck, or through hallways to another section of a barn these young animals will become stressed. They have no prior experience to draw upon. It is critical that they be handled in a calm and gentle manner at all times.

Ensure that there is not a large fluctuation in temperature from the room they have been housed in to where you are taking them. Weanlings should be transported in smaller groups of about 50 so it will cut down on assembling and unloading times.

Total transit time should be kept to a minimum. This first transit should never be more than 24 hours, as newly weaned pigs go off feed for up to the first 24 hours after weaning anyway and to add the transit stress you may end up with a load of dead piglets.

Loading density in the trailer must allow all piglets to lie comfortably without crowding.

One rule of thumb is when all the piglets are standing you can still see 25% of the floor space.
The table below is the recommended safe minimum space allowance for transportation of weanlings:

<table>
<thead>
<tr>
<th>Weight kg (lb)</th>
<th>Square Meter per</th>
<th>Square ft. per</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 (10)</td>
<td>0.085</td>
<td>0.7</td>
</tr>
<tr>
<td>9.1 (20)</td>
<td>0.084</td>
<td>0.9</td>
</tr>
<tr>
<td>13.6 (30)</td>
<td>0.093</td>
<td>1.0</td>
</tr>
<tr>
<td>22.7 (50)</td>
<td>0.139</td>
<td>1.5</td>
</tr>
<tr>
<td>31.2 (70)</td>
<td>0.167</td>
<td>1.8</td>
</tr>
</tbody>
</table>

There are several important physical and behavioral characteristics to consider when handling pigs. Pigs have 360-degree panoramic vision. What they see greatly influences how they move. Look at the circles below; this is what the pig you are handling will see.

The direction a pig will move depends on where the handlers position themselves in relation to the circle’s “point of balance”. If the handlers step behind the point of balance, pigs will move forward; if they step forward the animal will move back.

In effect, handlers who try to move animals by standing behind them will:

Pigs will turn and face the person entering their space rather than move forward.
ACTIVITY - Animal Handling Demonstration:

After watching the demonstration, what have you learned?

Will your knowledge of animal handling change how you approach and move animals in the future?

List 8 important factors to remember when working with an animal.

1. ___________________________________________________
2. ___________________________________________________
3. ___________________________________________________
4. ___________________________________________________
5. ___________________________________________________
6. ___________________________________________________
7. ___________________________________________________
8. ___________________________________________________
Handling and Transportation
DEVICES, SPACE, LOADING & UNLOADING
Information for Leaders

Suggestions to Begin this Section:
• Give the members a Roll Call Question and answer if you choose at the start of the meeting.

ACTIVITY: Farm Animal Handling Photo Analysis

At the previous meeting, ask members to bring in pictures of people handling or located near farm animals to the next meeting.

Once they bring in their pictures, ask them to think about what they have learned so far about animal behavior. Can they tell from looking at these pictures whether:
  a) The handler is properly dressed and using appropriate equipment for safety in handling this animal?
  b) The behavior shown in the picture is safe for both the animal and the handler?

Ask them to consider the animal characteristics previously discussed - noise, herd instinct, vision, blind spots in vision, depth perception, flight, maternal instincts, and male aggression behaviors.

ACTIVITY - Line in the Sand Game
• Prior to the next activity develop scenarios to have the members consider. Write each scenario on an index card. Examples of scenarios are given on the next page.
• You can run this activity yourself, or have your youth leader read the cards to the other members - members will choose one side or the other of the line OR you can assign a card to each member and have them choose which side they feel the scenario falls on and as a group discuss why.
• To engage an older member or youth leader you may ask them to come up with some question cards ahead of time to use with this game. As the leader you can discuss the issue with them before hand to be sure they are on the right side of the dilemma. Then let them run the activity.

Supplies: String or tape, index cards, scenarios
Draw the “line in the sand” by putting something on the floor like tape or rope (be sure members won’t trip over it!). One side of the line is ethical behavior the other side of the line is unethical behavior. Instruct the members when they hear the question or look at the scenario card to ask:

- Does it violate Food and Drug Administration Law?
- Is it fraud?
- Does it compromise the welfare of the animal?
- Does it relate to the real world of Agriculture?

**Line in the Sand Scenarios**

1. Use of a tranquilizer on a show animal at the show. -U
2. Feeding and watering my animal daily to meet its needs. E
3. Use an injection of anti-inflammatory agent to help a crippled animal walk properly at a stock show. U
4. Provide normal exercise for my animal. E
5. Put extra pigs on the truck, there was no point to keeping so few back. ?
6. We had a scheduled stop over for the transport as the trip was over 24 hours long. E
7. Extra bedding was used in the truck as it was very cold for moving pigs today. E
8. Severe restrictions of feed and water for several days to meet a maximum weight requirement for a show class. U
9. Injection of an antibiotic. U
10. Falsified birth date of an animal for show. U
11. Prodded the pigs onto the truck as they wouldn’t go up the ramp. U
12. Put a piglet or two for home use in the trunk of the car, after all they were little and we were only 10 minutes from our house. U
13. Used the proper grooming and handling tools with my pig at the show. E
14. Trained my pig for show at home by working with it for many hours so it would not be stressed or afraid. E
15. I sold my show project at the auction after the show. ?

You can think up any number of other scenarios like those above. The correct answers for the above are marked **E-ethical U-unethical or ? for simply undesirable or iffy behavior.**
**Handling and Transportation Devices, Space, Loading & Unloading**

Devices for Moving Pigs:

The actual moving of pigs whether around the barn or onto a truck can be stressful for both handler and pig. Pigs are best led by calm, quiet, gentle encouragement. They are also easier moved in smaller groups.

**Chase boards** are a very common item to use to move pigs along. This is a board that is about 1 m wide x 3 m high. They are usually made of plywood or aluminum with handholds at the top. The handler can walk behind the pig and keep them moving in the right direction. If you look closely at the person below you can see that she is using a chase board to load these pigs onto a truck. Take a good look at this picture – what do you think might be wrong with it?

**Canvas slappers** are about 7.5-10 cm wide. It is applied to the hind end of the pig to keep the pigs moving. Unnecessary force or a frozen slapper should never be used.

In this picture shown here the handler is moving the pigs along with the canvas slapper and plastic board that makes the noise. Never use the slapper directly on the animal.

**Stock Whips** if used against the side of an alley or wall, cause a noise that will cause the pigs to move forward. **NEVER** use a whip on a pig. Use of a whip on swine constitutes as cruelty. It will damage the hide of the animal and leave it marked and cause for downgrading when the animal reaches the market. Also remember earlier we commented that loud noise was something that made pigs nervous and stressed - so why would we want to use this type of upsetting device.

**Electric prods** are another device that is used on pigs and often misused by handlers. The use of these battery operated electric prods should be kept to avoid excitement and injury. **Never** use a high voltage prod on a pig as it can damage the hide of the animal. If a pig lies down when prodded, do not continue to prod, let the animal calm down and rest. Prods must never be used in the genital, anal or facial area on the animal. Use of this device is restricted to the hindquarters of pigs when their way forward is clear.

Law prohibits misuse of any of these devices. Never use items such as canes, pipes, tattoo machines or sharp instruments that may cause injury or bruising. This is **NOT** acceptable.
LOADING AND UNLOADING OF PIGS - Do’s, Don’ts and Facts:

Overcrowding livestock during transport is a very costly practice. Sure you can get more animals in one load and save a few dollars- but can you? Overcrowding can result in animal suffering and death loss. In the winter overcrowding can result in frostbite and in the summer heat stress.

- A pig must never be loaded or unloaded in a way that will cause injury or undue stress.
- Only load pigs into a suitable vehicle that is clean, appropriately disinfected, well bedded with proper bedding, and considered suitable for the transport of livestock.
- Have the appropriate type of loading area and avoid the major stressors are for pigs. These all hold true whether you are moving your pigs from pen to pen or into a trailer. Nice wide, curved alleys that allow for easy and safe handling. Calm familiar environment so the pigs have as little stress as possible. The door to the trailer should have an opening the same as the chute on your handling system for ease of loading and to avoid “pig” jam.
- The trailer should have the capability to allow you to segregate weights and ages of animal if needed. Cull boars for example should be put separately as well as cull sows over 170 kg. Never put cull boars and sows with market hogs. Also, unfit pigs should be sectioned separately and pigs should never be mixed in a trailer with other species of animal.
- Remember there should be a maximum of 30 animals per compartment, and fewer if the haul is longer than 5 hours as the animals will want to lie down.
- Sows with their litter are very seldom moved but if they need to be for some reason there needs to be extra protection taken to ensure the litter is safe and the sow and litter should be housed by themselves in the trailer.
- Pigs cannot sweat to cool themselves. Excess heat will move by convection from the skin, but pigs will pant through their mouths when overheated. Heat and fighting for floor space increases stress in the pigs in transit.
- The myth of packing more pigs in to the trailer in cold weather is just that, a myth. In fact many truckers will take less animals and use more bedding in the winter months. If the trailer is overloaded the pigs cannot reposition themselves if they are not comfortable. They cannot move away from drafts and cold spots thereby running the risk of frostbite. Also metal trailers that do not have wood on the side will cause frostbite due to the metal compartments if pigs are pressed against the metal for the entire trip.
The above interior of the trailer shows the different compartments - it is a ground load trailer, which means it is low to the ground for ease of loading. It shows the gates and chute widths and ramp dimensions, and compartment sizes. This is a very common configuration for a stock trailer.

**Space- Pigs need it!!**

On short trips pigs may prefer to stand but on longer hauls they will definitely want to lie down. Groups of recumbent hogs will require more floor space so loading density should be reduced.

- Every truck should be able to separate 1-2 animals in separate pens if necessary.
- Never transport livestock if the temperature is over 30-degrees Celsius.
• Reduce loading density for long hauls (over 5 hours) by at least 2 animals per loaded section of the trailer.
• After the first hour on the road the truck driver should stop and get out to check on the animals in his or her care. This is to look for problems, any animals down, animals huddled together in the center of the trailer (which may indicate they are too hot or too cold). From then on the load should be checked again every 2-3 hours during the transport.

FEED, WATER and REST:
Usually market hogs are not fed immediately before transporting. If the trip is to last more than 24 hours from loading time, the animals must have food and water 5 hours prior to being loaded. Pigs should never be confined to a truck for more than 36 hours without feed, water and rest.

Truck drivers must maintain, or have access to facilities where pigs may be fed, watered and cared for, and which provides shelter from the weather. Pigs that are unloaded must have all of the above and 5 hours of rest before being put back into the trailer again.

Work with your marketing agency for pre-slaughter, transport, feed withdraw times, testing and holding times when they arrive at the assembly yards.

Livestock trailers come in many sizes and configurations. Be sure to use the size and configuration that best suits your transport needs at the time.
HANDLING AND TRANSPORTATION
BEHAVIOUR AND HANDLING FACILITIES
Information for Leaders

Suggestions to Begin this Section:
• Give the members a Roll Call Question and answer if you choose at the start of the meeting.

Answer to what could this behavior cause? (On page 15)
1. Log jam in the loading chute.
2. Pigs getting wedged causing injury and/or bruising.
3. Panicked animals that will become more flighty and stressed.

SUGGESTED ACTIVITY: Be a Pig (Leader’s instruction sheet on page 14, Member’s worksheet on page 17).

Supplies Needed
2 pairs of sunglasses
Vaseline
4 paper cones
Tape, pins or string
Winter coat
We take our senses for granted and often we assume that everyone senses their surroundings the same way that we do. Animals, however, sense the world VERY differently than we do. After being the “animal” with limited vision, smell, hearing and sense of touch, you should have a better understanding of the animal behavior.

