Swine Health

CHARLES T. ESTILL, VMD, PHD, DIP. ACT

Oregon State University Extension Service
Healthy pigs start with a healthy sow!

- Good maternal line genetics
- Careful attention to nutrition
- Parasite control
- Manage the environment
  - Reduce stress by acclimating sows to human contact
  - Move to farrowing pen 3-4 days before expected farrowing
  - Temperature and humidity control
    - ventilation
  - Provide nest material and place cover over crate before and after farrowing
The newborn pig has three basic requirements:

- A good environment;
- Adequate and regular nutrition
- Safety from disease and crushing

Individual attention pays off!
Care of newborn pigs

- Weak pigs get crushed so move them away until they are stronger.
- Creep areas on both sides of the sow keeps pig out of the ‘danger zone’. Use a 175W radiant heat lamp. Check temp at pig level.
  - Newborns need 90°F
- Lighter, smaller pigs need extra attention
  - Heated creep boxes, carpet, deep shavings
Evaluation of newborn baby pigs

- Was gestation full term?
- Is the amniotic fluid clear or meconium stained?
- Is the pig trying to breathe?
- Is the pig moving with good strength?

If you answered **YES** to all 4 questions, leave the piglet alone!
Tube feeding pigs

- It is easy – learn how to do it!

- Equipment
  - Colostrum (any species but pig is best)
  - Rubber tube (12-14 Fr red rubber)
  - Syringe (20 ml)

- Procedure
  - Draw up about 10-15 ml ‘milk’ in a 20 ml syringe
  - Lubricate tube and push end over base of tongue and allow pig to swallow
  - Verify placement
  - Attach syringe and slowly inject ‘milk’
  - Pinch tube as it is withdrawn
Tube feeding baby pigs
First procedures for piglets

- The navel should be disinfected the day pigs are born using tincture of iodine.
- If possible, equalize litter size.
  - If several sows are farrowing within a 24-hour period, pigs can be transferred successfully from one sow to another.
  - Transfer bigger pigs in the litter, not the runts.
  - Best results occur if pigs are transferred the first 3 days of life and have received colostrum before transfer.
- Pig less than 2 lbs are at risk of death
Cross fostering

- Piglet weight variability contributes to mortality
- Foster litters according to piglet weights not just number of pigs in the litter
- Fostering has its downside
  - May not suckle
  - Piglets fight more
  - Increase sow aggression
  - Inhibits sow milk let-down
Heat for pigs

- Heat lamps
  - Attracts pigs to light and warmth
  - Hover
  - Mats
  - Heated floor
- Needs to be 85-90°F
- No drafts—solid walls or pens
What’s normal piglet behavior?

- Nurse about 15 times in first 24 hours of life
- Consume 15 mL /feeding
  - $15 \times 15 = 225 \text{ mL}$ (1/2 pint!)
- Cold or a delay to first nursing contribute to death and disease losses
What’s NOT normal piglet behavior?

- Lethargic- does not get up to nurse with rest of litter
- Isolated away from sow or heat source
- Moving from nipple to nipple looking for milk
- Cold, flat, purple
- Vomiting or diarrhea
Processing baby pigs

- Usually done between 1 and 14 days old
- Less stressful when done at a young age
- Castration, teeth clipping, tail amputation, ear notching, iron injection
Processing baby pigs

- Castration
  - To make management easier and prevent boar taint
  - Castration at 14 days results in less negative behavior change (reduced nursing, increased lying) and heavier pigs at weaning with better subsequent weight gain compared with pigs castrated at 1 day of age
Castration
Processing baby pigs

- Clipping needle teeth
  - Done because the sharp teeth can damage the sow’s udder and other pigs and prevention of greasy pig disease
    - Pigs fight to establish ‘ownership’ of a teat
    - Can cause broken teeth, jaw infections, joint infections, poor doing pigs
  - Many producers have stopped clipping teeth with no untoward effects – give it a try!
    - Expect more facial injury but usually of no concern
    - Many depend on aggressiveness of your line of genetics
Processing baby pigs

- **Tail amputation**
  - Done to prevent tail biting in growing-finishing pigs especially in confinement
  - Tail removed $\frac{1}{2} - \frac{3}{4}$" from base of tail
    - Emasculator, wire cutters, scalpel, hot docking iron (less stress response)
  - Do NOT do on day of birth – wait until pigs have ingested colostrum (do on day 3 with iron shot)
Processing baby pigs

- **Iron injections**
  - An important and essential procedure for confinement raised swine
  - Not giving iron and result in anemia, scours, poor health
  - Most important for fast growing pigs
  - Give 1 cc on day 2-3 and another at day 14 OR give 1.5 cc on day 2-3. Avoid injection on day of birth.
  - Oral iron is OK also
Care of the sow after farrowing

- Begins with good care before farrowing
  - Comfortable, good feed, plentiful water
  - Sow/gilt vaccinations to protect pig from diarrhea
  - Parasite control
  - 3-4 day adaption period to farrowing facility
  - Too bad we lost gestation crates!

