Assuring Quality Care for Animals 2024 Good Production Practices #2, #4, #5

As a youth Food Animal producer, our responsibility for food safety is the same as all animal product producers. The foundational things we do as producers to assure the quality of the food we produce are summarized in the 10 Good Production Practices. This year we will focus on GPP 2,4 and 5.

The 10 Good Production Practices

GPP #1: Use an appropriate veterinarian/client/patient relationship.
GPP #2: Establish and implement an efficient and effective health management plan.
GPP #3: Use antibiotics responsibly.
GPP #4: Properly store and administer animal health products.
GPP #5: Follow feed processing protocols.
GPP #6: Establish effective animal identification, medication record and withdrawal times.
GPP #7: Practice good environmental stewardship.
GPP #8: Maintain workplace safety.
GPP #9: Provide proper animal handling and care.
GPP #10: Utilize tools for continuous improvement.

This document is an outline of content for Quality Assurance sessions, and, for Station 3 of Livestock Skillathons for Sheep, Swine, Dairy, Beef, and Goats.*

GPP #2

Establish and Implement an Efficient and Effective Health Management Plan

Animal health is a key to food safety. Healthier animals grow more quickly and efficiently, and generally require less medical care. Reduced medical care lowers the risk of residues and costs associated with the treatment of sick animals. Developing and implementing an efficient and effective health management plan can have beneficial impacts on animals' health through the use of measures such as vaccination plans, biosecurity protocols, and emergency preparedness.

Development of an Individualized Herd Health Plan

A herd health plan is designed to address potential and current health challenges, and to help prevent diseases from entering into your herd or flock. To implement a herd health plan, consult with your veterinarian to formulate vaccination and parasite control programs tailored to your animal, herd, or flock. Consider factors such as the disease profile of the herd, the type of production, and the type of facilities.

The plan may include (1) the different vaccinations for each phase of the operation, and (2) the treatment guidelines for common disease challenges observed on the farm. A health plan may also be helpful in preventing or controlling potential disease outbreaks.

With the help of your veterinarian, develop a periodic health check of your animals. Tailor the herd health plan to your herd or flock and target the diseases of interest. Knowing the disease status of your animals can help your veterinarian create a specific health plan to help minimize the impact of disease. Provide vaccination and parasite control to help prevent your animals from getting diseases that can affect their rate of growth and overall performance and well-being. When purchasing an animal, make sure to ask for vaccination and parasite control (such as deworming) records.

Development of a Herd/Flock Level Biosecurity Plan

Biosecurity is a combination of management practices designed to prevent the introduction and transmission of diseases and disease-causing agents into a herd or flock. A biosecurity plan includes (1) barn sanitation, (2) rodent control, (3) caretaker entry policies, (4) visitor entry policies, and (5) general farm security measures. All biosecurity measures should be focused on the prevention of the entry of unwanted diseases. A biosecurity plan should be in place regardless of the number of animals you have.

Disease pathogens can move from one farm to another through the following:

1. *Rodents, wildlife, and birds* – Non-farm animals can transmit diseases or disease agents.
2. *Pets* – Keep cats and dogs out of the barn, as they can bring in disease if allowed to wander to neighboring farms where there could be sick animals.
3. *Vehicles and equipment* – Disease pathogens may be present on vehicles or equipment. (i.e. sharing show equipment or borrowing scales)
4. *Humans* – Humans can transmit diseases. (i.e. visiting multiple farms in one day when looking at pigs)
5. *New animals* – Introducing new animals or animals that have been off-site. (i.e. taking goats to weigh-ins and bringing them back to your goat herd)
6. *Clothing and shoes* – Clothing and footwear can be sources of disease agents. (i.e. wearing the same boots from one farm to the next without cleaning and disinfecting them between visits)
7. *Air* – Wind and air movement may transmit some pathogens.

Examples of how to implement External Biosecurity – Keeping diseases out of the herd.