ACTIVITY - Be a Pig! (Member’s version on page 17)
1. Break into groups of three. One person in each group is the helper and the others are the animals.
2. Cover 2 pairs of sunglasses with Vaseline. If you do not have sunglasses you can use cellophane and cardboard to make glasses. Put on the sunglasses to get an idea of how the pig sees you.
3. To better understand how animals hear, make four cones out of paper to fit over the “animals” ears. Attach with tape, pins or string.
4. Make another cone to fit over the nose to mimic an animal’s ability to smell.
5. Because the animal doesn’t feel as well as a human, put on a winter coat to simulate their sense of touch.
6. Now, to simulate the 360-degree range of animal vision, have the animals in each group stand back to back and link arms. To increase a sense of black and white vision dim the lights.
7. The third person in each group, the helper, will attempt to lead the pig around a course or through a doorway. Keep in mind what we just discussed about vision and blind spots. Use a piece of cardboard as your pusher board to gently encourage the animal to move in the direction you require.
8. Change the positions so everyone gets the chance to be the animal and the helper if there is time. If not this can be continued at the next meeting until everyone gets to experience what the animal does. The two people acting as animals must say what they see and hear because they are back to back and may not know what their other half is experiencing. This represents the animals mind in action.

DEBRIEF:
How did you feel being the animal and having to trust your helper? What kind of discomfort or stress did you feel being the animal? How did your body show stress in this situation?

• For the following week remind members to bring in their record keeping books.
• Also have the members find photos of people working around or being with animals.
• At the next meeting have the members take a close look at the pictures that they and the other members bought to the group. Take a few moments to look at and evaluate them for the following:
  • Are the people in the picture dressed properly for handling animals?
  • Are they using appropriate equipment for that animal?
  • Is the behavior shown in the picture safe for both the human and the animal?
• For this meeting try to bring in each of the common devices used for handling swine, a chase board, slapper, stock whip, cane, and electric prod. It will be better if members have a visual of each device and handle the device in the proper manner.
HANDLING AND TRANSPORTATION

BEHAVIOUR AND HANDLING FACILITIES

Moving older pigs can be just as challenging as moving young ones if they have not had much human contact over the course of their lives. The farmer or person responsible should make it a point to enter and walk through the pens very quietly just so the animals get used to a human presence being in their space. It has been proven in many studies that this greatly reduces the stress of moving the animals later as the presence of a human has not been seen to be threatening or new.

Pigs have a tendency to follow each other and to maintain both visual and body contact. If the lead pig is gently encouraged to enter the handling facility, others will generally follow.

Pigs may balk at **contrasting shadows, bright spots, and changes in floor surface.** Attempts should be made to control lighting and flooring surfaces so they are the same in each area that the pig has to travel. With little effort such as dim lights on a bright sunny day, use tarps to shut out bright light, scatter shavings or straw on all walking surfaces etc., you will ensure that the pigs will experience less stress while being handled.

Pigs also dislike steep inclines or declines. Keep all ramps of alleys to a 20 degree or less slope in either direction. Be sure the footing is solid so as the animals will not slip on any surface. Also keep all curves wide and open to allow lots of space when driving the pigs forward.

Pigs have a strong escape reaction. When prodded or handled roughly they will attempt to get away by turning back into the safety of the group, or by trying to run forward. Neither of these scenarios is good if you have finishing hogs in a loading chute!!

What could this behavior cause? ______________________________.

Pigs are not like sheep or cattle that you can make back out of a situation that is dangerous. Never walk on top of, or kick the pigs, as this will just make the panic situation worse. Try to gently move the animal that may be a little more forward, more forward slowly and quietly until the “pig” jam is under control. If these types of incidents continue to happen you may want to consider:

- Changing handlers
- Changing the way your pens or shoots are situated.
- Lower the number of animals that you are trying to move at one time.
- Take a close look at the stressors listed above and decide if one of these factors led to the problem - if it did, then fix it.
Remember - STRESS BUSTERS for PIGS:

- Move pigs in **small groups** (6-10 finishers) at one time.
- **Eliminate visual gaps**; they distract and are seen as an escape route.
- Use **gradual slopes and curves** on inclines that have angles of greater than 20 degrees.
- Remove potentially **frightening objects** like flapping tarps etc.
- **Remove possible injury causes** like loose boards or metal bits.
- Choose low stress moving devices.

Make all sorting gates, pens and ramp sides of solid panels to block out distracting sights and sounds. Gates and fence panels should also fit close to the floor. Slight visual gaps may tempt an excited pig to break for it. Even is they cannot escape they may injure themselves in the attempt. Below is a handling facility found in the **Recommended Code and Practices Manual** for swine. This design was created to reduce panic and traffic jams and indirectly reduce bodily injury, heart difficulties, and damaged meat through bruising and other losses.

A **crowd pen and chute** for pigs prevents jamming at the chute entrance. When the crowd pen is full, the handler stands in position 1 and directs the leaders into the chute. After the crowd pen is partially empty the handler steps through the handler gate into position 2 and pushes the crowd gate around safely.
ACTIVITY - Be a Pig

DEBRIEF: (make notes about these questions.)

How did you feel being the animal, and having to trust your helper not to put you in harm’s way?

What kind of discomfort or stress did you feel being the animal?

How did your body show stress in this situation?

We take our senses for granted and often assume that everyone (including animals) senses their surroundings the same way. Animals, however, sense the world very differently from humans. After being the “animal” with limited vision, smell, hearing and sense of touch, you should have a better appreciation for animals and why they behave like they do.
HANDLING AND TRANSPORTATION
Caring for the Compromised Pig
Information for Leaders

Suggestions to Begin this Section:
- Give the members a Roll Call Question and answer if you choose at the start of the meeting.
- In this next section we are dealing mostly with government regulation, both Federal and Provincial. Start with making sure the members understand the differences between the two when it comes to regulations.
- Have the members take turns reading the different parts of the transportation regulation sections. The material is a little dry, but it is the law and as future farmers they need to understand what is expected of them in the future.

The definition of a non-ambulatory animal as asked on page 23 is one that is unable to stand without assistance or unable to move without being dragged or carried.

ACTIVITY: Definitions (on page 24) Have members fill in definitions for the terms provided so they gain a better understanding of them. The definitions are:

Animals at risk or compromised: any animal with reduced capacity that is unable to stand the stress or living or transportation, due to injury, fatigue, infirmity, poor health, very young or very old animal, impending birth, or any other cause.

Distress: Animals need proper care, water, food and shelter, animals that are injured or sick or in pain are suffering or being abused, subject to undue or unnecessary hardship, deprivation or neglect.

Euthanasia: a painless killing by acceptable methods without fear or anxiety. Must be a reliable, reproducible, irreversible and simple, safe, rapid method.

Pain: An unpleasant sensation occurring in varying degrees of severity as a result of injury or disease. Signs of pain and suffering in pigs include one or more of the following:
- Unwilling to rise to its feet.
- Unwilling to walk
- Vocalization when prodded to rise or move. (like you yelling!)
- Reluctant to put a leg on the ground and bear weight.
- Trembling
- Mouth open and rapid breathing
- Arched back and abdomen tucked up’
- Head down, ears drooping and tail uncurled.
• Unwilling to eat or drink.
• Standing separate from the group, not following the group.
• No response when touched or prodded.

**Suffering:** A highly unpleasant emotional state associated with more than minimal pain or distress.

**Unfit:** An animal that is sick, injured, disabled or fatigued, that cannot be moved without avoidable suffering and that must not be transported.

**ACTIVITY - The GOOD the BAD and the UGLY Game**

**Supplies:**
Index Cards
Large sheets of Paper
Tape
Pens or Pencils

The learning objective for this game is to **help members identify practices that give agriculture a bad image**.

Before beginning the game ask the members how they define the word “*humane*”. The definition given in the dictionary is *kind or compassionate*. Next comes “*inhumane*”; get the members to describe what they think that means. On 3 sheets of paper write in bold letters **GOOD, BAD and UGLY**. Tape these papers at different areas of the room either on the floor or walls, whatever is best for your location. You can just print the page following cut it into sections if desired.

Take the scenarios found on the next page and put them onto cards. Ask members, either individually or in groups, to place the card under the heading they feel it fits best. If the practice could fit into more than one category discuss this with the members.
<table>
<thead>
<tr>
<th>Feed a balanced ration</th>
<th>Provide plenty of clean drinking water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep animals in the sunlight so they get sunburned</td>
<td>Hauling animals in the heat of the day in the summer.</td>
</tr>
<tr>
<td>Keep animals in a warm, dry place that is well ventilated and bedded.</td>
<td>Handling animals roughly when they arrive at a show.</td>
</tr>
<tr>
<td>Start training animals to be handled at a young age, never do your training at a fair.</td>
<td>Using hotshots, whips, canes, sticks etc. to beat animals when loading or showing.</td>
</tr>
<tr>
<td>Castrate, dehorn and dock animals when they are young.</td>
<td>Kick, knee, beat, jerk or slap an animal to get them to go where you want them to go.</td>
</tr>
<tr>
<td>Provide adequate exercise for all animals.</td>
<td>Using oil on the coat of animals, which makes it shine. But does it make it hot?</td>
</tr>
<tr>
<td>Protect animals from predators.</td>
<td>Failure to feed and water animals regularly.</td>
</tr>
<tr>
<td>Sort and load animals calmly and with little stress or force as possible.</td>
<td>Failure to keep pens and stalls clean and dry.</td>
</tr>
<tr>
<td>Provide rest periods during long hauls in a transport.</td>
<td>Allowing animals to fight and injure each other.</td>
</tr>
<tr>
<td>Give animals plenty of space.</td>
<td>Transporting feeder pigs in a sack in the trunk of a car.</td>
</tr>
<tr>
<td>Learn and accept that most of our 4-H livestock project animals will be harvested or else don’t purchase them. This usually applies mostly to beef cattle, lambs, pigs and sometimes poultry.</td>
<td>Improperly medicating animals or using unapproved drugs.</td>
</tr>
<tr>
<td>Pulling animals behind vehicles to train them to lead.</td>
<td>Leaving animals tied for long periods of time.</td>
</tr>
<tr>
<td>Beating, kicking or using a hot shot to train an animal.</td>
<td>Docking a lamb’s tail when it is 6 months old.</td>
</tr>
<tr>
<td>Housing herd animals alone.</td>
<td>Overcrowding animals in a barn, truck or pen.</td>
</tr>
<tr>
<td>Poor animal identification system. Never quite know which animal you are dealing with.</td>
<td>Kicking, kneeing, beating, jerking or slapping animals in the show ring.</td>
</tr>
</tbody>
</table>
HANDLING AND TRANSPORTATION
CARING FOR THE COMPROMISED PIG

Nobody likes to see an injured animal suffer. All animals that are injured and not able to be salvaged should be put down quickly and humanely. If an animal will be condemned at slaughter anyway it should never board the truck. Animals that have less severe conditions like minor abscesses, mild hernias or mild lameness should be shipped early to minimize pain and prevent the injury from getting worse. Compromised pigs may also be transported in a smaller group within the trailer so as not to become further injured. Some insurance companies have revised their policies so handlers can put down an injured animal first and deal with the paperwork later.

If an animal becomes sick or injured during transportation it is to be taken to the nearest suitable location for proper care. An injured pig may be salvageable if a federal or provincial veterinarian inspects the pig and approves its health status before it is killed. Otherwise they will have the animal humanely destroyed.