- Good care at farrowing
  - Comfort is a top priority
Care of the sow after farrowing

- When sow stops straining and shows interest in her litter you can assume she is done.
- Placentae are passed shortly after last pig or up to 12 h later:
  - If you do not see placentae in 12 h there may be another pig so check her.
  - If she continues to strain or has a smelly discharge check for another pig.
Care of the sow after farrowing

- Most sows eat very little for up to 48h post farrowing - this is normal
  - Provide no or very little feed the day of farrowing
  - By the day after farrowing increase feed up to 10-12#
  - Expect sow to drink 4-5 gallons/day – check waterer
Questions???

We have competition!
Which vaccines should I consider?

- Should be a decision made on a case-by-case basis by the producer in collaboration with his/her veterinarian.
- Consider several factors:
  - Risk of infection
  - Efficacy
  - Cost/benefit analysis
  - Public health and market access considerations
General recommendation for all producers

- A combination leptospirosis/parvovirus/erysipelas vaccine should be given twice, at least two weeks apart, to all incoming breeding animals.
- It should also be given to all sows at weaning and to boars twice annually.
Prebreeding vaccinations

- **Leptospirosis** (lepto) is a disease which can cause abortion.
- Sows and gilts should be vaccinated against *Leptospira* bacteria before breeding.
- Lepto vaccines call for gilts to be vaccinated twice before breeding, while sows should receive a single booster vaccination at every weaning.
Prebreeding vaccinations

- **Atrophic rhinitis**
- Characterized by sneezing, snorting, and sometimes nosebleed.
- Progresses to distortion of snout
- Inapparent carriers
- Sows are vaccinated at 4 and 2 weeks before farrowing
Prebreeding vaccinations

- **Erysiplothrix** (swine erysipelas)
- Affects growing or adult swine
- May cause enlarged joints, lameness, heart disease, skin lesions, high fever, sudden death
- Many healthy swine are carriers
Prebreeding vaccinations

- **Parvovirus (PPV)** causes reproductive failure characterized by mummified fetuses, return to estrus, small litter, NIP, and rarely abortion
- More likely to affect gilts
- Dam is not sick
- Occurs everywhere
- Vaccinate twice, two weeks apart, several weeks before breeding
Prebreeding vaccinations

- Colibacillosis (E. coli diarrhea)
- NOT 0157:H7
- Occurs in young piglets within a few days after birth and usually within the first week. Other cases are observed later in the nursing period and just after weaning.
- Pregnant sows/gilts are vaccinated twice at 3 weeks apart with the last dose at least 2 weeks before farrowing.
- Booster for each litter
Vaccinate for the following diseases only if they have been diagnosed and if the vaccine is felt to be cost-effective:

- Actinobacillus pleuropneumoniae
- Clostridium perfringens
- Encephalomyocarditis (EMC) virus
- Haemophilus parasuis
- Mycoplasma hyopneumoniae
- Porcine reproductive and respiratory syndrome (PRRS)
- Rotavirus diarrhea:
- Salmonella
- Streptococcus suis
- Swine dysentery (bloody scours)
- Swine influenza virus
- Transmissible gastroenteritis (TGE)
piglet vaccinations

Birth 3 days 7 days 14 days 21 days 28 days 42 days

RespisureOne
Rhinishield TX4 or Toxivol AD&E
Inglevac Circoflex
Rhinishield TX4 or Toxivol AD&E
Inglevac APP-ALC (optional) booster 3-4 wks
PIG PARASITES
(WORMS AND BUGS)

Charles Estill, OSU Extension Veterinarian
Signs of parasitism

- Loss of appetite
- Reduced rate of gain (2-21%) 
- Poor feed utilization (3-6%)
- Cough
- Diarrhea
- Death
- Potentiation of other bugs that cause disease
- Reduced carcass value
Small intestine parasites