1. Control wildlife and pests to prevent contact with your animals with use of perimeter fencing and bird screening.
2. Before purchasing new animals, discuss with your veterinarian a health maintenance program you should start when the new animals get to your farm.
3. When possible, establish an isolation facility or area for quarantining new animals at your farm that is remote and/or isolated from the existing animals.
    a. New animals should be quarantined for at least 10 days before integrating them into the herd or flock.
    b. During the quarantine period, observe and test for diseases, vaccinate, medicate, and acclimate the new animal(s) as recommended by your veterinarian.
4. Limit the number of visitors to your facility and minimize their contact with your animals. Question them about recent contact with other animals and downtime.
    a. Visitors should be away from the same species of livestock at least 24 hours.
5. Consider supplying disposable plastic boots to all visitors.
6. Require everyone to wash hands before entry into animal areas.
7. Change clothes and boots after visiting other farms, livestock markets, or exhibitions before entering your facility.
8. Limit equipment and tools to those that have been cleaned and disinfected if used on another farm. (i.e. Be sure to clean and disinfect scales if taking from farm to farm to weigh animals. This is true for large animal scales as well as small scales to weigh poultry and rabbits.)
9. Clean and disinfect your truck and trailer, or any type of crate or carrier, after each use.

Examples of how to implement Internal Biosecurity – Keeping diseases already in one or more sections of the herd or flock from spreading to other sections.

1. Work with your veterinarian to periodically survey your herd or flock for different disease challenges.
2. When possible, operate all-in/all-out when cleaning and disinfecting between groups of animals.
3. Establish a traffic pattern for both animals and people that prevents exposure of younger animals to older animals, their manure, or people who have recently been in contact with them.
4. Provide dedicated boots and coveralls at strategic sites in the facility. Wash hands when boots or coveralls are changed. If boot disinfection is difficult, use disposable plastic boots.
5. Practice proper room, pen, coop, and barn sanitation.
    a. An effective internal biosecurity plan includes a complete cleaning and disinfecting of each pen, coop, or building between groups of animals.
    b. Completely remove all organic materials and use compatible soaps and disinfectants to effectively kill harmful organisms.
    c. Allow the pen, coop, or building to dry completely before putting a different or new animal or the next group of animals in it. Complete drying further reduces the chance that disease-causing agents will survive until the next animal(s) arrive.

Foreign Animal Disease (FAD) and Agro-terrorism Awareness, Reporting and Prevention

Producers should increase their awareness of foreign animal diseases (FADs) and report all suspect cases to the Ohio Department of Agriculture. Producers should take special precautions to prevent the accidental or intentional introduction of FADs onto their farms and report all suspicious activities to local law enforcement. Producers and exhibitors need to be aware of zoonotic diseases, especially influenza, which can be passed from animals to humans.

GPP #4

Properly Store and Administer Animal Health Products

A primary responsibility of all adult and youth food animal producers is to produce safe food. Freedom from drug residue violations is a component of food safety. It is imperative to know where information can be found about withdrawal times, how to calculate when the withdrawal is complete and when it is safe to market an animal. Everyone responsible for the care of animals must be instructed on methods used to follow label directions, identify treated animals, and record treated animals. Accurate recordkeeping will allow anyone to quickly determine the correct withdrawal time has elapsed before animals leave a location. All food animal producers are responsible for following label directions or directions provided by a veterinarian medicating their animals under a veterinarian/client/patient relationship (VCPR).

Responsibilities for Properly Administering Products

Everyone – exhibitors, parents, guardians, caretakers – are responsible for properly administering products to their animals. It is your responsibility to

1. Read, understand, and follow label directions when giving any medication.
2. Develop a medication record and animal ID system so all caretakers know the medication status of animals prepared for harvest.
3. Identify all treated animals (refer to GPP #6).
4. Keep records for making judgments about marketing animals that have been treated.
5. Use medication records to determine when withdrawal times have been completed.
6. For exhibition animals, record any medication given on your Drug Use Notification Form

Drug Labels

1. Drug labels provide important information to producers and must be read and understood before giving any medication.
2. If the medication is being used in an extra-label manner, the use/restrictions from your veterinarian should be observed rather than the label instructions.
    a. Remember that extra-label drug use in feed IS NOT an option! It is illegal!
3. You will find valuable information about the medication, including the administration technique on the drug label.
4. Drug labels contain the following: Trade Name, Active Ingredient, Indications, Dosage, Direction for Use, Cautions and Warnings, Withdrawal Times, Manufacturer's Lot Number, Expiration Date