Federal regulations forbid loading injured or infirm pigs.

FEDERAL LEGISLATION- HEALTH OF ANIMALS ACT (TRANSPORTATION)

IT IS A VIOLATION TO:

- Transport a sick or injured animal where undue suffering will result, or when the animal is liable to give birth.
- Continue to transport and animal that is injured, becomes ill, or is otherwise unfit to travel.
- Load and unload animals in a way that would cause injury or undue suffering.
- Transport animals if injury or suffering is likely to be caused by inadequate construction of the vehicle, insecure fittings, undue exposure to the weather or inadequate ventilation.
- Use ramps, gangplanks or chutes that are inadequately constructed or maintained and would be likely to cause injury or undue suffering of the animals.
- Confine monogastric animals, such as horses and pigs, in a motor vehicle for longer than 36 hours unless the animals are fed, watered and rested on a vehicle that is suitably equipped for the purpose.
- Load an animal for a trip of more than 24 hours without providing food and water within 5 hours of loading.
YOU MUST:
• Segregate animals of different species, of substantially different weights and ages, or if incompatible by nature.
• Allow animals to stand in a natural position.
• Provide for drainage and absorption of urine.
• Either spread sand or have the vehicle fitted with safe footholds in addition to adequate bedding.
• Ensure that animals unloaded for feed, water and rest remain at least 5 hours, and longer if necessary, for all of the animals to have access to feed and water.

If you do or do not do any of the above you could be charged under the Criminal Code Act of Canada.

The bottom line is that you must always provide responsible care, custody and control of the animals in your charge. You must also never cause undue pain and suffering to any animal under any circumstances.

Meat Inspections Act:

Every federally registered establishment in which food animals are slaughtered must have:
• Loading and unloading facilities.
• Well maintained outside shipping and receiving areas that are clean and well drained.
• Separate areas to accommodate, housing, segregating, and holding condemned, suspect, injury or sick animals.
• Facilities and equipment for: restraining animals, conveying injured or disabled animals in a humane manner
• Secure footing for the areas that animals need to walk across.
• Pens that provide adequate ventilation, space and potable water and feed if the animal is held for more than 24 hours.
PROVINCIAL LEGISLATION

Ontario Society for the Prevention of Cruelty to Animals Act:

Inspectors under the Provincial act have authority of police officers when enforcing laws pertaining to the welfare of animals. The Ontario SPCA operates on a compliant basis.

- Where an inspector or agent of the Society observes an animal in immediate distress, he or she may enter, without warrant, any premises, building or place other than a house either alone or accompanied by a veterinarian.
- Animals are considered to be in distress if they are in need of proper care, water, food, or shelter or being injured, sick or in pain, suffering or being abused, subjected to undue or unnecessary hardship, privation or neglect.
- An inspector or an agent of the Society may order the owner to take actions that are necessary to relieve the animal of it’s distress or have the animal examined by a veterinarian at the expense of the owner.
- An inspector or agent of the Society may remove an animal from a building or place where it is and transport it to a location where the animal may be provided with food, care or treatment to relieve its distress.
- An inspector or and agent of the Society may destroy and animal with the consent of the owner or where advised by a veterinarian after the animal has been examined and is found to be ill or injured and is incapable of living without suffering.

The Livestock and Livestock Products Act dictates that all non-ambulatory animals require a Veterinary Certificate. A non-ambulatory animal is defined as:

An Inspector may:

- Enter any place or vehicle containing or used for the storage or carriage of livestock.
- Stop on a highway any vehicle that he or she believes contains livestock and inspect both the vehicle and the livestock.
- Require the production of any books, records or other documents relating to any livestock.
- Delay the shipment of any livestock for the time necessary to complete his or her own inspection.
- Seize and detain any livestock transported in contravention of this Act and require the owner to remove such livestock from the place of detention at the expense of the owner.
MEAT INSPECTION ACT:
Ontario abattoirs are licensed and inspected under the regulations of the Meat Inspection Act by the Food Industry Branch of the Ontario Ministry or Agriculture and Food and Rural Affairs. Provincial meat inspectors cooperate fully with the Canadian Food Inspection Agency when unacceptable animal care or transportation practices are suspected.

The LIVESTOCK COMMUNITY SALES ACT states that all animals must be inspected prior to sale. Inspectors conduct the initial screening and hold suspicious animals for examination by veterinarians appointed under this Act.

After going through all of the above acts and government regulations with regards to livestock, we can see that various branches of government are working hard to keep our animals healthy and our food supply safe.

**ACTIVITY: Definitions**
After reading through the above sections fill in the blanks for the following definitions to better understand what they mean.

Animal at risk or compromised: ____________________________________________

Distress in an animal - what can cause it? _________________________________.

Euthanasia: ____________________________________________________________

Pain____________________________________________________.

Suffering: ____________________________________________________________

Unfit: _______________________________________________________________.
**Federal Transportation Regulations**

**DO**
- Segregate boars, animals of different weights and ages, or if incompatible by nature.
- Provide proper ventilation, drainage and absorption of urine.
- Have sufficient headroom for animals to stand in a natural position.
- Either strew the vehicle with sand or have the vehicle fitted with safe footholds, in addition to appropriate bedding.
- Ensure that animals unloaded for feed, water and rest remain at least five hours and longer, if necessary, for all animals to receive food and water.
- Ensure that animals segregated in trucks receive extra protection from cold and wind chill; supply ample bedding.
- Euthanize animals promptly as the conditions outlined on the reverse occur.

**DO NOT**
- Transport a sick or injured animal where undue suffering may result, or when the animal is liable to give birth during the journey.
- Continue to transport an animal that is injured, becomes ill, or is otherwise unfit to travel beyond the nearest place it can be treated.
- Mishandle an animal on loading or unloading.
- Use goads or prods on the face, anal, udder or genital area.
- Load or unload animals in a way that would cause injury or undue suffering.
- Crowd animals to such an extent as to cause injury or undue suffering.
- Transport livestock in trailers not designed for safe handling of that species or class of livestock.

*Source: Transporting Livestock by Truck (CFIA)*

---

**Lameness Classes**

These categories can be used to determine the status of an animal’s mobility, from normal to non-ambulatory.

**Transport as soon as possible**

**Class 1**
Visibly lame but can keep up with the group.

**Class 2**
Unable to keep up; some difficulty climbing ramps. Load in rear compartment.

**Do Not Load or Transport**

**Class 3**
Requires assistance to rise but can walk freely.

**Class 4**
Requires assistance to rise; reluctant to walk; halted movement.

**Class 5**
Unable to rise or remain standing.

* *Classes 3, 4 or 5 may be loaded for transport for veterinary treatment under veterinary supervision.*

---

**Further Information**

<table>
<thead>
<tr>
<th>Health of Animals Regulations (Federal)</th>
<th><a href="http://www.inspection.gc.ca">www.inspection.gc.ca</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>OMAF (Food Inspection Branch): 1-888-466-2372 (4-OMAFRA)</td>
<td>extension 6-4230</td>
</tr>
<tr>
<td>CFIA (Transportation Emergencies): 1-877-814-2342</td>
<td></td>
</tr>
<tr>
<td>Ontario SPCA: 1-888-ONT-SPCA</td>
<td>(668-7722)</td>
</tr>
</tbody>
</table>

**OMAF Agricultural Information Center**
Contact Centre (1-877-424-1300)
www.omaf.gov.on.ca

**Ontario Farm Animal Council**
(Animal Care Helpline)
905-821-3880
www.ofac.org

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This resource may be used or reprinted with credit to the Ontario Humane Transport Working Group. Working Group members include: Canadian Food Inspection Agency, Ontario Farm Animal Council, Ontario Ministry of Agriculture and Food, Ontario Society for the Prevention of Cruelty to Animals, and the Ontario Trucking Association.

*To order more copies, please contact Ontario Farm Animal Council: (905) 821-3880 www.ofac.org* 

Endorsed by:

**Ontario Association of Swine Veterinarians**

July 2006

This page available through the Ontario Farm Animal Council at www.ofac.org.
Should this pig be loaded?

Do Not Load

Delay Loading

Transport Direct to Slaughter with Special Provisions

Euthanize
- Non-Ambulatory (see box below)
  - any case where pigs are unable to eat or drink due to injury or disease
  - chronic "poor-doers" or extremely thin pigs
  - pigs suffering from severe non-responsive disease
  - prolapsed uterus
  - arthritis involving multiple joints
  - nervous disorders, such as rabies must be reported to CFIA; contact your vet before euthanizing
  - fractures that impede movement
  - hernia that impedes movement, is painful, touches the ground

Assess/Seek Veterinary Advice
- fever due to disease process
- sows likely to farrow during transport or upon arrival at market or farrowed within 48 hrs
- pigs showing signs of:
  - exhaustion
  - heat stress
  - weakness
  - porcine stress syndrome

Transport Direct to Processor as soon as possible
- within 24 - 36 hours
- abscess and local infections (no fever)
- prolapsed vagina or rectum
- Lameness Classes 1, 2 (see reverse)
- penile or vulva injury
- severe deaddawn injury
- first stage anemia or weight loss (no fever)
- blind
- frost bite

Non-ambulatory Animals
- Unable to stand without assistance or unable to move without being dragged or carried. Commonly called "downers." Assistance may not include any touching of the animal.
- Lameness classes 3, 4 & 5 should not be loaded or transported. (see reverse)
- Animals should not be loaded if at risk of going down en route

Animals may only be shipped to slaughter if:
1. All medication withdrawals are met
2. It is fit for human consumption
3. It can be humanely loaded and transported

If these conditions are not met, animals must be humanely euthanized on-farm and disposed of in accordance with all regulations. Contact your veterinarian for advice on specific situations.

This page available through the Ontario Farm Animal Council at www.ofac.org.
BIOSECURITY

STOP
AUTHORIZED PERSONS ONLY
ANIMAL HEALTH
SECURE AREA
BIOSECURITY
Introduction - Leader’s Information

Suggestions to Begin this Section:
- Give the members a Roll Call Question and answer if you choose.
- ACTIVITY: What does Biosecurity Mean to you? Ask for answers by going around the room or ask members at random. The answers will range from safety, disease control, avoiding contamination of barn, avoiding contamination of herd, keeping people out of your barn, keeping people off your property etc. You may want to ask for a volunteer to record these answers.

Materials Required: Marker & Flipchart (to record answers if desired).

Answer - (to the question on page 3)
The list of people entering the farm might include:
- Neighbors and friends
- Agri-business and Service Representatives
- Veterinarians
- Municipal or Regulatory personnel/ Inspectors
- Custom manure/ bio-solids haulers and applicators.

Have the members take turns reading small parts of the Barn Entrance section of the meeting. Be sure they look closely at the basic layout presented. If they are from a swine farm you may want to ask that member what kind of entrance they have to their barns.

Answer- to the question, how many refrigerators should be in the barn? (on page 5)
There should be TWO refrigerators, one for human food the other for barn medications etc. You also need TWO tables or one table and a bench. One table for human food eating and using, the other table for drug mixing, barn paperwork or charts, storage of health related equipment that may be needed in the barn.
Biosecurity - What is it?

Biosecurity is a relatively new word in livestock production. This word does not appear in any English dictionaries and as a result has been given a number of meanings.

For the sake of our study of swine, we will define biosecurity as the protection of a swine herd from the introduction of infectious agents (viral, fungal, bacterial, parasitic etc.) Also, biosecurity includes the controlling the spread of diseases within the farm itself not just from outside sources. There are many ways to protect our swine herd, and this section discusses the various methods used in swine operations today to protect the herd.