- Threadworm (Strongyloides ransomi)
Large roundworm

- *Ascaris suum*
- Most important swine parasite
- Can potentiate flu and pneumonia
Zoonosis of *Ascaris suum*
Trichinella

- Can infect any mammal
- Usually infects swine and bears
- Regulation of garbage feeding (1960s) has drastically reduced incidence in US
Parasites of the cecum and colon

- Whipworms (Trichuris suis)
- Nodular worms (Oesophagostomum)
**Trichuris suis**

- *Trichuris suis* is the whipworm of pigs
  - very common in Oregon
  - adult parasites weave their long neck into the lining of the LI and cecum
  - Anemia, diarrhea, stunting of growth, and death occur from weaning to 4 months
  - Dx by finding typical whipworm ova → bipolar with golden brown color
- Associated with proliferative enteritis
- Treat with Ivomec, Dectomax, or Safeguard (in feed for 3 days)
Nodular worm

- **Oesophagostomum dentatum**
- Adult is 1 – 2 cm long and creamy white
  - Lives in large intestine lining
  - Causes granulomatous lesions from repeated exposures
  - Lesions in LI cause loss of its use as sausage casing
  - Treatment with Ivomec or Dectomax
Lungworms

- Metastrongylus spp.
Treatment and Control

- Ivomec, Dectomax, Atgard
- Regular deworming prior to farrowing and deworming growing piglets at 8 – 10 and 16 weeks beneficial
- Pigs on dirt are more commonly affected
  - raising on concrete or wire will reduce
  - keeping clean pigs on clean pasture will decrease build up and transmission
- Larvae are infective to humans, but not a common occurrence
- Good hygiene around pigs should be practiced
Swine Protozoa (tiny guys)

- **Coccidia - Eimeria spp.**
- very pathogenic in small pigs
- Diagnose at necropsy
- Fecal floats for chronic coccidiosis
- Difficult to treat effectively - treatment with sulfas individually for 5 days in baby pigs
  - Thorough sanitation of farrowing area and weaning area
Parasite control

- **Sanitation**
  - Easier on concrete
  - Parasites need moisture and warmth

- **Drugs**
  - Often only a temporary solution
  - Routine deworming advised if farm history indicates
  - Treat sows 10-14 days prefarrowing
  - Treat pigs at 3 and 6 weeks of age then 3-4 weeks after weaning

- **Nutrition** - especially vitamins and protein
Parasite control

- Wash sows with a mild soap solution immediately before placing them in the farrowing house. Give special attention to the udder and feet.
- Keep farrowing pens clean and free of manure to prevent exposure of baby pigs to large numbers of worm eggs and parasite larvae.
- Avoid using permanent pastures or dirt lots. If temporary pastures are not available, rotate permanent pastures yearly or renovate pastures periodically.
Parasite control

- Use well-drained areas for lots and pastures. Avoid formation of mud holes. Avoid overstocking lots and pastures.
- Provide adequate nutrition to minimize the effect of parasitism and to reduce the tendency of pigs to search and root for food.
- Do not feed raw or improperly cooked garbage or table scraps to swine (to prevent trichinosis).
# Swine dewormers

<table>
<thead>
<tr>
<th>Deworming Agent</th>
<th>Roundworms</th>
<th>Nodular Worms</th>
<th>Whipworms</th>
<th>Lungworms</th>
<th>Threadworms</th>
<th>Kidney Worms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piperazine</td>
<td>75-100%</td>
<td>50%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hygromycin B(^1)</td>
<td>95-100%</td>
<td>95-100%</td>
<td>85-100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dichlorvos(^2)</td>
<td>99-100%</td>
<td>95-100%</td>
<td>90-100%</td>
<td>0</td>
<td>60-80%</td>
<td>0</td>
</tr>
<tr>
<td>Levamisole(^3)</td>
<td>99-100%</td>
<td>80-100%</td>
<td>60-80%</td>
<td>90-100%</td>
<td>80-95%</td>
<td>80-100%</td>
</tr>
<tr>
<td>Pyrantel(^4)</td>
<td>96-100%</td>
<td>88-100%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thiabendazole(^5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>100%</td>
<td>0</td>
</tr>
<tr>
<td>Fenbendazole(^6)</td>
<td>92-100%</td>
<td>99-100%</td>
<td>94-100%</td>
<td>97-99%</td>
<td>variable</td>
<td>100%</td>
</tr>
<tr>
<td>Ivermectin(^7)</td>
<td>90-100%</td>
<td>86-100%</td>
<td>variable</td>
<td>99-100%</td>
<td>99-100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\(^1\) Tradename - Hygromix, Elanco Products Co.
\(^2\) Tradename - Atgard, SDS Biotech Corp.
\(^3\) Tradename - Tramisol, American Cyanamid Co.
\(^4\) Tradename - Banminth, Pfizer, Inc.
\(^5\) Tradename - TBZ, Merck and Company, Inc.
\(^6\) Tradename - Safe-gaurd, Hoechst-Rossel Co.
\(^7\) Tradename - Ivomec, Merck and Company, Inc.