Drug Storage

1. Follow proper drug storage instructions indicated on the label.
    a. Always check the drug label for proper storage instructions.
    b. Most medications require storage in a clean, dry, and dark location.
    c. Medications are perishable, and therefore must be protected from damage and stored under the right conditions to remain effective.
    d. Rotate inventory to avoid accumulation of out-of-date products.
    e. Routinely monitor and record refrigerator temperatures.
2. Temperature extremes or exposure to sunlight may decrease the strength of a stored drug.
    a. Some drugs are best stored at room temperature.
    b. Most vaccines and some antibiotics should be refrigerated at 40° F – 45° F.

c. As a rule, once a bottle of medication has been opened it should be stored in a refrigerator unless specifically directed by the label or your veterinarian.

3. Medications lose their effectiveness over time.
    a. Only purchase enough medication that will be used before the expiration date.
    b. Rotate the inventory to use the bottles/packages with the shortest expiration date first.
    c. Check products regularly to make sure they have not expired, and properly discard those that have.
    d. Label directions will state, "use the entire contents immediately when opened." for many vaccines.
4. Maintain the identity of all medications.
    a. Store the medication in the original container with the product label.
    b. If a medication must be placed in another container, clearly label it immediately to prevent misidentification.
5. Avoid withdrawing an injectable medication and storing it in a syringe that is not labeled for a later treatment.
    a. Unlabeled syringes may have medication in them that could be mistaken for another medicine. This will result in a poor treatment response and mistakes in withdrawal times.
6. Syringes do not provide protection from contamination and sunlight that a colored glass vial provides.
7. Syringes that have been cleaned and disinfected may have a soap or disinfectant residue that can inactivate the drug of vaccine left in them over time.
8. Prevent contamination by storing medication appropriately.
    a. Keep injectable medications in a tightly sealed, clean bottle.
    b. Clean the rubber stoppers before inserting the needle into the vial.
    c. Use only clean and sterile needles to withdraw contents from multi-dose vials.
    d. Dirty needles can contaminate the contents of the vial.
    e. Contamination of the contents can cause injection-site reactions and abscesses.

Administering Medications

Exhibitors, parents, guardians, and producers are all responsible and should work together as a team for proper administration of medications to animals. When drugs are administered properly and recorded, exhibitors will avoid drug residues. Record any medication give to exhibition animals on your Treatment Record, and if needed, on your Drug Use Notification Form.

Methods of Providing Medication to Animals

1. ***Oral*** – medications given through the mouth

a. With oral medications there is no risk of broken needles or injection-site reactions. b. Oral medications include tablets, pills, capsules, pastes and liquids.

1. Drenching tubes, balling guns or oral dose syringes are used to place the liquid or pill at the base of the tongue at the back of the mouth.
    a. Consult a veterinarian for proper technique to avoid administering medication into the lungs.
2. Medication can also be administered through the water and/or feed, especially when a large number of animals are medicated.
    a. These routes are less stressful to the animals as well as the people giving the medication.
    b. Add, per instructions on the label, medications to animals' drinking water.
3. Medications can be added through a central watering system that has a water medicator installed in the supply line.

4. Individual animals or small groups of animals can be medicated using their current watering systems provided these animals only have access to the medicated water.
5. When treating animals for multiple days in a row, medicated feed may be the method of choice.
6. You must follow all instructions on the feed tag or delivery slip when using medicated feeds.
7. Remove any residual feed from bins and feeders before adding the medicated feed.
    a. Medicated feed should be introduced to the affected animals rapidly and in the proper concentration.
    b. Monitor animals' feed intake because medication must meet healing levels to be effective.
8. If daily feed intake is shortened whereby animal is not eating as much, the medication may not meet the healing levels.
9. Extra-label drug use in feed is ILLEGAL! It is NOT AN OPTION!
    a. Be sure to do the math when putting medication in water or feed for fewer numbers of animals than the instructions listed on the label. Calculate the correct amount of medication to add to the water or feed. Do not over or under medicate!
    b. Individual oral treatment may be necessary for certain bacterial diseases because it is the only route that can guarantee beneficial levels of medication.