A violation or break in biosecurity can cost the farmer many dollars in lost animals, and time spent caring for sick animals. With the ever increasing attempt to limit the amounts of anti-microbials and other disease fighting agents biosecurity needs to be number one on the minds of all farmers to protect their livelihood.

All visitors need to understand the possible risk they present when entering a farm, what a producer expects from them and what precautions need to be taken between farms that are visited. This applies to anyone entering or leaving the premises who may be visiting other livestock operations, and not just those of the same species or commodity type.

This list of people would include:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

Visitors can unknowingly bring harmful agents onto the farm on their clothes, footwear, equipment and vehicles. All visitors should make an appointment so that both parties can make the best use of their time and to be sure the visitor understands the protocol under which the farm is working.
Swine Barn Entrance, Office and Change Area Protocol:

The entrance way to any swine barn can greatly help reduce the risk of introducing diseases to the herd. The entrance to the barn is one of the key components for biosecurity on the farm. The entrance way can also provide some amenities and miscellaneous functions necessary to protect the swine, operators and visitors to the barn. If using an old barn to house your animals you may want to consider an addition. Most newer barn plans contain some form of vestibule entrance.

A vestibule entrance is your first line of defense for your barn. The outside door is locked at all times. A doorbell can be attached to buzzers or lights inside the barn to let the operator know that someone is there. In the case of small items such as semen, items can be passed through a sliding window directly into the office. This helps to reduce the number of people that are entering the barn. Visitors that do need to come in must leave their shoes or boots inside the first door of the vestibule area before proceeding. A sign on the change-room door should list all of the biosecurity protocols you require the visitor to follow. See the drawing of a vestibule entrance that is suggested on the OMAFRA website: (http://www.omafra.gov.on.ca/english/engineer/facts/95-071.htm).

VESTIBULE ENTRANCE:
Key Vestibule Areas:

Street Clothes Drop: Depending on the level of biosecurity and the whether a shower will be taken and all outerwear and underwear are left in this area.

Shower: Most farms expect everyone to shower before entering. Other farms simply require the visitor to wear boots and coveralls that belong to the barn. In this type of set up the shower may be there solely for the use of the operator at the end of the day.

Barn Clothes Area: Barn clothes will be hung on hooks on the wall. There is shelving above for clean clothes. Barn boots can be left here but a better place to put them may be beside the feed room door. This would make keeping the office, shower and changing area cleaner. The washer and dryer for used barn clothing could be kept here also.

Office/Lunch Area: This room is self contained and should provide the operator (s) the ability to prepare simple lunches and a place to sit and eat. This area may also contain a whiteboard or some other way to communicate messages from one person to another without entering the barn area.

Washroom: with a sink and toilet that is SEPARATE from the shower area.

Storage area: This would be used for hot water tank, cleaning products, and clean dry storage area for dry goods.

Refrigerator and Worktable:

There should be______ refrigerators. Why?______________________.

There should be a worktable separate from the eating table. Why?_________________________ ______________________________.
**BIOSECURITY**

**Protecting the Farm, Part 1 - Leader’s Information**

Suggestions to Begin this Section:
- Give the members a Roll Call Question and answer if you choose.

**Answer** - to the question, *What other ways can disease enter your herd? (located on page 8)*

Ask around the room for input. You will get answers like dogs, cats, rats, birds, newly purchased animals not quarantined, sick animals that were not removed or separated etc.

**ACTIVITY:**
Get members to read the At Risk information included in this section. It is good to get the members used to speaking in front of their own group as it leads to better public speaking skills in larger settings.

**ACTIVITY:** Cog in the Wheel (on page 7)

**Materials Required:**
Scraps of paper with numbers 3, 5 and 7 on them - you need 3 3’s, 5 5’s and 7 7’s.
A large, open meeting space.
ACTIVITY - Cog in the Wheel: Gearing Up!!
This activity is designed to create teamwork but also to let the members get a sense of what happens when a cog breaks or is missing. Ask how they can apply this scenario to their biosecurity on the farm.

Supplies: You need scraps of paper with odd numbers on them –3,5,7, etc. You need to have 3 –3's and 5- 5's etc.

Just as well functioning gears keep machinery going, teamwork, responsibility and commitment keeps our farm going and safe. To see how it works, turn each participant into a “tooth” on a gear by having each person draw a slip of paper to see what # of gear they will be.

Participants form circles according to assigned numbers. The 3’s will form a tight circle by holding hands and facing outward, joined hands straight out in front of them.

Now the 5’s will form their circle in the same way. The 5’s circle will move very close to the 3’s with the two circles touching at a tangent point (joined hands), when they rotate. In that way, one gear turns the other.

They can be joined by other circles of 7’s, 9’s etc. depending on the number or youth you have, or the exercise can be done in two groups.

The 3’s start the movement. The other gears move according to how the momentum develops. Everyone STOP. Put on the brakes and reverse. Go in the opposite direction.

When the group has tried moving forward and backward, stop them and compliment them on making a great set of gears! Compare them to a fine-tuned machine with every tooth moving in place. So if every member is doing his or her part all goes smoothly.

Try this one more time taking out a cog. Does the wheel turn the same? Does it run as smoothly? Why or why not?

Have the members brainstorm responsibility to their farm biosecurity their 4-H club and its members, to community safety etc.

Ask:
- Are the responsibilities shared?
- Does the group work like a machine with well-oiled gears? What would happen if the well-oiled gears stopped turning in your barn security protocol?
- Do things sometimes break down? What are the consequences of this?
- How can the group prevent or handle breakdowns when they occur?

This activity adapted from Manitoba 4-H - “Quality Equation”
Biosecurity
Protecting the Farm, Part 1

How can I best protect my herd?

We all know what the sign to the right means even if it has no words on it. STOP! Be sure that the door to the premises is posted with “DO NOT ENTER” or “CHECK IN” signs or other warning devices, even a gate across a driveway so that the visitor has to be buzzed in.

Visitors can introduce contaminants to the barn, and should therefore make appointments ahead of time to make sure all the proper protocols are followed.

In what other ways can disease enter your herd?

________________________________________________________
_______________________________________________________

Controlling Diseases
When it comes to the operator controlling disease within the barn there are many things he/she can do, the most important of all is SANITATION!! Not just sanitation of equipment, but:

• Frequent hand washing
• Changing clothes before going to another section or the barn, or after caring for an animal that is ill.
• Be sure that all feeders and waterers for the animals are clean and sanitary at all times.
• There should always be a place to quarantine new or sick or injured animals.
• The operator should always change or wash up regularly after handling these animals in order to stop the spread of disease.

New Additions to Your Herd
Be sure you know the status of any new animal that comes into your barn:

• Do you know the source of the purchase of that animal?
• Have they been vaccinated?
• Does the other farm use the same or similar protocols for biosecurity that your farm does?
• What is the current health status of the herd of origin?
• Most importantly, quarantine any new animals for 21-30 days.

Risk assessment for all visitors to the farm is one way for the operator to determine if he/she wishes to take the risk of that individual or group of individuals being on the premises. Look over the table of risks on the next page. How would you fit in if you went to visit the neighbor’s swine farm?
Guidelines for Visitor Risk Assessment:

<table>
<thead>
<tr>
<th></th>
<th>Low risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farm visits</td>
<td>No other farm animal contact.</td>
<td>One or occasionally more than one farm per day</td>
<td>Routinely visits many farms or auctions</td>
</tr>
<tr>
<td>per day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective clothing</td>
<td>Wears sanitized shoes or boots. One pair of</td>
<td>Wears sanitized shoes or boots-if clean may not</td>
<td>Does not wear clean or protective clothing.</td>
</tr>
<tr>
<td></td>
<td>clean coveralls per site.</td>
<td>change coveralls.</td>
<td></td>
</tr>
<tr>
<td>Animal Ownership</td>
<td>Does not own and/or care for livestock</td>
<td>Owns and/or cares for a different species of animal.</td>
<td>Owns and/or cares for a similar species and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>production type.</td>
</tr>
<tr>
<td>Contact with animals</td>
<td>No animal contact</td>
<td>Minimal or not direct contact-exposure to animal</td>
<td>Regular direct contact with animals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>housing facilities.</td>
<td></td>
</tr>
<tr>
<td>Biosecurity knowledge</td>
<td>Understands and promotes biosecurity for</td>
<td>Aware of basic biosecurity principles but is not an advocate.</td>
<td>Little appreciation or understanding of biosecurity</td>
</tr>
<tr>
<td></td>
<td>industry</td>
<td></td>
<td>principles.</td>
</tr>
<tr>
<td>Foreign travel</td>
<td>Does not travel out of Canada</td>
<td>Limited travel outside of Canada without animal</td>
<td>Travel to foreign countries with animal contact in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>contact.</td>
<td>those countries.</td>
</tr>
</tbody>
</table>

BEST PRACTICES of BIOSECURITY on your farm when it comes to visitors:

- Provide farm gate signs indicating biosecurity levels in effect on the farm. Place restricted entry notices on barn doors and be sure they are locked.
- Keep service vehicles as far away from the animal facility as possible. Designate a parking area for vehicles entering the farm, away from the traffic area used by the farm and away from feed and manure. All visitor vehicles should be visibly clean of manure and other organic matter.
- Establish one area for visitors to enter if they have to. Install a bell or alarm system for visitors to indicate their arrival. Stress that they have an appointment if possible.
- Keep a visitor log or record of the names, dates and vehicles that visit.
- Determine if, when and what types of farms have been visited.
24 hours prior to your farm. As a precaution, 48 hours may be required between visits (1 week for foreign visitors).

- Restrict access to animal areas to essential persons only. NO direct animal contact unless absolutely necessary.
- Insist on clean clothing and/or supply clean boots and clothing at your farm.
- Do not allow foods of animal origin to be brought onto the farm.
- Provide a container or plastic bag for collecting dirty clothes or disposable items from visitors.
- Ask visitors to wash their hands upon leaving the barn, especially if there was direct contact with the animals. If you are hosting tours provide hand washing facilities or disinfectant hand gel.
- Provide a footbath and a container of an appropriate disinfectant solution with a scrub brush at the entrance to each facility. Maintain these with daily cleaning. Remove any accumulated organic matter and put in new disinfectant regularly.
- Ensure that all equipment used by visitors has been thoroughly cleaned and disinfected and stored appropriately before being used on your premises. Also clean and disinfect all borrowed equipment and tools prior to use on your farm and before returning the equipment.
BIOSECURITY
Protecting the Farm, Part 2
Leader’s Information

Suggestions to Begin this Section:
• Give the members a Roll Call Question and answer if you choose.

Activity: Biosecurity Quiz (pages 12-16)

Activity: Line in the Sand - Biosecurity (page 16)
ACTIVITY - Biosecurity Quiz (for the end of this unit)
Leader’s Version
Circle the correct answers to the following questions: (the correct answers are highlighted)

1. Animal Biosecurity means:
   a. Keeping diseases out of animal populations where they do not already exist.
   b. Protecting your animals from trespassers.
   c. Monitoring animal feed and water supplies.
   d. Locking the animals in your barn at night.

2. After returning from a livestock show you should keep the show animal away from the rest of your animals for how long?
   a. A week.
   b. At least two weeks.
   c. A month.
   d. A day.

3. You should do chores (feed, water, clean) for your animals in this order:
   a. Sick to oldest to youngest.
   b. Youngest to oldest to sick.
   c. Oldest to sick to youngest.
   d. Youngest to sick to oldest.