**Footnotes**


**Dectomax** roundworms, nodular worms, lungworms, threadworms, kidney worms, sucking lice, mange
External Parasites of Swine

- Hog lice
- Mange
- Ticks
- Stable flies
Hog lice

- Most common external parasite
- More of a winter problem
- Irritate skin especially legs and skin folds behind ears
DECTOMAX® Injectable Solution
(doramectin)
Injectable

Description

DECTOMAX® Injectable Solution is a ready-to-use, colorless-to-pale yellow, sterile solution containing 1% w/v doramectin (10 mg/mL). In swine, DECTOMAX is formulated to deliver the recommended dosage (300 mcg/kg of body weight) when given by IM injection at the rate of 1 mL/75 lb of body weight.

Approved Uses

DECTOMAX Injectable Solution is approved for:

- The treatment and control of internal and external parasites of swine.
- It is safe for the use in swine of all ages, including breeding stock.
- The treatment and control of the following species of gastrointestinal roundworms, lungworms, kidney worms, lice and mange mites. Consult
Biosecurity- What’s the big deal?

- The Oregon swine industry is small and very spread out so biosecurity has not been, shall we say, lax.
- But......
  - It is a JUNGLE out there!!! Trouble lurks in every pig hauler’s vehicle that enters Oregon.
  - We have already suffered from letting our guard down.
What has happened?

- This year, early summer, a FFA producer in OR had pigs with a variety of common diseases that did not respond well to treatment or prevention through vaccination – PRRS was diagnosed in a pig submitted to the diagnostic lab.
- Blood testing confirmed that about 2/3 of the herd was PRRS positive – gilts were purchased from IN.
- PRRS-positive animals were marketed and surveillance continues – no new cases.
What has happened?

- Later this summer, the parents of an OR 4-H’er asked me to test two gilts that were brought in from Indiana.
- One had a history of chronic diarrhea caused by a rare strain of Salmonella. This gilt was also PRRS-positive and died.
- The other gilt was negative and retained.
What has happened?

- This past week a local producer asked to have two gilts tested. One was PRRS-positive and the other negative.
- The positive animal came from a ‘dealer’ in another part of the state. He obtained the gilt and several others from Illinois.
- We will continue testing and culling in this herd.
What went wrong?

- The herd of origin disease status was unknown.
- The pigs were co-mingled in shipment.
- Animals were sent to shows/jackpots before a diagnosis was made.
- There was no quarantine blood testing performed.
What should happen?

- Evaluate your biosecurity strengths and weaknesses.
- Evaluate your system – identify weak points (see handout).
  - Isolation
  - Indirect spread
- Fix them!
What is PRRS?

- Porcine reproductive and respiratory disease
- The MOST costly disease in the US swine industry
- A bugger to get rid of!
Epidemiology

- Once established it tends to circulate indefinitely.
- Chronic, persistent infection (to 165 d).
- Virus shed in oral, nasal, mammary, fecal, and seminal secretions (even AI).
- Exposure can be intranasal, im, oral, intrauterine, vaginal, skin breaks
- Spread by insects, fomites, breeding, airborne (1 KM), transplacentally
Porcine Endemic Diarrhea Virus

- It is not new – 1971 in UK
- It is not reportable
- It does not infect people
- Pork from infected animals is safe to eat
- It is a production-related disease
- As of July 2013 found in 16 states
- Now in 23 states - killed 1 million pigs
  - Indiana, Iowa are hot-spots
Disease testing

- Blood samples
- Tissue samples
- Swabs
- Oral fluids
Oral fluids for disease testing
What can I do to help you?

- Answer questions
- Harp on you about biosecurity until you are sick of me
- Perform testing at no charge