2. ***Topical*** – applied on the skin or on the mucous membranes of the eyes, ears, or nasal passages
a. Medications are available as ointments, sprays, dusts, pour-ons, and dips.
b. Most of the topical medications are for parasite control.
c. Check if product is approved by FDA for use on food animals.
d. Take care to prevent chilling of animals when using sprays or dips in cold weather.
e. Use appropriate protection (gloves, masks, etc.) when applying certain topical medications.

3. ***Injection*** – using an infusion method, typically with a syringe and needle, to deliver medication
a. Injections are useful when treating individual animals.
b. Injections may be the only way of medicating animals that are too sick to eat or drink.
c. Injections may be the only option if the medication prescribed is poorly absorbed from the gut.
d. Proper identification of the subject animal(s) is paramount.
e. Proper restraint may be necessary when giving injections.
f. Injections present a risk of broken needles and injection-site reactions.
g. Select the proper site for an injection. Only inject into clean, dry areas.
h. When administering injections to animals, a producer should give subcutaneous injections instead of intramuscular injections when the label guidelines allow. 1. Subcutaneous injections lower the risk of damage to muscle, and subsequently to the meat produced from that animal.
i. Learn and use injection administration techniques under the guidance and direction of a veterinarian for your respective species of animals.

Types of Injections:
Intramuscular (IM) – in the muscle
Use a spot on the neck just behind and below the ear, but in front of the shoulder. Do not use a needle to inject in other areas unless directed by a veterinarian, as there may be some bleeding and bruising of the muscle followed by abscesses or scarring. Scars can stay in the muscle for the life of the animal and be a blemish in the cut of meat, thus damaging the food products. A veterinarian and packer can help to determine acceptable alternate methods to avoid carcass defects, which impact valuable meat cuts in the carcass. Use the proper gauge (size) and length of needle to ensure the medication is deposited in the muscle and not in other tissues. Use IM injections when indicated as the best route of delivering the medication according to the label.

Subcutaneous (SQ) – under the skin
Make sure the injection site is dry and clean to avoid infections. Use the proper size and length of needle and angle to avoid injecting into the muscle. Injecting into the muscle changes drug metabolism and withdrawal times. Most ideal injection sites are in the flank or neck regions or behind the elbow where loose skin is present. Tent the skin and inject into a pocket created under the skin, away from the site of skin puncture.

Implants – inserted via subcutaneous injections given in the ear of cattle
Needles must be clean and sharp. The ear should be clean and dry to prevent infection and to get greater utilization of the implant. Proper placement of the implant is in the middle one-third of the backside of the ear. Work with a veterinarian or animal health supplier to design an implant strategy for the operation. With FDA approved implants, there are no withdrawal times for harvest.

Intraperitoneal (IP) – in the abdominal cavity
This technique a SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION and guidance as serious injury, including death, can occur.
Intravenous (IV) – in the vein
This technique a SHOULD BE USED ONLY UPON VETERINARY INSTRUCTION and guidance as serious injury, including death, can occur.
Intranasal (IN) – in the nasal passages
Withdraw the product from the bottle using a syringe and needle. Remove the needle from the syringe. Use the recommended application tip for administering the product. Keep the animal's head tilted upward during and immediately following administration to help the product be inhaled into the deep nasal passages.
Intramammary Infusion – in the udder through the teat canal
Clean and disinfect each teat. Insert only the tip of the cannula (small tube specifically made for insertion into teat canal) into the teat canal for treatment. Infusing a drug into one teat affects the milk produced in all areas of the udder.

Appropriate Needle Usage

1. Evaluate the quality of the needle you are using – all three parts – the hub, shaft, and bevel.
    a. No chips, cracks, burrs
    b. Make sure it is not bent
2. Provide needle-use guidelines that address the following
    a. Use proper animal restraint.
    b. Select the proper site and technique for injection.
    c. Select the proper size and length of needle according to (1) the species, (2) the animal's age, (3) the injection site selected, and (4) the characteristics of the product to be injected.
3. Use the smallest gauge needle possible.
    a. A 20-gauge needle is smaller in diameter than an 18-gauge needle.
4. Change the needle when appropriate to maintain cleanliness and sharpness.
5. Needles should be changed between each animal to avoid spread of blood-borne diseases.
6. Retrieve dropped needles and immediately properly dispose of them.
7. Take measures to minimize the loss of needles in areas occupied by the animals.
    a. Packers report finding needles lodged in the tissues around the mouth and throat of animals.

b. It is your responsibility to inform buyers or processors of any animal potentially contaminated with a needle.