4. Separating sick animals from healthy animals means:
   a. Fencing off an area in the barn, for sick animals to live in until recovery.
   b. Keeping sick animals in a corner of the barn out of touching range of other animals.
   c. Putting sick animals in a completely separate area than healthy animals.
   d. Not letting sick animals share feed and water with healthy animals.

5. Avoiding sharing of grooming equipment and __________ can reduce the risk of your animals getting respiratory diseases from other animals.
   a. feed/water containers.
   b. shovels.
   c. needles.
   d. antibiotics.

6. How far away should an “isolation area” be from the main barn?
   a. at least 100 feet.
   b. at least 500 feet.
   c. at least 700 feet.
   d. at least 900 feet.
7. Feed should be delivered by:
   a. a truck that goes to several other animal operations on the same day.
   b. a driver who wears clean clothing each delivery.
   c. a truck that goes to one farm, is disinfected, and goes to the next farm.
   d. a truck and driver who are clean every day.

8. Vehicles can transmit diseases by:
   a. having manure stuck to tires and vehicle frames.
   b. animals licking a truck that delivers to several different farms.
   c. having manure inside the cab of the truck.
   d. animals coughing on a truck that delivers to several farms.

9. Visitors on the farm should:
   a. wear clothing they brought with them.
   b. shower in and out of the animal facility.
   c. wear clothing given to them by the farm owner
   d. not be allowed in at all.

Discuss the correct answers to this quiz.
Activity - Biosecurity Quiz

Circle the correct answers to the following questions:

1. Animal Biosecurity means:
   a. Keeping diseases out of animal populations where they do not already exist.
   b. Protecting your animals from trespassers.
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   a. wear clothing they brought with them.
   b. shower in and out of the animal facility.
   c. wear clothing given to them by the farm owner.
   d. not be allowed in at all.
Activity – Line in the Sand

Put a line on the floor and the members must decide if they agree or disagree with the statements that you are about to read to them by stepping over to one side or the other. Remember this round we are not dealing with ethical treatment issues, but biosecurity issues as they relate to the farm and the consumer.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe that animal disease outbreaks in Canada are a minor issue</td>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>I believe animal biosecurity is important in controlling the spread of diseases.</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>I believe poor biosecurity on farms can lead to a total loss of income from animals/livestock for producers</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>I believe that an animal outbreak of disease can cause major economic problems for whole countries</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>I believe at county fairs, it is okay to allow visitors to pet and feed animals. Biosecurity is not an issue</td>
<td>Disagree</td>
<td></td>
</tr>
<tr>
<td>*It is easy for me to tell sick animals from healthy animals</td>
<td>??Agree</td>
<td>??</td>
</tr>
<tr>
<td>I believe isolating new or show animals from the rest of the herd for a week is long enough.</td>
<td>Disagree</td>
<td></td>
</tr>
<tr>
<td>Even if it is a hassle separating show animals from other animals it is important in disease control</td>
<td>Agree</td>
<td></td>
</tr>
<tr>
<td>I do not believe that wildlife and pets are a threat to animal biosecurity</td>
<td>Disagree</td>
<td></td>
</tr>
<tr>
<td>I do not believe that visitors should be allowed on the farm unless absolutely necessary due to biosecurity risks</td>
<td>Agree</td>
<td></td>
</tr>
</tbody>
</table>

*The answers to this question may vary with age and experience of member. This one will make them think a bit. There is really no right answer to this question. It would be due to type of disease presented, experience of member and what they see.*
BIOSECURITY
Protecting the Farm, Part 2

Manure Handlers and Haulers
As production costs increase, more producers are contracting professional handlers and haulers to deal with the farms manure. However, there is a risk of disease being introduced by hiring custom labour. Improper sanitation procedures between farms can potentially spread a number of diseases. Ensure that manure management equipment is properly maintained and cleaned, especially if being used at several farm sites. Wash all exterior surfaces of manure handling equipment; check that they are visibly free of organic matter before they arrive on the farm.

Access to Premises
Part IV of Ontario’s Nutrient Management Act outlines the “Inspection and Orders” related to identification and inspection by provincial officers involved in nutrient management legislation. A biosecurity protocol has been developed to minimize the risk of spreading disease-causing agents among and within agriculture operations by government personnel. The protocol applies to all situations involving personnel from the Ministry of Agriculture of Food, and the Ministry of the Environment. Biosecurity concerns cannot be used to restrict entry of government regulatory staff to agriculture operations.

What does the above paragraph mean? Well, if anyone for any reason feels that any farm operation is not operating within guidelines they can report the farm and the owner/operator MUST allow the inspector on the premises to follow up the complaint or be thrown in jail!

Biosecurity provides:
- An essential component of many on-farm food safety programs.
- Greater consumer acceptability of the quality and safety of the food supply we provide.
- Healthy animals that are more productive.
- Improved animal welfare and well-being.
- Improved efficiency and profitability for the farmer.

Whether it is the relatively controlled environment of a swine barn, or an open field biosecurity is critical. Over the past decade food safety, public health and animal health have gained greater importance throughout the world.

In swine CQA (Canadian Quality Assurance) and HACCP (Hazard Analysis Critical Control Points) programs originate at the primary production level—the farm—with biosecurity playing a key role for the entire food production chain.
As the primary producers of food, farmers and all those involved in agriculture are expected to do their part, using new knowledge and technology to continuously improve the safety of the food supply, maintain and improve animal health and protect the environment.

Greater focus is placed on prevention through basic hygiene and biosecurity standards, closed production systems, detailed record keeping and animal identification will be required. A sound biosecurity system and good nutrient management plan is the best part of any farm plan.

Each farm needs to develop a specific, documented biosecurity plan in consultation with their veterinarian and/or contract provider.
TRACEABILITY
Where do all those pigs go?
Leader’s Information

Suggestions to Begin this Section:
- Give the members a Roll Call Question and answer if you choose.
- Discuss the various traceability methods that are used on the farm and try to bring in an example of the equipment used for each method for show and tell.

Activity - Traceability Elements Discussion (on page 3)

Activity - Where has the Pig Gone?
Discuss the following scenario with your members.
Joe farmer took the piglets to the weaner barn last Tuesday. Starting with the Leader, go around the room and have the members think about the pig’s movement in terms of who handled them and where they went. This should demonstrate just how much movement and how many people handle the animals from farm to fork.

Activity - The Mary Lou Scenario (see page 4 for Leader’s section, page 9 for Member’s section.)

Activity - Traceability Elements (see page 3-4 for Leader’s answers, and page 7 for Member’s discussion sheet.)
ACTIVITY: Traceability Elements Discussion

Break the members into groups depending on the size of your club. Give each group one of the 4 elements of the Canadian Hog Identification and Traceability System and have them think of ways that this National program might work. Find out if members are familiar with the steps that are being taken now. Give them 15 minutes to brainstorm this and then provide them with the correct responses if they did not come up with them on their own.

ANSWERS:

1. It will soon be mandatory that all livestock premises be registered and they will be put into a Global Positioning System or GPS tracking. Therefore every farm, auction barn, slaughter facility and quarantine facility in the nation will be in this National Database by 2008. Also, every animal that is on or leaves the farm will have an identification number that is his or her own but also will have a farm number identity in the tag as well. They have started this system already with mandatory tagging in cattle and sheep. The tags are farm specific and are currently being monitored by Agriculture and Agri-Food Canada. For swine the shoulder tattoo is recorded at the slaughter facility when they arrive and are inspected.

2. About 13.5% of all shoulder tattoos in swine are duplicated. This makes for difficulty in tracking where an animal came from. Swine will adopt the farm number and individual animal ID system number much like the other livestock commodities have. The emphasis is on having each individual having its very own number. For example, the farm number may be 5KFF - this would appear on each tag and then the animal ID #, for example 5KFF231S. What does the last letter stand for? Anyone know? It is a year letter. This would tell an operator that this animal was from the 5KFF farm, and the animal # is 231 and it was born in 2006. This is now a permanent number on record for that farm and that specific animal.

3. This database will store ALL of the records of animals born to a farm. It tracks where and when animals are shipped. It keeps an electronic record of what truck the animal traveled on, how long the animal was in transit and the condition of the load when it arrived at its destination. This database can record carcass information upon inspection, and contains data necessary for payment of the animal from the buyer to the farm. Disease and quarantine records help contain disease outbreaks quicker by being able to identify the farm immediately.
4. This movement report will go directly to a centralized or regional-national movement database that will be managed by a management agency. Reports of movement will be automated through internet, file uploads or the phone. All hog movement, including hogs going to slaughter, will be required to be reported both as a shipping and receiving event. Abattoirs must provide all of the information needed in “minimum data fields” for verification of the animals they received.

Scenario discussion answers: This will center on biosecurity and traceability - located on page 9)
- Mary Lou did not make sure that the pig was healthy when it left the farm.
- She didn’t separate the pigs from her father’s herd, and the extra pig that came from a different farm.
- The members did not practice good biosecurity habits by being sure to change clothes or shower in and out of the barns.
- The members did not clean the vehicle between going to the different barns.

After two weeks it is pretty hard to tell what animal gave what to whom! Was it the two animals from the neighbor’s farm; was it the single animal that the girls picked up, or did someone enter the farm and bring the disease with them?

It is hard to track what animal brought in the disease so all of the animals in the barn are going to have to be treated. Mary Lou has just caused her family farm great expense for the medication to treat this disease.

Treatment records will need to be kept on all the animals in the barn. This takes a lot of time to do, but is necessary as the pigs have been medicated.

If her family is sure about their biosecurity practices then Mary Lou and her 4-H members should get rid of their project animals so the remainder of the family herd can recover and carry on.

Remember the best way to provide a safe environment for your herd and provide a safe food product to consumers is:

Biosecurity, Isolation, Sanitation!
Traceability

Where do all those pigs go?

Traceability - what does it mean?

Traceability is a tool that the swine or any other livestock industry can use to reduce or minimize the impacts of a domestic or foreign animal disease outbreak, or food safety crisis.

Traceability is the ability to trace the history, application, or location of an item or activity by means of recorded identification.

A swine traceability system is a pig identification system that allows for the tracing back and forth of live animals and their products. This system is complex and has taken many years to develop.

Traceability - why do we need it?

Currently, more than half of our swine product is sold in over 100 countries around the world. If a domestic or foreign animal disease occurred in Canada, the borders would close, and the production base would immediately shrink by 50%. The best-case scenario would be that the borders would close for 90 days and re-open. Reality tells us after watching BSE that this is usually not the case. Even a 90-day close could cost farmer upwards of $45 billion dollars.

So why do we need traceability?

a) To help minimize the impacts of a foreign animal disease outbreak or a food safety crisis.

b) To reinforce our domestic and export market access that we have safe products going to market

c) To improve the competitiveness of our industry by being able to prove our high safety standards so we can continue to ship our Canadian products.

There are 3 components to this “swine traceability” system:

- Identification of the farms.
- Identification of the animals.
- Tracking the movement of all animals and meat.

The Canadian Pork Council has been mandated to develop a traceability system to track swine movement between birth and slaughter of hogs. The National Identification System for Swine is to be completed by the winter of 2008. This initiative was started in 2002 and continues to evolve an change as our markets evolve and change.
Packers are also going to be responsible for development of systems that work between slaughter and the retail store. The National System will be a complete Farm to Fork System.

Currently most Canadian hog producers have an on farm identification system in place. This would be a way of tracking on farm which animal the farmer was dealing with. The slap or shoulder tattoo is what is used at the slaughter plants for data in case there needs to be “trace back”. This is NOT enough to satisfy our trade partners. As stated below at the time of this writing 13.5% or the slap tattoos used today are duplicate numbers.

One of the older methods of identification was ear notching. This guy to the left looks pretty upset with the process, and I can’t say I blame him. I don’t think I would want someone cutting wee chunks out of my ears! But each notch stood for something specific to the farm the animal was on. This method is not done as readily today as it once was.

There are ear tags that can be place in the ear of an older animal or a piglet. A study of ID methods done in 2005 found that the use of ear tags the best for traceability. They had 99% readability, they are low cost and there is usually only about 5% tag loss in the herd.

There are also tattoo guns to tattoo large or small animals. Sometimes the tattoo goes in the ear, and other times on the rump of the animal. Often you may see tattoos just behind the right shoulder of the hog, and this may be done as the animal is being loaded for transport. During that same study in 2005 the researchers found that ear tattoos were unreadable and inefficient. They also discovered that the slap tattoos even though they were 91% readable that 13.5% of all shoulder tattoos used today were duplicated by another farm! Now what does that say if you need to trace and animal?

The researchers in this study also looked at the use of electronic ear tags or RFID tags. They found them to be very costly to both the farm and the receiving destination of the hogs, the readings they got from these tags was not reliable, there were system failures that were quite significant. The biggest drawback was the cost of both the tags and the reading system required. This type of identification system has not been ruled out for use; they are looking at modifications and ways to reduce cost for a system such as this.
The Canadian Hog Identification and Traceability System

Canada is now part of the “global village”. More people are traveling all over the world than ever before. This open global economy has its good and bad side. One of the down sides is that of disease transfer. Some foreign diseases affecting swine can be transmitted from and to other animals, as well as humans. There already exists in Canada a National mandatory regulation of identification for cattle, sheep and bison. The Canadian Pork Council recognizes the importance of this National Identification system for all livestock would minimize the risks resulting from a disease outbreak.

What will the Canadian Hog Identification and Traceability System look like?

Well, it will be divided into 4 elements - each one will be rolled out in a timely fashion to reach the goal of having the full system in place by 2008.

These elements are:

1) A livestock premises registry and national database. What does this mean, and how do you think they will do this? Have they started?

2) A national tattoo numbering registry for hogs going to slaughter. What will they be doing differently?

3) A regional swine slaughter and marketing board database. What will this database take care of?

4) A national hog ID and movement reporting system and database. What will this system be covering?

Do you think that identification will be needed for breeding stock?
You bet! Pigs used for reproduction are moved in smaller groups, from one farm to another. As a result, reproductive pigs will spread disease much faster and wider than the normal flow of commercial pigs to slaughter. This is particularly true when we include the supply of semen from boar studs to sow herds. As a result of this problem, tracking of breeding stock should be captured in MORE detail using permanent identification for all breeding animals. Because individual sows and boars can move as single animals, and can potentially be resold or moved to other farms for reproductive purposes, the identification used on these animals MUST be unique to that specific animal.

Below is what can happen when one animal goes through the system with an illness and no or improper identification.

**Traceability Investigations**

**WISHFUL THINKING**
- Detected original case
- Traced all contacts
- Prevented spread

**HARSH REALITY**
- Detected case generation
- Traced some contacts
- Already spread

How will we know where those pigs went?

- It will be mandatory that ALL livestock sectors and premises in Canada where animals are raised, quarantined, auctioned and slaughtered will be globally positioned. In other words all of these premises will be registered with a central agency and be on a GPS system.
- It would be mandatory to identify all market hogs with a unique shoulder slap tattoo on the premises of origin before going to market.
- It would be mandatory to report ALL animal movement (shipping and receiving) between premises.
- It would be mandatory under specific conditions to identify all animals with a unique physical identifier (visual ear tag). Coming or going, if we’re looking at shipping, we’ll be doing away with
the paper shipping manifests. The new system will be an electronic online system that will keep track of producers’ ID, hog numbers shipped, transporter ID and the processing plant receiving the hogs ID. This information will feed into a central database and be available to all those needing it. With a single keyboard entry and the swipe of a plastic card this information can be done within minutes of the pigs being loaded for market. There will be less turn around time for payment of hogs shipped, less paperwork overall and a verifiable traceable record on every animal in the food chain or still on the farm.

**Who and what is driving these changes?**

The global economy (our trade partners) and the end product consumer. Everyone wants to be sure they have a safe and consistent food supply chain in place over the course of their lifetime.

**ACTIVITY:**
Read the following scenario:

Mary Lou is a 4-H member that wants to be involved in a swine livestock project. Some of her club mates would like to also. Mary Lou’s family earns a living from their swine operation. Mary Lou and two of her club mates bought a pig from a neighbour to show at the county fair. The pig seemed a little underweight, but not bad so they put them in a trailer. They then went to pick up another pig from one of the other members of the club. This was from a different farm.

The members did not wear protective clothing, and have now taken the truck and trailer to 3 different swine farms within 24 hours, without washing it down. After all there is no disease in the area, they are all neighbors, and all have good clean operations.

The pigs are all put in a pen at the end of one of Mary Lou’s family barns.

Two weeks after Mary Lou brought these pigs home they developed dysentery. Dysentery is a highly contagious disease and pigs of all ages can catch it. Some pigs can be carriers of the disease and never get it; they are called “shedders”.

How are we going to track what animal brought the disease into the barn and when? What kind of records are going to have to be kept? What can be done about the problem now?
Nutrient Management

From Barn
Manure and water fall through these slatted floors into a storage below.

To Pit
Manure is stored in here!

To Field

Nutrient Management
NUTRIENT MANAGEMENT
From Manure to Crop Management, Pts 1 & 2, & Odour Management
Leader’s Information

Suggestions to Begin these Sections:
• Give the members a Roll Call Question and answer if you choose.

The Definition of Nutrient Management (as asked on page 5): by definition is to match the nutrients in manure and fertilizer to match what crops require in an environmentally friendly way.

Answer to the question of how much waste a sow produces in a day (on page 5) - approximately 15.9L daily, bring a large bucket that will hold approximately that much, put water in it and have the members weigh it and feel the heaviness of it.

Answer to the question, what are the three main soil nutrients (on page 5) - N-nitrogen, P-phosphorous and K-potassium.

Answer to the question - Why the difference in the number of different animals allowed on farm sites (on page 8) - wet vs. dry manure, nutrient components excreted by the animal in question (this has its basis in nitrogen testing) and size of the animal being housed or pastured.

Answers to the question, what types of records should the farmer keep? (on page 10)
• Soil tests
• Manure and other organic nutrient sources) analyses
• Recommended rates and actual application rates
• Date, time, and method of application.
• Weather and field conditions at time of application.
• Rainfall records
• Crop yield
• Any evidence of erosion, runoff and tile effluent.

Proper records are evidence of your commitment to nutrient management planning. Records must be kept for 6 years.

Activity: Nitrogen Soil Test (on page #)
Supplies Needed: Soil, Distilled water, Screw top jar, Medicine dropper, Nitrogen tablets

Activity: Soil Density Experiment (on page #)
Supplies Needed: Clear jar with tight fitting lid- pasta sauce jar or wide mouth canning jar work well, Dry soil sample of loam, sand, clay and organic matter. Distilled water, Liquid detergent.
ACTIVITY - Nitrogen soil test

Supplies Needed: Soil
Distilled water
Screw top jar
Medicine dropper
Nitrogen tablets**

1. Measure 1 level tablespoon of soil into a clean screw top jar.
2. Add 5 tablespoons (approx. 100ml) of water- preferably distilled into the jar.
3. Screw on the top and shake thoroughly, and allow the soil to settle for 30 minutes. Be careful not to move the jar during this period.
4. With a medicine dropper, fill both sides of the purple nitrogen tester to the dotted line with water from the top of the jar, being careful not to disturb the soil in the bottom of the jar.
5. Take one purple capsule and, holding it upright, gently tap the bottom against a hard surface to settle the powder inside. Then grasp the top and slowly twist and pull upwards until the two halves separate. Pour the powder into the left (small) compartment of the tester. Do not put any powder in the right (large) compartment of the tester.
6. Cap the tester and shake for at least 1 minute.
7. Compare the colour of the water in the left (small) compartment with the colour chart on the right compartment. Record the number and description of the colour that most closely matches the colour of your solution.
8. Empty the water in the tester down the sink. Wash the tester and cap in warm soapy water and rinse well. Allow tester and cap to dry thoroughly before recapping.

You can try using different types of soils to see the differences in results. The kit comes with about 8 capsules so gives for lots of results.

You can also bring in different commercial fertilizer bags showing the components or even pictures that show the components for comparison.

The powder in the purple capsules is NOT hazardous to health is used correctly.
Keep the tables away from food and drink, and out of reach of children.

**Nitrogen tablets can be purchased through:
A & L Canada Laboratories East or
Stratford Agri Analysis Lab or contact
Ontario Agri-Food Education Office for a soil kit or just more information on the Nitrogen tablets.
ACTIVITY - Soil Density Experiment

Supplies Needed:
- A clear jar with tight fitting lid- pasta sauce jars or wide mouth canning jars work well.
- Dry soil sample of loam, sand, clay and organic matter.
- Distilled water
- Liquid detergent.

This can be done as a group, or in pairs or as individuals. Bring in soil samples of sand, flower bed loam, construction type clay like material and some organic matter like leaves or small sticks.

In this activity the soil will “settle out” in layers. The sand should sink to the bottom, the clay particles should stay in suspension and the organic matter will sit on top. The heavier particles settle first and the lightest last.

1. Fill ½ the glass jar with the soil samples (equal parts of each).
2. Add water until the jar is now 2/3 full and add two drops of liquid dish detergent (this serves as a wetting agent).
3. Tighten the lid and shake the sample, mixing the soil, water and wetting agent.
4. Mix the sample thoroughly for 5 minutes.
5. Put the jar down and let stand for 5 minutes and see if you can see the start of settling.
6. View the sample again after 4 hours.
7. Due to the nature of your clubs meetings you may want to label the jars and just leave them until the next meeting OR send the jar home with the member and have them bring back a report on what happened to their jar.

Activity Discussion Points:
Discuss how the different types of soil and their formation would have an impact on how well manure spreading would seep into the soil.
Discuss how root systems of various plants would be compromised with different types of soil. If you have a nitrogen tablet left over you may want to test the sample for nitrogen content.

Observations of various types of soil:

<table>
<thead>
<tr>
<th>Component</th>
<th>Particle size</th>
<th>Appearance</th>
<th>Feel</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>Large</td>
<td>Individual grains can be seen</td>
<td>Grains can be felt</td>
<td>Does not hold water or nutrients well</td>
</tr>
<tr>
<td>Silt</td>
<td>Medium</td>
<td>Individual grains cannot be seen without a magnifier</td>
<td>Feels like powder or flour</td>
<td>Holds water but minimally</td>
</tr>
<tr>
<td>Clay</td>
<td>Small</td>
<td>Individual grains cannot be seen</td>
<td>Grains cannot be felt; feels sticky when wet</td>
<td>Holds water and nutrients well; is hard when dry</td>
</tr>
<tr>
<td>Organic material</td>
<td></td>
<td>Sticky when wet</td>
<td></td>
<td>Holds water and nutrients well; should be mixed with other soil components for effective plant growth; rich in plant nutrients</td>
</tr>
</tbody>
</table>
NUTRIENT MANAGEMENT
From Manure to Crop Management!