8. Change bent needles – NEVER straighten a bent needle. Always carefully remove and replace it.
   a. Disposable needles rarely break during initial use. However, the needle shaft is much more likely to break if it has been bent during an injection, straightened and used again, or after repeated use.

Disposal of Used Needles, Surgical Knives and Syringes

1. Used needles, knife blades, and syringes are called sharps.
2. Sharps must be disposed of properly following use to prevent environmental contamination and injury to fellow workers, children, waste handlers and livestock.
3. Dispose sharps in a rigid puncture-resistant container immediately after use.
   a. You can purchase "sharps" containers from many farm supply stores, safety supply houses, drug stores or veterinarians.
   b. Regardless of the container type, it should prevent the penetration of needles through the container surface.
   c. Do not use glass containers as they are more likely to break in the disposal process.
4. Sharps containers must be clearly labeled as a biohazard waste container not for recycling.
5. Securely tighten and seal the cap or lid with heavy tape once the container is full.
6. Ask your veterinarian or local hospital if they accept farm-generated medical wastes for disposal of these containers.

Disposal of Animal Health Products

1. All animal health products, including antibiotics, must be properly handled and disposed of to minimize environmental exposure.
2. Do not put unused antibiotics in sewage systems, as they are not designed to remove the antibiotics from the discharge water.
3. Regulations for disposal of unusable antibiotics vary from state to state.

a. Unless specifically prohibited by local regulations, unusable or unwanted antibiotics should be discarded in a commercial sanitary landfill.

Needle Size and Selection Subcutaneous		Intramuscular	
Gauge	Length	Gauge	Length
Baby Pigs	18 or 20	5/8 in or 1/2 in	
Nursery Pigs	16 or 18	1/2 in	16 or 18	3/4 in or 5/8 in
Finisher Pigs	16	1 in	16	1 in
Sows or Boars	14 or 16	1/2 in to 3/4 in	14 or 16	1 in or 1-1/2 in
Calves (<300 lbs)	18-20	1/2 in to 3/4 in	18	1 in or 1-1/2 in
Calves (300-700 lbs)	16-18	1/2 in to 3/4 in	16-18	1 in or 1-1/2 in
Calves & Dairy Cattle (<700 lbs)	16-18	1/2 in to 3/4 in	16	1 in or 1-1/2 in
Sheep and Goats	18-20	1/2 in to 3/4 in	18-20	1 in
Small Animals (all ages)	20-22	1/2 in	20-22	3/4 in or 5/8 in

GPP #5

Follow Proper Feed Processing Protocols

Protecting the health of an animal and the quality of consumer products starts with selecting and feeding high quality feeds. What an animal eats will affect growth, health, economic return and food safety. Accidental contamination or mistakes made while mixing feeds can cause health problems in animals. These contaminants could also be found in meat, milk, or egg products, thereby exposing the chemical to consumers.

Only purchase feed with a Guaranteed Analysis listed on the feed tag. For ruminants (beef, dairy, sheep and goats), ruminant-derived protein feeds are NOT allowed to be fed under current federal law. Obtain a Feed Suppliers Confirmation Form, which is a form from your feed supplier that says no ruminant proteins are in the product you will be feeding. Keep this form on file in case you need it.

As a Producer, it is important to have an awareness of proper hygiene when handling feed, techniques for mixing and using both medicated and non-medicated feeds, proper labeling, and recordkeeping practices.

The next section of information is an overview of the manufacturing practices that the company manufacturing your feed is following to assure you are purchasing a safe product to feed your animal.

Current Good Manufacturing Practices (cGMPs)

A set of guidelines for processing medicated feed, referred to as current Good Manufacturing Practices (cGMPs), is designed to (1) prevent feed contamination and (2) to provide reasonable assurance the medicated feed is manufactured accurately. The cGMPs must be followed to help ensure safe, wholesome meat for human consumption. Current Good Manufacturing Practices provide standards for Buildings and grounds, Equipment, Workspace and storage areas, Product quality assurance, Labeling, and Recordkeeping. Each standard is set to assure the medicated feed products are suitable for feeding livestock intended for human consumption.