Nutrient Management by definition means matching the nutrients in manure and/or fertilizer to crop requirements so they grow to their full potential in an environmentally friendly way.

Manure is the original fertilizer. This dates back to wild animals roaming the land, untouched by man. Manure holds nutrients that plants need to grow. WE get our nutrients from food and plants get their nutrients from the soil and the sun.

What are the 3 main nutrients in soil?

N __________ P __________ K __________

Plants need N __________ to stay green and healthy, P __________ to have a healthy root system and K __________ for protection from wilting, disease, cold and dryness.

Can you guess how much waste a sow produces daily? Answer____________________________

One human pollutes (on a volume basis) about 454 litres of clean water per day and every litre of this water must be treated!! This is a HUGE number when you consider the population of just our country. The last census shows that Canada had a population of 31,021 people x 454L = 14,083,534L of waste per person per day!! If we go by the numbers it is NOT the animals in agriculture who are the greatest users and polluters of the environment it is the human population. Good thing that the government doesn’t want to try and nutrient manage us. So back to the livestock Nutrient Management:

• One feeder hog (88kg-440kg) produces about 6.1 litres per day
• A 1200 sow barn would produce about 19,068 litres per day=42 people
• A 100 feeder hog barn would produce about 4,540 litres per day= 15 people.

So Nutrient Management guidelines also tells the farmer how much manure he has to spread and how much his soil needs to grow his crops in a responsible manner.

Soil testing and manure testing to find out how many nutrients your field needs to grow healthy and productive crops, while protecting the environment, is critical to the farm, field and the environment. This testing is also mandatory under the Nutrient Management Act as farmers are looked upon as stewards of the land. Therefore everything the farmer does should be in the interest of the land and its
improvement. When testing the soil and the manure, the nutrient that they focus on most is the amount of phosphorous in the soil.

When manure is spread on a field it is usually spread at a rate of 335 hectolitres (hl) of manure per hectare (3000 gallons/acre). That is the norm. However if the farmer finds that his soil test shows that his fields are high in any of the above nutrients the rate at which you apply the manure/fertilizer will vary with the level of the test.

**Example of a little test:**
My farm is _______ acres. We house ___________ feeder hogs. How much manure can I spread on my fields if the nutrient numbers match up properly?

So the major concerns for the **Nutrient Management Act** are:
- Proper storage and handling of manure can be a valuable resource to improve soil and provide nutrients to your crops (Stewards of the land).
- Many herd and flock health issues arise from improper storage and handling of manure and other barn wastes (avoid disease).
- Livestock waste that is not properly stored can be harmful to humans and other water supplies as well as natural habitats (avoid contamination).
- Efficiency is the proper storage and handling of manure and is your best management tool (best nourishment for you soil and crops).

**Livestock Units:**

Yes, this is the swine project so we are mostly concerned with regulations pertaining to swine. When it comes to Animal Units per acre it is interesting to see the different numbers and to ask the question – why are there different Animal Units per acre for different animals?

Livestock units? What does this term mean?

**A Livestock unit** by definition is a measure used to compare odour produced by different animals.

Back when the Government first came up with this Nutrient Management plan they assigned all livestock a “unit designation”. This means that they tested manure output for each kind of animal, the contents of the manure as it relates to greenhouse gasses and the environment, land management and manure spreading safety so that waterways and watersheds would not become contaminated and so on. Under this study every species of livestock was assigned an animal unit rating.
For example, three beef cows = 1 animal units (meaning you can house 3 cow per acre of farmland, whereas you could house 8 adult sheep equals one animal unit therefore you can house 8 adult sheep per acre of farmland. With swine see the table below.

Why the difference in number of animals per unit?

The following is the Nutrient Management numbers for ages and stages of swine:

<table>
<thead>
<tr>
<th>Type of animal</th>
<th>Nutrient Units Animal / NU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swine feeders</td>
<td>6.0</td>
</tr>
<tr>
<td>Swine sows-dry and boars non SEW</td>
<td>3.5</td>
</tr>
<tr>
<td>Swine sows-dry and boars SEW</td>
<td>3.33</td>
</tr>
<tr>
<td>Swine sows with litters non-SEW</td>
<td>3.5</td>
</tr>
<tr>
<td>Swine sows with litters SEW</td>
<td>3.33</td>
</tr>
<tr>
<td>Swine weaners non-SEW</td>
<td>20.0</td>
</tr>
<tr>
<td>Swine weaners SEW</td>
<td>20.0</td>
</tr>
</tbody>
</table>

**SEW means segregated early weaning**

So again, the Nutrient Management Act tells the farmer how many animals are allowed at any given farm site.
NUTRIENT MANAGEMENT

From Manure to Crop Management
continued…

So what are we managing if we are nutrient managing?

Under the Government Nutrient Management Act ALL farms must keep records on manure and their Nutrient Management Plan for the farm. Nutrient management does not just pertain to the manure aspect of the environment but also the number of animals allowed on a farm that produce that manure.

So we are managing:

- **Manure storage sizes** (must be able to store a minimum of 245 days as maximum benefit from the spread of manure on crop land is in the spring and summer)
- **Manure application dates and weather conditions** (best times to spread manure is on cool days when the winds blow away from neighboring residence if possible, early in the day and mid-week rather than on weekends or holidays when neighbors may have visitors)
- Amounts of manure applied to the fields (knowing your soil type, make sure the manure rate is appropriate for the land it is being spread on and protect all surface and ground water)
- Environmental risk identification (knowing your land base and what your minimum distance regulations are going to be)
- Contingency plans if something should go wrong while spreading or hauling manure.

What is a **Minimum distance requirement**?

Well, this legislation also regulates how much distance a new barn can be located from another residence or business, wells of any type, streams, waterways or standing water of any kind. The minimum distance changes with the type of livestock you are housing in your new barn. This is when they use the Animal Nutrient Units we mentioned during the last meeting to help determine what the distances will need to be for responsible manure application to the land, odour issues that arise from neighbors when spreading manure and how many animals can be housed on that one farm.

Regulations state that the **A** factor has to do with **odour** and the **B** factor is the **number of animals** that can be housed on that site by nutrient units as laid out in the guidelines above.

All farms must submit a site plan to the Government after attending the Nutrient Management course. Older farms have some issues that may be grandfathered into the plan as they have been there for a very
long time. Even older farms still may be required to change the type of manure storage they have now, depending on the type of livestock being housed. New farms that are to be built must submit the plans to the Nutrient Management group prior to building to ensure that all the measures are in place under the act.

Many farmers will rely on their builder or a consultant to do this kind of paperwork for them. One of the main issues is water source protection so this becomes part of the minimum distance issue for a new barn and especially for the manure storage facility.

Below is a table of the kind of distances that are considered appropriate when storing and spreading manure:

**Wells and waterway protection is paramount:**

<table>
<thead>
<tr>
<th>Minimum distance between the Permanent Manure storage and:</th>
<th>Distance required in metres.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilled well less than 15 metres deep</td>
<td>15</td>
</tr>
<tr>
<td>A municipal well</td>
<td>100</td>
</tr>
<tr>
<td>Other types of wells dug or bored</td>
<td>30-90 depending on what they feed</td>
</tr>
<tr>
<td>Surface water</td>
<td>50 from the flow path</td>
</tr>
<tr>
<td>Field drainage tiles</td>
<td>15</td>
</tr>
<tr>
<td>Tile inlets</td>
<td>50 from the flow path</td>
</tr>
<tr>
<td>A flood plain</td>
<td>NO building*</td>
</tr>
</tbody>
</table>

*Flood plain would require permission from the Conservation authority.

Liquid manure must be spread by a licensed tanker applicator. Manure can be put on the land in many ways. It can be injected into the soil, worked into the soil, or put on top of the land. Farmers decide how to spread their manure based on their soil and land, time of year, and the type of crop they plan to grow. Farmers need to plan this to get the most nutrients to their plants while keeping the smell to a minimum. The technology has gotten so advanced that a satellite image grid-map of a field will tell the spreader exactly how much manure needs to be applied where in the field.

**RISK Management in Nutrient Management:**

The goal in spreading manure is to be sure that it is put and stays where the plants need it. If more is applied that is needed, it could drain through the soil and enter waterways. If large amounts of manure enter a waterway it could be toxic to its inhabitants. Accidents happen, or maybe it was to be a clear day and a sudden heavy rainstorm came up.
If an accident occurs that is why under the Nutrient Management Act an Emergency contingency plan is laid out that explains how to clean up a spill right away so the least damage is done. Canadian farm practices are subject to a variety of federal and provincial laws on topics like water and environmental protection, normal farm practices and land use planning. If a farmer contaminates a waterway he can and will be charged under the law just like any other company would be.

A contingency plan should include the following:

- A list of emergency phone numbers
- A map showing surrounding dwellings and land uses.
- A list of available emergency equipment and supplies and their locations.
- A sketch of the farmstead and immediate surroundings, including emergency water supplies.
- A sketch of the area surrounding the farm, indicating where surface and subsurface drainage water would flow.
- Specific plans outlining the action to be followed in the event of a manure or fertilizer spill.

When a spill occurs:

- Eliminate the source of the spill. If the spill is from a broken line turn off the pumping equipment and if possible plug the tile outlets. Plug the leaks and reconnect broken lines.
- Contain the spill. Construct earthen berms with a scraper blade or use bales of straw or sand bags to limit the scope of the spill.
- Contact your municipality and the Ministry of the Environment immediately.
- Clean up. Take manure from the containment area and apply to land using proper application rates.

Above ALL else KEEP RECORDS!

What kind of records should the farmer be keeping?
* *
* *
* *
* *
* *
For how many years should these records be kept?________________
Odour Management

All across Canada there are a great many studies being done on Odour Management when it comes to the swine industry.

Odours are most often noticed during collection, stirring, transportation or spreading of manure on the land. While some smells are expected on farms, reducing them is always a good thing. Keeps the neighbors happy.

Barn Odour:
With the new barns designed with odour in mind. Feeder barn floors are slatted and sloped to allow manure to drop into concrete storage tanks. The new barns also make the most of sophisticated ventilation and heating systems to control air, temperature, humidity, airflow, dust and gases. The building therefore controls the amount of odour that may escape the premises. When designing new barns distance and prevailing winds also are taken into consideration to reduce the amount of odour emissions.

Manure Storage:
Properly engineered concrete manure storage structures are the most practical and economical way to store hog manure. Prevailing winds, tree shelterbelts and proximity to neighbours must be considered when locating storage to achieve better odour control. Warm weather and high humidity may temporarily increase manure storage odours. Also when manure is stirred before being pumped up into trucks for spreading will increase the amount of odour released. The manure must be stirred to ensure that all the nutrients are distributed evenly on the ground. There are currently on the market Biological and Chemical additives available to help mask odours in the manure storage structure. Depending on what you use the chemical can also help reduce nitrogen loss.

Field Application:
Manure spreading and neighbour complaints of odour go hand in hand. By watching time of day, weather conditions, day of the week and possibly your neighbour’s plans can help reduce the complaints. The highest odour emission rates occur right after spreading and last for a few hours.

New application methods have been proven to reduce the odour that is emitted my spreading. Manure injection where the manure is put right into the soil has proven to be most effective.
Research on Dietary Odour Control:
Yes, you read this correctly. There is much research on controlling odour in swine manure by controlling what the animal eats and how much of each ingredient the animal eats. The studies are based on reducing the amount of crude protein in hog rations to minimize nitrogen and phosphorus excretion losses and thus reducing manure odour. If these studies continue to show promise it will have a good economical potential for the farmer. Protein is one of the most costly feed ingredients in any livestock diet.

Other studies in progress at the time of this writing include the use of adding amino acids and enzymes to hog rations to reduce nitrogen, phytase enzymes to improve digestibility and reduce phosphorus excretion (this would be your Enviropig, which is a trade mark out of Guelph University) and various chemical and biological feed and manure additives to determine their odour control capabilities.

Farmers and Rural Communities:

Raising hogs is a full time job for most farmers. Successful hog producers work hard to:

• Produce safe, wholesome, high quality pork
• Stay current with the latest in farming practices.
• Add value to their communities
• Communicate openly about their farming practices
• Employ local people and support local businesses
• Protect the environment
• Listen and understand concerns of their neighbours and act on public input.
• Follow a code of practice for caring for their animals
• Implement Best Management Practices for many aspects of their farming operations.

*The above list is what you as a swine club member and show person need to portray to everyone that you meet when showing swine or attending swine shows.*
How Many Hats Does a Farmer Wear?

Careers in Agriculture and the Food Chain
Careers
Careers Available in the Swine Business - Leader’s Information

Suggestions to Begin this Section:
- This unit could be done as a senior unit.
- Give the members a Roll Call question if desired.
- If possible try to get a tour of a research facility, AI unit, feed mill or some other facility. This would be a great time to get speakers in that work in different sectors of the swine industry. Feed Nutritionist from a feed company, vet, AI unit salesperson etc.

ACTIVITY: Links in the Chain (on page 3)
This is an excellent way to get the members into the mind set of thinking about just how many players there are in the food chain.

Supplies: Strips of paper, Tape, Pens or pencils

Activity: Careers Research

Have each member research an area in the field that may be of interest to them, and find out the kind of qualifications that would be needed to work in their chosen field.

There are 2 websites that are available to everyone so that the members can research different areas of the swine industry. Ontario Government – type in National Occupational Classification and search the trade that you are interested in. OR www.apprenticesearch.com and they have a direct swine section and much more. This is an Canadian site that has valuable career information, including direct swine related information as well as other trades. This is an easy to use and interactive site. There is a Research a Trade sheet that can be printed off this would be great for the members when researching a career that interests them. It will guide the member in what questions to ask, education required etc. Examples of these websites are found on pages 6 and 7.

At the time of writing there are many changes going on in the swine sector so the members may find some conflicting information. For example, truck drivers used to only need an AZ licence to haul pretty much anything. That is no longer the case for sludge pumper trucks - they now require a special Technician License as well as Site Certificate, Broker Certificate and Land Application License to spread manure. This type of truck driver falls under both the Ministry of the Environment and Ontario Ministry of Food and Agriculture (OMAFRA).

On page 4, you will find sheets on which members can record their research. Further instructions for members are found on page 8.
ACTIVITY - Links in the Chain

Supplies: Strips of paper, Tape, Pens or pencils

Divide the members into groups with strips of paper, pen or pencil and tape. Have them write down and make links of everyone that is involved with the pig from the time it is born until the time it is on the dinner plate. This will get them thinking about the partners in the swine industry that you can’t be without. They are to join the strips of paper like links of a chain. The team with the longest but most correct links is the winner.

This will start discussion on all the players in the “Farm to Fork” chain. Some of the answers that will come out in the chain will focus on:

- Farmer
- Family of the farmer
- Farm gate sales persons
- Drovers/truckers
- Livestock dealers
- Contract personnel
- Banks
- Vets
- Hired help
- AI unit
- Ultrasound technician
- Research and development units
- Feed company
- Feed Nutritionist
- Trucker
- Agronomist
- Soil Science
- Crop Sciences
- Buyer
- Inspectors
- Office staff at various agencies
- Processing plant
- Butcher
- Packer
- Shipper/receiver
- Grocery store
- Employees
- Consumers etc.
Research Swine Related Careers and Trades  
www.apprenticesearch.com

In the "About Trades" section of www.apprenticesearch.com. Look through the list of skilled trades. Choose one trade that you would like to learn more about, and use the online profile to fill out this form.

Career/trade I am researching: ________________________________

Industry Sector: __________________________________________

Job Description  
What does someone in this career/trade do? What are their responsibilities?

Preparation and Training  
What kind of education does someone in this career/trade need? How long is an education or apprenticeship in this career or trade?

Workplaces  
Where could someone in this career/trade work?
Wages
How much money does someone in this career/trade make? This can be an hourly or an annual wage. Are there different levels of pay?

Where can I find more information?
Write down any websites or other resources where you could find more information about this career/trade.

Why is this career/trade appealing to me?
Write 3 or 4 sentences about why you chose to research this career/trade, and why you find it interesting. You could talk about your skills (Would I be good at this trade?), or your interests (Is it something that I am interested in?), or any other reason why this trade appeals to you.
Welcome!

What's New

Coming Soon

About the NOC

What's New:

The NOC Web site now reflects NOC 2006 information. While no modifications to the structure of the NOC took place in 2006, users can expect to find:

- Minor editorial changes made to a small number of Unit Group titles
- Review and updates performed to over 150 of the 520 Unit Group descriptions that include Lead Statement, Main Duties, Employment Requirements, Additional Information and Classified Elsewhere sections
- Modifications and/or new titles, including gender-specific titles added to the existing NOC Index of Titles

Contact us if you have questions about NOC 2006.

Coming Soon:

- We're listening! - Based on users’ feedback, a new look and added features to the NOC Web site are planned for the spring of 2007.

- The Career Handbook - Second Edition, the counselling version of the NOC, continues to be available and is currently being updated to reflect NOC 2006. Look for the revised information to appear on this site sometime in 2007.

- Does your organization need to access live NOC data? If so, contact us to learn more about our NOC Web Service that is scheduled for release in October 2006 and how this new innovation can save your organization time and money.

About the NOC:

What Does an Agriculture - Swine Herdsperson Do?

An Agriculture - Swine Herdsperson carries out feeding, health and breeding programs on hog farms and may also supervise general farm workers. In this career, you would maintain livestock performance records and perform all hog-producing work including selection, breeding, weaning, feeding and medicating the animals.

Job -Related Skills, Interests and Values

- Reading and interpreting hog documentation, feed sheets, feeding guides, government regulations and nutritionist or veterinarian
CAREERS

Careers Available in the Swine Business

If I work in the swine field, what do I want to do, and what do I need to do it?

An important first step in helping you as young people to find challenging and meaningful careers is to raise your awareness of the variety of choices available in the Agriculture and Agri-food sector today. One in five jobs today is in the Agri-food industry. An honest assessment of your own and other career choices can help you make wise decisions about your future.

Careers Research

There are two websites that describe almost every job that you can think of, including those in the Agriculture sector. The first site is [www.apprenticesearch.com](http://www.apprenticesearch.com) - go into the About Trades section and see what you can find.

Also check out National Occupational Classification, type this into Google and hit Canada and again you will find all the jobs in any sector of society that you would ever need to find.

You can talk to people who currently do the job you are interested in and find out what they had to do to get their job.

Look in your local paper for want ads or the Farm papers for want ads, call them up if possible and find out what the advertiser is looking for in an employee.

Take your Research Trade/Career paper home and choose a job to research. Find out as much as you can about the job you may be interested in and fill in your paperwork. Bring your paper to the next meeting and as a group we can discuss your chosen job and what you need to do to get that job.
CAREERS
Careers Available in the Swine Business - continued
Leader’s Information

Suggestions for this Section:
• Any further meetings of the career section are designed to be hands-on and interactive - meetings could consist of speakers from different sectors of the Swine industry, and field trips to view Swine related facilities.
• Review the career information members have researched (if this activity has been given) and discuss it.
• Arrange for a speaker panel or speaker night. Refer to the occupations listed on page three as a starting point for this activity.
On behalf of 4-H Ontario and myself I would like to thank everyone who was so very helpful and instructive in helping me to put together this Swine project.

**Canadian Pork Council**
CQA/AQC for Canadian Hog Producers Manuals and CD
Canadian Code of Practice for Environmentally Sound Hog Production
1101-75 Albert St.
Ottawa, Ont. K1P 5E7
(613) 236-9239  [www.cpc-cc.com](http://www.cpc-cc.com)

**Agriculture and Agri-Food Canada**
Recommended Code of Practices
Nutrient Management for Livestock Operations
1-866-242-4460  [www.omafra.gov.on.ca](http://www.omafra.gov.on.ca)

**Ontario Pork**
Publications Pigs, Pork and Progress
Pork News
655 Southgate Drive
Guelph, Ont. N1G 5G6
519-767-4600  [www.ontariopork.on.ca](http://www.ontariopork.on.ca)

**4-H Ontario**
Swine Project
Quality Equation 4-H Club Pack
Ag Awareness
5653 Hwy 6 N, RR 5
Guelph, Ont. N1H 6J2
1-877-410-6748  [www.4-hontario.ca](http://www.4-hontario.ca)

**Alberta 4-H Record Keeping Manual**
Dog and Horse as reference as to Composition - www.4-h.ab.ca

**Better Pork Magazine**
RR 2
VankLeek Hill, Ont. K0B 1R0
613-678-2232  [rirwin@betterfarming.com](mailto:rirwin@betterfarming.com)

**Ontario Farm Animal Council**
[www.ofac.org](http://www.ofac.org)  [www.farmissues.com](http://www.farmissues.com)

**Ontario Hog Farmer Magazine** - 1-877-358-7773
[of_edit@bowesnet.com](mailto:of_edit@bowesnet.com)
References

**Manitoba Pork Council**
Pigs in Transit
1-888-893-7447  www.manitobapork.com

**SaskPork**
How Pigs are Raised
1-866-244-7675

**Swine Nutrition Guide 2nd edition**
Written by J.F Patience, P.A. Thacker and C. F.M. deLange
Published by the Prairie Swine Centre Inc.
P.O. box 21057
Saskatoon, Saskatchewan S7H 5N9

**Ontario Soil and Crop Improvement Assoc.**
1 Stone Rd.
Guelph, Ont. N1G 4Y2
9751-9751-9751 www.ontariosoilcrop.org

**Careers in Agriculture**
www.apprenticesearch.com
National Occupation Classification site for Canada

**Agri-Food Advocate Program**
Box 460
Milton, Ont. L9T 4Z1
1510-1510-1510 www.oafe.org

**OSI Genetics**
Box 400
Innerkip, Ont. N0J 1M0
2627-2627-2627-2627 www.osi-inc.on.ca

**Swine Genetics Ontario**
RR 1, Strathroy, Ont. N7G 3H3
1-800-684-8288 www.sgo.on.ca

**Canada Plan Service**
Site devoted to livestock buildings
www.cps.gov.on.ca/english/planmenu.htm

**Fritz Concrete Inc.** - barn diagrams
RR 1
Chepstow, Ont. N0G 1K0
519-366-2253
The Merck Veterinary Manual
Morfeld. Stall Ring - flooring
www.stall-ring.de

School Science Lesson – Pig Project
www.uq.edu.au/_School_Science_Lessons/pigProject.html
loads of cool facts and short descriptions of all things swine.

Myths and Facts about Hog Production in Canada
http://collections.ic.gc.ca/hog/myths.html

Science Projects
http://www.energyquest.ca.gov/projects/thermometer.html

Indiana Extension Education Network - Biosecurity
www.ces.purdue.edu/eden/animal_youth_course.htm

PIC
PO Box 348
Franklin KY
www.pic.com

Pig Site for Virtual Pig and All General Pig Knowledge
http://www.thepigsite.com