Here are some examples of the protocols taken by feed manufacturers to ensure a quality feed product. This is only a partial list of the current Good Manufacturing Practices.

- Prevent accumulation of dust that could contaminate finished feeds and present a fire hazard.
- Construct premises to ensure access to preventative maintenance ease of operation, maintenance, cleaning, pest control and minimize feed contamination.
- Employ inspection and control procedures to secure compliance with required standards for production, storage and transport of feed and feed ingredients.
- Clean up spills, fix leaks in equipment and prevent build-up of feed ingredients.
- Check scales to ensure they are accurate and functioning properly.
- Clean feed mixing and handling equipment between medicated and non-medicated feed usage.
- Keep feed work areas separated from equipment or storage used for herbicides, pesticides, fertilizers and ingredients not intended for inclusion in feeds.
- Utilize precautions to minimize spoilage and condensation and limit fungal and bacterial growth.
- Collect and test feed samples for composition and consistency. Consult with your feed supplier to administer these tests.
- Use pathogen-control procedures where appropriate.
- Samples of ingredients and finished feeds should be taken, identified appropriately, and stored for six months.

- Keep feed inventory records so you can both trace back and trace forward each batch of ingredients to the group of animals that consumed the feed.
- Maintain records regarding production, distribution and use of feed and feed ingredients.

Medicated cGMPs – Special Requirements

In addition to the cGMPs listed above for general feed manufacturing, there are special requirements for use when manufacturing medicated feeds. It is critical to follow these special requirements to ensure animals receive the proper dosage of medication.
When manufacturing or mixing medicated feed, it is critical that the feed contains the proper concentration of medication. Too low of a concentration may not have the desired effect on an animal. Too high of a concentration may cause negative health effects or excessive residues that last beyond the labeled withdrawal times.
Remember that extra-label use of medicated feeds is ILLEGAL.

As a Producer it is your responsibility to
a. Follow withdrawal times carefully.
b. Keep written records of medicated feed used
c. Keep feed records for one (1) year for swine, sheep, goats, and poultry; and two (2) years for beef and dairy after the animals are marketed.
d. Record any medicated feeds given to exhibition animals on your Drug Use Notification Form (DUNF)

Feed Additives

Feed Additives are substances added to feed rations to improve feed efficiency, promote growth or treat disease.

a. Accurately calculate dosage.
    1. Is each animal receiving the same dose?
    2. Calculate dosage for the average weight or average feed intake for the pen of animals according to the label.
b. Read label carefully.
c. For FDA-regulated feed additives answer the following
    1. Is the feed additive approved for the species?
    2. Is the feed additive approved at the level being fed?
    3. Can the feed additive be fed to label directions?
d. For non-FDA-regulated feed additives
    1. What is the appropriate level to feed?
    2. Will too much feed additive have negative consequences?
    3. What information or data supports the claim of the product?
e. Licensed veterinarians, feed manufacturers and producers may order, produce or use drugs in feeds only if the following conditions are met
    1. The drug is approved by the Food and Drug Administration (FDA)
    2. The drug is used in the manner for which it was labeled and approved
    3. As provided by FDA feed mill license, where applicable

Reading a Feed Product Label

Feed labels are regulated by USDA unless medications are added. The FDA is the regulatory agency for medicated feed labels. Labels must appear on all commercial feeds and ingredients.

The feed label will be in this format:

Brand and/or Product Name

Intended Species and Production Phase

Medicated Statement – must appear below product name if medication is used, as well as a statement of purpose for the medication, which is followed by a listing of active ingredients with their amounts.

Guaranteed Analysis – required, followed by a listing of nutrient analyses required for the product and species; must list "not less than (minimum) or not more than (maximum)" depending on the nutrient.

Ingredients – listing of each ingredient in order from highest to lowest concentration.

Feeding Directions or Mixing Directions – instructions for feeding or mixing the product

Warning or Caution Statement – includes medication used and withdrawal time; provides instructions with statement.

Manufacturer's Name and Address

Net Weight – indicates the weight of the product.

Read the feed label before feeding your animals! Know the age and type of animal being fed and its nutrient needs, which may change throughout its life cycle. Look closely to see if there is an active drug ingredient and what the withdrawal time is.